



THE EFFECTS OF LABOUR MARKET INFORMATION SYSTEMS ON
UNEMPLOYMENT, A CASE OF DAR ES SALAAM REGION IN TANZANIA

Dissertation Manuscript

Submitted to Unicaf University in Zambia
in partial fulfilment of the requirements
for the degree of

Doctor of Philosophy (PhD) in Business

By Ruth Davison Minja

November, 2024

Approval of the Thesis

THE EFFECTS OF LABOUR MARKET INFORMATION SYSTEMS ON
UNEMPLOYMENT, A CASE OF DAR ES SALAAM REGION IN TANZANIA

This Thesis by Ruth Davison Minja has been approved by the committee members below, who recommend it be accepted by the faculty of Unicaf University in Zambia in partial fulfilment of requirements for the degree of

Doctor of Philosophy (PhD) in Business

Thesis Committee:

Dr Bilal Talal Jibai, supervisor

Dr Isaak Papadopoulos, chair

Dr Evangelia Siachou, internal examiner

Dr Ali Samnan, external examiner

Abstract

THE EFFECTS OF LABOUR MARKET INFORMATION SYSTEMS ON
UNEMPLOYMENT, A CASE OF DAR ES SALAAM REGION IN TANZANIA

Ruth Davison Minja

Unicaf University in Zambia

This study investigated the effects of Labour Market Information Systems (LMIS) on unemployment, in Dar es Salaam region in Tanzania. The Study also assessed effectiveness of LMIS functions, and explored factors affecting performance of with a view of providing empirical evidence on making informed decisions related to balancing the problem of labour supply and demand and control of unemployment. The Study was guided by three main questions focusing on the extent LMIS affects manpower planning, unemployment and determination of other factors which affects performance LMIS in Dar es Salaam Region.

The Study used mixed methods approach which is superior to individual approaches due to its ability of optimising on the strengths of both quantitative and qualitative underpinnings. The study covered 2,896 participants aged 18 – 75 years. The Dar es Salaam Business Register of Establishments was used as a sampling frame and a two-stage stratified sampling approach was used to select eligible participants.

The study applied Ordinal Regression Model (ORM) to analyse quantitative data using Statistical Packages for Social Scientists and Taguette software was used to analyse qualitative data. Results reveal that manpower planning is a positive significant predictor of the performance

of LMIS with parameter estimate value of +21.485 meaning that; for every one unit increase in efficiency of manpower planning, there is a probability that performance of LMIS will increase by 21.485 units. Similar results were obtained from use of ICT with parameter estimate value of positive 1.433. On the other hand, the findings revealed that, unemployment is a significant negative predictor of LMIS with parameter estimates of negative 3.56 which means that, for every unit increase in unemployment there is a predicted 3.56 units decrease in the performance of LMIS.

Basing on the established statistical significance of results from the ORM, this study recommends several actions to be taken to enhance performance of LMIS and control of unemployment. These actions bring together key requirements needed for the Government, employers, training institutions and other key stakeholders to adopt rational practices of manpower planning; accelerating adoption of other social economic factors relevant for performance of LMIS; and also adopting efforts to curb unemployment.

Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where stated otherwise by reference or acknowledgment, the work presented is entirely my own.

Copyright Page

I confirm that I retain the intellectual property and copyright of the thesis submitted. I also allow Unicaf University in Zambia to produce and disseminate the contributions of the thesis in all media forms known or to come as per the Creative Commons BY Licence (CC BY).

Dedication

This work is dedicated to my beloved family, my husband Godlisten Abel Minja, my lovely daughters: - Joselyne Godlisten Minja and Elistaha Godlisten Minja and my beloved Grandchild Precious Yusuph Uguzi.

Acknowledgments

I would like to extend my profound appreciation to my supervisor, Dr. Bilal Talal Jibai for his theoretical and practical guidance at all phases of my study. I would like also to extend my sincere gratitude to the Government of the United Republic of Tanzania and the management of the Tanzania National Bureau of Statistics, specifically, to the Statistician General Dr. Albina Chuwa for her encouragement to NBS Staff to proceed with further studies. Special thanks to my colleagues Hashim Njowe and James Mbongo from the National Bureau of Statistics for editing this thesis. I also thank all respondents for their cooperation and willingness to provide the needed information which was critical to accomplish this study.

Finally, I would like to extend my special thanks to my beloved family: - my husband Godlisten Abel Minja; my lovely daughters: - Joselyne Godlisten Minja and Elistaha Godlisten Minja and my beloved Grandchild Precious Yusuph Uguzi for their prayers, encouragement and support they offered me during my studies. It is not easy to mention all individuals who supported me during my study but; I would like them to understand that, their support is recognised and appreciated immensely.

TABLE OF CONTENTS

List of Abbreviations	21
List of Tables	25
List of Figures	30
CHAPTER 1: INTRODUCTION	211
An Overview of the Problem Under Study.....	211
Statement of the Problem.....	217
Purpose of the Study, Research Aims, and Objectives	225
Nature and Significance of the Study	229
Nature of the Study	229
Significance of the Study	233
Contribution of the Study.....	236
Research Questions and Research Hypotheses.....	238
Research Questions.....	238
Research Hypotheses	239
CHAPTER 2: LITERATURE REVIEW	243
Introduction.....	243
Key Concepts and Definitions Associated with Labour Market Information System and Unemployment.....	244
Key Concepts and Definitions on the Supply Side of the Labour Market Labour .	244
The Labour Force.....	246

Labour Market	247
Labour Market Information	248
Labour Market Information System.....	249
Key Concepts and Definitions on the Demand Side of the Labour Market	251
Employment	251
Unemployment.....	252
Economic Activities.....	253
Decent Work	253
Precarious Work.....	255
Economically Active Population and Inactive Population	255
Employment Status	256
Poverty	257
Skills Mismatch	258
Main Levels of Research Process	259
Identification of Research Gaps for Future Research	262
Methodology to Identify Research Gaps	263
Methodological Gaps	264
Theoretical Gaps	265
Knowledge Void	266
Theoretical Framework.....	267
Different Scholarly Views of What Constitutes a Theory	267

Theories Related to Labour Market Information and Unemployment	271
Classical Model of Labour Market	274
Neoclassical Model of Labour Market.....	276
Job Search Theory.....	277
Keynesian Model	278
Monetary Model.....	280
Unbalanced Labour Market Model	280
Efficiency Wages Model.....	281
Institutional Theory.....	281
Conceptual Frameworks	284
Empirical Literature Review.....	295
Labour Demand	296
Labour Force Supply.....	301
Labour Market	306
Labour Market Information	311
Labour Market Information System.....	318
Employment and Unemployment	325
Importance of Ethics in Conducting Research.....	332
Informed Consent.....	335
Debriefing	337
Avoiding Deception	338

Protection of Participants.....	339
Confidentiality	341
Privacy	341
Withdrawal from an Investigation	342
Other Ethical Issues for Consideration	343
Summary of the Literature Review.....	344
CHAPTER 3: RESEARCH METHODS AND DATA COLLECTION	352
Introduction.....	352
Research Approach and Design.....	355
Quantitative Research Approach and Design	355
Case Study Design.	356
Correlational Studies Design.	356
Experimental Studies Design.....	357
Qualitative Research Approach and Design	357
Case Study Design.	357
Grounded Theory Design.....	358
Ethnography Design.....	358
Mixed Methods Approach and Design	359
Selection of Research Approach and Design for this Study	361
Data Collection Tools.	364
Data Collection Strategy Used in Quantitative Approach.	365

Data Collection Strategy used in Qualitative Approach	366
Validity and Reliability of the Study	367
Operational Definition of Variables Used in the Study	367
Study Procedures and Ethical Assurances	369
Population and Sampling for the Study	369
Types of Sampling Techniques.....	370
Probability Sampling Procedures, Advantages and Disadvantages.....	370
Non-Probability Sampling Techniques, Advantages and Disadvantages.....	371
Sample Design Used in this Study.....	372
Characteristics of Sampling Frame Used for the Study.....	373
Estimation of the Sample Size for the Study on LMIS.....	374
Assumptions Used for Determination of Sample Size.	374
Sample Determination Equations	375
Data Collection Summary.....	376
Techniques for Data Analysis.....	376
Parametric Test	377
Non-Parametric Test	378
Levels of Measurement in Quantitative Research	378
Nominal Scales	378
Ordinal Scales	379
Interval Scales.....	379

Ratio Scales.....	379
Descriptive, Explanatory and Inferential Data Analysis Techniques	380
Descriptive Data Analysis Techniques	380
Univariate Descriptive Analysis.	380
Bivariate Descriptive Analysis.	381
Explanatory Data Analysis	381
Inferential Data Analysis Techniques	382
t-test or student's t-test.	383
Analysis of Variance (ANOVA).....	383
Chi-Square (χ^2).	383
Regression Analysis.....	383
Statistical Software for Data Analysis	384
Techniques used in Data Collection and Analysis.....	385
Research Processes and the Underpinning Philosophies	386
Research Philosophies	387
Positivists	387
Interpretivists	388
Pragmatists	390
Qualitative and Quantitative Research Approaches	391
Importance of Qualitative Research Approach.....	392
Qualitative Research Designs - Grounded Theory	393

Qualitative Research Designs – Ethnography.....	393
Qualitative Research Designs - Case Study.....	394
Strengths and Weaknesses of Qualitative Research	395
Importance of Quantitative Research Approach.....	396
Differences between Quantitative and Qualitative Research Approaches	397
Selection of the Most Appropriate Research Philosophy, Methods and Techniques Used in Data Collection and Data Analysis	398
1st Layer: Research Philosophy of the Study	398
2 nd Layer: Research Approach of the Study.....	401
3 rd Layer: Research Strategy Used in this Study	402
4 th Layer: Research Method used in this Study	402
5 th Layer: Time Horizons	404
6 th Layer: Techniques and Procedures for Data Collection and Data Analysis Used in this Study	404
Techniques and Procedures Used under Quantitative Study	405
Sampling Method.....	405
Possible Biases in the Sampling Method	405
Sample Selection or Participant Bias	406
Under Coverage Bias	407
Sampling Bias on the Study Design.....	407
Non-response Bias	408

Response Bias	409
Techniques and Procedures Used under Qualitative Study	410
The Study Measurements.....	411
The Study Measures under Quantitative Approach	412
The Study Measurement under Qualitative Approach.....	413
Conclusions of Chapter Three	413
CHAPTER 4: ANALYSIS OF RESEACH FINDINGS.....	416
Introduction.....	416
Analysis of the Research Findings from Quantitative Study.....	418
Statistical Software Used to Analyze Quantitate Data	418
Data Transformation	419
Trustworthiness.....	419
Descriptive Data Analysis.....	420
Inferential Data Analysis	421
Test of Normality of Quantitative Data	421
Data Model Fitting Information (MFI), Goodness-of-Fit.....	421
Parameter Estimates.....	421
Analysis of the Research Findings from Qualitative Study.....	422
Statistical Software Used to Analyze Qualitative Data	422
Trustworthiness of the Qualitative Data	422
Data Transformation, Coding and Interpretation of the Results.....	423

Conclusion of Chapter Four.....	423
CHAPTER 5: DATA ANALYSIS AND RESEARCH FINDINGS	425
Introduction.....	425
Trustworthiness of Data.....	427
Trustworthiness of Data Collected using Quantitative Research Approach.....	428
Validity of Collected Data.	429
Reliability of Collected Data.	432
Objectivity Strategy.	434
Research Findings.....	435
Response Rate and Weighting Procedures for Quantitative Study.....	435
Assumptions on Data Transformation	436
Descriptive Quantitative Research Findings from Employers and Training Institutions Module	439
Quantitative Results for Research Question One and Its Hypothesis.....	446
Quantitative Results for Research Question Two and Its Hypothesis	455
Quantitative Results for Research Question Three and Its Hypothesis	465
Trustworthiness of Data Collected using Qualitative Research Approach.....	471
Credibility.	472
Dependability.....	472
Confirmability.....	473
Qualitative Research Findings	473

Regression Analysis for Quantitative Research Study	476
Regression Analysis for Quantitative Research Study from Employers Module. ..	478
Regression Analysis for Quantitative Data Collected from Training institutions	482
Evaluation of Findings and Reconnection with Literature	485
Evaluation of the Study Results to Inform Research Question One (RQ1).....	487
Evaluation of the Study Results to Inform Research Question Two (RQ2)	490
Evaluation of the Study Results to Inform Research Question Three (RQ3)	492
Summary of Data Analysis and Research Findings.....	493
Summary of Trustworthiness of Data	493
Summary of Research Findings	494
Summary of Results for Research Question One (RQ1).	495
Summary of Results for Research Question Two (RQ2).....	496
Summary of Results for Research Question Three (RQ3).....	497
CHAPTER 6: IMPLICATIONS, RECOMMENDATIONS AND CONCLUSIONS.....	498
Introduction.....	498
Implications of Research Findings	502
Practical Implications by Research Questions.....	502
Practical Implications of Research Findings for Research Question One (RQ1) ...	502
Practical Implications of Research Findings for Research Question Two (RQ2) ..	509
Practical Implications of Research Findings for Research Question Three (RQ3) ..	513

Theoretical Implications of the Research Study.....	514
Recommendations for Application by Research Questions	518
Recommendations for Application Under Research Question One (RQ1)	519
Recommendations for Application Under Research Question Two (RQ2).....	524
Recommendations for Application Under Research Question Three (RQ3).....	529
Limitations and Delimitations of the Study	531
Limitations	531
Delimitations	533
Recommendations for Further Studies.....	533
National Manpower Survey (NMPS).....	534
Implementation Arrangements of the NMPS.	536
Steering Committee.	536
Technical Committee.	537
Secretariat.	537
Work Plan, Budget and Time frame.	539
Other Recommended Future Studies	540
Critical Characteristics of Optimal Labour Market Information to be Considered in Future Studies	541
Conclusions of the Research Study by Research Questions.....	542
Conclusions Based on the Findings from Research Question One (RQ1)	545
Conclusions Based on the Findings from Research Question Two (RQ2).....	546

Conclusions Based on the Findings from Research Question Three (RQ3).....	547
General Conclusions of the Study.....	548
References.....	501
Appendices.....	530
Appendix 1: Employers Questionnaire	530
Appendix 2: Training Institutions Questionnaire	530
Appendix 3: Employees Questionnaire	530
Appendix 4: Unicaf University in Zambia Research Ethics Application Form Doctoral Studies.....	530
Appendix 5: Unicaf University in Zambia Research Ethics Committee Decision	530
Appendix 6: Gatekeeper letter	530

List of Abbreviations

ADA	Africa Development Agenda
ANDPs	Annual National Development Plans
ANOVA	Analysis of Variance
ATE	Association of Tanzania Employers
BRE	Business Register of Establishments
CG	Central Government
CMA	Commission for Mediation and Arbitration
DQA	Data Quality Assurance
EE	Employers' Establishment
EO	Entrepreneurial Orientation
EOS	Employment Outlook Survey
EPCs	Evidence Based Practice Centres
EPZA	Export Processing Zone Authority
fc	Factors influencing performance of LMIS
FINER	Feasibility, Interesting, Novel, Ethical and Relevant
GDP	Gross Domestic Product
GSBPM	Generic Statistical Business Processing Model
HCT	Human Capital Theory
HLI	High Learning Institutions

ICT	Information and Communication Technology
ID	Immigration Department
ILFS	Integrated Labour Force Survey
ILO	International Labour Organisation
JCM	Job Competition Model
LGA	Local Government Authorities
LMI	Labour Market Information
LMIS	Labour Market Information System
MANOVA	Multivariate Analysis
MDAs	Ministries, Departments and Agencies
MFI	Model Fitting Information
MoEST	Ministry of Education, Science and Technology
Mp	Manpower planning
NBS	National Bureau of Statistics
NDQAF	National Data Quality Assurance Framework
NEET	Not in Employment and Not in Education or Training
NEET	Not in Employment and Not in Education or Training
NFYDP	National Five Years Development Plans
NGO	Non-Government Organizations
NIP	National Institute of Productivity

NMPS	National Manpower Survey
NSA	Non-State Actors
ORM	Ordinal Regression Model
OSHA	Occupational Safety and Health Agency
Pf	Performance of LMIS
PPS	Probability Proportional to Size
PSU	Primary Sampling Unit
SDGs	Sustainable Development Goals
SMS	Skills Mismatch Survey
SPSS	Statistical Packages for Social Scientists
SSRA	Social Security Regulatory Authority
SSU	Secondary Sampling Unit
STI	Science, Technology and Innovations
STI	Science, Technology and Innovations
TaESA	Tanzania Employment Services Agency
TDV	Tanzania Development Vision
TDV	Tanzania Development Vision
THBS	Tanzania Household Budget Survey
TIC	Tanzania Investment Centre
TIE	Training Institutions Establishments

TPHC	Tanzania Population and Housing Census
TPSF	Tanzania Private Sector
TVET	Technical and Vocations Education Training institutions
Un	Unemployment
UREC	University Research Ethics Committee
VAT	Value Added Tax
VET	Vocational Education and Training
VTC	Vocational Training Centers

List of Tables

Table 3. 1 Variables Domains, Description and Data Types (Modified from Ismail, 2020)....	368
Table 3. 2 Sample Size Determination for this Research	375
Table 3. 3 Data Collection Summary	376
Table 5. 3 Component Correlation Matrix for Employers Module.....	432
Table 5. 4 Reliability Statistics Derived from the Employers Module	434
Table 5. 5 Assumptions Used in Data Transformation	437
Table 5. 6 (a) Number and Percentage Distribution of Employers by Age Group and Sex, Dar es Salaam, 2022 –International Definition of Youth.....	439
Table 5. 6 (b) Number and Percentage Distribution of Employers by Age Group and Sex, Dar es Salaam, 2022 – National Definition of Youth	439
Table 5. 7 (a) Number and Percentage Distribution of Respondents from Training Institutions by Age Group and Sex, Dar es Salaam, 2022 – International Definition of Youth.....	440
Table 5. 7 (b) Number and Percentage Distribution of Respondents from Training Institutions by Age Group and Sex, Dar es Salaam, 2022 – National Definition of Youth	440
Table 5. 8 Number and Percentage Distribution of Employers by Level of Education and Ownership of Establishments, Dar es Salaam, 2022	441
Table 5. 9 Number and Percentage Distribution of Respondents from Training Institutions by Education and Ownership of Establishment, Dar es Salaam, 2022	442

Table 5. 10 Number and Percentage Distribution of Employers by Main Type of Economic Activity, Dar es Salaam, 2022	443
Table 5. 11 Number and Percentage Distribution of Employers by Number of Employees Engaged, Dar es Salaam, 2022	444
Table 5. 12 Number and Percentage Distribution of Respondents in Training Institutions by Number of Years Worked, Dar es Salaam, 2022.....	446
Table 5. 13 Number and Percentage Distribution of Employers by the Status of Skills Match by Sector of Ownership, Dar es Salaam, 2022	447
Table 5. 14 Percentage Distribution of Employee's in Training Institutions by the Status of Skills Match by Sector of Ownership, Dar es Salaam, 2022	448
Table 5. 15 Percentage Distribution of Type of Skills Lacking Among Staff by Sector of Ownership, Dar es Salaam, 2022	450
Table 5. 16 Distribution of Employers by Industrial Activities and Level of Satisfaction of Performance of Employees Hired from TVET institutions	454
Table 5. 17 Percentage Distribution of Skills Mismatch Among Staff by Sector of Ownership, Dar es Salaam, 2022	455
Table 5. 18 Distribution of Training Institution's perception Regarding Areas which need to be Improved by Type of Ownership, Dar es Salaam, 2022.....	456
Table 5. 19 Percentage Distribution of Methods used for Sourcing of Employees by Sector of Ownership, Dar es Salaam, 2022.....	459

Table 5. 20 Percentage Distribution of Employers Regarding the Extent of Agreement that LMIS Affects Unemployment, Dar es Salaam, 2022	464
Table 5. 21 Distribution of Training Institutions Regarding the Extent of Agreement that LMIS Affects Unemployment, Dar es Salaam, 2022	464
Table 5. 22 Percentage Distribution of Employers Regarding the Extent of Agreement that there is Association between Different Social Economic Factors and Performance of LMIS, Dar es Salaam, 2022	465
Table 5. 23 Percentage Distribution of Training Institutions Regarding the Extent of Agreement that there is Association between Different Social Economic Factors and Performance of LMIS, Dar es Salaam, 2022	466
Table 5. 24 Percentage Distribution of Employers by whether they have Used ICT by Sector of Ownership, Dar es Salaam, 2022	466
Table 5. 25 Percentage Distribution of Areas of ICT Uses in Organizations by Sector of Ownership, Dar es Salaam, 2022	467
Table 5. 26 Percentage Distribution of Areas of ICT Uses in Training Institutions by Sector of Ownership, Dar es Salaam, 2022	467
Table 5. 27 Percentage Distribution of the Most Important Challenges Faced by Organizations with Regard to the Use of ICT by Sector, Dar es Salaam, 2022	468
Table 5. 28 Distribution of Employers by Industrial Activities and Status of the Use of Information and Communication Technology	470

Table 5. 29 Code Book Extracted from TAGUETTE; Number and Percentage Distribution of Tags and Descriptions Regarding Employees Perception about the Performance of LMIS, Dar es Salaam, 2022.....	474
Table 5. 30 Code Book Extracted from Taguette: Number and Percentage Distribution of Tags and Descriptions Regarding the Main Methods Used by Job Seekers to Search for Jobs, Dar es Salaam, 2022	475
Table 5. 31 Test of Normality of Quantitative Data Collected from Employers Module.....	476
Table 5. 32 Test of Normality of Log of the Quantitative Data Collected from Employers Module	477
Table 5. 33 Case Processing Summary	478
Table 5. 34 Model Fitting Information.....	479
Table 5. 35 Goodness-of-Fit.....	479
Table 5. 36 Pseudo R-Square	480
Table 5. 37 Parameter Estimates of the Ordinal Regression Model	480
Table 5. 38 Test of Normality of Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022.....	482
Table 5. 39 Test of Normality of Log of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022	482
Table 5. 40 Model Fitting Information of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022	483

Table 5. 41 Goodness-of-Fit of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022	483
Table 5. 42 Pseudo R-Square of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022	483
Table 5. 43 Parameter Estimates of the Ordinal Regression Model of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022.....	484
 Table 6. 1 Estimated Operational Budget for NMPS in Tanzania (1 USD = TZS 2,500)	538
Table 6. 2 Proposed Work Plan for Implementation of the Proposed NMPS in Tanzania.....	539

List of Figures

Figure 2.1 Main Stages of the Research Process (Gelling, 2015).....	260
Figure 2.2 A Conceptual Module Adapted from Woods and O'Leary (2006) Explaining Performance of Labour Market Information System.....	291
Figure 2.3 The Research Onion adopted from Saunders et al. 2009	386
Figure 4. 1	386
Figure 5. 1 Percentage Distribution of Employers by Levels of Education, Dar es Salaam, 2022	441
Figure 5. 2 Number of employees in Training Institutions Participated in the Study by Sex, Dar es Salaam, 2022	445
Figure 5. 3 Distribution of Training Institutions by Means Used to Ensure Relevance of Training Programmes by Type of Institution, Dar es Salaam, 2022	449
Figure 5. 4 Percentage Distribution of Institutions which Hired Graduates from TVET or HLI by Level of Satisfaction of Performance of Recruited, Dar es Salaam, 2022	451
Figure 5. 5 Percentage Distribution of Employers Regarding the Extent of Agreement that LMIS Affects Manpower Planning, Dar es Salaam, 2022	452
Figure 5. 6 Distribution of Training Institutions Regarding the Extent of Agreement that LMIS Affects Manpower Planning, Dar es Salaam, 2022	453
Figure 5. 7 Percentage Distribution of Graduates from Training Institutions by Duration they Took to Get Employment, Dar es Salaam, 2022	457

Figure 5. 8 Percentage Distribution of Reasons for Posts which have been Vacant for Six Months or More, Dar es Salaam, 2022	458
Figure 5. 9 Percentage Distribution of Methods used by Training Institutions for Sourcing of Employees, Dar es Salaam, 2022.....	460
Figure 5. 10 Percentage Distribution of Employers by whether they have Used Labour Market Information System by Sector of Ownership, Dar es Salaam, 2022	461
Figure 5. 11 Percentage Distribution of Experience on the Performance of LMIS, Dar es Salaam, 2022.....	462
Figure 5. 12 Percentage Distribution of Experience on the Performance of LMIS by Training Institutions, Dar es Salaam, 2022	463
Figure 5. 13 Distribution of the Most Important Challenges Faced by Training Institutions with Regard to the Use of ICT, Dar es Salaam, 2022.....	469

CHAPTER 1: INTRODUCTION

An Overview of the Problem Under Study

This research work dwells on the Effects of Labour Market Information System (LMIS) on unemployment. There are several definitions of LMIS but the main context is built on its ability to support manpower planning for optimal labour supply and demand in the market. According to Cazes and Verick (2013), Labour Market Information System is a synergy of institutions with identified responsibilities, commitments and tasks for all parties to produce, store, disseminate, use and utilization of labour market related information. Similar definition has been provided by Woods and O'Leary (2006) that, LMIS comprises all institutions and the associated core functions related to manpower planning and several responsibilities related to labour market information such as job vacancies in terms of different time frames from short to longer term perspectives.

The conceptualization of Labour Market as in other normal markets refers to the interaction between sellers and buyers of labour whereby; training institutions are the major suppliers of labour or job seekers or employees and the employers including the Government, private sector, nonprofit organisations are categorised as buyers of labour on the demand side (Alexander et al., 2019). However, labour market is more complex than the normal market for commodities in the sense that, buyers of services provided by laborers' have no mandate to own the laboures providing the services as in conventional markets for goods and also buyers and sellers of labour are unpredictable due to rapid changes in technology, high level of innovations, income and population dynamics which influence level of investment, employment and unemployment in the economy (Meulders & Wilkin, 1991). Therefore, Labour Market Information refers to any information being statistical or non-statistical information and the functioning of the Labour

Market, in terms of the extent training institutions impart the right skills and knowledge to their students who are potential employees, stock of available labour force in the economy and their qualifications, job openings and associated rewards, locations of available jobs, projections for future jobs and all other key labour market indicators (Alexander et al., 2019). However, according to International Labour Organisation (2002), countries should consider to produce and manage the minimum of 17 Key Labour Market Indicators (KLMI). These indicators are broadly categorised in three major categories namely; indicators measuring the extent to which an economy can offer jobs to persons who wish to work; indicators measuring quality of employment held by individuals; and indicators which give information about labour market structure.

The KLMI measuring ability of an economy to provide employment include: - labour force participation rate; employment to population ratio; unemployment; youth unemployment; people out of the labour force and long-term unemployment. In addition, KLMI which measure the quality of employment are: - status in employment; working poverty; temporary workers; working hours; employment in the formal economy; underemployment; education; wages; labour productivity and poverty. Also, the KLMI which provides an insight into the profiles of the labour market including: - employment by economic class; occupation and sector. Labour Market information is crucial in making evidence-based decisions related to enhancement of productivity which will contribute to the increased economic growth in the three main social economic sectors namely: - Agriculture; industry and construction and service. Major users of Labour Market Information include decision makers from all institutions, employers, employees, job seekers, potential labour force, training institutions, curriculum developers, researchers and individuals (Hennig-Thurau, 2004). Each user is interested with segmented type of Labour Market Information which are relevant to their needs. For instance, training institutions need labour market information such as skills gaps by type of

economic activities which can help them to design training courses and skills needed by employers to ensure the graduates are employable; policy makers from the government would like Labour Market Information such as unemployment, wages and employment status to help them understand the strengths and areas with weakness which needs prompt interventions and planning for medium and long term employment related programmes (Alexander et al., 2019).

Regarding unemployment or simply a state of being jobless, International Labour Organisation (ILO) has put two main definitions for international comparison; these are strict and relaxed definition of unemployment. The Strict definition of joblessness covers all persons who were without work during a reference period of time and they were available for work and they must be seeking work (Byrne & Strobl, 2004). The second ILO definition of unemployment is a relaxed definition which corresponds to the strict definition of joblessness but do not encompass the condition of looking for employment (ILFS, 2014). Similar definitions have been provided by Barnichon and Yee (2020) that, unemployment can be conceptualised as a ratio of the labour force that is not in employment but available and looking for work. However, the ILO guidelines allow countries to adapt the international definition of unemployment to suite their labour market characteristics. The national definition of unemployment has been used in this study which brings together relaxed unemployment aspects and the employed persons during the reference period who were marginally attached to employment due to economic reasons during the reference period (ILFS, 2014). Labour Market Information Systems is an important parameter for social wellbeing of the people and economic prosperity of an economy. The main functions of LMIS are to support coordination, information exchange, labour market processing, monitoring and evaluation procedures; and reporting progress on the performance of development frameworks related to employment (Sparreboom, 2001). Effective labour market policies require an effective LMI system

that guides, supports and monitors them and includes an institutional framework, data collection and compilation, data storage and analysis tools (Martín, 2011). According to Blanchard et al. (2014), proper LMIS provides an effective ground work for policy formulation related to skills enhancement to foster productivity in employment and ensure sustained economic growth.

Despite the important role of labour related information and LMIS on job creation, economic growth and reducing unemployment, LMI and LMIS at global perspectives and specifically in most of developing countries are fragmented and has not been performing to its optimal level. Many countries lack access to a robust Labour Market Information which hinders social economic development given its key role it plays on multisectoral performance; it is high time as most of the countries are striving to strengthen production, dissemination and the use of information pertaining to manpower planning, employment, unemployment and other labour market information including establishing effective Information Systems for Labour Market. According to Desjardins (2019), LMIS in most of developing countries are fragmented and incomplete, which thwarts efforts and sustained support for development processes. The same issues have been raised by O'higgins (2001), that, lack of LMIS seems to have affected the expectations of young educated job seekers in some developing countries due to unreliable information about job openings and selection of courses which are demanded on the market over time.

Another comparative study conducted by Martín (2011) in Colombia, Costa Rica, Ghana, Nicaragua, Senegal and Tunisia indicates that, the main challenge facing performance of LMIS are inadequate institutional framework, fragmented expertise and resources, inadequate coordination and data accessibility. It has been reiterated by Cazes and Verick, (2013) that, despite commitment of many countries to develop LMIS, there are several limitations that impinge on the

effective functioning of the LMIS that aspiring to develop such systems. The operational limitations include among others, inadequate labour market data and uncoordinated institutional framework.

In a developing country such as Tanzania with a low level of technology and where labour is a prerequisite input for economic growth processes specifically engagement in production, storage and distributions of commodities and provision of services; LMI is one of the vital factor used in determining the ability of the economy to absorb the existing workforce, control unemployment, boost economic growth and poverty alleviation. There is a close linkage between poverty alleviation, economic prosperity, unemployment and well-functioning of Labour Market Information System but it has never been easy to explicitly determine and main the relationships (Ismail, 2020). The ineffective Labour Market Information System in Tanzania has been cited as a major obstacle for graduates to find employment (Amani,2017). According to SORENSEN and MAS, (2015), LMIS in Tanzania has neither succeeded in performing its functions because of a many reasons including a limited scope whereby labour market information is produced at an aggregate national format leaving a substantial part of lower-level administrative areas unattended. Furthermore, labour market in the country are not disaggregated by key labour market information which could support employers, training institutions and job seekers in making rational decisions about carrier development.

A well-functioning LMIS in the country would greatly enhance information sharing amongst actors from the demand and supply side. Job seekers would readily obtain information about job openings and vacancies in different fields; and prospective entrants to the Labour Market would use the LMIS for evidence based vocational and career guidance; equip education and training authorities with critical data for manpower planning, especially on courses and skills they

offer and shaping of education curriculums and trainings towards the demand of employers in relation to economic development. Moreover, the Government can use the LMIS as a policy tool for overall manpower planning to solve skills mismatches problem; reduce unemployment; improve working conditions and ultimately attaining decent work. Absence of an effective LMIS makes all these potentials untapped.

Demand for LMIS in Tanzania has recently increased to support formulation of policies and programmes to respond to many malfunctions of the performance of the labour demand and supply including: - high unemployment; skills mismatch and inadequate data sharing mechanisms. For instance, According to Integrated Labour Force Surveys conducted by Tanzania National Bureau of Statistics in 2014 and 2020, unemployment has consistently stood as high as 10.3 percent as estimated in 2014 and 9.0 percent recorded in 2020 (ILFS, 2014 & 2020). Though there is no comprehensive study conducted in the country about skills mismatch, a small sectoral study conducted by SALAAM (2020) revealed existence of high skills mismatches in agri-business enterprises (41.2 percent) tourism and hospitality (17.6 percent) and construction (20.6 percent).

Tanzania is also implementing several global, regional and national development aspirations including: - the United Nations Agenda for Sustainable Development, 2030 (SDGs, 2030), the Africa Development Agenda, 2063 (ADA, 2063) and the Tanzania Development Vision, 2025 (TDV, 2025) which is being implemented in a phases of five-year development programs. All these development frameworks comprise labour market aspects which focus on, among other things: - job creation, reducing unemployment, income generation, training and skills development, working conditions, human development, reduction of poverty and achieving decent work. Basing on those facts, the need for conducting deeper research on the performance of LMIS and its relations to manpower planning and unemployment by harnessing the opportunities of data revolution can't

be ignored. Furthermore, the need for effective LMIS is strongly felt in Tanzania as stipulated in its medium and long-term development policies and programs. Moreover, the study results will contribute significantly to the economic growth, creation of more jobs which will ultimately reduce unemployment and improve welfare of the people.

Statement of the Problem

The problem of ineffective Labour Market Information Systems to support formulation of policies and programmes and making prompt interventions by the Government and private sector that focus on job creation and; provision of quality education, training and skills which suit the needs of employers has had implications into high unemployment in Tanzania over time. According to Tanzania National Bureau of Statistics Integrated Labour Force Surveys (2014 & 2020), Tanzania is experiencing high unemployment ranging between 10.3 and 9.0 percent in 2014 and 2020 in that order. It is also noted that, Dar es Salaam region which is the in the study area is particularly experiencing high unemployment; whereby 21.5 percent of the total labour force in 2014 was unemployed, and only decreased by one percentage point in the period of six years between 2014 and 2020 to 20.5 percent. Furthermore, most of the Key Labour Market Indicators are not performing at optimal levels in Tanzania. These include among others: - Labour Force Participation Rate (LFPR) which continued to decrease up to 77.0 percent from 85.0 percent between 2014 and 2020. In addition, Employment to Population Ratio (EPR) dropped to 68.6 percent in 2020 from 71.3 percent in 2014; Total Employment in the Informal Sector remained persistently high above 20 percent over the past 10 years and youth unemployment remained at double digits standing at 13.4 percent in 2020 (ILFS,2020). The current state of labour market information in Tanzania implies inability of the economy to employ the available labour force resulting from among others, skills mismatch between the possessed skills by those looking for

work and skills demanded by employers; limited investment which limits creation of more jobs and limited information about available jobs and other key labour market information to support making optimal decisions about human capital development (SALAAM, 2020). Furthermore, malfunctions of the Labour market information Systems in Tanzania divides key labour market actors such as decision makers, job seekers, training institutions in making concerted policies and programmes to balance labour supply and labour demand in the labour market (Sparreboom, 2001).

Labour Market Information System in Tanzania like many developing countries is fragmented and uncoordinated. Moreover, institutions responsible for management of various aspects related to Labour Market Information System are working in silos. This impinge access and use of labour market information by policy makers and key actors of the labour market for proper manpower planning and other applications. Furthermore, Tanzania is experiencing a huge data gap of the labour market in relating to coverage and timeliness because the dominant LMI sources are surveys specifically the labour force and employment and earnings which are conducted after every five years but sometimes exceed five years depending on the availability of resources. For instance, the labour force survey was conducted in 2006 and then in 2014 an interval of 8 years. Labour force survey is household-based survey and due to competing priorities the survey is normally designed to provide estimates at national level only leaving the big part of the society uncovered. Surveys which provide estimates at a low government level such as regional or council levels could provide more precise status of the labour market in the country and help policy makers to make optimal and specific interventions to boost employment and improve welfare of all people. Likewise, the annual survey on Employment and Earnings (EES) is the only survey which collects critical labour market information from the formal sector of employment in the

country to complement information which could not be collected using the labour force surveys. However, due to financial constraints, EESs have not been conducted regularly and are limited to provide labour market information estimates representative at regional levels only leaving council level uncovered. Irregularities in production of labour market information in Tanzania and lack of such information at lower administrative levels are among the key factors impinging the performance of LMIS in Tanzania. In addition, there are lot of labour related administrative data in the country produced by Government Ministries, Departments and Agencies and the private sector albeit of low quality which could also add value into the labour market if and only if innovations and use of technology were properly harnessed to establish a well-functioning Labour Market Information System.

Effectiveness of the Labour Market Information System in Tanzania would have great value in bringing information related to the labour market from various data producers and sources including censuses, surveys and administrative data into a common pool to support job seekers, training institutions and employers in making evidence-based decisions. It would also inform about institutional framework which can translate policies into actions. For instance, Labour Market Information System which has quality data in terms of timeliness, reliability and relevance for both job seekers and employers are critical for them to adjust their strategies for looking for works and for employers to adjust their recruitment approaches based on the available labour force (Alexander et al.,2019).

Similar augments from other scholars indicate that, lack of effective Labour Market Information System in Tanzania, hinders job seekers, employers and training institutions in making correct decisions concerning their jobs and training (Amani, 2017). According to Cazes and Verick (2013), in developing countries, labour market faces challenges to create job

opportunities in the formal sector which would promote prosperity of job seekers and their families. Therefore, governments are promoting investment on development of effective LMIS. Job seekers specifically in developing countries face many challenges to get employment due to skills mismatches and to find a job which has income that can contribute to development of their life (International, 2013). According to Shamchiyeva and Kahyarara (2014), job seekers in Tanzania specifically youth, are more vulnerable in terms of higher unemployment including longer and insecure school to work transition.

In addition, according to Maurya and Shah (2014), increased activities in the global labour market have necessitated the need for reasonably quality data and enhanced accessibility of information related to the Labour Market. Labour Market Information has become fundamental element of a growing and competitive economy which necessitates for sufficient timely production of quality and relevant LMI which can effectively perform its important role in providing opportunities to develop relevant skills needed in the labour market (Rihova, 2016). The following are some key actors of the Labour Market and important uses of LMI in the social economic development:- human resource planners need labour market information in order to design programs and establish policies to facilitate human resource development and support growth in employment; labour market information provides an indication of regional employment and unemployment trends which are used by planners to examine the situation and recommend adjustments in expenditure targeting areas of most needs (Arpaia et al., 2014). Vocation training institutions need information on labour market trends such as occupational changes dictated by technological advances, skill requirements by employers to be able to plan relevant training programs (Guardia et al., 2021). Occupational Safety and Health Authority require timely labour market information on occupational risks, disputes so as to take corrective measures and provide

necessary arbitration and when the need arise (Brown et al., 2012). In addition, Labour Market Information is important to job seekers as it to help them in career development planning and make suitable choices based on labour force demand (Alexander et al., 2019).

Furthermore, drastic and rapid changes in labour market dictate need for coordinated production, storage, processing and effective dissemination of LMI to make it useful and relevant to planners, policy makers, investors, employers, and the work force. Several countries in the world including developed economies are engaged in establishment of effective labour market information systems to ensure equal access to quality Labour Market Information in terms of relevance, timeliness, reliability, validity, completeness and other attributes of quality to human resource planners, fiscal planners, employment service providers, vocational training institutions, occupational regulatory authorities, employers and potential employers and job seekers (Brandas et al., 2016). Production process of LMI in developing countries including Tanzania is hampered by several challenges including inadequate coordination, inadequate funding, lack of labour market information systems, timeliness, accuracy, un-uniformity, inadequate accessibility, inadequate monitoring and evaluation programs, high rate of non-response (Amani, 2017). In Tanzania specifically, there are various sources of labour market information, but the information is not compiled to form a tangible, usable LMIS by various users. The information is scattered within several producers, but do not reach other users or potential users. Lack of coordination framework, therefore, makes information dissemination difficult. For instance, Ministries responsible for education and vocational training produces data on education statistics, vocational training programs, job openings and the required training but this information is not easily accessible by job seekers (Kessy, 2020). Lack of coordinated production processes of labour market information generation from the designing stage, data collection, storage, dissemination

and use has resulted in difficulties in evaluation of policies and programmes pertaining to the labour market. Responsibilities of labour market actors are not explicitly stated with regards to data collection and dissemination. This has affected human resources planning based on LMI trends, resulting into high level of unemployment (SALAAM, 2020).

Financial constraint limits the required wide coverage in data production from conducting surveys, collecting administrative data and employing all data mining methods nationally is an expensive exercise requiring enormous investment. Irregular Labour Market Surveys conducted in the country including integrated labour force surveys, manpower surveys and; employment and earning surveys are a result of unavailability of funds and generation of incomplete data. Key labour market indicators recommended internationally are collected through Integrated Labour Force Surveys after every five years. Information from these surveys could have more value if were available in a higher frequency to better inform policy makers about the labour market changes for prompt actions. Due to financial constraint, even the five years interval the survey is irregularly conducted (Di Fabio & Blustein, 2016).

Furthermore, timeliness of information is necessary for job seekers, potential employers and policy makers. The labour market information in Tanzania is not timely due to delays in conducting the surveys, analysis and dissemination due to financial constraint. Timely Labour Market Information would make it easier to match employers with job seekers, while providing the necessary data to stakeholders to develop training based on labour force demand. It would also enable employers to anticipate organizational needs. Therefore, the effective Labour Market Information ought to be capable of reflecting the prevailing situations and labour market realities. Even though there has been progressive development in information communication technology,

particularly the use of internet in the country, dissemination of Labour Market Information through internet is minimal (Nsabimana & Funjika, 2019).

Some agencies in the country, especially regulatory authorities, receive inaccurate data which do not fit for the purpose. Inaccuracy is also as a result of incomplete data collection which leads to inaccurate decision support system (Alexander et al., 2019). Furthermore, Labour Market Information in the country lack the uniformity criteria, is produced in different format because each institution producing LMI for its own purpose. This makes it difficult to compare statistical data over time. Accessibility is another key challenge of LMI in Tanzania, is not easily accessible by those who need the information such as employers, employees, investors, training institutions and job seekers. Dissemination is selective for internal use and does not meet the concept of equal access to information. Development and use of LMIS could be the permanent solution to improve accessibility of LMI (Acosta & Secretary, 2018).

Inadequate monitoring and evaluation programs on LMIS functions result in difficulties in determining whether users receive relevant labour force information, whether they are satisfied, and identifying gaps in LMI production and dissemination (Rihova, 2016). Furthermore, over dependency on labour force surveys which is sometimes prone to high rate of non-responses and inability to collect some of the Labour Market Information; poor performance in production and use of information pertaining to the labour market from administrative records increases threats to achieve the aspirations of policy makers of getting timely, accurate, and complete Labour Market Information (Kern, 2018). Lack of Labour market information systems has resulted in ambiguities of labour market functions and most of explained existing challenges.

In addition, Sparreboom (2001) emphasised the importance of optimally performing Labour Market Information and its architecture to facilitate making rational decisions to address

unemployment concerns in any economy. Moreover, a well-coordinated production and dissemination of labour related information is critical to support conducting a robust analysis in evaluation of economic, social and demographic characteristics as they relate to training and employment opportunities. Other major uses of LMI include: - determining the need to develop, increase or even reduce, when necessary, vocational training programs within specific industry or area; developing policies and planning programs to support work force changes and skills related to working experience; monitoring and evaluating employment, unemployment and under-employment trends in order to adjust government expenditure. Other are: - identifying areas with most need for employment services taking into account the number of job seekers and potential employers within specific industries; guiding personnel policies on which industry to invest most as well as timing of investment, and likely changes in job market trends; helping individuals in making career choices and providing information of training opportunities to match future skill requirements of various occupations. It also supports monitoring by regulatory authorities the occupational conditions and disputes; mass lay-offs and make amends or corrective measures before negative impact is realized (Barnes et al., 2020).

In this regard, this study aims at making contribution to the existing body of knowledge by conducting a detailed investigation to explore effects of performance of Labour Market Information System on unemployment. The investigation is carried out through evaluation of factors relevant to performance of LMIS and recommending optimal LMIS framework. Without such investigation, many interventions aimed at promoting employment and controlling unemployment may risk focusing on the wrong areas at all levels from all levels of Government machinery from Central, Regional Secretariats to Local Authorities. The study adapted the conceptual module of Woods and O'Leary (2006) to examine the implications of Labour Market

Information System on the situation of unemployment. The module assumes that the best performance of the LMI system is measured by the ability of the economy to employ the existing labour force in the course of producing goods and services delivery and quality of labour force that meet the needed skills in the market.

Purpose of the Study, Research Aims, and Objectives

The fundamental purpose of this mixed study is to critically examine and evaluate effects of Labour Market Information System on unemployment in Dar es Salaam region. The aim is to assess effectiveness of Labour Market Information System functions and to determine factors affecting its performance to support informed decisions to gauge the mismatch between the supply of labour and the associated demand in production of goods and services. The state of Labour Market in Tanzania as in other countries has many but multifaceted nature of players with different interests of labour related information for a diverse purpose on the basis of the type of the core roles. It is therefore critical to ensure proper and well-coordinated functions of the Labour Market to ensure production of demand driven labour market information; harmonised means of information archiving, dissemination and utilization by policy makers at both sides of the labour supply and corresponding demand including the public sector, private sector, job seekers and training institutions. It has been reiterated by SORENSEN and MAS (2015) that, it is of high importance for any country to put a mechanism in place to address the problem of fragmentation of labour market information by establishing integrated labour market information system which brings together collected labour related information from different data producers that are transformed into meaningful stories for policy makers and other users in making meaningful decisions about career development. This approach will bring about huge dividends in development processes including avoiding duplication of efforts which will significantly enhance efficiency in terms of

time, equipment, personnel and funds used in the labour market sector. The saved resources will be used to enhance performance of other equally important priority development areas to ensure sustainable development in all sectors of the economy. On the demand side of the labour market, it is the objective of this study to ensure that the results will have multiplier impact into economic development ranging from increased number of investments into various economic activities, increased new jobs, employment and disposable income. All these initiatives will result into increased aggregate demand which will also stimulate employer's decision to investment more and have big impact on reducing the problem of unemployment. On the supply side, objective of this study is to ensure that training institutions design effective training programmes which will impart the demanded knowledge and skills to their students which will also warrant their employability. There is high skills mismatch in Dar es Salaam labour market resulting from weak coordination between training institutions, employers and potential students during making decisions of training programmes. Findings of this study will provide reliable strategic plans which will bring together employers, individuals and training institutions into a common dialogue platform, the effective LMIS in making optimal decisions which will ultimately eliminate the problem of unemployment in Dar es Salaam.

Furthermore, the importance of determination of factors affecting performance of labour market in Tanzania has been mentioned by several scholars including Amani (2017) that, is a cornerstone for improving the labour market from production to dissemination and use which directly improves performance of sectors such as agriculture which provides employment to more than 60 percent of Tanzania's work force. The effective functioning of labour market information system has been cited several times in literature due to its outstanding deliverables related to improved manpower management. According to Maurya and Shah (2014), effective labour market

information system acts as a bridge to reduce mismatches between skills demanded by employers against those supplied by training institutions. It helps job seekers and students to make optimal decisions about the highly demanded skills in the labour market; type of training programmes to undertake; employers to understand available skills and expertise and facilitate informed dialogues in the labour market.

For a country like Tanzania with a low level of technology, Labour is still an important primary factor of production which requires deep research to facilitate making evidence decisions related to creation of more jobs and economic development. According to ILFS (2020) the concept of labour Force is well explained under the population in a specific age threshold termed as working age population. The working age population consist of persons who are economically active in production process and those who are not active also referred to as economically inactive persons. The economically active persons include those who are in employment, meaning they did some economic activity for pay or profit during a reference period of time which is usually a one week prior to the survey. On the other hand, a population of a specified age who did not hold any work and were available to hold work under a specified reference time even if they did not take any step to look for work are termed as unemployed persons. The concept of economically inactivity refers to persons who were not in employment or were not searching for employment in the reference duration.

According to Population and Housing Census - PHC (2022), Tanzania is characterised by high proportion of working age population whereby more than half (53.4 percent) of the population are in working age population. This is a marginal increment of 1.5 percentage points above 51.9 percent recorded in PHC conducted in 2012. Tanzania being a developing economy, utilization of technology in production of goods and services is still at very low scale and therefore labour

became an important factor in the economy and distribution chain of commodities and service. It is therefore imperative to ensure available vast pool of the labour force, specifically those who have the rights skills to perform their activities at optimal scale. Proper planning of skills needed in the economy plays a vital role on ensuring a virtuous circle of high skills, high productivity, high wages and uptake on available and new technologies in production processes and reduces the risks of the economy to fall on high rates of unemployment (Maurya & Shah, 2014). However, according to SALAAM, (2020) Tanzania is experiencing high level of skills gaps, skills mismatch and information about manpower demands in many sectors and there is little documentation of the current situation and recommendations to address the situation. In order to attain aspirations and objectives of the Tanzania National Development Vision 2025 which focuses on industrialised economy by harnessing opportunities of technology to improve agro-processing which will add value to agricultural products; it is critical to conduct deep labour market information studies to better inform national development initiatives. Inefficiency in labour market performance in the country has been mentioned as key obstacle towards inadequate delivery of skilled labour from training institutions and employers to hire labour force with adequate skills which in turn can contribute to the development and expansion of their businesses. This results into the increased number of unemployed persons and growing of informal sector employment in the country. This study will critically explore the current performance of the labour market architecture to strategically assess the institutional context of the labour market dynamics, production, storage and dissemination information related to labour market, level of stakeholders' engagement to assess the extent of inclusiveness concept which are critical in ensuring production of demand driven LMI and the relevance of courses trained at higher level institutions.

In order to precisely address the research problem, specific objectives of the study which focuses on establishments employing 5 persons and above in Dar es Salaam region include the following: -

- i). To investigate the effects of Labour Market Information System on manpower planning in Dar es Salaam region;
- ii). To assess the effects of Labour Market Information System on unemployment in Dar es Salaam region; and
- iii). To assess factors affecting performance of Labour Market Information System in Dar es Salaam region.

Nature and Significance of the Study

Nature of the Study

The rapid change in technology, globalization, skills mismatch and the increased demand for entry into employment has increased the complexity of the labour market and Labour Market Information Systems (Mann & Huddleston, 2017). For the case of Tanzania, there is a rapid expansion of higher learning institutions associated with imbalance between number of graduates who are job seekers and the number of work force demanded by employers. On the other hand, job seekers from higher learning institutions possess limited skills than that is required by employers which results into high unemployment. According to Kessy (2020), employment for graduates from Tanzania has been a serious issue and available enrolment data indicate that, it is increasing tremendously whereby it has surged upward by 10.5 percentage points from levels estimated in 2009/2010 as compared to 2012/13 estimates. According to SALAAM (2020) about 850,000 youth enter the labour market in Tanzania but only 50,000 which is equivalent to only 5.9 percent of them get employment in the formal sector of employment. This means that, a substantial

number of educated youths have challenges to access employment opportunities which could results into a poor society, low pace of economic growth, increased informal sector employment filled with discouraged workers which also affect productivity. Furthermore, lack of effective LMIS in the country has hampered several development processes due to inadequate access to labour market information which are important in policy formulation and timely interventions targeting job creation of more jobs and enhancing decent work.

Basing on complexity nature of labour market information and existence of many players from both demand and supply side; mixed methods approach is the most suitable methodology for this study. Mixed methods approach facilitates conducting deep research which is able to provide comprehensive information to support wide understanding of the phenomenon. The proposed approach involves the application of techniques underpinned in the quantitative as well as in qualitative methods in conducting the research (Kern, 2018). Data collected from qualitative approach was used to complement data collected from quantitative approach.

There are several advantages of using mixed methods approach including possibility of obtaining comprehensive, accurate and valid data to address the research problem (Casey & Murphy, 2009). Furthermore, according to Thurmond (2001), mixed methods approach is suitable for investigating a complex phenomenon because it supports understanding the multidimensional variables of the phenomenon such as Labour Market Information System and reduce the limitations which could occur if single approach were used. It helps to understand the phenomenon more accurate and enhances the validity and reliability of the research results (Olsen, 2004). However, the main challenge of using mixed methods approach which require planning for remedial actions is the collection of huge amount data which needs more time and expertise on data validation, analysis and reporting (Thurmond et al., 2001). In addition, it needs deep

understanding of positivists and interpretivists philosophical considerations (Duffy, 1985). In order to provide solutions to existing challenges of the selected method, this study involved intensive literature review covering multifaceted perspectives of the method in relation to labour market information which helped to identify challenges encountered in previous similar researches and proposed solutions to increase efficiency. Since this study employed mixed methodological approach, quantitative and qualitative research designs were used to collect information which can be used to provide insights into research problem, objectives and provide answers for the research questions. Considering the complexity of this study, a case study, which is a descriptive quantitative design, was used to leverage on its ability of handling many variables in the investigation of a complex phenomenon. It aims to gather detailed numerical information to enable a detailed analysis of a phenomenon. According to Walker (2005), the main characteristic of a quantitative is the ability to collect quantitative data to test objective hypotheses. However, is not recommended to make inference to the population when small sample sizes are used (Queirós, et al., 2017).

On the contrary, a qualitative case study design fits requirement of complementing information collected using quantitative approach. It facilitates collection of comprehensive non-numeric information and in-depth investigation of a complex phenomenon with multiple variables (Kratt, 2019). The method is powerful in collection of deeper non-numeric information of the topic under investigation. It has been reiterated by Chowdhury et al. (2020) that, the main characteristics of case studies are rooted on its ability to gather and process detail information and provision of explanation about "how" and "why" part of the research. However, it needs small samples which limits drawing inferences to the population using the study results (Starman, 2013).

Basing on the proposed mixed methods method, data collection and analysis used quantitative and qualitative techniques. For quantitative approach, the study collected numeric data using structured close ended questions which facilitates testing the research hypotheses (Walker, 2005). Questionnaires were distributed to respondents for self-administration using google forms. Statistical Packages for Social Scientists (SPSS) were used to analysed the collected data and Microsoft Excel which are common quantitative statistical tools. The selected software is commonly used by social scientists in data processing and are also powerful in performing statistical tests (Bhattacharjee, 2012). In addition, they are user friendly and have high capacity of analysing big data sets with multiple variables, performing simple and multiple regressions, analysis of variance and covariance, and factor analysis (Levesque, 2007).

On the other hand, for qualitative approach, non-numeric data was collected by conducting in-depth unstructured interviews using open ended questions to facilitate collection of deep and comprehensive perceptions of participants about the performance of labour market information systems (Holmes & Hazen, 2013). The detailed inquiry made the results more consistent and helps to understand the performance of labour market information holistically (Chowdhury et al., 2020).

In order to encounter some challenges associated with conducting interviews including respondent biases as explained by Harding (2018); advanced interviewing techniques and control of interactions to ensure collection of relevant information about the performance of labour market information was used. The dominant methods used to analyse qualitative information such as thematic analysis, comparative analysis, content analysis and discourse analysis were used (Harding, 2018). The step-by-step procedures in the Taguette software, the dominant tool to analyse qualitative information were used to enhance deep understanding of the responses and making robust analyses and recommendations.

Furthermore, experiences reveal that, secondary data for labour market information which was previously collected by other researchers or from government ministries, departments and agencies are critical to complement the analysis of the primary data and therefore has been carefully used whenever necessary.

Significance of the Study

Significance of this study is of two folds, theoretical and practical. Theoretically, the study will promote development of new high breed theoretical model for labour market in Dar es Salaam based on both classical and neoclassical models. The new model is underpinned by Keynesian assumptions of economic growth and employment variables in demand and supply side of the labour market. The framework is more inclusive because it provides important roles for key stakeholders categorised as employers who could be the government or private sector, employees, training institutions and individuals as opposed to a silos conventional theoretical framework. Theoretical framework of this study believes that stakeholders' intervention in development policies is critical at all stages in balancing forces of labour supply and demand in the labour market. It has been reiterated by Lefebvre (2000) that, in the real world of economies and the rapid change of technology, government interventions to gauge the mismatch between labour demand and supply cannot be understated.

On the other hand, the practical significance of this study is explained around its findings which will facilitate innovative thinking to data ecosystem in Dar es Salaam specifically on designing a new model for collection of Labour Market Information using mixed data collection methods as opposed to the current practise of relying solely on quantitative research approaches. The mixed methods approach permits use of both quantitative and qualitative research approaches during data collection to draw the strengths from both approaches but also to water down

limitations which could occur by using only one approach. The proposed data collection model will significantly improve availability of reliable and trusted labour market information for formulation of policies and strategies focusing on reducing the problem of unemployment in Dar es Salaam. In addition, practical contribution of this study is development of new conceptual framework which brings labour market actors from demand side and supply side of the labour market into a common pool to facilitate development and implementation of effective integrated Labour Market Information System. These includes; enhanced methods of data production, data sharing mechanisms, dissemination and use for making multisectoral evidence-based decisions. It has been also stated by Woods and O'Leary (2006) that, availability and easily accessible Labour Market Information System is an important factor of competitive LMI to improve both skill sets and the number of manpower required in the dynamic market place. In addition, the argument is supported by Mickelsson (2016), that functions of LMIS are fundamental elements in skills development, reduction of unemployment and acts as a fuel to economic development processes. Therefore, the functions of the LMIS in the country which are currently inadequate and fragmented will be enhanced to facilitate effective mechanism for coordination and information exchange, labour market analysis and; monitoring, evaluation and reporting on the performance of employment related policies and programs.

The findings of this study would greatly enhance information sharing amongst actors from of the Labour Market including employers who could be the Government, private sector or Individuals from the demand side of the labour market and training institutions, job seekers and employees on the supply side of the labour market. This is an important aspect to boost employment because Government would use the reliable and updated labour market information in formulating evidence-based policies and programs which focuses on job creation, equipping

education and training authorities with critical data for planning courses and imparting adequate skills to students which are also demanded by potential employers to increase their employability. In addition, job seekers would readily obtain information about job openings and vacancies in different fields and prospective entrants to the Labour Market would use the LMIS for evidence-based vocational and career guidance. According to Hopkins (2000), forecast of training needs is among major challenges facing manpower analysts and planners in education sector specifically in Sub Saharan Countries for many years.

The findings from this study will strengthen collaborations within the National Statistics System (NSS), reduce duplication of efforts in production of labour market information; enhance LMI availability for strategic policy formulation targeting to job creation and reduction of unemployment in the country. It has been reiterated by Maurya and Shah (2014) that effective functioning of the labour market information system facilitates re-evaluation of policies and standards of the country's labour force whereby job seekers and students can easily identify type of training and skills demanded for different occupations and all other work and training related information. Furthermore, training institutions and industries can access and share job and training information to facilitate making right decisions related to their businesses.

On the other hand, aspirations for sustainable development highlighted in a number of country's sustainable development agendas such as sustainable human development, poverty reduction, economic growth and reducing unemployment will not be achieved if labour, the primary factor in production of goods and services is not well coordinated. It is of high relevance and importance to undertake this study which will inform the current status, gaps on the existing knowledge and recommendations to support strengthening mechanisms for effective LMIS using the available limited budgets.

Contribution of the Study

This study which assessed and evaluated the effects of LMIS on unemployment, is the first ever study to be conducted in the country and will significantly contribute in strengthening national data ecosystems and accelerate efforts towards career development of the people. Theoretically, results of this study will contribute to the use of optimal labour market theory in tandem with the optimal conceptual framework which takes into account the nature and the current practices of labour market performance in Dar es Salaam region which are also aligned with the existing international standards. The fundamental assumptions of classical labour market theories that there is a perfect functioning of labour market and that no need for government intervention is no longer a reality in this current era of rapid change of technology, high population growth rate and other social economic factors (Awinia, 2024). For instance, according to the United Republic of Tanzania report on Administrative Units Population Distribution Report of 2022; the annual growth rate for Tanzanian population is 3.2 percent and is expected by 2050 population of Tanzania will reach 118.1 million people. At the same time more than half (53.4 percent) of the population is in the working age population and the economy is growing at the rate of 5.1 percent. This means that, government intervention is critical on policy formulation and enforcement of economic and population policies to balance fertility rate to cope with the economic growth. In addition, according to the Keynesian theory recommended and used in this study, these interventions will significantly contribute to boosting the economy to grow at the higher rate that can absorb the rapid population growth into production chains. Adoption and application of Keynesian theory in Dar es Salaam and Tanzanian economy will promote government interventions to stimulate investment and creation of more jobs in addressing the high level of

unemployed youth in the country, specifically, in Dar es Salaam region whereby about 10 percent of the country population resides.

In addition, there are significant practical contributions of this study on enhancement of the functions of labour market in Dar es Salaam region. There are many actors in the labour market ranging from government, private sector, non-government organisations and training institutions and collects labour market information for their own administrative purposes. They use data production methods and tools which are not comparable and results into inadequate labour market information in terms of incomplete, inadequate quality, incomparable and inaccessible. Produced labour market information does not fit the needs for formulation of policies to facilitate proper interventions which can increase aggregate demand, boost investment, making rational decisions on career development and therefore hinders development efforts. Results of this study will provide practical solutions to the existing problem through the use of effective labour market information, a conceptual framework which brings together key labour market practitioners from public and private sector into a common pool to facilitate dialogues related to the exiting gaps, data production and sharing standards. The proposed conceptual framework for this study will results into spill over benefits in all economic sectors, training institutions and individuals. Each practitioner will be aware of the critical needs and able to fully participate in development process because training institutions for instance will be able to plan for courses that meet the needs of employers, individuals will be able to find the highly demanded skills and also available future job vacancies for them to plan well in advance on career development.

Research Questions and Research Hypotheses

Research Questions

Formulation of research questions is a critical step in qualitative, quantitative and mixed methods approaches (Onwuegbuzie & Leech, 2006). Formulation of feasible research questions is a vital stage the conduct of any research. In order to formulate a good research question, researchers are supposed to consider the relevance of the questions in addressing research problem and research objectives, timeframe for conducting the study and the availability of resources (Armour & Macdonald, 2012). Adequately designed research questions are cornerstone for the subsequent stages of the research process such as design of the research, methods for data collection, processing and interpretation of the findings. According to Farrugia et al. (2010), development of smart research questions and their associated hypotheses is a critical step in any research which paves the way towards the optimal study design and collection of relevant data which will facilitate on making right decisions to address the existing problem. Development of relevant research questions requires high level of understanding about the existing problem including in depth literature review about the phenomenon, level of technology required and being used in the study area and all other key aspect which will help in providing results to meet research objectives (Ploeg, 1999). The research questions should be broader and considered as the primary questions whereby several secondary questions can be developed to collect information to inform the primary question (Prasad et al., 2001). According to Farrugia et al. (2010), the FINER criteria which entails Feasibility, Interesting, Novel, Ethical and Relevant should be considered as a baseline for development of good and relevant research questions and the research project. Well-developed research questions should consider several factors such as number of subjects covered, resources to be used, scope, should build on existing knowledge to provide scientific results which address

the research problem but also inform future researchers. These are critical issues to be considered by any researcher because failure on this stage will affect the whole research processes and results of the study may be compromised.

Research questions have huge influence on selection of the research methods and the final research results with regards to addressing research objectives and the research problem. It has been reiterated by Farrugia et al. (2010) that adequately defined research questions in terms of specificity is vital to provide guidance to a researcher about study design and conceptualisation of the research problem which are critical for informing type of data to be collected, methods of data processing and analysis. Furthermore, well formulated research questions have huge contribution on establishment of good research hypotheses which are simple, specific and stated in advance the data collection (Banerjee et al., 2009). Therefore, basing on the research problem, the outlined specific objectives of this Study which focuses on establishments employing 5 persons and above in Dar es Salaam region and the best practices for designing suitable research questions from the literature, Study was guided the following research questions: -

RQ1. To what extent Labour Market Information System affects manpower planning in Dar es Salaam Region?

RQ2. To what extent Labour Market Information System affects unemployment among employable persons in Dar es Salaam region?

RQ3. What are the factors affecting performance of Labour Market Information System in Dar es Salaam Region?

Research Hypotheses

Hypothesis testing implies application of sample data to make generalization of the study results to the population under study (Shaukat,2009). According to Farrugia et al. (2010), a study

should state null and alternative hypotheses. The null hypothesis indicates absence of differences in mean functional outcome of dependant and independent variables; as opposed to alternative hypothesis which asserts a difference between mean functional outcomes of variables under study. Similar arguments have been provided by Banerjee et al. (2009) that, there are two main types of hypotheses namely: - null hypothesis which assumes, absence of association between predictor variable under the study and the corresponding outcome variables. and the alternative hypothesis which is the proposition that there is an association. According to Prasad et al. (2001), there are several definitions of hypothesis provided by other scholars but all of them are centred on the expected relationship between dependant and independent variables under the study, it provides explanation of the phenomenon under study which requires further investigation to support making correct decisions of either accepting or rejecting the null hypothesis of the study. Making wrong conclusion about either rejecting or accepting the null hypothesis will result into committing inferential errors, namely Type I or Type II errors which will have critical impact in making inference of results of the study to the population studied. Type one error is in order when a true null hypothesis is erroneously rejected by the researcher, sometimes called a false positive. On the contrary, Type II error is the acceptance of a null hypothesis which should have been rejected, implying that a researcher fails to find evidence to reject a null hypothesis while it is truly false, it is also called false negative (Martin & Bridgmon, 2012). This may happen due to several misconduct of the research including using a very small sample or unrepresentative sample which limits generalization of the study results into the population, it results into random error which results into an erroneous inference (Martin & Bridgmon, 2012)

Furthermore, development of study hypotheses should be aligned with the planned research approach, this include quantitative, qualitative or mixed methods approach which is underpinned

by both research approaches, namely quantitative and qualitative. Similarly, formulation of study hypotheses can either use inductive or deductive method whereby, inductive method is based on making generalisation from specific observations while deductive method is concerned with the top-down approach which starts from the general theories towards specific observations (Bulajic et al.,2012). It has been also underlined by Prasad et al. (2001), establishment of good research hypothesis requires a clear understanding on the construct and associated variables including their definitions, interlinkages with other sectors in the economy and the whole system operations of the problem under study. Good research hypothesis should be simple to test, specific to avoid ambiguity during implementation and should also be stated in advance to inform other research processes (Martin & Bridgmon, 2012).

This study used three main hypotheses based on the research questions designed to capture information from establishments employing 5 persons and above in Dar es Salaam region translated into statistical hypotheses as follows: -

Hypothesis 1: Labour Market Information System affects manpower planning in Dar es Salaam region

H₀: Labour Market Information System does not affect manpower planning in Dar es Salaam region

H₁: Labour Market Information System affects manpower planning in Dar es Salaam region

Hypothesis 2: Labour Market Information System affects unemployment rates in Dar es Salaam region

H₀: Labour Market Information System does not affect unemployment rates in Dar es Salaam region

H₁: Labour Market Information System affects unemployment rates in Dar es Salaam region

Hypothesis 3: There is an association between different factors and performance of labour market information in Dar es Salaam region

H₀: There is no association between different factors and performance of labour market information in Dar es Salaam region

H₁: There is an association between different factors and performance of labour market information in Dar es Salaam region

In addition, the hypotheses were tested using different statistics tests depending on the nature of the hypothesis. Important statistics test including regression models, cross-tabulations of the data, χ^2 -test, t-test and ANOVA techniques were used during data analysis (Shaukat,2009).

CHAPTER 2: LITERATURE REVIEW

Introduction

This chapter presents review of various literatures about effects of Labour Market Information System (LMIS) on unemployment focusing on relevant theoretical and conceptual frameworks. It also provides reviews of basic attributes of theories such as concepts, definitions, relationship between variables and limitations of the relevant theories related to LMIS, unemployment and the general socio-economic development (Wacker, 1998). The Chapter further assesses the empirical logical linking between Labour Market Information System and unemployment by studying various variables from the supply and demand sides of the labour market. This Chapter also provides literature review regarding fundamental elements of theory such as what, how and why are presented in the proposed conceptual module for studying the effects of Labour Market Information System on unemployment (Whetten, 1989). The review presented in this chapter provides also basic information which explains logical linking between labour supply and labour demand as part of understanding the dynamics of Labour Market Information; the architecture of Labour Market Information System and its potential impacts on unemployment. A literature review focussing on LMIS which is the area of interest in this study; research ethics, available knowledge regarding research methods their strengths and weaknesses; research processes and all other key information are considered very important stage in this study. Literature review provides more focus and clarity to critical issues experienced with previous researchers who conducted similar studies and the possible solutions and recommendations for consideration for future researches (Tsalikis & Fritzsche, 2013). Generally, this chapter provides literature review from the empirical researches conducted at global, regional level and specifically in Tanzania as a developing economy (Gehman et al., 2018). Discussions are centered on the

research problem, objectives of the study which are critical in formulation of research questions, theoretical and conceptual framework including relationships between labour market variables of the study.

Key Concepts and Definitions Associated with Labour Market Information

System and employment

Given the nature of this study which investigated the effects of Labour Market Information Systems on unemployment, discussion of key concepts, definitions and variables are presented separately for supply and demand side of the labour market.

Key Concepts and Definitions on the Supply Side of the Labour Market Labour

According to Agarwal et al. (2017) labour is the most important resource in any economy to aid the production of goods, storage and distribution and delivery of services. It generates wealth for the nation, region, organisations and individuals. Despite the advancement in technology and artificial intelligence, still labour leads and guide the performance of economic and economic activities in any country (Novakova, 2020). However, labour suffers from all types of unemployment, wage variations, skills mismatch, inadequate social protection and other related problems due to lack of reliable labour market information systems (Woods & O'Leary, 2006). The problem of skills mismatch in Tanzania has persisted for a long time and is growing, it is among the key priority agenda of the development frameworks due to several constraints which labour with skills mismatch possess to facilitate economic growth; ensuring quality and standards of produced and delivered services; timeliness of production of economic activities; innovation and all other social; economic and environmental requirements for economic development (SALAAM, 2020).

Importance of labour in production processes has been mentioned by many scholars including Novotná and Volek (2014) basing on the study findings conducted to investigate the role of labour in production processes in the context of growth in gross value in agriculture, fishing, and forestry in Czech Republic. The results showed that labour has noticeable influence in the growth of the selected sectors and is not constant, differ in skills, quantity, experience and changes significantly depending on the business cycle. Similar results were obtained in the study conducted in 2021 jointly by Tanzania Private Sector (TPSF) Foundation and the Tanzania National Bureau of Statistics (NBS) on the selected six sectors namely; agribusiness and agro-processing; tourism and hospitality; energy; construction; information and communication technology (ICT); and transport and logistics (SMS, 2021). Results of this study indicated existence of huge skills mismatch and expectation of growing skills mismatch in all sectors and specifically in agricultural sector in the area of machinery operations and management; pharming practises and animal husbandry.

According to Tinbergen (1974), the concept of labour and its role in production processes are recognised based on the econometric tests in all economic theories. Furthermore, literature informs about different types of labour and their elasticities of substitutions between them (Gottlieb et al., 2021). Labour is categorised based on several factors but among the key factors are the levels of education and skills they possess to perform some occupations. Labour should be flexible to adapt to new developments including technological advancement, innovation, change in aggregate demand which goes in tandem with the changes of policies and development frameworks (Meulders & Wilkin, 1991). These changes are more prominent to developing countries including Tanzania of which there are more opportunities for economic growth with a low level of technology and therefore needs for more labour participation in production activities

and enhancement of labour skills to adapt to new emerging issues. Labour substitutions can occur depending on the factors affecting the labour market, with regard to the equilibrium of its supply and the demand sides. Demand side of the labour market, labour substitution are derived by the need of employers to substitute labour to meet the pressure from the aggregate demand which requires specific type of labourers with specific type of attributes. On the other hand, on supply side, labour substitution is mainly derived by the factors which are more beneficial to employees including looking for more paying jobs and other related factors for job satisfactions (Gottlieb et al., 2021). However, job satisfaction depends on education level attained and skills possessed in performing work. It is of paramount importance to ensure effective practices of education planning and curriculum development which are important for imparting the relevant skills required by employers in the demand side of the labour market and consequently have positive satisfactions of the labour (Guardia et al., 2021).

The Labour Force

In economic terms, labour force includes persons of either sex in the working age category who were engaged in some economic activities to produce goods and services or were unemployed in a specified period of time, normally in the period of last seven full days or last week before the interview or a labour survey; they are also termed as economically active population in some countries. According to ILFS (2020), Labour force comprises employed and unemployed persons during a reference period of time whereby, employed category includes a population who did some economic activities using a one-hour criteria in the period under study. On the other hand, the unemployed persons include all those who did not engage in any economic production in the reference period of time under consideration, but they expressed availability and willingness to take up a job regardless of whether they took any step to look for work or not. Similar concept of

labour force is provided by Kale and Doguwa (2015) that it is a concept that aggregates persons, either males or females who engaged in production of goods and services in the specific period under the study and all the unemployed persons. Therefore, persons who do not satisfy inclusion into the labour force cohort that is, they are neither in employment nor in unemployment are regarded as being out of the Labour Force. This category mostly includes full time students, severely sick persons who cannot engage in any economic activities, severely disabled people and others with similar conditions (ILFS, 2014).

Labour Market

According to Serena (2016), labour market refers to communication between buyers and sellers of labour with regards to available labour, qualifications and prices. Labour markets inform employers about availability of workers and skills they possess, inform workers about available jobs and learning about their employers and facilitate the negotiations and transactions (Graham & Anwar, 2019). Labour market is an important tool for employers to obtain the competent workers with the skills required to support productive activities, and also for workers to be able to find the best and satisfying jobs (Graham & Anwar, 2019). Labour market does not differ from other markets; it includes employers on the conceptual demand of the market and the workforce on the side of supply of the market. All types of information from the respective sides of the labour market, that is the demand and supply sides are termed as Labour Market Information (SORENSEN & MAS, 2015).

According to Calmfors (1994) labour market plays a great role of fighting for persistence unemployment in developing and developed countries and countries are working towards formulation of optimal labour market policies and systems that can support to fill the existing gaps for information required by employers on the demand side, and workers on the supply of the labour

market. Nevertheless, it is well documented that, labour market performance differs between countries depending on several factors. The most cited factors in the literature include the level of unemployment, employment growth, participation rates, underemployment, institutional coordination and legal frameworks (Sorrentino & May 2002). Similar arguments have been provided by Abebe et al. (2021) that, labour market is an important mechanism specifically in developing countries such as Tanzania where labour is one of the main factors of production of goods and services, it provides access to jobs vacancies, information about highly demanded skills and available skills which helps job seekers to find better jobs and employers to source the right job seekers. Labour market plays a crucial role on the economic and demographic forces related to training institutions as suppliers of labour and employers on the side of demand for labour in the recruitment process (Mangozho, 2003). Labour market therefore facilitates availability of important information in employment process including the available stock of labour force, potential labour force, job vacancies, skills offered in training institutions, highly demanded skills, wages, working conditions and training opportunities (Wunsch, 2005). Basing on the above cited concepts, this study defines Labour market as a platform which facilitate interactions among employers, employee, trainings institutions and labour intermediaries with regards to key career development issues.

Labour Market Information

Tavakoli and Kismihók (2020) conceptualized Labour Market Information as the one that includes relevant information from both sides of the labour market - that is the demand and supply sides, which support matching a dynamic employment process due to rapid change in technology and; the need for more complicated, soft and mixed skills in production and service delivery processes. For instance, trainings institutions are heavily affected by the drastic change of

technologies compared to the training programmes offered which affects employability of graduates due to high skills mismatch. Reliable Labour Market Information facilitates establishment of a one stop centre Labour Market Information System in career practises and is an important element for individuals career guidance (Staunton & Karla, 2021). It has been also emphasised by Petersson et al. (2011) that, labour market information is crucial in formulation of labour policies and programs focusing on job creation and decent work. According to Ismail (2020), Labour Market Information includes all information related to demand and supply of labour needed in production processes. It includes both quantitative and qualitative information about employees, employers, training institutions, intermediaries, skills, job openings, wages, working conditions and the related information which are vital in making evidence-based decisions on career development. According to the ILFS (2020), a similar definition of Labour Market Information explained by other scholars in the existing literature was used. The survey defined Labour Markert Information as information which explain the functions of the labour market including working conditions of the key actors from both supply and demand of the labour market. That is workers on supply side and employers on the demand side. This study adapts the concept of Labour Market Information provided by Ismail (2020), that, includes all important information needed by employers, employees, training institutions, intermediaries and individuals in making labour market decisions.

Labour Market Information System

According to Cazes and Verick (2013), the Labour Market Information System is an institutional arrangement that has recognised responsibilities, working agreements and functions for all parties in production, storage and dissemination of LMIS. It is a set of institutions with similar functions and processes that facilitate the flow of labour market information to support

manpower planning in short terms, medium and long term (Woods & O'Leary, 2006). Effective Labour Market Information System which are properly designed, integrated and coordinated, support individuals in making relevant career choices and support employers, employees and training institutions use the available information in making rational decisions (Bassey & Atan, 2012). Similar definition has been provided by Bassey and Atan (2012) that, Labour Market Information System is an important tool which links training institutions, job seekers and employers. It facilitates accessibility of labour market information for making informed decisions and consequently reduce the gap that exists between the two sides of the labour market, that is the demand and the supply sides.

Furthermore, the concept of Labour Market Information System entails an institutional framework with systematic mechanism in place to support digital data compilation, accessibility, data sharing, data processing and analysis of LMI. Demand for effective Labour Market Information System in Tanzania has recently increased to support formulation of policies and development programs to provide solutions to challenges in employment performance in the economy, particularly the existing high rate of unemployment (Sparreboom, 2001). Basing on the conceptualisation of Labour Markert Information System as provided by different scholars, this study defines Labour Market Information System as a platform which connect employers, employees, training institutions and intermediaries at different levels of administrations. It connects regions, cities, institutions and individuals on real time basis about the highly demanded skills in the market and where they are needed, skills required to enhance employability, and provides key labour market information for training institutions to foster transformations related to the design of training programs that meet the demanded skills in the labour market (Sarma & Bonvillian, 2018).

Key Concepts and Definitions on the Demand Side of the Labour Market

Employment

Employment includes all persons who during a specified duration performed some economic activities for pay or profit or were self-employed for-profit motives or family advantage or those who were temporarily out of employment but would definitely return to their work. The condition of being temporary absent from work applies only if a person will definitely go back to work; these includes those on leave or works in agricultural activities whereby by during their absence the economic activities continued (Husmanns et al., 1990). Similarly, according to ILFS (2020), employed persons include also unpaid family workers in economic activities.

Employment is an important macroeconomic indicator in any economy given its important role it plays on income generation and reduction of poverty. However, employment in many developing countries has not resulted into expected outcomes as a result of existing imbalances between jobs available and job seekers in terms of quantity and quality (Kareem, 2015). Employment is therefore dominant social economic factor and has significant contribution to the development and growth process if well managed. According to Husmanns et al. (1990) employment is the principal source of income for most people and is among the most important agenda elements of national policies related to enhancing economic growth, distribution of income, alleviation of poverty and other social economic programmes. However, in developing countries such as Tanzania, large proportion of employed persons are in self-employment in the informal sector which has characteristics of low income and also difficulties in measuring its contribution to the economy; this results into underestimation of the Gross Domestic Product. Furthermore, many developing countries including Tanzania, little has been done research-wise to investigate the importance of employment and its contribution to the development process which

is directly related to the need of increasing investment, creating more jobs, reducing unemployment and combating the poverty levels.

Unemployment

The ILO which is the custodian agency for employment standards recommends two main definitions regarding unemployment. These are: - the strict definition of unemployment, and the relaxed definition of unemployment (Byrne & Strobl, 2004). The strict definition includes a portion of the population belonging to the working age that did not perform any economic activity in a specified reference period and took some steps to seek for employment in previous twenty eight days prior to the survey and also must indicate availability to take up a job if such job could be found. On the other hand, relaxed definition of unemployment covers the portion of the population in the working age category who did not work during a reference period regardless of whether they took any steps to search for work (Byrne & Strobl, 2004). It has been also defined by Barnichon and Yee (2020) that, unemployment is expressed as the percentage of working age cohort who were without any economic activity, indicated availability for work and sought work. The international definitions of unemployment form the basis for countries to compile comparable labour indicators but also adapt the definition to suit their situations.

According to Feng and Sun (2018), unemployment includes all persons who meet all of the following conditions: - being without any economic activity; and actively looking for work and indicate availability for work including those who are marginally attached to employment and those who are working on part time basis due to economic causes. Persons who marginally attached to employment are also termed as discouraged workers meaning that they are no longer searching for work but they are available for work. Similar definition has been provided by Eslake (2021) that, a person is termed as unemployed if during a reference week was without work, took efforts

to look for work in the previous twenty-eight days (four weeks) and was available to take up work at any time. Definition of unemployment according to Jones and Riddell (1999), does not differ from the definition provided by other scholars, include all working age population who are without any economic activity, searching for employment and are available for employment if an opportunity arises, it includes also all discouraged workers who believe that no work is available.

Given the flexibilities provided by the ILO, and in order to properly address country's specific needs, this study uses Tanzania's nationally domesticated definition of the concept of unemployment. The Tanzania's national domestication of the concept of unemployment brings together the international conceptualisation of relaxed definition of unemployment and the concept of marginal attachment to employment due to economic reasons during a reference period of time (ILFS, 2014). The marginally attached persons to employment includes those who were time related under employed, that is they worked less than 40 hours per week due to economic reasons and were available to work for more hours; and those who were working on subsistence agriculture with generally lack of assurance to continue working in the next few days (ILFS, 2020).

Economic Activities

Economic activity covers engagement in all market and non-market activities resulting into production of goods and delivery of services in the economy. It also covers production of own account goods and services and excludes unpaid activities for delivery of services for own consumption including household chores and related services for members of the household (SNA, 2008).

Decent Work

Decent work is synonymous to a well-functioning Labour Market and its associated functions of the Labour Market Information System which promote among others: - job promotion,

rights of workers at work places, basic social protection benefits, social dialogues and other rights of workers which contribute to reduction of poverty and improve wellbeing of the people (Blustein et al., 2016). It has been reiterated by Di Fabio and Blustein (2016) that, decent work has proved to be more productive in any economy given its attributes attached to it such as reasonable wages for employees, assurance of security at work places, social protection, freedom of expression between employers and employees, equality in access to opportunities for both men and women and possibilities to further develop workers' careers. Limitations in LMIS in developing countries owing to budgetary constraints, weak institutions and lack of data make it hard to fully realize the potential dividends of decent work in developing countries' labour markets and economies in general.

According to the Profile (n.d) similar conceptualization of decent work has been provided by other scholars that, at international level decent work is measured using various indicators such as the Unemployment Rate (UR), the Labour Force Participation Rate (LFPR) and the Employment to Population Ratio (EPR). These indicators are critical in the Labour Market as they provide number and proportion of working age population in an economy including those who are in employment, those not in employment but willing to work and available for any work. It provides signals of the magnitude and performance of the country's labour market regarding its ability to absorb available labour in production of goods and delivery of services (Sehnbruch et al., 2015). Decent work is among the priority agendas of most of developing economies including Tanzania. However, according to HDR (2009), there is plausibility of coining an overall index for measuring performance of decent work, which combines several attributes of job at work places. Further development is needed to ascertain optimal methods for inclusion or exclusion of variables

from both quantitative and qualitative dimensions of decent work in computation of index including their importance in career development.

Precarious Work

According to ILFS (2020), precarious work is the type of employment that offers inadequate employment benefits to employees including low payment, working hours, inadequate security and inadequate social protection. Employers are not sure of their job for the next short period of time. The precarious work is a relevant issue in discussing both the underlying characteristic and the role Labour Market Information System can play on addressing this problem of inadequate employment as it comes in many forms, most importantly in the form of: - agency work; temporary work; casual; and seasonal work. According to Vosko et al. (2003), many literatures have pointed out several factors as main causes for prevalence of job precariousness in the labour market and one of such factors is unemployment. In event of high unemployment, unemployed persons become desperate and they are willing to take up a job even with limited conditions, therefore leading to job precariousness.

Economically Active Population and Inactive Population

Persons who are economically active comprises of those who are employed or unemployed during a specified period of time. Those who are actively engaged in supply of labour are classified as the employed category, and those who are seeking work and indicate availability for work belong to the unemployment group (Husmanns et al., 1990). For this reason, the concept of economically activeness can't be ignored in gaining insight into the labour market along with associated aspects of Labour Market Information System. The term economically active population at international level is regarded to be a general term and identifies two useful concepts, namely: - the usually economically active persons; and the current economically active persons.

The term usually economically active is determined using longer reference duration, such as one year or twelve months. The term currently economically active is determined using shorter reference duration, such as one week or seven days. Persons belonging to the currently economically active population are similarly referred to as the labour force (ILFS, 2014).

According to Brown et al. (2012) economically inactive population are persons who do not belong to the labour force. They include persons who are not in employment or in unemployment. There are several reasons for being economically inactive, some of such reasons include: - being too young or too old for work; physical inability as a result of disability or illness and engagement in fulltime training. Though many researches have focused attention into studying the concept of labour force and its associated attributes, in recent times there has been a reinvigorated focus on understanding characteristics of the economically inactive population to make this group of the population more responsive to labour market policies including implementation of the Labour Market Information Systems (Ludwinek et al.,2017).

Employment Status

The term employment status explains the degree of authority or risk borne by the job holder. It distinguishes between two types of workers, which are employees and persons who are self-employed. The employed persons are in a category of people who bear less authority and risk compared to self-employed. The group of self-employed can further be categorised into three main groups namely: - the employers or those in self-employment who have hired some employees to work for them; the self-employed persons who have not hired any employees to work for them, these are also termed as own account workers. Other groups are contributing family workers and members of producer cooperatives (ILFS, 2020). Status in employment is an important indicator which is used to compute other several Labour Market Indicators such as proportion of the

employed persons in the labour market who work for wages or salaries; identification of own businesses working with other workers for pay or profit and those working for family businesses. All this information is critical if can be coordinated and accessed through Labour Market Information System to facilitate informed decisions.

Poverty

According to Hasell et al., (2023), the term poverty is complex and there is no unique definition, it is multifaceted and the extent of poverty depends on the definition used. According to THBS (2017/18), poverty involves many concepts associated with the assessment of household income, expenditure and consumption in determination of the basic needs' poverty and food poverty or extreme poverty. A household is considered food poor if cannot afford to meet minimum food requirements, that is if consumption per adult equivalent is below food poverty line. On the other hand, if a household fails to meet minimum food requirements and the basic needs such as clothes is categorised as basic poor. The analysis of poverty is critical in any economy given its interrelations with other social economic indicators including employment, unemployment and education. According to Osabohien et al. (2019), there are more poor households for households with the unemployed heads than households with employed heads.

Many literatures have cited a strong link between poverty and performance of labour market and LMIS. They consider that, access to productive employment is the most effective manner of escaping falling into the poverty trap. However, in many countries, especially the developing ones, access to work opportunities and better working conditions has remained a challenging prospect. Unemployment rates have been high, and in some instances in two digits figures. Higher unemployment which exacerbates poverty is strongly interlinked to malfunctions

in the labour market, specifically the balance between the supply of labour and the demand for labour, which is collaterally linked to underperformance of LMIS (Husmanns et al.,1990).

Skills Mismatch

Skills mismatch is the gap with respect to skills demanded by employers in the labour market and the skills available or possessed by job seekers. It provides insight about types of skills needed to perform a certain work in relation to the skills provided by training institutions to facilitate production of goods and services. The higher the skills gap the higher unemployment of the labour; it implies that the economy creates jobs which need skills which are not available in the labour market or training institutions provides trainings and skills which are not demanded in the labour market (Guardia et al., 2021). Similar concept has been provided by other scholars that, skills mismatch refers to difference in skills levels between individual skills and the skills demanded in the labour market to enable production of goods and delivery of services. Skill mismatch can either be defined as individuals possessed higher skills than required in the labour market or can be inadequate which needs to be enhanced to enable employees to effectively participate in production of goods and services (SALAAM, 2020).

Definition of key variables used in this study such as labour market, labour market information, labour market information system, unemployment and their relationships are important elements in designing a relevant theoretical and conceptual framework. Literature reviews provided in this section are sourced from various search facilities, such as Google Scholar and online library service provided by Unicaf University in Zambia including eJournals, ProQuest 1 Business Library and eBooks. Most of the references used include seminal literature, peer-reviewed and scholarly research sources published within the last 5 years.

Main Levels of Research Process

The term research entails different methods related to investigation and collection of information with the aim of addressing a certain problem in the society, it could be building a new theory or building on the existing theories in addressing problem of the society (Kassi et al., 2009). Furthermore, there are different research paradigms and their philosophical considerations used to categorise academic research (Kumatongo & Muzata, 2021). A researcher is supposed to critically review the existing research paradigms and align them with the social context under study to set the bases for research design and research processes.

Research process involves systematic procedures to be followed by any researcher from the designing stage, collection of the need information, data processing and analysis, report production, dissemination and communication of the research findings to key users (Gelling, 2015). However, researchers are sometimes required to revisit the previous stages to take on board key issues which were not well integrated of include emerging issues given the rapid change of technology and complexities associated with research activities (Gray, 2019). This means that there is close interrelationship between research stages whereby; effectiveness of each stage depends on the sound implementation of the earlier or previous stages (Gelling, 2015). Research process should comply with the Generic Statistical Business Processing Model (GSBPM) for quality assurance in each stage of its implementation (Model, n.d.). The model has main processes and sub processes which are highly connected in sequential manner in such as way that, effective completion of the previous stages provides a higher probability of completing the remaining next processes. All processes are critical and has to be implemented to ensure collected information can effectively address the research problem.

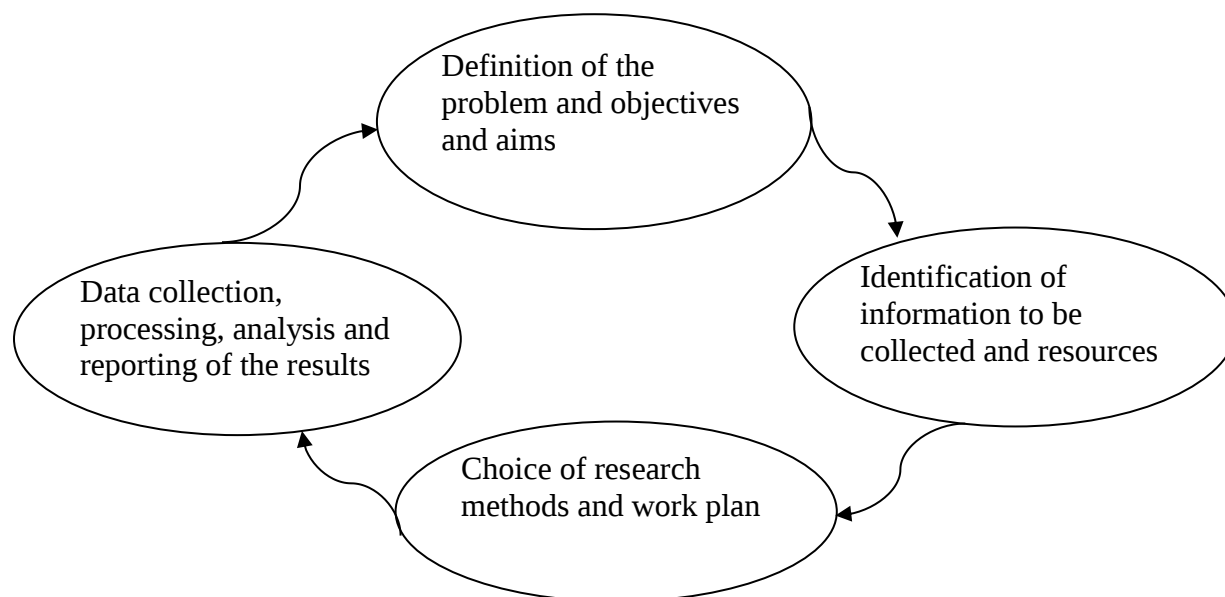
Figure 2.1*Main Stages of the Research Process (Gelling, 2015)*

Figure 2.1 shows that there is no unique sequence of stages for research processes but there are common agreed issues of the research process in the literature which should be considered by any social science research (Gelling, 2015). The foremost step in research practice is definition of research problem and main objectives as to why research is undertaken. The main essence for formulating a research problem is to critically establish the gap in relation to the previous and similar studies conducted in the study area, best practise and challenges encountered to better inform the research process (Kumar, 2019). Researchers at this stage should have clear background of the phenomenon regarding the topic under investigation, the current status and existing gaps backed up with data for evidence-based decisions. In addition, literature review at this stage is of paramount important in identification of similar researches conducted before, methodologies used, challenges faced and their contribution to the existing knowledge (Ellis & Levy, 2008). The knowledge gained during the review will guide the researcher to refine the definition of the problem to be more precise, feasible and clearly explain the contribution to the topic under study.

The definition of research problem should be able to inform about the existing gaps and how the research results will contribute knowledge to solve the problem in the community. A well-defined research problem will support formulation of smart objectives of the research which will be able to provide answers to research questions towards solving a defined problem (Lecture Note).

The second stage of research process is determination of information required and resources. At this stage types of information to be gathered during data collection have to be identified and defined. Concepts and terms used in the problem statement have to be clearly stated to ensure information collected will respond to the objectives of the research. In addition, a researcher at this stage should identify resources required at all stages of research process. Resources include funds, equipment, software, personnel and costs for all other statistical infrastructures such as internet, office space and others (Theofanidis & Fountouki, 2018).

Choice of research method and development of research plan is the third step in research process. This stage is critical because it explains how a researcher will find answers to research objectives. It includes selection of relevant research methods, research design, sample design, research approach, time frame and plan for development of research tools such as questionnaires and instruction manuals (Newhart & Patten, 2023). A researcher should be able to explain and justify the strength, weakness and limitations of methodology and methods opted to ensure the value for money for utilized resources including human and financial resources. According to Gray (2019), project management software such as Microsoft Project is recommended in research planning given its ability in generation of graphs to support preparation of research planning with specific timescales for evidence-based decisions in the course of research implementation.

The last stage of research process is centred on the field and post field work activities including collection and processing of statistical information, analysis, preparation of reports,

dissemination and communication of the results. Data collection includes the actual information inquiry using data collection tools developed in stage three depending on the research design and approach. Collected data are then processed using statistical tools and techniques to ensure final datasets are of the required quality. Detailed analysis should be conducted to answer research questions, identify limitations and the knowledge contribution to the topic under study. Conclusions mark the key research observations to answer research questions for informed policy decisions.

Basing on the discussions above, a well designed and implemented research process is important to support production of valid and reliable research results which provide answers to research questions to meet the objectives of the research. Moreover, it is effective and economic approach in conducting researches as it reduces costs of revisit previous stages in the research process which could have cost implications in terms of time and financial resources.

Identification of Research Gaps or Future Research

There is high correlation between scientific research gaps and future researches. Research gaps are the missing information or topics which limit the findings from specific research to fully address the research problem or an existing problem which has not been researched (Miles, 2017). According to Robinson et al. (2011), systematic assessment regarding where, why and how the prevailing evidence falls short is helpful to inform the right types of questions which need to be solved and types of research studies which need to be conducted to address the research gaps. It is also argued that, more innovative approaches to research are required to further develop knowledge (Crust, 2008). It is therefore important for researchers to have a critical thinking and conducts intensive literature review from multiple scholars to establish research gaps which will form a strong foundation for enhancing knowledge through future researches.

Methodology to Identify Research Gaps

According to Müller and Kranz (2015), identification of research gaps is fundamental goal of literature reviews but there are limited guidelines to be used in identification of methodological research gaps in qualitative studies to inform future surveys. In order to address this challenge, Müller and Kranz (2015) developed a concept matrix which is used in tandem with the predetermined set of categories to help researchers to conduct a rigor and systematic reviews to identify research gaps. The suggested concept matrix includes elements such as provocative exception, knowledge void, action-knowledge conflict, methodological conflict, and theoretical conflict. Contradictory evidence occurs if research findings contradict with the previous findings from the of the phenomenon. Knowledge void occurs when the research findings differ from the expectations of the researcher. Methodological conflict involves inefficiencies in the methods used in the research at all stages of research process. The last category is the theoretical conflict which occurs if there are several theoretical frameworks developed to address the specific phenomenon in the society.

Furthermore, Robinson et al. (2011), proposed additional two common framework known as Evidence Based Practice Centre (EPCs) and Population, Intervention, Comparison, Outcomes (PICO) to systematically conduct reviews of the current evidences to determine the research gaps and associated reasons. These are very important information in formulation of research questions and determination of relevant research methods for future studies. According to the study conducted by Farooq (2017), reasons for the existence of research gaps can be classified into four main categories which are: - inadequate information which results if there is limited number or none similar researches implemented in particular area of the study. Secondly, research gaps arise due to biased findings resulting from inadequate methodologies including small sample size which

does not allow generalisation of the results. Thirdly, inconsistency which determines the extent to which conveyed effect dimensions from involved studies seem to go in similar bearing and the last category is not the right information indicating most of the key conclusions might not be evaluated. Identification of the research gaps for future researches in this study is according to both Müller and Kranz, (2015) guidelines and Robinson et al., (2011) frameworks. The underlined criteria of systematic literature reviews in determination of research gaps and the reasons for their existence have been used.

Methodological Gaps

This sub section explains and provide empirical cases of the studies conducted with methodological gaps which is critical to be considered for the future researches in the similar context. Empirical methodological gaps have been identified in the research results undertaken by Xenikou and Simosi (2006) on the Culture of organizational and transformational leadership as independent variables of performance of a business unit. The central objective of the research was not achieved as a result of methodological inefficiencies including application of cross-sectional data which permits collection of information once to examine the association between the independent and dependent variables of the study. In such a case, longitudinal research could provide more reliable results by measuring both variables in different time periods. Therefore, future researches are important to contribute on the developed knowledge using enhanced methods to support business performance which will have great impact into the society.

Another study which has methodological gaps include research implemented by Wiklund and Shepherd (2005) about Entrepreneurial Orientation (EO) and performance of small businesses using a configuration method. Although configuration approach proved to explain performance of small businesses in a more efficient way than a two-way approach, the study experiences variations

in the sampled units during the first round of data collection and also during the follow up. Methodologically, variation in sampled units indicates under coverage and affects the final results if proper adjustments are not incorporated. More researches are encouraged in this area to use configurations approach which includes more variables and larger sample to better inform the business operators.

Methodological research gaps are also identified in the study conducted by Myers (2003) on management of brand equity by looking at the effects of various attributes. In the study, the sample unit constituted randomly sampled students, this study didn't consider stratification of the population to facilitate targeting sample which could results into more representative results. It is therefore recommended for future studies to consider filling the gaps specifically to inform about the role of intangible variables on brand equity. In addition, more studies will contribute more knowledge to ensure sustainability of the great brands.

Furthermore, the study conducted by Hennig (2004) on customer orientation of service employees and its bearing on customer satisfaction, commitment, and retention had several methodology limitations. For instance, the size of sample adopted was not adequately representative of the Germans' population studied. In addition, methodology was biased to customers only as respondents while ignoring the perceptions of employees which could have impacts on the results. In addition, the study used online approach to data collection which automatically excluded those customers with no access to internet. These gaps call for researchers to conduct more study in this area to unlock the existing opportunities.

Theoretical Gaps

Theoretical consideration in conducting researches is a critical stage given its impact on reliability and validity of the research findings. The following are some important theoretical gaps

of the research identified which provides useful information to future researchers during the designing of their study. Theoretically, the module used in the study undertaken by Xenikou and Simosi (2006) about Organizational culture and transformational leadership could have been improved by adding more important variables to have more reliable results at functional level. Another identified research gaps in this category are from the study undertaken by Wiklund and Shepherd (2005) about Entrepreneurial Orientation and Performance of Small Businesses. Findings of this study revealed an improved influence on the performance of small businesses using additional factors such as capital and dynamism environment, a three-way interaction module than using only the main effects model. Theoretically, the designed model supported data collection for independent variables for only one year. Longer period could have increased the model's explanatory ability.

Theoretical conflicts were also identified in the study conducted by Myers (2003) about management of brand equity by looking at the effects of various attributes. The study basically used tangible and intangible variables, but other variables such as advertisement or promotions of the brand were not used which could have high contribution to the results. It is therefore important for future researches to consider more integrated module for informed decisions. Additionally, the theoretical model used in the study conducted by Hennig (2004) about Customer orientation of service employees was designed specifically for German. It lacks transferability features to be applicable in other societies with cultural differences from the original settings. Future researches are therefore important to enhance the knowledge into other parts of the world.

Knowledge Void

The knowledge void was experienced in the study conducted by Xenikou and Simosi, (2006) because some of their hypothesis was contrary to their expectations. For instance,

humanistic orientation was established to have significant negative influence on the performance of a business unit. There is a need for further research in this domain to inform about cause or other associated factors for the identified gaps to enhance organisations performance.

Basing on the discussions above, research gaps are important of consideration for any research to better plan for the study and future researches, it helps building or enhancing the existing knowledge in different dimensions ranging from the establishment of research problem, designing of research questions, identification of relevant theories and their underpinning philosophies and other related research processes. Research gaps are considered as output from literature reviews but likewise perceived as an important input due to the fact that they can influence more research (Robinson et al. 2011). It has been noted that, for the reviewed articles, most of the identified gaps are methodology oriented, inadequate theoretical frameworks and knowledge void. The main reason for existence of the identified gaps includes inadequate knowledge in the area of study, financial resources and technological challenges. Therefore, all studies have some limitations which provide room for further research to enhance the existing knowledge for the benefit of the society in general.

Theoretical framework

Different Scholarly views of what Constitutes a Theory

This section provides explanation of views from different scholars about what constitute a theory, commonalities and differences which exists among them. According to Holton et al. (2007), theory can be explained based on the several assumptions associated with the context of a particular phenomenon (ontology), existing knowledge about such a phenomenon (epistemology) and methods used to study the phenomenon. All these aspects have created prolonged discussions, philosophical considerations, conceptualisation of paradigms in building theories. Furthermore,

Storberg-Walker (2003) explained that, researchers interested in doing theory building research in applied studies or adding knowledge to the existing theories are required to critically review existing literature related to theory building focusing on the area of interest for investigation.

There is no unified theoretical framework that fits any inquiry but researchers are required to give strong rationale for the choice of a particular theoretical framework that can address the identified research problem, objectives and research questions (Osanloo & Grant, 2016). It has been reiterated by Sala (2011) that there is no accepted unique theory of labour market although scholars have attempted to conceptualise and explain the related problems within the framework of economic models such as Human Capital Theory (HCT), Job Competition Model (JCM) and Assignment Models (AM). According to Thomas (2017), there is no common definition of theory across or within different disciplines. For instance, the following are two different definitions of theory from different scholars. Theory can be explained as a “set of concepts or constructs and the relationships among them along with boundary conditions, assumptions and constraints” (Schroeder, 2008, p. 355). On the other hand, Wacker (2008, p. 6), defined theory as “an explained set of conceptual relationships” and that, there are four main dimensions of theories used to examine if a particular set of conceptual relationship is essentially a valid theory. These are conceptual definitions, domain limitations, relationship building and predictions. These properties of theories have also been reiterated by Schroeder (2008) that; they provide more detailed description of theory. Basing on different definitions and concepts of theory building from different scholars, researchers are required to have a deep understanding of existing research theory building conceptual frameworks and their applications to help them in making relevant choice of the theory which will precisely address their research problem.

According to Whetten (1989), a complete theory must contain three fundamental elements which are: - what, how and why. “What” describes set of factors, variables, concepts required in theory development; “how” explains how elements under “What” are related and “why” explains underlying physiological, social and economic assumptions that justify the selected “What” elements and the proposed relationships. Generally, what and how constitute a domain or subject of the theory and normally presents in arrows to connect boxes to illustrate a typical model. Who, where and when are other elements which have to be explored carefully as they are considered as limitations of theory building if are not carefully considered in the theoretical model. In contrast, according to the definition of theory provided by Wacker (2008) which focuses on the relationship of the set of conceptual frameworks, the basic properties of theory include explanation of the key terms used to explain who and what; location and time period which covers when and where, existing relationships of variables covered to describe the how and why part of the theory and possibility of conducting predictions to inform future theories.

Furthermore, according to Storberg-Walker (2003), theory building can be compared and contrasted from three perspectives that are critical for applied sciences. According to Holton et al. (2007) theory building can be viewed under three main dimensions namely; steps which should be considered during theory building; relationship between different actors in theory building and criteria formulation for monitoring and evaluation of the theory building processes. It is further explained that, theory building cannot be detached from the human behaviour, the cultural context settings of the society which are critical on introducing changes for development processes. A theory comprises all key aspects needed, legal framework and step by step stages required in explaining the phenomenon. More views from Holton et al. (2007), indicates that, there are several methods of theory building, for instance, a methodology developed by Dubin provides eight key

aspects for consideration in theory building which can be clustered into two main groups i.e. - theory development and research operations. Theory building covers all variables of interest, their relationships and the underpinning legal aspects at all stages, important inclusions and exclusions for consideration. Research operations focusses on variables for consideration, methods, empirical tests in the course of theory development, hypotheses development and testing of the theory for making evidence-based decisions about the phenomenon. According to Wacker (2008) and Schroeder (2008) explanation of a good theory should consider to cover relationship between various concepts about the phenomenon with clear definitions, relationships, limitations, legal frameworks, important inclusions, exclusions, predictions and other attributes related to the phenomenon. More view of what constitute a theory according to Gehman et al. (2018), are from the prominent scholar views of Denny Gioia, Kathy Eisenhardt and Ann Langley basing on the results obtained from the study conducted using qualitative research approach about theory building that, theory constitutes essential elements and differences about the composition of the theoretical conceptual framework variables of the phenomenon which explains how and why a phenomenon is present.

On the other hand, other scholars including Gehman et al. (2018) provided similar arguments that, theory is a wide concept and covers several elements, their relationships and common interlinkages which can facilitate clear understanding of the phenomenon. These includes, role one says; constructs A can play or influence performance of the other constructs say constructs B is critical in theory building. If a researcher fails to explain the reasons why A influences B results into just a correlation and not a theory and may result in making incorrect decisions of rejecting or accepting null hypothesis, which are critical stage in any research given the huge impact which may affect the society.

Basing on the discussions above, theory building is an important stage in the good conduct of research. It is imperative for researchers to have a wide knowledge of the phenomenon under study, review existing theoretical conceptual frameworks to facilitate formulation of a theory which is relevant to the planned study. Inadequate theory formulation would result into incorrect research methods and irrelevant research findings.

Theories Related to Labour Market Information and unemployment

According to Fitzgerald (1998), classical labour theory assumes that, amount of labour demanded is exactly equivalent to the amount of labour supplied at the equilibrium wage, therefore there is no unemployment. However, according to Mouhammed (2011), full employment theory does not necessarily mean no-unemployment due to the existence of frictional unemployment at the prevailing rate of real wage. That is, a worker may voluntarily stop working if gained utility for not working is greater than that of working or real wage. Deriving from the classical labour theory, it assumes optimal performance of labour market that, job seekers and employers have full information at no cost. It limits fundamental issues of labour market information such as determinants of unemployment and its behaviour over time and the significance role Labour Market Information can play on balancing labour supply and demands in the labour market.

On the other hand, the modern theory of unemployment fluctuations demonstrates that, the natural unemployment rate is an equilibrium in which the number of job seekers and employers reach a stability controlled by important factors of the relative prices of the two activities (Hall, 2003). Given the complexity of unemployment, labour market information system has great role to play to inform about the performance of the economy with regards to its ability to utilize the available labour, inform students and training institutions about the highly demanded courses in the market for their consideration. This will eventually result into employable graduates and reduce

unemployment. Moreover, according to Mouhammed (2011), performance of labour market information plays a crucial role on employment because availability of information such as search for better jobs, closing or opening of new plants helps in making right decisions for workers and employers.

Furthermore, according to Loveridge and Mok (2012), neo classical economic theory treat labour market as an exchanges system where buyer and seller of labour meet individually as equals and that allocation is regulated by price. On the other hand, classical theorists such as Smith and Marx links the mechanism of labour market to the system of power, the demand and supply of labour and the underlying social relationship which may take place over time (Loveridge & Mok, 2012). This indicates that, neo classical theory does not consider institutional arrangements such as trade unions and collective bargaining as critical issues in labour market. Deriving from both classical and neo classical theorists, there is close correlation between manpower planning, unemployment and labour market because large amount of labour supply than the demanded workforce results into involuntary unemployment.

According to Card (2011), the common definition used to measure unemployment around the world involves persons who are not working in any economic activity but they indicate willingness to work, and also actively looking for work. Unemployment can be categorised into frictional, structural and cyclical unemployment (Levine, 2013). According to Arpaia et al. (2014), frictional unemployment is a short-term movement of people into and out of jobs; structural unemployment occurs basically due to skills and location mismatch and cyclical unemployment occurs as a result of decreased in the demand for commodities and services in the labour market. During the crisis of structural unemployment normally employers decide to lay off workers or they may decide to close the firms. According to Sparreboom (2001), labour market information

systems with relevant information are important tool for job creation, job searching and reduction of skills and location mismatch through its functions at policy formulation, monitoring and evaluation processes, it has big contribution during the structural unemployment. In addition, according to Mouhammed (2011), many countries, regardless of the level of economic development, have experienced high unemployment since the Great Recession of December, 2007. For instance, the rate of unemployment in US picked up to 10.0 percent in October, 2009, Levine (2013). In Egypt the rate of unemployment reached 19 percent in 2011 according to Mouhammed (2011). Tanzania like in other countries is experiencing high rate of unemployment for long time and specifically for youth who could significantly contribute to economic growth and poverty reduction are not optimally engaged in production chain (ILFS, 2014). High rate of unemployment in any economy impinges economic growth and human development. According to Farsio and Quade (2003), Okun's law which is a widely accepted theories in macroeconomics states that, one percentage point reduction in the unemployment rate would produce approximately three (3) percent more output in the economy.

The United Republic of Tanzania aspires to heavily transform the country's socio-economic activities to a middle income semi- industrialized country by 2025. Skilled Labour and use of technology is therefore important for the country to migrate into industrialized economy. According to a study undertaken by Nsabimana and Funjika (2019), in Tanzania, application of mobile phone technology to provide appropriate information to farmers reduced the rate of unemployment. The available labour market information in the country is not coordinated, it is fragmented across government ministries, training institutions and the private sector. It is also not comparable, incomplete and not compatible for informing employment policies, job seekers and employers. The explained situation in Tanzania has been reiterated by Amani (2017), that,

inadequate performance of labour market information in Tanzania is a key barrier for graduates to access employment. Furthermore, according to SORENSEN and MAS (2015), little has been done in Tanzania on bringing fragmented labour market information into a common pool to enhance its accessibility which could have great role on job creation. Therefore, labour market information system which is well functioning is the cornerstone for reducing unemployment by bringing together decision makers, education institutions, students, graduates and employers into a common pool for informed decisions. It will inform about available jobs and locations, required skills, available skills and formulation of relevant labour related policies, programs and interventions. It is therefore imperative to establish a robust theoretical framework to facilitate conducting deep research to unlock employment opportunities through effective labour market information systems and to enhance economic growth and human development in the country.

Basing on those augments, the following are critical analysis of four main theoretical frameworks pertaining to the performance of labour market and unemployment. These are classical model, neoclassical model, Keynesian model, monetary model, unbalanced labour market model and efficiency wages model and other post Keynesian model in that order (Serena, 2016). The frameworks are presented in chronological order in the sense that each theory builds from its successors to ensure it bridges the existing gaps and enhance performance of the Labour Market Information System, facilitate creation of more jobs and reduce levels of unemployment.

Classical Model of Labour Market

The history of economic theories advances step by step with economic dynamics coupled with technological advancements which need new ideas from individuals and tools to support economic development, employment and the general wellbeing of people (Hudea, 2015). Between 18th and 19th centuries, economy was driven by classical economic model which brings together

assumptions from several economists with common interest towards boosting economic growth, employment and control of inflation (Hudea, 2015). In the same grounds the Classical Model of Labour Market originates from the concepts and assumptions of Adam Smith and other economic thoughts which assumes existence of full employment indicating overall effective performance of the labour market that, amount of labour demanded is equal to the amount of labour supplied and that a minimum government intervention on labour market aspects is required (Fitzgerald, 1998). Classical economists assume existence of natural unemployment, the minimum rate of unemployment resulting from voluntary economic forces and any other emerging gap relating to labour demand and labour supply is filled by an increase of wages (Serena, 2016). The natural unemployment rate is an equilibrium in which the number of job seekers and employers reach a stability determined by important factors of the relative prices of the two activities (Hall, 2003). However, existence of frictional unemployment at the prevailing real wage rate nullifies the full employment theory (Mouhammed, 2011). In addition, assumptions of classical economists holds only if there is efficient labour market and the minimum government intervention supported by good labour related policies and regulations (Agarwal et al., 2017). In other words, there is optimal performance of labour market whereby job seekers, training institutions, intermediaries and employers have full information about labour market such as available jobs by geographical locations, skills required by employers, wages, quality of the available labour and other information which can support training institutions to design and offer trainings and skills demanded by employers. The theory limits fundamental issues of labour market information such as determinants of unemployment and its behaviour over time.

The classical theory is limited to wages as the only means of controlling unemployment and does not consider other factors to address the difference between labour demand and supply

considered by other seminal work in the field of economics including Humana Capital Theory, Job Competition Model and Assignment Models (Sala, 2011). In addition, Keynesian and Monetarists models of labour market is against the classical model assumption of minimum government intervention, it underscores the importance of government interventions in addressing unemployment by designing and enforcing implementation of labour related policies and programs that aims at job creation including establishment and expansion of businesses and easy access to loans (LISOVA, 2021).

Neoclassical Model of Labour Market

This model builds on the achievements reached by classical economists and introduces flexibilities and new ideas and tools to cope with the prevailing supply and demand of the economy. New feature of this module includes the value of goods measures by marginal utility of production and consumption where practitioner works towards profit maximisation using the liableble information. In addition, it works under the assumption of the aggregate demand derived from microeconomic activities in equilibrium in the economy with regards to prices, wages, interest rates and the optimal matches between employers and employees' requirements (Hudea, 2015). According to Bianchi and Henrekson (2005), neoclassical economics is a comprehensive model that uses demand and supply to describe optimal allocation of resources, rational decision making, trade-offs and prices using calculus and a general equilibrium concept of the economy. With relation to the labour market, neoclassical model treats labour market as an exchange system where buyer and seller of labour meet individually as equals and that allocation is regulated by price (Loveridge & Mok, 2012). Similar concept has been provided by other scholars such as Leon Walras (1954), Alfred Marshall (1920) and Vilfredo Pareto (1897) that, the equilibrium of labour demand and supply is maintained by the wages and that the labour market is controlled by the

power of supply and demand for labour. According to Serena (2016), neoclassical model builds on the classical assumption of full employment that the equilibrium of labour supply and demand is controlled by the wages implying that unemployment is practically non-existent.

Both classical and neoclassical theories assume minimum government intervention and does not take into account critical issues of labour market policy aspects such as institutional arrangements, availability and accessibility of labour market information for informed decisions, intermediaries, dispersion of wages and discrimination which may results into unemployment (Leontaridi, 1998). Deriving from both classical and neoclassical theorists, labour market information systems are of paramount important in providing reliable information for both demand and supply side of labour for making evidence-based decisions. There is a wide gap between the job seekers, available jobs, training institutions and employers because of information asymmetry and the matching of the key variables is being done through labour marketing information system (Agarwal et al., 2017). It is from these arguments that, labour market information system became an important tool to support most of the economic theories and conceptual frameworks in making evidence-based decisions to accelerated economic growth, boost job creation and carrier development of people which will ultimately reduce unemployment.

Job Search Theory

IT has been emphasised by van Hooft et al. (2021) that, if Job Search Theory is used in tandem with other economic models such as Neoclassical Model contributes to narrowing the existing gap in the labour market. According to Faggian (2021), 67 percent of the national income comes from labour, specifically in developing economies where labour is still a key factor of production. It is there important to ensure effective manpower planning which will facilitate choice of the right occupation and economic activities one should engage. Given the critical role which

labour plays in the economy and in the labour market, economists have devoted much effort to enhance existing labour related theories and come up with the Job Search Theory; a successor of the neoclassical labour supply theory (Marinescu & Skandalis, 2021). The neoclassical theories of employment are underpinned by adequate availability of labour market information to facilitate making evidence-based decisions by labour market actors to reduce unemployment. However, less have been said for persons who are unemployed and are actively searching job. Therefore, Job Search Theory provides flexibility module which permits sequential of processes for job seekers and guide them to stop looking for work if subjected to inadequate information and uncertainties (Cooper & Kuhn, 2020). This includes development of matching function which brings together job seeker and employers into a common pool for informed decisions. It operates under similar assumption of Keynesian economic theory which is underpinned by the aggregate demand which stimulates investment, job creation and reduction of unemployment.

Keynesian Model

Despite notable improvements made by classical and neo classical economists to ensure equilibrium of demand and supply side of the economy and their assumptions of minimum government intervention, still there was a room to improve given the dynamics in the real-world economic operation (Wolff & Resnick, 2012). Keynesian Model maintained the good work done by classical and neo classical economists and introduces several factors such as technological advancement, change of population structures, level of education and the need for government intervention to ensure optimal operations of the economy. It was noted that, the assumptions of Keynesian economic theory have significant impact on business cycles, consumption pattern and also influences decisions of investors or employers, employees, training institutions and the public at large with regards to using available information to formulate policies and programs for

sustainable economic development (Rada et al.,2023). According to Blinder (2008), Keynesian economic theory advocates the concept of aggregate demand and its impacts on general output, employment and price level over a short period of time. Keynesian theory of employment considers total spending and aggregate demand as job creation engine because spending promotes investments, increase demand for goods and services which will definitely require more labour and technology in production processes (Habanabakize & Muzindutsi, 2018). According to Serena (2016), Keynesian model contradicts the neoclassical model, and asserts that the labour market is not in equilibrium and therefore government intervention is critical to achieve the balance between demand and supply of labour. This may include increased government expenditure and lower taxes to stimulate demand which will positively affect production and the need for more labour in production processes and use of technology to enhance sharing of labour market information. All these interventions result into low unemployment, economic growth and poverty reduction. It has been supported by LISOVA (2021), that Keynesian theory which is manifested in creating new enterprises, promoting investments and tax reforms and the monetarists theory which focuses on management of inflation, exchange rate and government policy credit are critical to regulation and transformation of the labour market.

However, according to Habanabakize and Muzindutsi (2018), Keynesian theory of unemployment does not work in all countries, sometimes increased government expenditure destroys some of the existing jobs instead of creating more jobs. For instance, Afonso and Sorolla (2012) in their study to address high unemployment in Spain established that application of Keynesian model could lead to loss of more jobs than creating new job opportunities. In addition, new classical theorists assert that expected fluctuations of money supply in the economy do not specifically impact on the real output and the labour market is capable of self-adjusting to address

imbalances labour supply and demand (Blinder, 2008). In the same vein as explained for the classical and neoclassical theories, the fundamental roles of labour market information architecture of coordination, exchange of information, analysis of labour market dynamics, monitoring and evaluation; and reporting of the performance of employment related policies and programs cannot be ignored in ensuring full employment (Sparreboom, 2001)

Monetary Model

Furthermore, Monetarists model builds from the Keynesian model and assumes that solution to unbalanced labour market is the use of monetary lending (Serena, 2016). It has been reiterated by Ng'andwe (2020) that, Keynesians agree with the Monetarists on the key assumptions of the presence of natural unemployment and impacts of expansionary fiscal policy on aggregate demand for labour. According to Serena (2016), monetarists believe that, factors responsible for high unemployment such as lack of labour market information including availability of job opportunities, information of persons seeking jobs and the use of trade unions can be addressed temporarily by the use of monetary policy lending to stimulate demands. Monetarists underline the need for reliable and accessible labour market information systems to support design of policies and programs related to promotion of employment.

Unbalanced Labour Market Model

Economic theories such as Keynesian Economic Module has progressively improved to accommodate new thoughts given its flexibility and nature of the real-world economy (Hudea, 2015). The Unbalanced Labour Market Model builds on Keynesian Model and assumes the power of collective bargaining in determination of nominal wage for employees and that monetary policy lending proposed by monetarists model could have long term impacts on employment after adjustment of wages (Serena, 2016). Unbalanced labour market model brings into attention the

need for transparency in the labour market to facilitate negotiations of wages between employers and employees through intermediaries (Driver & Temple, 2012). This model can only be successively implemented if there are effective labour market information systems which brings into a common pool experience about nominal wages and other related information for employee performing similar jobs.

Efficiency Wages Model

In the same argument of economic development and the rapid changes of technology which needs more complex and soft skills, the efficiency Wages Model augments to the existing economic models that, workers are paid at a level which aims at maximizing productivity and also providing incentive to employees (Serena, 2016). However, according to Walsh (1999), most of the theoretical efficiency wage models concentrates on one or two models which is not feasible in the real economy, the model should be able to examine inter industry wage differentials and does not always work for large industries. The theory does not consider other labour market factors on reducing unemployment, however, labour market information system to facilitate timely availability of information about wages is important aspect in this theoretical framework.

Institutional Theory

Other economic theory which has significantly contributed to improve balancing demand and supply in the economy specifically in the labour market is the Institutional theory. It is underpinned by rules, norms, structure, set of conditions and actions of an organisation with regards to routine operations of the organisational machinery (Lawrence and & Shadnam, 2008). According to Hassan and Gil-Garcia (2008), Institutional Theory has been used in many disciplines including political science, history, sociology, economics and information technology and proved to have significant contribution with regards to understanding the phenomenon.

Conceptualization of the term institution is centred on the cultural elements inherited and transmitted over period of time in the society through agreed procedures, norms and rules (Brammer et al.,). Furthermore, institutions change and transform from time to time to cope with the globalization and technological changes in shaping the social life. In economics, the institutional theory operates under microeconomic theories which is underpinned by the assumptions of attaining consistent and stables utilities under cognitive limits, inadequate information, inadequate legal agreements and weak monitoring and evaluation of agreements (Salmeron & Bueno, 2006). Given the key elements of institutional theory, from organisational to individuals, Institutions in economics helps in balancing asymmetric information, making rational decisions, equality and rights of doing business under a stable and well-designed governance and legal framework for the benefit of all actors (Hwang & Colyvas, 2020). Similarly, institutional theory could play an important role by building on the existing labour market and labour market information system gaps in Dar es Salaam region to enhance institutional framework and governance, production, dissemination and use of labour market information for making effective decisions. Advancement of technology creates complexities and necessitates changes in the way of doing business using digital technologies, sharing of information such as labour market information and the mechanisms for institutional arrangements, coordination and collaboration. Digital interactions are considered to be the best approach to opt in this era of technological changes, it is considered as enabling factor towards transformation of economic activities which depends heavily on the availability of labour market information from demand and supply side of the labour market. All these aspects are possible if Institutional Theory is well adopted to support development of consistent and stables means of operation, from production of harmonised labour market information underpinned by statistical legal frameworks, enhance collaboration between

employers, employees, individuals and training institutions to ensure concerted efforts towards bridging the existing gap between labour demand and labour supply in the labour market.

Basing on the literature review about dominant theoretical frameworks related to labour market information, and complex nature of labour market, this study was guided by Keynesian theoretical framework taking into consideration neo and new Keynesian underpinnings. The choice of this theoretical framework considered many factors which are rooted on the strengths of Keynesian theory over other theories. These includes among others, its flexibility to adapt to economic dynamics such as taking into account value of goods and service provision measured by the marginal utilities derived from the consumption pattern and its influence in production processes (Del, 2021). This is consistent to the aggregate demand variables used in this study that; influences employers' decision to investment and making correct decision about type of business with regards to the most demanded goods or services. It also influences the demand side of the labour market and variables used in this study including the skills needed to facilitate production of the planned goods or services, quantity and quality of available labour force in the market, availability and affordability of information and communication technology tools.

Furthermore, availability and easily accessible labour market information through LMIS is critical in this theoretical framework to facilitate effective dialogues between key variables used namely: - employers who could be government or private sector, employees, job seekers and practitioners at training institutions. In addition, most of theories related to labour market such as Monetarist model and Unbalanced Labour Market Model are built on the Keynesian assumptions. Therefore, issues of economic dynamics, monetary lending and spending to stimulate aggregate demand, economic growth, employment and unemployment; and the need of enhancing interactions between labour demand and supply actors through LMIS are grounded on the

Keynesian theoretical framework. Presented labour market theories specifically Keynesian views provide enabling environment and the importance of sectoral linkages from micro to macroeconomic aggregates in making rational decisions related to labour market. They provide grounds for making decisions about relevant training courses which will impart the right skills to students, type of investment depending on various factors including the quality of the available labour force and reliability of labour market information exchange thorough LMIS which acts as one stop centre for labour related information to support evidence-based decision making.

Conceptual Frameworks

Labour Market Information System is a broad macroeconomic concept which covers all the relevant concepts of labour supply and labour demand in the labour market to enhance production, data sharing, access and use of Labour Market Information for sustainable development (Acosta & Secretary,2018). A well-established conceptual framework will have significant contribution on the effectiveness of performance of Labour Market Information System which will serve as a macroeconomic tool to better inform labour related policies and programs in the country. According to Brandas et al. (2016) effective conceptual framework for Labour Market Information System results into increased production of labour related information, availability, data sharing, access and use within the National Statistics System (NSS) of a country. The conceptual framework of the Labour Market Information System should consider among others management of different categories of labour market information produced along with their respective producing institutions, types of information demanded, methodology used in data production, existing data sources, frequency of data production and existing gaps, storage, sharing mechanisms and compatibility of dissemination platforms (Pheko & Molefhe, 2017). It has been reiterated by Rihova (2016) that given the important role of Labour Market Information in

development processes and its functional inadequacies in developing economies, many countries are striving to establish Labour Market Information Systems which will act as a central repository for Labour Market Information to support formulation and management of labour market policies.

According to Merriam (2001), a conceptual framework is a combination of concepts, expectations, definitions, theories and relationship between variables in the study which provide guidance on how the research problem can be explored, to provide solutions which can address the existing problem. Osanloo and Grant (2016) emphasized on the close association of theoretical framework and conceptual framework for the particular study. Basing on the chosen theories, the conceptual framework adapted from Woods and O’Leary (2006) guided implementation of this study to investigate the effects of labour market information system on unemployment.

According to Pheko and Molefhe (2017) in their study about enhancing employability of graduates in Botswana, a developing economy like Tanzania, labour is among the important sector of the economy which requires deeper research on application of technology to enhance availability of relevant and timely Labour Market Information for development process including strengthening partnership between training institutions, employers and job seekers. Demand for Labour Market Information in Tanzania has recently increased to support the country’s agenda of transforming the economy from agricultural to semi-industrialised middle income and to high income economy. This is well articulated in the Second National Five Years Development Plan (FYDP II), 2016/17-2020/21 with the theme “Nurturing Industrialization to Foster Economic Transformation and Human Development”. Furthermore, theme for the Third National Five Years Development Plan (FYDP III 2021/22-2025/26) focusses on “Attaining Export Growth and Competitiveness”. National Five Years Development Plans (NFYDP) are implemented through Annual National Development Plans (ANDPs) to realize the Tanzania Development Vision (TDV)

2025 aspirations of which a well-educated and learning society, high quality livelihood by heavily investing on human development is among of the key priority areas (TDV, 2025).

Like any nation at an early stage of development, Tanzania requires a robust Labour Market Information System that can provide timely information for evidence-based decisions on capital investment and human development. These includes Labour Market Information in different dimensions such as qualifications of the labour force, distribution of employment by occupations and economic activities, job vacancies and skills, education and training programmes, unemployment, wage information, dynamics of skills mismatch and most demanded skills. Therefore, development of comprehensive conceptual framework for this study is a critical step to support development of an optimal Labour Market Information System. The Labour Market Information System developed will serve as a macroeconomic instrument to better inform labour related policies and programs. An optimal Labour Market Information System is a backbone of transition of the economy to sustainable development. Availability of comprehensive and timely Labour Market Information helps the policy makers and planners to make right decisions to answer most of their questions on what, how, where and which in investments and human capital development (Bimrose et al., 2018). Moreover, it is evident that, labour market information is critical for development processes to inform and track economic performance in Tanzania has increased tremendously given the rapid change in globalization of economic activities, advancement and rapid change of technology and; emerging of the digital economy. These dynamics calls for more advanced and mixed skills and ability to adapt to new technologies in production of goods and services. In addition, Tanzania was upgraded from low-income economy into lower middle-income economy by the World Bank in 2020, which reflects among others improved access to credits to support further economic growth (Bataille, 2020). Given the major

economic reforms taking place in the country, as explained by Agarwal et al. (2017) labour remains the supreme factor in facilitating productive activities for goods and services and coordination of all economic activities through the optimal use of Science, Technology and Innovations (STI).

Despite the importance of labour and labour market information in stimulating economic growth, labour market information is underproduced, fragmented, outdated and inadequate in terms of all dimension of data quality which includes among others; completeness, timeliness, relevance, reliability and professional independence. In this scenario, underpinnings of the chosen Keynesian theory for this study which calls for government interventions on both demand and supply side of the labour market to stimulate investment and creation of more jobs is critical. Effective LMIS is essential and necessary policy tool to support policy makers and planners in making rational decisions related to government interventions in the area data production related to labour market and the linkages between sectors of the economy. In addition, there are many players of Labour Market in the country working in silos with different purposes. Basing on that, tools and methods used in production, storage and dissemination of Labour Market Information differs from one practitioner to another. This approach limits harmonisation, comparability and establishment of Labour Market Information time series database which can be used to inform policy makers but also to inform projections of available future opportunities for career development. For instance, there are a lot of administrative labour related data produced by Ministries, Departments and Agencies and that produced from non-traditional data sources by Non-State Actors such as private sector and civil society associations which could contribute great value to the national development processes if there were an effective framework for bringing them into a common pool and disseminate to users. The conceptual framework of this study explores supply side of the labour market by identifying types of labour market information

produced and institutions producing such information to enhance data availability, data sharing, avoid duplications of efforts the data production, improve data comparability, harmonisation and identification of data gaps to facilitate evidence-based decisions in the national development processes. Basing on the Job Search Theory which emphasises on the importance of bringing job seekers and employers into a common pool to facilitate dialogues related to employment in the absence of reliable LMI, the proposed conceptual framework provides key practical solutions to inform making evidence-based decisions. The proposed enhance coordination functions of the Framework for job seekers, employers and training institutions is a fundamental element which amplifies the role of job search theory in the real world. Conceptualisation of Job Search Theory and its flexibility nature which guide job seekers facing challenges of access to LMI to continue using job search applications which brings commonalities with the Keynesian Theory used in this Study. The aspects of aggregates demand and the needs for government interventions in economic performance to create more jobs provides solutions to job seekers who are actively looking for work and those who are ready to work but not actively looking for work. With regard to the demand side of the market for labour, the conceptual framework provides important information for planning and decision making on economic development and reforms; key information such as skills requirements, level of education and skills demanded, type of economic activities and services, productivity and wages will support making evidence-based decisions to foster economic transformation and human capital reforms in the country towards semi industrialized middle income economy. Such information in Tanzania if available does not meet the basic quality for official statistics as recommended by the Fundamental Principles of Production of Official Statistics of the United Nations, because most of them are incomplete, in patches, incomparable due to use of different methodologies; some of them are not available and most of them are

outdated. For instance, the information about unemployment which is among the key labour market indicators in the country is normally produced after every five years which is too long period to support policy makers in making prompt and relevant interventions. Since Labour Market Information are dynamic and the ongoing economic reforms in the country, there is a need of comprehensive conceptual framework to facilitate establishment of Labour Market Information System to curb existing problems of unemployment by ensuring timely, valid and reliable comprehensive Labour Market Information for making accurate decisions in the social and economic development processes.

With regards to the context of dynamic economy and human and social development reforms on-going in the country, effective Labour Market Information conceptual framework for development of an effective labour market information system is of paramount importance. It will support informing policy makers and planners in making more precise and relevant decisions focusing on the best match between economic growth and human development such as training and jobs, unemployment and job vacancies, skills requires and training programmes, income from employment and productivity and other relevant Labour Market Information. The aim is to ensure that, results of this study will definitely play the key role in supporting the country's agenda of transforming her economy from agricultural to semi industrialized middle income economy for sustainable development.

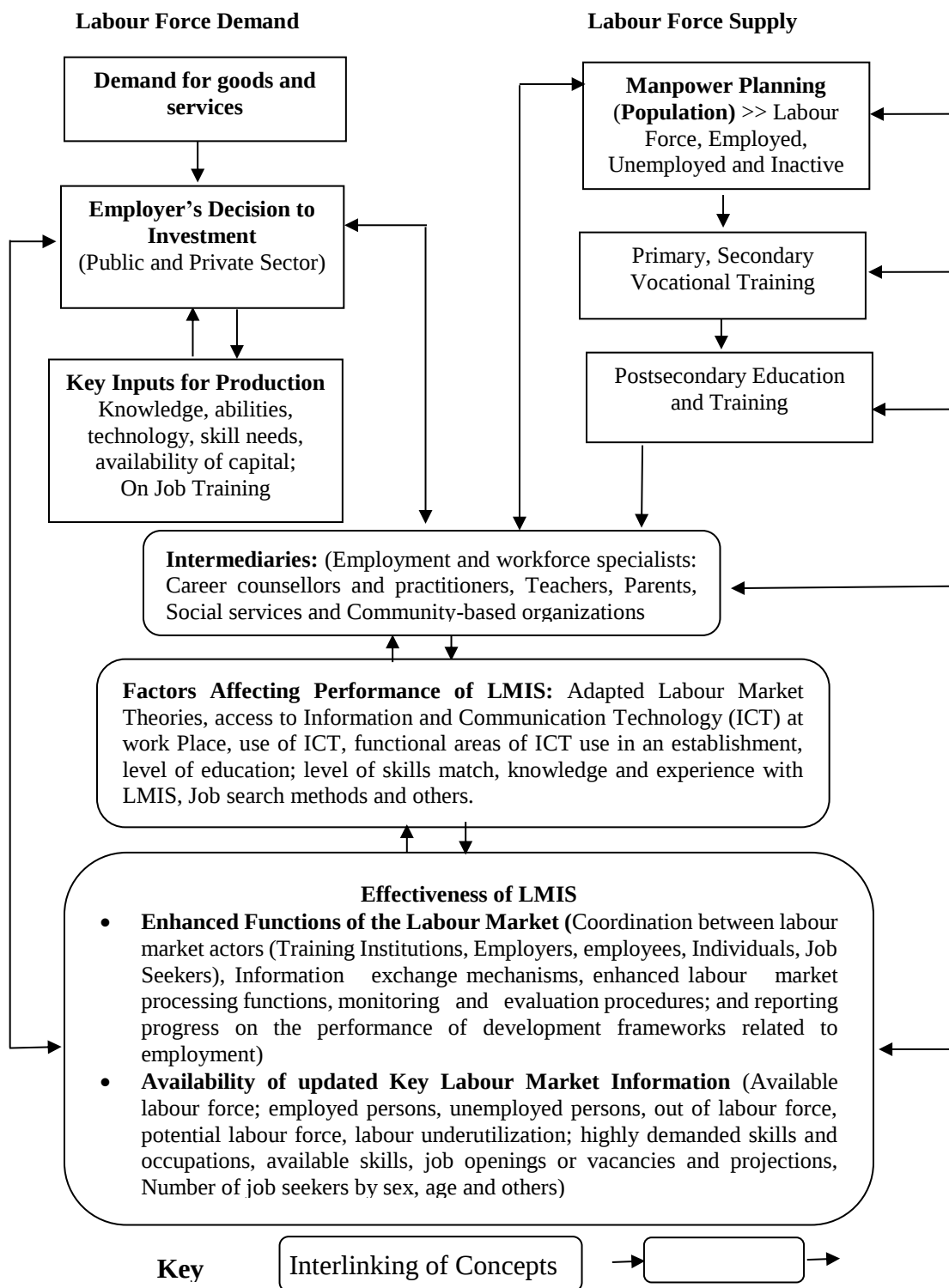
Basing on those facts, a multi government intervention and actions are essential to ensure high quality, updated and easily accessible labour market information as a pre-requisite feature of a well-functioning and efficient labour market. Government intervention and actions can also improve short term and long-term balancing of supply and demand for labour to ensure that individuals develop the skills required in the labour market; training institutions design joint

curriculars which reflects both employers and consumer's needs; and investors make right investment decisions (Woods & O'Leary, 2006). However, there are several actors in the labour market and amount of data produced from government and Non-State actors are unprecedented and are not coordinated, yet most of classical economic theories assume perfect information. The necessity for effective Labour Market Information System is an important priority area for government intervention in Tanzania, specifically to address high rate of unemployment in Dar es Salaam region whereby about 10 percent of total population resides. According to the Tanzania Population and Housing Census (PHC) conducted in 2012, ten (10) percent of the population resided in Dar es Salaam. This population percentage slightly declined from 8.4 percent according to Tanzania Population and Housing Census conducted in 2022.

Basing on those facts, the conceptual framework used in this research study is adapted from Woods and O'Leary (2006) and has two main parts, the elements of demand side and supply side of the labour market as indicated in Figure 2.2.

Figure 2.2

A Conceptual Module Adapted from Woods and O'Leary (2006) Explaining Performance of Labour Market Information System



The conceptual framework of this study is built on the Keynesians theory of the labour market, the neo classical theory which taped strengths of the classical views to enhance performance of the labour market. The conceptual framework of this study has two main side of the labour market namely; the supply and demand side. Conceptualization of these two elements in relation to the Keynesian views of aggregates demand, the left side of the framework represents components of demand side of the market for labour. It shows the relationship between demand for goods and services at micro and macro levels which have critical role to play on aggregate demand views of Keynesian and the associated influences on production chain and job creation. Employers as important practitioner on the demand side could be the Government, private sector, Non-Government Organizations (NGO) or any other Non-State Actor. Employers make decisions to increase or decrease investment depending on the aggregate demand for goods and services which will also inform about skills level required to produce the highly demanded goods, knowledge, abilities, technology and availability of capital. It is conceptually indicated that, aggregate demand for goods and services influences decisions for investors or employers of whether to increase or reduce production of specific type of goods or services. If aggregate demand increases it means it will stimulate more investment and creation of more jobs and definitely contributes to decrease unemployment rate. According to Mitchell and Muysken (2006), aggregate demand concept has been mentioned and econometrically proved by many scholars including the Keynesian underpinnings of the labour market as the most important determinant of employment levels. Furthermore, aggregate demand emanates from government implementation of various labour market theories including monetarist and Keynesian theories which believes on the important role that government interventions can contribute to boost aggregate demand through

practising effective monetary policies and reforms to ensure price stability, increased investment, creation of more employment and reduction of unemployment (LISOVA (2021).

On the other hand, decrease in aggregate demand which is also caused by several factors including money circulation and low income as explained by neo classical economic theories, results into low investments and even closing of some business because investors will be getting losses instead of profit. This also affects unemployment because closing of business means retrenchment of employees, exacerbating unemployment situation in the economy. Furthermore, change in demand may results into need of more complex and mixed skills to facilitate production of the new emerging goods and services which can affect levels of employment. These cycles of the economy should be critically considered in any conceptual framework related to Labour Market Information Systems, manpower planning, population, labour force, employment, unemployment and inactive population. This phenomenon is also manifested in Keynesian theory adopted for this study regarding the need for government intervention on balancing supply and demands of the labour market. Given the nature of labour market with various type of practitioners with different needs and qualities, government interventions including policy reforms, rebuilding, reconciliation to strengthen economic resilience is of paramount importance.

The figure 2.2 also indicated the connections of the labour demand with intermediary agents including employment and workforce specialists, career counsellors and practitioners, teachers, parents, social services and community-based organizations and the labour market information system. The figure 2.2 indicates that, demand for labour depends on many factors including adapted labour market theories which are used as a baseline information in policy formulation focusing on strengthening relationship between supply and demand of the labour market, nature of goods and services demanded, needed capital, type of technology and skills

needed in production processes. Furthermore, intermediaries support connection of labour demand and labour supply through different means and their functions can significantly be enhanced through effectiveness on the access to Information and Communication Technology (ICT) at work place, use of ICT at work places, level of education; level of skills attained, job search methods and effective use of Labour Market Information Systems.

Moving downwards on the demand side; employers may decide to upgrade skills of their employees through on job training or may recruit new employees through intermediaries or directly from the Labour Market Information System which includes all key Labour Market Information to support employers in making rational decisions. Labour Market Information System provides reliable and updated information for matching job openings, job seekers, available skills and the movement may result into or out of employment or out of labour force.

With regards to the right side of the framework, it illustrates the supply side of labour in the labour market indicating relationship between manpower planning and various population elements including total population, labour force, employment, unemployment, age groups, working age population, inactive population, potential labour force, sex, dependency ratio, birth rates, deaths rates, migrants and immigrants. It also indicates linkages of the population with the training institutions from primary school, secondary education, Vocational Training Centres (VTC) and post-secondary education and training which include community colleges, universities or other equivalent higher learning colleges and technical schools. Furthermore, there is correlation between population, education and performance of the Labour Market Information System.

The framework also indicates that, population is not fixed as is affected by several factors including migration, deaths and births. Most of the population will go through education system to labour market through intermediaries or direct to the labour market. Labour Market Information

System plays an important role of connecting employers from the demand side of the Labour Market; with employees, job seekers or unemployed persons and training institutions on the supply side of the Labour Market about available jobs, skills needed, skills available and other information to help achieve equilibrium between demand and supply of labour which have great impact on reducing unemployment (Gordon, 2010). For instance, training institutions would plan to train students focusing on highly skills demanded by employers in the labour market and individuals would apply the information to plan their education programs and other carrier development programs. An effectively designed Labour Market Information architecture hugely contributes to reduce unemployment because it reduces costs for job searches, easy the transition from school to employment, training institutions impart the demanded skills to their students to support graduates became employable and facilitate proper and effective matches between demand and supply for labour. It will assist as a macroeconomic instrument to better inform employment related policies which are formulated and monitored by the government as part of government intervention in education system; and associated programs through improved data capture and data sharing mechanisms, improved data quality, storage, availability, accessibility and use for evidence-based decisions. It will facilitate effective planning, monitoring and assessment of labour policies and programs and strengthen collaboration within the National Statistical Systems.

Empirical Literature Review

This section provides empirical literature review focusing on main components of the proposed conceptual framework for the research including methods, experiences of collection of data, data processing, dissemination, data uptake and its impact on development policies specifically labour related polices (Onwuegbuzie & Collins, 2012). The review also covers the overview of Labour Market Information System (LMIS), key functions of LMIS and their impacts

on unemployment. In addition, the literature review intends to establish empirical evidences of effects of LMIS on unemployment from similar studies conducted by other scholars. According to Randolph (2009) literature review is critical step in any research and it is a way of showing the author's knowledge about the phenomenon ranging from justification of the research problem, main methodologies to applications of the results. Findings and experiences drawn from the literature review have been crucial to enrich the study in many dimensions in addressing the effects of Labour Market Information System on employment (Rowley & Slack, 2004).

Labour Demand

Labour demand refers to the total amount of labour required by employers during a reference period of time at a particular wage rate to facilitate production processes (Sapsford & Tzannatos, 1993). Labour demand entails the need for workforce by employers to fill existing job vacancies to perform the work (Sarycheva & Shvetsov, 2015). Labour demand depends on consumers' demand for a particular goods or services which can be sold in the competitive market; labour demand also derives the required skills and technology needed in production of the demanded commodities (Sloane et al., 2013). It has been reiterated by Sala (2011) that amount of labour entrants into labour market, level of investment required, level of wages, skills and change in technology in production of commodities and delivery of services depends on consumers' desire to a particular goods or services. It is therefore imperative for any economy to invest on human development given its important role on reduction of unemployment, increased income, reduction of poverty and enhancement of the people's welfare (Mangozho, 2003).

Labour demand is an important element in analysis of employment relationships from the perspectives of the employer; it is the role of employers to coordinate the size, quality and all attributes of factors of production including labour (Sloane et al., 2013). However, it is not readily

easy specifically in developing economies to obtain the required quality of labour from the labour market due to various causes including high level of skills mismatch between the demanded skills and the available skills, irrelevant curricula and inadequate information on job seekers in the market (Bassey & Atan, 2012). Skills mismatch in the labour market explains that skills or level of skills of job seekers available in the market are inadequate or irrelevant in production of a particular goods or service (Sala, 2011). The skills gap could be enhanced by enforcing LMIS functions to facilitate availability of one stop centre for dialog regarding employment aspects between employers, employees and training intuitions. Core tasks of LMIS includes coordination, information exchange, analysis of performance of the labour market, monitoring, evaluation; and reporting of performance of policies and programs related to employment (Sparreboom, 2001). A well-functioning LMIS could bring employers and job seekers in a common pool for negotiation and training institutions would identify the mostly demanded skills to design and project relevant and evidence-based curricula for their institutions.

The wider gap between demand for labour and the supply in many developing economies is due to information asymmetry of the labour market (Agarwal et al. 2017). Matching between skills demanded and supplied are becoming more complex and difficult to manage due to pace of technological advancement, industrialization, trade liberalisation and other factors which could have been coordinated and communicated well through effective LMIS for formulation of evidence-based labour market policies (Tavakoli et al., 2020). These changes are normally associated with the need for highly sophisticated LMIS to provide indications to job seekers, employers and the government in making optimal choices in the labour market and to invest more on human resource development to ensure they acquire the right skills and knowledge in production of goods and service (Cully, 2006). Inadequate labour market information such as

available jobs and the required skills, job location, wages and other related information contributes to the increase of unemployment rate and shortages of labour, increase poverty and lower quality of life. Therefore, effective LMIS could be a useful platform where key actors of the labour market specifically the job seekers, employers and training institutions meet to negotiate employment terms, training institutions identify the highly demanded skills to support designing training programs aligned with the existing demands and also provide information that helps job seekers in making correct decisions and choices on their carrier development.

It is also important to understand how exogenous factors out of demand and supply for labour circle affects unemployment levels (Hamermesh,1986). For instance, advancement in technology requires more complex skills than ordinary skills to operate machines, robots and the whole digital economy; a danger which can leave behind a lot of job seekers with ordinary skills (Adams, 2018). In addition, a study conducted by Olayiwola and Rutaihwa (2010) in Tanzania about Trade Liberalization and Employment Performance indicated that, intensity of exports and imports have huge impact on the labour demand. The study asserts that, when amount of goods imported exceeds what is exported, this results into a decline in aggregate demand for labour in the country. Another scenario which may cause fall in aggregate labour demand occurs when there are reforms towards more capital-intensive economies.

Quantitatively, labour demand can also be explained by assessing number of advertised job vacancies by employers or by assessing number of employees recruited during a reference period of time while on the qualitative perspective labour demand can be assessed using various variables such as type of occupation needed by employers, skills possessed by job seekers; job experience and wages (Zito, 2011). The dynamics of demand for labour can also be assessed based on horizon scanning and scenario development whereby labour experts conduct assessment of key changes of

employment and skills over time. Apart from large scale econometric forecasting models, a research study undertaken by Iredale et al. (2014) indicated, over time in the industrialised economies, labour demand among low and medium skills labour decreases, employment among skilled labour increases and there will be persistent shift to more service-oriented economies. Information about labour demand is critical in formulation of sound policies but yet its accessibility is inadequate in most of developing countries. A study conducted by Zito (2011) in Ivory Coast, Morocco and Peru about Labour Market Information Systems; only Ivory Coast had information about labour demand which were also not complete in terms of coverage and robustness. This phenomenon is common in many African countries including Tanzania whereby information about labour demand is inadequate and scattered across ministries, departments, agencies, private sector and other data producers.

Labour demand can also be examined by the Employment to Population Ratio indicator, which examines the capacity of an economy to employ labour. A person is regarded as employed if during a reference time of one week was engaged in paid employment (employees) or self-employment (employers, own - account workers, member of producers' cooperatives, contributing family workers) or was engaged in work that is not classifiable by status such as apprentices and interns. In Tanzania, results from the Integrated Labour Force Survey indicates that Employment to Population Ratio declined from about 77.4 percent in 2014 to about 75.4 percent in 2020 (ILFS, 2020). Decrease of Employment to population ratio explains that, there is slow pace of economic growth, which leads to creation of inadequate number of job opportunities to absorb new entrants in the labour market due to inadequate LMIS and other factors which can effectively connect job seekers and employers, provision of key labour market information for investor's in making evidence-based decisions about investment and expansion of their businesses which could have

positive impact on employment to population ratio. However, as the economy matures, long term planning and forecasting are extremely important. High fertility rates in Tanzania calls for proper planning in terms of expansion of educational facilities and human resource at all levels. According to Tanzania Population and Housing Census results, PHC (2022), Tanzania is characterised by young age population structure, whereby 42.8 percent of the country's population are under 15 years old. If proper measures are not taken to adjust population growth and create conducive environment for economic growth, employment to population ratio will continue to decrease. Effective Labour Market Information System will play a great role on provision of relevant information to all key actors of labour market to rectify the situation.

Labour demand dynamics have direct impacts on employment and unemployment levels. For instance, high unemployment results from the decrease in aggregate demand for labour. It indicates inability of the economy to provide employment for all those who want to work. According to ILFS, (2020) conducted in Tanzania, result indicated an increasing unemployment trend for youth (15-35 years) from 12.1 in 2014 to 12.6 percent which is directly related to the increased number of job seekers. There are several reforms which government can consider to take into consideration to control unemployment including enhancing employability skills to youth by providing both soft and hard skills needed in the labour market, ensure conducive macro-economic environment to attract investments to sectors with potential for employment creation such as agriculture, manufacturing, construction and services and; ensure a robust Labour Market Information System that adequately inform planning for social economic development. With regards to other parts of the world such as the Republic of Korea, Labour Market Information System has been used as policy tool in identification of labour shortages for making optimal

evidence-based decisions about vocational training, investment, foreign and domestic labour policies (Iredale et al.,2014).

Labour turnover which explains the rate which persons enter and leave the job is another important dimension of explaining labour demand. Increase in labour turnover indicates the increase in job creation and increase in aggregate labour demand but also, high rate of job quitting is implies rise in labour demand and involuntary unemployment because workers are confident in finding another work (Akinyomi, 2016). The study focused on demand and supply of labour in the labour market in relation to employment levels and assess the effects of Labour Market Information System on unemployment.

Labour Force Supply

Labour force supply refers to the total number of work force outflow into the labour market, it represents the work force, job seekers and the role training intuitions as the supplier of labour play on training the labourers (Danailova & Belser, 2006). Neoclassical model of labour-leisure choice is a typical framework for labour supply used by economists to analyse labour force supply in a real business cycle (King et al., 1988). The model explains factors that determine person's willingness to work, number of hours a person is willing to work and helps to determine the impact of economic dynamics and government policies on work incentives. It has been revealed that, labour supply comprises of persons in employment and those in unemployment, collectively termed as the labour force (ILF, 2020). Therefore, factors affecting labour supply at micro and macro levels are highly associated with the selection between working at a given wage rate and free time (Ahmet, 2018). It has been reiterated by the classical economists that, increase in real wage in the labour market leads to an increase in labour supply, therefore wages have huge impact on labour supply (Curtis et al.,1996). This explains that, labour elasticity provides the percentage

change in working hours results from the percentage change in wage rates, it reflects the change in participation rates in relation to change in wage rates in economy (Evers et al., 2008).

Furthermore, while Keynesian economists believe nominal wages are the key determinants of labour supply, Monetarists believe that labour supply are mostly affected by the expected wages (Ahmet, 2018). Other factors which influence labour supply include: - level of education, demographic characteristics, access to labour market information, working hours and expected level of income (Böheim & Taylor, 2003). However, according to Serena (2016) factors such as qualification, competence, experience and working capacity are the fundamental entities of the transaction and not the salary which is merely a mechanism to remunerate the work. In this context, determination of factors affecting labour supply such as wages, number of working hours, available jobs, demographic preferences and skills required and its accessibility could be a loadstar to unemployment challenges in many countries including Tanzania (Ahmet, 2018).

Furthermore, a study conducted using panel data from 1991-1997 in UK reveals that wages, marital status, gender and work experience are key determinants of labour supply in the economy (Bhattarai & Wisniewski, 2000). Other scholars have indicated technology transfer, foreign direct investment, Gross Domestic Product (GDP) and trade affect labour supply and employment (Bhaumik et al., 2007). Additionally, some schools of thought oppose the wage classical theory of labour supply but support the theory of efficient LMIS which facilitates easy access to labour related information and therefore automatically pave the way for full employment (Agarwal, et al., 2017). Decision about when to start working, type of occupation, number of working hours and wages are crucial in life. In addition, decision to start working could be whether to join the labour market soon after completing compulsory education or joining higher level studies to acquire more knowledge and qualifications before joining the labour market (Sloane et al., 2013). All these

decisions would be properly made if there are adequate data to support making evidence-based decisions. In most cases, in developing countries including Tanzania, labour market information is fragmented, not accessible, not complete and if available there is weak correlation between the qualification and skills required by employers and the existing labour qualities in the country's labour market. This is again a results of inadequate labour market information to inform training institutions to design and train courses that are demanded by employers in the labour market. Skills mismatch, education qualifications, gender and marital status have been mentioned as significant factors affecting labour supply in Tanzania (Msigwa & Kipsha, 2013). Therefore, there is a need to continue promoting formulation of policies and programmes that foster production and accessibility to labour market information which goes in parallel with the pace of change of technology. In this case, establishment of effective LMIS is the best fit in addressing the available problem in the country. It has been reiterated by Mutalemwa (2021) that, the country should consider investing more in formulating and enforcement of policies and programmes that support and promote employment prospects for graduates through effective Labour Market Information System.

Basing on the discussions above, it is imperative to have reliable labour market information from employers, employees and training institutions, packed using open format and easily accessible using Labour Market Information System to facilitate evidence-based decisions about labour participation in economic activities. It will enhance transparency, equal access to information, reduce corruption and maximize peace and trust on government machinery related to labour policies and programmes (Danailova & Belser, 2006). Transparency and availability of factors affecting labour supply over the business cycle such as fluctuations and wage rates, skills

demand and hours of work through effective functioning of Labour Market Information System functions have great influence on unemployment trend of any economy (Ham, 1986).

Furthermore, understanding dynamics and factors affecting labour supply have huge impact on understanding other economic factors which are related to employment including economic growth, inflation, environment, climate change and taxation. Performance of the economy have close correlation with the quality of labour supply, level of skills and the qualifications possessed by the labourers. High taxes and high rate of inflation increase cost of production, discourage investments and moral of working which affects labour supply in the economy (Rolph, 1980).

Theoretically, labour supply is analysed on the basis of Labour Force Participation Rates in terms, wage rates and other exogenous factors (Du & Koekemoer, 2003). The Labour Force Participation Rate is the measure of the proportion of working age population that participates in the labour market by engaging in economic activities and those available to work. It includes all employed persons or unemployed persons, who are unemployed but indicate availability for work regardless if they took some steps to look for work in past four weeks prior to a labour force survey. The Labour Force Participation Rate signals to the volume or size of the country's labour force that can potentially participate in production of commodities and delivery of services in relation to the country's working age population. (ILFS, 2014). It is therefore important to associate labour supply and unemployment which measure existing gaps in the labour market and unutilized labour in production. As an unemployment level increases, so the economic growth slows down due to the large number of unutilized labour in the production activities.

Results from Integrated Labour Force Survey, (2014) in Tanzania indicated that larger proportion of about 30 percent of unemployed persons relied on information from friends and

relatives on available jobs in the market. The proportion increased to 38.5 percent according to ILFS (2020). Only 0.5 percent of unemployed persons in 2014 and 1.3 percent in 2020 registered to unemployment agency to search for work which is also available in few parts of the country (ILFS, 2014; ILFS, 2020). This suggests the absence of a robust LMIS in Tanzania (Shamchiyeva & Kahyarara, 2014). This situation is highly attributed to the fragmented Labour related information and lack of effective LMIS which could pull key labour market information from employers, employees and training institutions in a common pool for proper training planning, career development choices and formulation of other labour related policies and programmes.

More efforts are needed in the country to tap opportunities of the rapid change in technology, use of science and innovations to develop applications which are easy and friendly to shared labour market information in short run at the same time putting more efforts in developing effective labour market information systems (Shamchiyeva & Kahyarara, 2014). In fixing the imperfections of labour market information system, information technology has the potential role to play in supporting the balance between labourers and employer skills needs (Sarma & Bonvillian, 2018). Labour Market Information System is a key policy agenda and is receiving special attention in Tanzania and in other developing countries. Lack of reliable systems makes it difficult for job seekers to access available jobs, make correct decisions about their education, access information about skills required in the labour market, and possibility of real-time mapping of job seekers and employers to fuel the social economic development. Therefore, the need for effective LMIS in the country cannot be ignored given its importance on reducing the existing high unemployment.

Labour Market

In connection to the previous discussion about labour demand and supply, labour market is similar to other types of markets and operates on the concept of demand and supply of the labour force. In the labour market, demand represents the need for employers to deploy available labour force in production activities and on the other hand, supply represents job seekers either unemployed persons or employed persons searching for better jobs (Sarycheva & Shvetsov, 2015). Similar definition has been provided other scholars including Woods and O'Leary (2006) that labour market is an institutional arrangement and processes that facilitates interaction of labour supply and labour demand in the economy.

According to Serena (2016) the main components of labour market are supply, demand and price whereby firms act as buyers and bidders and job seekers acts as sellers willing to render their knowledge and skills in production of commodities for the buyer at an agreed price. It has been echoed by Perț (1990, as cited in Steliana, 1990 & Nita, 1997) that labour market is an economic space whereby buyers and sellers from demand and supply side of the market meet and trade freely in which wages, free competition between operators and other specific factors of work adjusts the demand and supply for labour.

Labour market is also examined by assessing its complex functions it performs in the economy in different dimensions including economic, social, political and education. For instance, educational functions ensure availability of necessary information about the vocational training, retraining of the labour and work experiences to support making evidence-based decisions (Ghiță, 2005). It acts as a set of relationship between demand for labour and its supply which is essential in economic space of any country and is influenced by dynamics of economic development and changes of its structure (Sarycheva & Shvetsov, 2015). For instance, number of employed persons

on the aggregate demand side demonstrates the ability of the economy to absorb existing labour force in the economy, increase in capital investment and the ability of creating new jobs, while aggregate supply demonstrates the willingness of labours to sell their labour at a given wage rate (ILFS, 2020). In other perspectives, the segmented labour market theory considers variables such as gender, age groups, territorial, duration of contract and working schedule either full time or part time employment as important element which can influence demand and supply for labour (Leontaridi, 1998).

Other factors which can either promote or hinder the performance of labour market includes demographic changes such as change in youth cohort size, change in education programmes, level and quality of skills possessed or supplied, change in working environment and the legal frameworks (Gangl, 2002). The labour market as in other markets operates under a competitive condition whereby, worker compete against themselves to retain their positions or to secure better jobs and on the other hands employers struggle to attract and to retain competent workers within their organisations (Serena, 2016). Imbalance between demand and supply of labour affects performance of labour market and creates unemployment when there is excess labour supply than labour demand required in the economy (Wieling & Borghans, 2001). Malfunctioning of the labour market has been indicated as an important reason of poverty in developing countries (Okojie, n.d). Disguised unemployment, natural, cyclical, frictional and structural unemployment are considered as symptoms of inadequate performance of labour market including lack of coordination between supply and demand for labour and high rates of skills mismatch in developing countries (Berry & Sabot, 1978). It has been reiterated that, Labour market is an important institution to support functioning of an economy, yet, there are huge gaps between the labour demanded by employers and the available labour forces in terms of skills,

qualification, geographical and gender preferences and the related factors (Msigwa & Kipsha, 2013). Ineffective labour market would therefore compromise formulation of meaningful labour related policies and programmes (Heintz, 2008). There are several factors affecting performance of the labour market and are important attributes for considered in manpower planning for any country, these includes demographic changes, quality of labour supply compared to the qualifications required by employers, wages, working hours and geographical locations of working stations and other related factors (Wieling & Borghans, 2001).

Understanding nature and functioning of labour market has drawn special attention to economists to address several labour market paradoxes including its relation to labour standards, unemployment and the necessities of government intervention in addressing levels of unemployment (Figueroa, 1994). In order to provide solutions to malfunctioning of the labour market, review of legal frameworks and labour related policies and programmes are of paramount importance. These includes among others: - wage rate settings for public and private sectors, training programmes, employment protection legislations, collective bargaining frameworks and the effective Labour Market Information system (Gazier,2013).

Empirical investigations have indicated that, both employers and job seekers take time to find the suitable partner in the labour market, it is a costly exercise and is among the major determinant of poverty and unemployment (Andrews et al.,2003). Given the advancement in information technology, the best alternative to optimise the performance of labour market where job seekers and employers meet is through the LMIS. Effective LMIS acts as the common pool where labour market actors and labour market institutions such as the government, social partners, firms and workers meet for negotiations and planning for making evidence-based decisions (Gazier,2013). The System enable both actors to use short period of time to find the best match,

this approach is becoming more realistic and relevant and many countries are struggling to develop LMIS (Andrews et al., 2003).

According to McKenzie (2017) in a well-functioning labour market, employers and job seekers can find one another easily and the only unemployment available is low, frictional and temporary. In this scenario, government intervention is low or there is no need for government intervention to support job seekers to find a job or a firm to recruit a worker in the labour market. However, in practice, government interventions such as formulation of relevant labour policies, training programmes that address the skills mismatches, provision of wage subsidies, job search and matching assistance through operationalization of Labour Market Information System have demonstrated huge impact on the positive performance of labour market (Msigwa & Kipsha,

2013). Ineffective labour market makes difficult for training institutions to design training programmes that matches with the advancement of technology and the skills required in the labour market which results into unemployable graduates and high level of unemployment (Mason et al., 2009). Effective labour market is an indispensable in supporting government, firms, training institutions and job seekers in making scientific decisions about manpower planning and carrier development. Other scholars have indicated that, as in other markets, wages are the prices for labour in the labour market which are affected by the labour demand and supply. Keeping other factors constant, demand for labour grows when price falls, and unemployment increases with increase of prices (Abbott, 2013). However, in practice other key obstacles to facilitate entry into labour market such as lack or inadequate labour market information system contributes significantly to the imbalances between labour supply and demand (Wieling & Borghans, 2001).

The importance of enhancing labour market functions in developing economies to achieve full employment which facilitates a more equitable redistribution of national income and

satisfaction of basic needs for the most deprived population is indispensable (Celestin, 1983). Implementation of this theory has been facing several obstacles, one of them being inadequate performance of the labour market functions which could provide signals to policy makers and planners about the status of labour market actors for immediate interventions. This could be assessment of the mostly demanded skills to support planning of training courses which suite the needs; timely connection of job seekers with available vacancies or assurance of reliable data to support formulation of relevant manpower planning policies and programmes.

The performance of labour market in Tanzania is similar to those of other developing economies. According to Tanzania labour market risk report (2021), “Tanzania scored a moderate of 45.2 out of 100 for Labour Market Risk Index, ranking the country in fourth place out of 11 East African states and 125th out of 201 states globally” (p.4). Most graduates entering labour market in Tanzania are short of skills to perform productive activities in the economy. This limits their employability because training and skills imparted to them do not match with the required skills by employers (New job seekers short of skills, 2018, as cited in YouLead, 2018). The Report estimated that, between 800,000 and 1,000,000 new labour force enters the labour market in Tanzania of whom, a substantial proportion of them are not employable due to skills mismatch. Consequently, about 11.7 percent of youth are unemployed with 28.8 percent residing in Dar es Salaam, which is the most important economic city in Tanzania (Graduates’ labour market preps for increased employability, (2020); ILFS, 2014). It is imperative for training institutions as the key stakeholder of skills development to partner with employers including government and private sectors to design training programmes that meet employer’s needs. This will significantly reduce the skills mismatch which job seekers are experiencing and contribute to the economic growth, wealth and ultimately reduce the incidences of poverty.

Investment in skills development is an important agenda in Tanzania's policies and legal frameworks but still high unemployment remains a challenge because there is a weak linkage between labour market actors (Tanzania must change ways of empowering the youth, 2021). Ineffective labour market leads into high cost of on job training, and encourages importation of foreigners for firms looking for specialised labourers. Moreover, it discourages investment due to increased cost of production, which may further compound dearth of skills in the labour market (Tanzania labour market risk report, 2021). To address this situation there is a need of enhancing performance of labour market functions in the country to better inform the labour market actors in making correct decisions. Empirical study conducted by Nsabimana and Funjika (2019) demonstrated that, there are more farmers with mobile phones who shifts from agriculture to better paying non-farm sectors because they can access labour market information through their mobile phones. In addition, enhancement of mechanism for labour market sharing, proper linkages between training institutions and employers to ensure that students are taught basing on the demand of employers as opposed to supply-driven education is critical (Graduates' labour market preps for increased employability, 2020).

Labour Market Information

There are different but similar concepts of Labour Market Information (LMI) and its importance on formulation and monitoring of employment policies to support manpower planning, career development, economic growth, poverty reduction and its relationship to unemployment. According to Sparreboom (1999) LMI is any statistical or non-statistical information related to labour market including policies and regulations collected using accepted methodologies and practices. Labour Market Information focuses on the labour market trends including projections at regional and local levels, industry in terms of types of economic activities in the economy, types

of occupation, job openings, skills and other individual information of the workforce (Murray, 2010). The concept of Labour Market Information positions the world of work as the normal market place whereby transactions take place between employers as buyers of labour and job seeker or employees as the sellers of labour (Alexander et al., 2019). International Labour Organisation defines Labour Market Information as any information which relates to supply or demand for labour, its functions, challenges, available opportunities and employment related intensions of the labour market actors (Woods & O'Leary, 2006).

However, according to Alexander et al. (2019) labour market is fundamentally different from the normal markets of goods and services as explained by classical theories of equilibrium. In the labour market buyers and seller are not rational and it is a difficult act to balance labour demand and supply, and also buyers for labour do not own the labour as normal goods. It has been demonstrated in several theories including theory of segmentation which explains different markets which can operate in the world of work such as decent work and precarious work markets (Leontaridi, 1998). Labour Market Information can be segmented to serve difference users to address their specific needs but it needs strong partnership between labour market actors to ensure availability of adequate related labour market information to address the gap between labour demand and supply (Alexander et al., 2019). Training institutions for instance could be more interested with the skills related information to support designing training programmes for their students which meet the needs of the employers; policy makers would like to have information about the labour market dynamics to support designing of effective labour related policy interventions and individuals would focus on information related to career development and in making employment decisions (Drummond & Halliwell, 2016).

According to Serena (2017) Labour Market differ from the normal market for goods in several ways, it is a world of work where supply and demand for labour meet to determine what they have, what they can offer and the price or remuneration for the agreed job descriptions. It has been emphasised that Labour Market Information is detached from normal market through several features including segmentation of the market, rigidity specifically when there is high unemployment and inflation rates, existence of minimum wages which do not permit quick adjustments to dynamics of the economy and it is imperfect market (Serena, 2016). Other theory includes those related to social capital which have empirically proved to have huge economic contribution in the labour market (Knight & Yueh, 2008).

Labour Market Information provides clear guidance to the key actors' such as government, business operators, workers, training institutions, students, job seekers and immigrants on formulation of policies related to manpower planning, career development and training programs (Drummond & Halliwell, 2016). According to Murray (2010) Labour Market Information are important tool that support individuals, policy makers and businesses to make evidence-based decisions including projections for the future labour market, skills development and existing gaps in the labour market for relevant and timely interventions. According to Geo-JaJa (1989) youth make unrealistic choices about training and occupations due to lack of timely and reliable Information pertaining to the labour market. LMI is therefore critical to support development of effective policies and programmes which focusses on better career development and vocational training guidance in training institutions.

It has been reiterated that Labour Market Information is among important tools that are used by the Government and other stakeholders to better coordinate labour market adjustments (Sharpe & Qiao, 2006). The importance of LMI has been emphasised by Woods and O'Leary

(2006) as the fuel to drive effective performance of products and input markets given the globalisation of economy. Effective Labour Market Information has the key role to play to ensure training institutions and individuals plans for skills development that are in line with the dynamic markets and globalization. This is crucial because Labour Market Information has impact on employability of graduates or job seekers and the overall magnitude of unemployment (Milot-Lapointe et al., 2018).

Despite the importance role that Labour Market Information contribute on development processes, Labour Market Information in many countries and specifically in developing countries such as Tanzania are fragmented, uncoordinated, incomplete, not harmonised and are of low quality to support one stop information access for employers, employees, training institutions and job seekers interactions (Sarma & Bonvillian, 2018). Demand for Labour Market Information to support real time decision making about career development, skills requirements and training programs remains a challenge in both developed and less developed countries (Sarma & Bonvillian, 2018). The universal challenge emanates from increased demand for real time labour market information specifically in job matching and the rapid change in technology and; use in differing education and employment settings (Attwell & Hughes, 2019). This situation reflects the urgent need to develop innovative solutions which can enhance performance of the Labour Market Information in various dimensions including production, sharing, dissemination and use in making right decisions. It has been reiterated by Park et al. (2014) that apart from the conventional factors such as wages, hours of work, and fringe benefits that explain market bias, imperfect Labour Market Information is also positively related to the market bias. For instance, inability of firms to identify available skills in the labour market and the inadequate mechanism to inform job seekers about job openings and lack of information to trainings institutions about the demands from

employers weaken the labour market. “Effective careers advice is impossible without good quality labour market information” (Alexander et al., 2019, p. 9).

Similar situation has been explained by Sparreboom (1999) in South Africa that labour market information has series of deficiencies from production, accessibility and use to facilitate formulation of policies which can address the dramatic economic, social and political changes. Advancement in information technologies in economic production and the application of internet have changed tremendously the labour market information settings. These includes greater number of working hours, increased income, increasing number of information technology occupations, online job search and recruitment are rapidly moving on the web and also made possible job matching between employers and employees (Freeman, 2002). Government and other actors of the labour market recognise importance of Labour Market Information in career guidance underpinned by time and relevant Labour Market Information which can inform right decisions about future studies that matches with their interest and interest of the employers (Hofer et al., 2020). Availability and accessibility of relevant labour market information helps industry to find labours that matches with the company needs on a real time manner, and helps training institutions prepare their students to cope with the skills demanded by companies (Parinsi et al., 2018).

Labour Market Information facilitates institutional arrangements to support translation of labour market information into policy actions. These include among others, job projections, understanding the future skills needs, stock and quality of available labour force, job openings, wages and other related information (Sparreboom & Powell, 2009). In addition, strong collaboration between labour market actors including the Government, private sector and intermediaries is needed to ensure optimal functioning of the labour market (Woods & O'Leary (2006). The main functions performed by the Labour Market Information includes employment

distribution function, revenue sharing of economic operators through remuneration, social function such as social protection of workers, education and training functions and political function to ensure labour related aspects are on board under the political arena for sustainable development (Serena, 2017).

Establishment of network of LMI actors in the country is crucial, the network should consider key government departments, private sectors and the National Statistics Offices (Sparreboom, 1999). National Statistics Offices are the custodian agency for all statistical information in countries, they are mandated to coordinate production and use of all statistical information including Labour Market Information. For instance, the National Bureau of Statistics in Tanzania conducts labour force surveys after every five years to update key labour market indicators in the country. As in other developing countries, labour market information from labour force surveys is national representative leaving a large portion of labour at local levels unrepresented (ILFS, 2020). Other sources of Labour Market Information in Tanzania are Employment and Earnings Survey conducted in formal sector of employment on annual bases and administrative sources from public and private sector.

However, Labour Market Information in Tanzania is inadequate and makes it difficult for users to make right decisions on education, jobs and career development. It has been explained by Kessy (2020) that expansion of higher learning institutions in Tanzania is increasing tremendously but graduates face substantial difficulties in the job search due to inaccessibility of labour market information; graduates are not employable due to high skills mismatch and leads to some of them to opt for insecure and low paying jobs. Lack of effective Labour Market Information in Tanzania has exacerbated low pace reduction of unemployment, poverty, per capital income and living conditions (Green et al., n.d). Tanzania has tried several times to strengthen the functioning of the

Labour Market without much success as a result of many factors including absence of effective institutional framework for Labour Market Information, inadequate resources and unharmonized legal frameworks. Unemployment in Tanzania and other Sub-Saharan countries remains a challenge due to many barriers for graduates wants to enter into the Labour Market. These include irrelevant decisions they make about field of study, job skills mismatch, poor career guidance, communication and inadequate Labour Market Information System (Amani, 2017). It is therefore imperative for the country to deliberately strengthen collaboration between employers, job seekers and training institutions for big results related to balancing between demand and supply of the labour. Persistence increases of unemployment results into serious negative impacts on social economic development of the economy. This situation requires concatenated efforts to strengthen Labour Market Information functions to effectively harness the opportunities available for graduates for sustainable social economic development (Bassey & Atan, 2012). The current initiatives in the country to address unemployment and man power planning are fragmented and uncoordinated (Green et al., n.d). Training institutions should also consider including generic skills such as entrepreneurship to steer graduates towards self-employment as their transition phase while waiting for formal labour employment (Amani, 2017).

Labour Market Information is the foundation and linchpin of human resource development, labour market analysis, man power planning and impacts on unemployment in the economy (Green et al., n.d). It facilitates analysis of the current labour force, mapping of the existing labour related policies and determination of the information gaps to address policy issues. Relevant and timely decisions about carrier development, employment and education are supported to a greater extent with the existence of easily accessible, complete and updated Labour Market Information.

Effective Labour Market Information depends on many factors including a well-coordinated institutional framework and responsibilities which spans from data collection, processing, analysis, archiving, dissemination and communication to relevant users using a user friend interface. It has been emphasised by Alexander et al. (2019) that the necessity for a thorough approach towards Labour Market Information from National to local levels to facilitate decisions making of the sector is an important agenda of many economies, specifically the developing economies. This can be achieved by developing an effective LMIS which will act as a one stop centre in the world of work where employers, job seekers, employees and training institutions interaction and making evidence-based decisions about what they need, what they have, wages, labour related social aspects and career guidance of the individuals (Murray, 2010). “Information about the labour market that is collected, processed and disseminated through the LMIS are key dimension of economic reality as most people spend their lives on the labour market” (Martín, 2011, p. 17).

This study uses the definition of Labour Market Information provided by ILO as stated by Woods and O'Leary (2006) because is much broader in capturing all concepts of the complex Labour Market Information from both labour demand and supply sides, which is also similar to definitions provided by all other scholars.

Labour Market Information System

There are various views about the concept of Labour Market Information System, all of them strive to support formulation of policies and programs focusing on enhancing accessibility and use of LMI in making evidence-based decisions, reduce the skills-job gap, support training institutions to plan and teach courses that are demanded in the labour market, job creation, enhance productivity, poverty reduction, support labour market forecasts and the other related economic

variables. According to Martín (2011), LMIS is a platform with a clear institutional arrangements, procedures and mechanisms to support production, storage and sharing of all relevant Labour Market Information. It supports data collection, processing and dissemination of labour market information; the system should be interoperable to facilitate communication with other systems in the economy (Barnes & Bimrose, n.d.). However, Woods and O'Leary (2006) indicated that, the global economy is complex coupled with continued state of flux and there is no truly ideal Labour Market Information System.

The main data sources for Labour Market Information are censuses, surveys and administrative records. However, administrative records are of low quality, incomplete, incomparable and therefore require extra work to improve the quality to facilitate development of statistical databases which can inform Labour Market Information Systems (Benchimol et al., 2011). Labour force surveys and employment and earning surveys are the main sources of labour market information conducted on regular basis in many countries including Tanzania, while a module of questions for the key labour market indicators are normally piggybacked to the household or establishment - based census questionnaire after every five years for surveys and ten years for censuses (Tanzania ILFS, 2020). The main objective of labour force surveys is to collect comprehensive information on the state of the labour market in the country such as persons in employment or unemployment, persons who are economically inactivate, those in the working age, potential labour force, and other relevant characteristics to support analysis and making rational decisions.

Advancement of information technology has changed the way world economy operates from planning stage, production to marketing. Digital economy is the preeminent driver of social economic development in both developed and developing economies which support making wiser

decisions regarding production of goods and services, employment, unemployment and other economic variables which reflects the realities of a new age (Brynjolfsson & Kahin, 2002). According to Goos (2018) the effect of technological advancement in economics of the labour markets is multifaceted including the nature of interactions between job seekers and employers, job mobility for workers, production processes which also affects labour demands and the skills required. Economic sectors require timely, accurate, complete and precise information to support real time decision making. Information technology plays great role in all fields including labour markets. According to Parinsi et al. (2020) availability of labour market information systems facilitates a transparency in recruitment processes, increase accessibility of available job vacancies, skills possessed by job seekers and also increase the interest of prospective workers because of the easy of accessing relevant information for their career development decisions.

Recognition of value of LMIS has recently grown to unprecedented levels as economies become more complex due to economic reforms which require complex and dynamic labourers (Woods & O'Leary, 2006). Labour Market Information System is a comprehensive policy guidance tool in manpower planning, investments and in making employment decisions and vocational guidance decisions (Green et al., 1995). It has been emphasised by Cörvers (2003) that effective Labour Market Information System guides vocational and education planning, provides detailed information to support labour market forecasts which is an important element in job creation and reduction of unemployment. The key components of Labour Market Information System include: - data, analytic tools, information sharing and dissemination components; intermediaries and institutional arrangements (Woods & O'Leary, 2006). Similar explanations have been provided by Martín (2011) that the common components of Labour Market Information System include labour statistics to facilitate availability of data for all key labour market indicators,

labour market analytics component, labour market observatories and registration components where job seekers can register their qualification and their experience of work and vacancies registration by employers.

According to Barnes and Bimrose (n.d.) Labour Market Information System functions can be grouped into three main categories namely: - facilitation of labour market analysis function; provision of information to support monitoring and reporting of labour related policies; and coordination of labour market actors in production and use of labour market information for decisions making. Furthermore, according to Sorensen and Mas (2015), effective Labour Market Information System should perform the two main functions of providing descriptive data to the labour market; and provision of labour market services. The data driven Labour Market Information System is mainly for policy makers, it provides data for key labour related indicators including employment, unemployment, labour force, wages and available vacancies to explain the situations prevailing in the labour market and to support policy makers to plan proper interventions to enhance functions of the labour market (Parinsi et al., 2018). In addition, service-oriented Labour Market Information System serves as important interface between supply and demand for labour. It provides access to job-market databases which facilitate possible matches between job seekers and potential employers; provides information about available vacancies; demanded skills for each vacancy, wages, work stations and all attributes attached to vacancies and profiles and qualities of job seekers (Mangozho, 2003). The rationale underpinning this function is the existence of wide gap between demand and supply for labour caused by imperfect labour market information (Sorensen & Mas, 2015).

Inadequate information about key labour market indicators such as skills demanded and type skills taught in higher education institutions in Nigeria was mentioned to be bottleneck for

graduates to get employment due to high level of skills mismatch (Bassey & Atan, 2012). This results into high unemployment for graduates, worsen the well-being and increases poverty rates. According to Goher et al. (2021) similar situation is prevailing in the United Arab Emirates whereby an Information System for the Labour Market is highly acclaimed to facilitate better management of the labour market. These include providing relevant labour market information, bringing labour market actors into a common pool to enable identification of actions related to reduction of high skills mismatch, unemployment, and dialogue on vacancies and other aspects related to career development (Goher et al., 2021). Labour Market Information System aims to optimise supply of labour and the corresponding labour demand in the labour market in the sense that it enhances skills- jobs matching, optimise resources by increasing employment and reduction of both frictional and structural unemployment (Tavakoli and & Kismihók, 2020).

Labour Market Information System supports flow of labour market information and it acts as lubricant of inter institutional policy making for training institutions, employers and job seekers. It also helps to forecast labour supply and labour demand, skills needed and skills possessed by job seekers to enhance manpower planning and minimise the skills mismatch which will ultimately create more jobs and reduce levels of unemployment (Martín, 2011). Labour Market Information System makes it easy for graduates to find jobs that match with their skills, employers to find relevant skills in the labour market and training institutions to prepare and teach their students courses that will make them more employable (Parinsi et al., 2018). Labour Market Information Systems have a great role to ensure the benefits of digital revolution in the labour sector are broadly shared (Goos, 2018). Information from LMIS supports in making rational decisions in addressing both external shocks and structural adjustments such as wages distribution, retrenchment and the

ability of labour market functions to balance labour supply and demand in the economy (Goldfarb & Adams, 1993).

A study conducted in Kosovo in 2021 revealed that existing high unemployment for youth aged 18 to 24 years results from among others lack of integrated Labour Market Information System to guide them and employers in making appropriate decisions and plans (Bellaqa, 2021). Lack of connection between job seekers, employers and training institutions have been mentioned several times in the literature as an obstacle to employment which results into more poor and unhappy societies, specifically in developing countries.

Establishment of effective Labour Market Information Systems in developing economies is crucial for workers and investors in making decisions about the optimal use of labour in production processes, improving efficiency of Labour Market functions, promoting production and reducing the incidences of poverty (Goldfarb & Adams, 1993). Labour Market Information such as information on the state of employment is a key determinant of poverty specifically in developing countries and therefore policy makers need timely labour force data to facilitate formulation of policies and programmes that can address the complex relationship between labour markets and development (Cazes & Verick, 2013). According to Martín (2011) Labour Market Information System is a vital policy tool to guide formulation and monitoring of effective labour market programmes and policies. However, Labour Market Information System can only succeed in supporting functions of the labour market if it integrates the components of data-oriented components and service- oriented components (Sorensen & Mas, 2015). In addition, harmonisation of standards for production, storage, dissemination and communication of LMI has an important role to play on labour market information system integration processes to facilitate

availability of timely and relevant information for informed decisions (Costescu & Costescu, 2013).

Despite the important roles that Labour Market Information Systems play on enhancing the performance of the labour market functions as explained in previous paragraphs, most of them are fragmented and inadequate in terms of interoperability, completeness, timeliness, relevance and in many countries including Tanzania, are non-existent or un-operational (Sorensen & Mas, 2015). For instance, it is explained by Sarma and Bonvillian (2018) that among the developed countries, labour market information management in US is highly decentralised, localised, fragmented and uncoordinated for making informed decisions. This calls for strategic plan to design and implement effective labour market information system to support training institutions, employers and job seekers in making relevant decisions for their routine labour market aspects.

This situation is common and worse in most of developing countries including Tanzania. High levels of unemployment in developing countries are exacerbated by the imperfect functions of the labour market and Labour Market Information Systems (Cazes & Verick, 2013). Inadequate information system to disseminate labour market information in the country has been cited to contribute to high levels of unemployment, low productivity and poverty (Ismail, 2020). Furthermore, skills that are incongruous with the demanded skills in the labour market are common in Tanzania. This situation results into unemployable graduates, inadequate partnerships amongst training institutions and employers and high level of unemployment (Manyaga & Athumani, 2010, as cited in Renold, 2020).

In order to enhance functions of the labour market in the country, several initiatives are required to develop effective Labour Market Information System. This includes strengthening collaboration between data producers and users in the country to improve data availability,

designing harmonised data collection and disseminations systems, assessment of the existing job seeking and vacancy advertisement approaches and strengthening the relationship between training institutions, employers and job seekers (Yavitz, 1973). It has been reiterated by Ismail (2020) that the government requires sustainable means to improve LMIS to support functions of the labour market which will have huge contribution in job creation and ultimately reduction of unemployment. Labour markets in developing countries fails to generate jobs to help individuals in making choices for their career development and also are inadequate in supporting policy makers and training institution in planning processes (Cazes & Verick, 2013). It is therefore critical time to conduct more research in the area of labour market to support establishment of effective Labour Market Information System which can better inform employment related policies and programs (Ismail, 2020). Among of the key issues to consider as explained by Adams et al. (1992) includes labour planners to provide relevant information to support training decisions taking into consideration the complex and dynamic nature of the labour market.

Employment and Unemployment

Understanding size and composition of working age population and labour force of any economy has significant contribution to the policies related to economic growth, employment, unemployment, poverty reduction and formulation of labour related policies and programmes (Suwal & Dahal, 2014). Macroeconomic indicators such as employment and unemployment if are properly managed provides vital information to support formulation of policies focusing on fundamental pillars of fighting against poverty and social exclusion such as equity, employment security and human dignity (Body, n.d.). Many countries in developing and developed economies have high labour market insecurity with regards to unemployment and insecure jobs that affects negatively their wellbeing across different welfare states (Voßemer et al., 2018). According to

Baah-Boateng (2015, as cited in AfDB et al. 2012) formulation of effective labour related policies and programmes requires a clear and well-coordinated Labour Market Information Systems to inform each other instead of relying on one indicator such as unemployment rate. Low quality employment is a broad and multidimensional concept and is mostly related to unskilled people, less educated people, low wages, lack of basic social protections and in mostly marginalised groups such as women, youth and older people perpetuate those disadvantages (Johri, 2005). On the other hand, high quality jobs or decent employment are characterised by equality and job satisfaction with regards to social protection, workers' rights and social dialogue (Ghai, 2003). Labour force statistics support monitoring of macro-economic policies including job crisis which is an important agenda item in developing countries, it also supports formulation and implementation of policies related to job creation, human resource development, poverty reduction and income generation (Castillo et al., 2011). According to Brandolini et al. (2006) working age population comprises of persons of specific age who are economically active and those who are economically inactive.

The economically active population comprises persons of a specified age threshold who did some economic activity for one hour or more during a period under consideration and those who were without a work, available for work and took some initiatives to look for work during the period under consideration (Shrestha, 2003). On the other hand, a population is considered economically inactive if during a reference period of time were not working and were not available for works and they did not take any step looking for work (ILFS, 2020). This category may include children, full time students, very sick persons, very old persons and persons with severe disability to engage in economic activities. It also comprises discouraged workers who do not believe that

they may get employment due to several factors including their low levels of education and the high competence existing in the labour market (Blundell et al., 1998).

Furthermore, in economic perspectives, the ratio of employment to population is used to measure the proportion of the working age population out of the total population that is in production processes. Higher values for employment to population ratio shows that a larger proportion of working age population is in employment and a low ratio shows a large proportion of population is not in employment or it is economically inactive (ILO, 2014). Employment to Population Ratio in Tanzania Mainland was 61.3 percent in 2020 indicating that about 40 percent of the working age population are either not in employment or are out of labour force. This group could have significant contribution to economic growth, poverty reduction and well fare of the society if were channelled in productive activities. (ILFS, 2020). According to International Labour Organisation (ILO, 1982) and the System of National Accounts (SNA, 2008) the term employment refers to the working age population that engaged in some economic activities for one hour or more during a certain reference of time, normally a week or seven days. Economic activity includes any activity that contributes in production of goods or services that add value to the Gross Domestic Product (Sundaram, 2009). Many countries domesticate international definition of unemployment to ensure peculiar issues in their national labour market contexts are well captured while maintaining the international concepts for international comparison (Niemic et al., 2009). For instance, the national definition of employment in Tanzania does not include persons who were marginally attached to their employment with regards to self-employment in agriculture, those who were temporarily absent from their work due to economic reasons and low security of their work (ILFS, 2020).

Moreover, labour market categorizes employed persons by their employment status. The dominant categories for the status in employment for both formal and informal sectors are:- those persons working for payment (paid employees), working in their own business or farm, helping their families without payment (unpaid family helpers), workers categorised as apprentice or intern and cooperative workers (Hoffmann, 2003; Elias, 2000). It has been reiterated by Günther and Launov (2012) that employment status applies for both formal and informal sectors and regardless of whether the activity performed was main or secondary activity. According to Fox and Gandhi (2021) at international level, persons in employment include all persons who in the previous seven days or last week prior to a labour force survey were involved in some productive activities for one hour or more either for pay, or in unpaid or self-employment for profit including those who were momentarily absent from their work. Persons in self-employment include those working on their own farms or other productive activities and have not hired any employees to work for them. Persons in employment also include unpaid family workers in family income-generating activities. Similar conceptualisation of employment has been reiterated by Brandolini (2018), these includes one-hour criteria, reference period of seven days or one week for current employment in any of the productive activities within the scope of System of National Accounts, 2008.

According to Piana (2003), employment is a key macroeconomic component and can be expressed as number of all persons engaged in production of goods and delivery services, working hours which are used to estimate level of time related under employment, level of education, skill levels, kind of legal contract, type of economic activities, occupations, wages, status of employment and other related employment variables. Levels of employment have direct relationship to the levels of economic activities measured by the economic growth and also the labour productivity (Akkemik, 2007). In addition, skill levels required in various productive

activities in different economic industries differ which may affect employability of job seekers. It is critically important that employment related policies and programmes of any country focus on imparting the right skills, knowledge and technology to ensure their workforce are employable over a long time period depending on the economic and technology advancements (McQuaid & Lindsay, 2005). Furthermore, establishment of effective labour market information systems which can bring together trainings institutions, employees, employers and job seekers to facilitate dialogue focusing on creation of more decent jobs should not be overlooked (Piana, 2003). However, other factors which affect level of employment such as wages whereby higher level of wages discourages employers to higher many employees and low which attracts more employment and gives more powers to employees to negotiate about wage increases is critical in the planning processes (Dickens et al., 1999).

Despite the importance of employment in economic and social development, informal employment dominates specifically in developing economies (Body, n.d). As in other developing economies, informal sector employment in Tanzania stands at 28.7 percent is dominant in urban areas compared to rural areas (ILFS, 2020). Informal employment includes all jobs in the informal sector and employment in the formal sector which does not cover basic social protections (Kucera & Roncolato, 2008).

Similar explanations are provided by Jackson (2019) that informal employment is synonymous with underground and informal economy which comprises all persons employed in at least one informal sector during a reference period. Williams and Lansky (2013) defined informal employment as all jobs conducted within the boundary of the informal sector and employment in the formal sector which lack basic social and legal employment benefits.

Apart from informal employment, unemployment has been increasing and is among the top priority development agenda in most of developing economies. Unemployment is among of the key macro-economic indicator which is used to assess the ability of the economy to use the existing labour force in production of goods and services (Levine, 2012). Unemployment reflects a huge underutilisation of the labour force in production of goods and services which has huge impact on income generation, poverty reduction and wellbeing of the society (Yelwa et al., 2015). According to Brandolini et al. (2006) unemployment comprises all persons who were without work, indicated availability for work and took some actions to seek work during a reference time. According to ILFS (2020) unemployment as defined at international level, covers all persons who were without work, indicated availability for work, and took some efforts to look for work during a specified time, normally previous one week or seven days prior to a labour force survey. Unemployment which comprises three conditions of persons without work and were available for work and were searching for work is termed as the Strict International Definition of Unemployment (Guataqui & Taborda, 2006). However, there is flexibility for countries to relax the looking for work criteria specifically for developing economies where agriculture and informal sectors have the larger shares and have inadequate information of the labour market for the rest sectors (Kolev & Saget, 2005). Tanzania is essentially faced by such conditions and the Relaxed International Definition of Unemployment is mostly used for internal policies (Byrne & Strobl, 2004; Brandolini et al., 2006). The international concept of unemployment is limited in relation to the contexts of many developing countries, especially the African countries. For instance, adults who are not seeking work, they just do not want to work are categorised under the discouraged workers which portrays a bad picture of the labour market in developing economies (Baah-Boateng, 2015). Basing on the explanations of international concepts of unemployment above,

unemployment in Tanzania include all persons who did not engage in any economic activity in the last week and indicated availability for work even if they did not take any step to look for work in the last four week including those who were extreme marginal attachment to employment (ILFS, 2020)

There are several determinants of unemployment depending on the stage of development of an economy, although some of them are common to both developed and developing countries (Folawewo & Adeboje, 2017). Most of the advanced economies such as Australia have been able to maintain low level of unemployment rate of under 5 percent due to the existence of effective Labour Market Information Systems which provides signals to labour market actors about skills supply and demand, job opportunities, wages, job locations, basic social protections and also support government in making right decisions on policies and programmes related to labour market (Cully, 2006). However, according to Kinsey (2004) Labour Market Information Systems have substantial contribution on reducing unemployment and; in order to have sustainable LMIS functions; other factors such as political stability, unanticipated economic trends, underinvestment and other social and economic factors have to be addressed to support labour market actors on making optimal decisions about their firms and skills development. In addition, effective Labour Market Information Systems requires a National Data Quality Assurance Framework (NDQAF) which stipulates quality criteria at different levels of Labour Market Information Systems from the planning, processes and dissemination of the information (Iredale et al., 2014). Absence of NDQAF for Labour Market Information Systems results into inadequate information about the skills required to perform available jobs in the market and is has been mentioned as a significant obstacle to address unemployment levels (Handel, 2003). In order to address this challenge, it is advised countries to consider establishing NDQAF to ensure implementation of effective LMIS to

support labour market actors in making correct decisions about optimal labour supply and demand of their economies (Woods & O'Leary, 2006). Labour Market Information Systems brings together firms, training institutions and job seeker in a common interface to facilitate dialogues about manpower planning (Cully, 2006).

Challenges of high skills mismatch and inadequate Labour Market Information are common in developing economies such as Tanzania. Ineffective Labour Market Information Systems in the country has resulted into high skills mismatch, unemployment and ineffective career guidance (Amani, 2017). Tanzania and other developing economies should therefore consider investing on development and maintaining effective LMIS to support policy makers and labour market actors on making optimal decisions about the labour market (Msigwa & Kipesha,

2013; Khumalo & Eita, 2015). These includes policy reforms focusing on conducive environment for investment to create more jobs which will definitively boost economic growth, reduce poverty and promote the decent work agenda. It is of paramount importance for any economy to control levels of unemployment, optimise labour market functions to water down the impacts of unemployment to the economy. It has been proved that, unemployment has high correlation to the economic turndown due to its multiplier effects to other macroeconomic variable such as higher rates of inflation, increased incidences of poverty and well-being of the people (Yelwa et al., 2015).

Importance of Ethics in Conducting Research

Research ethics are set of principles which are used to guide researchers to ensure good conduct of research (Guthrie, 2010). According to Aksoy and Tenik (2002), beneficence, non-maleficence, respect for persons and justice are the four main universal principles of ethics which are applicable to any culture and society. Beneficence focuses on the responsibility of researchers

to optimise the benefits of participants, non maleficence require researchers to protect participants, to ensure no harm to them, respect for participants requires every participant to have right for dignity and be respected and justice strictly focuses on fairness (Lecture Notes). The ethical principles play fundamental role in research process. The principles guide the researchers to resolve conflicts between requirements and objectives of the research study on one side and the rights of persons participating in the study (Orb et al., 2001).

Furthermore, according to Benatar (2002), debate about conducting ethical researches in developed and developing countries is increasing although their implementations differ depending on the nature of the research. It is of considerable importance for implementers of research to observe ethics in conducting researches to avoid bias and activities that are out of scope of professional conduct of researches (Bhattacharjee, 2012). However, there are ethical dilemma which indicates a clash between right and right, a tension which occurs when two ethical principles conflict and it is truly that there is no clear guidance on what ought to be done (Evans & Thompson, 2016). Ethics in conducting research are becoming indispensable mechanisms for any kind of research. Research ethics are important aspects of research governance processes from collection of data, analysis and dissemination of the results (De Wet, 2010). According to Shamoo and Resnik (2009), conducting ethical research have several advantages including: - promotion of collaboration and cooperation, foster research objectives and build of trust between researchers, participants and the community. Recently, consciousness on the importance of research ethics has increased to a considerable scale. For instance, experimental studies undertaken by the US social psychologist researcher, Stanley Milgram in 1960s, in which participants were deceived into trusting that they were giving others potentially lethal electric shocks would never be authorised (Ruxton & Mulder, 2019). Furthermore, all variations on misconduct varying from intentional to

unintentional are against research ethical conducts and responsible implementation of research. Such variations in the conduct of the research impair the integrity of research (Hyytinen & Löfström, 2017).

According to Bhattacharjee (2012), research ethics are general principles upheld by the researchers' community regarding the acceptable and non-acceptable conducts of a professional research. Ethical conducts play an important role in the research process. They enhance collaboration, cooperation and trust among scientists, but also eliminate damaging disgraces emanating from adoption of unethical or illegal conducts (Shamoo & Resnik, 2009). Due to the importance of ethical considerations in research process, various codes, rules, and policies regarding research ethics have been adopted by various professional affiliations, government entities and research and high learning institutions (Resnik, 2015). However, research involving human specimen embodies the long-standing contradictions between what is advantageous to the individual research and what is advantageous to the society as a whole. Measures and practices that uphold rights and welfare of human specimen may be equally hampering scientific research that may be of advantage to the society as a whole (Resnik, 2018). There are five main research ethic principles which researchers are required to consider in conducting any type of research. These include: - informed consent, debriefing, avoiding deception, protection of participants and confidentiality (Lecture Notes). Similar arguments have been mentioned by other scholars. Behi and Nolan (1995) asserted that, ethical considerations in research have impacts and relation to many elements of the research process and also assist in deciding if research is ethically adequate. Ethical issues could be in the context of using human subjects or those related to non-human subjects. According to Fouka and Mantzourou (2011), the different aspects and elements that researchers are required to consider when conducting their researches are directly related to the

key research ethic principles of obtaining informed consent, protection of participants, confidentiality, avoiding deception and debriefing. Similar arguments have been provided by Guthrie (2010) that, researchers are required to associate the ethical principles with the five main professional standards which are informed consent, protection of participants, privacy and confidentiality, withdrawal from an investigation and debriefing to ensure good conduct of research.

Informed Consent

According to Nijhawan et al. (2013), informed consent an important ethical consideration in conducting any research, it is a legal binding aspect of the research which uses human as sampled units in the study. Researchers are obliged to provide all key information about the study including the objectives, methods for data collection, associated risks which may occur during the course of the research and liberty to withdraw participation from the research at any moment without any difficulty (Plankey-videla, 2012). Informed consent is similar to mutual agreement between researchers and participants which includes all important information to protect participants from any harm at all phases of the research circle, from collection of data in the field to dissemination and communication of the results (Lecture Notes). Informed consent is an important tool to which are used to protect rights of participants and should be obtained before starting any training of participants and data collection (Hardicre, 2014). Informed consent is a procedure by which participants decide willingly to take part in the research after been given all information about the study such as the objectives of the study, risks associated with his/her participation, any kind associated incentive and the provisions for them to withdrawal from the study without any negative consequences (Yip et al., 2016). Any conduct against the informed consent is considered as research misconduct and has impacts on the research honesty. Several

conceptualisations about informed consent focus on the rights of persons involved in research to be given key information about the research process to allow them make informed decisions on their participation in the research (Haggerty, 2004). It has been reiterated by Regmi et al. (2017) that, research participants are required to be informed genuinely about the 3Rs; the roles, risk and rights before they make decisions to participate in the research. Some of the most important pieces of information needed by persons involved in research to clearly understand before making decisions about their participation in the research process include: - objectives of the planned study, procedures and methods planned for data collection and analysis and dissemination of the findings, and freedom to end participation in the study at any moment without any consequences (Corrigan, 2003). However, according to Mamotte and Wassenaar (2009), most of the participants have limited knowledge regarding the validity of informed consent, understanding the basic elements of informed consent, determination of associated risks and benefits for their participation and other related issues.

Obtaining informed consent is the corner stone approach to conducting ethical researches and can be in written or in any other format. However, obtaining informed consent in a cross-cultural setting poses a challenge; it is therefore important to distinguish between informed consent for participation in research and that of other realms such as obtaining informed consent of patient care (Benatar, 2002). Another challenge of obtaining informed consent as explained by Haggerty (2004), is related to researches that employ deception whereby researchers deliberately hold some of the key information about the study for the betterment of participants or the communities at large. For instance, it is difficult to obtain informed consent from patients prior to medical intervention for treatment (Corrigan, 2003). It is recommended that, deception can only be used in research if approach is required to obtain the key variables of the research and avoiding using

deception may distort the research findings (Orb et al., 2001). Furthermore, informed consent may also be unrealistic due to more bureaucratic requirements which may delay implementation of the research according to time frame (Mamotte & Wassenaar, 2009).

Furthermore, despite the importance of obtaining informed consent before commencing the study, it is not always possible (Lecture Notes). There are several factors which could hinder obtaining the informed consent including language barriers, misunderstanding of information provided by a researcher, vulnerable people such as children and people who are severely sick or had mental disorder (Nijhawan et al., 2013). For instance, it has been cited by Brö Marzano (2007) that, in developed countries such as Italy, doctors do not ask for informed consents for severely sick people because they are considered not mentally able in making right decisions about their life. If such factors exist, researchers are supposed to devise a special mechanism to support obtaining informed consent depending on the particularities of the research and existing legal frameworks in the country or community. It is therefore imperative to obtain informed consent before commencing data collection. Persons involved in a study should be informed about important information including the study objectives, their roles, associated risks for participating in the study and the strategies to avoid any risk, their rights such as withdrawal from the study without any repercussion and the planned data collection methods.

Debriefing

Debriefing is among important research ethics which facilitates interaction between researchers and participants about different issues observed during the study (Turk, 2002). The central objective of debriefing is to give basic information regarding research to participants to ensure that they are not affected physically, mentally or psychologically (Lecture Notes). Participants also use debriefing sessions to express their concerns about their involvement in the

research for clarifications. It is an avenue which strengthens collaboration between researchers, participants and the community for sustainable partnerships in similar undertakings in future. However, structured debriefing does not work for everyone, it is vital to put other arrangements in place to guarantee that participants in a research have a chance to discuss about their experiences (Dickson-Swift et al., 2008). For sensitive topics, self-debriefing instead of small group debriefing could enhance identification of participants' strengths and areas for development (Verkuyl et al., 2019). Debriefing is normally done after the research to discuss with participants about various issues observed during the study and to ensure safety and discomfort of participants if any (Turk, 2002). Debriefing is very important in explaining to participants issues such as intentionally deception practised during the study to meet research objectives and to strengthen and build partnership with the community for further studies in future (Cason & Wu, 2019). According to Zong et al. (2018), debriefing focuses on providing feedback to participants about the research findings and provides a chance for participants of the study to enquire on issues related to the study for clarification. Debriefing is a sign of showing respect for participants and builds good relationship for future studies (Ndebele, 2013). It promotes transparency specifically for studies which deliberately practised deception by explaining the rationale, provide an apology and offer participants an opportunity to withdrawal their data (Miller et al., 2008). However, researchers have to use different strategies to ensure effectiveness of debriefing sessions, for instance, self-debriefing would work better for sensitive topics compared to group debriefing (Verkuyl et al., 2019).

Avoiding Deception

Deception in research occurs when a researcher intentionally or by omission communicate irrelevant information to participants which can mislead them (Kalbfleisch & Docan-Morgan,

2019). Avoiding deception and obtaining informed consent are research ethic principles which are highly correlation and researchers are required to comply except for very few scenarios. On the other hand, it is argued that deception is essential in studies on certain subjects and persons taking part in the study understand and even agree deception when they are prudently informed (Bröder, 1998). Generally, experimental studies in a number of fields have applied deception since in some situations, deceiving participants about various aspects of a study appears vital to fulfil certain scientific missions (Cason & Wu, 2019).

Similar descriptions are provided by Kalbfleisch and Docan-Morgan (2019) that, researchers are required to avoid deception in all phases throughout the research cycle. But Kalbfleisch and Docan-Morgan, (2019) insisted that, occasionally, deception may occur intentionally or unintentionally due to some specific scientific reasons. Deception misleads research participants and is considered as a serious scientific misconduct of the research (Yip et al., 2016). According to Bröder (1998), deceptions is sometimes necessary to certain disciplines and are normally justified to participants during debriefing sessions. Failing to justify deception may result into very negative relationship between researchers, participants and community but also participants may withdrawal from the study and withhold their information (Thomasma et al., 2000). Furthermore, deception can jeopardise informed consent and space for personal freedoms, since researchers may feel the necessity to reserve certain types of information regarding a study to undertake the experiment (Cason & Wu, 2019).

Protection of Participants

According to Orb et al. (2001), protection of research participants is very important and legally action to be considered in any research study. It involves protection of participants from any form of harm or disturbances either physically or mentally (Lecture Notes). These can be

achieved by ensuring balance between three principles of autonomy, beneficence and justice. These principles capitalise on the understanding of basic rights of persons participating in the research, including the right to be made aware of research, equal share and fairness and doing good for others and, preventing them from any harm (Orb et al., 2001). Researchers are required to abide to protection of participants ethics principle although there are some exceptions such as unintentional embarrassment of participants or harm which can cause psychological or physical harm.

Generally, it is universally agreed that protection of human participating in research is both ethically and practically important in all types of studies involving humans as subjects. Yet, many researchers focus on norms rather than practical implementation of the norms in achieving protection of participants (McDonald & Cox, 2009). According to Woodward (1999), it is crucial for researchers who are planning to conduct a study which involve human subjects to consider protection of participants as one of the core values of conducting ethical research. Basing on that, researchers are putting considerable attention to designing researches that protect human subjects at all dimensions including obtaining informed consent, justice and the right for dignity (Benatar, 2002). According to Orb et al., (2001), since the main objective of conducting researches is to build knowledge using human subjects as representatives to solve the problem of the society, it is imperative to protect their rights and avoid harm for participants who are participating in the study for others. This can be avoided or reduced by practising appropriate ethical researches such as obtaining informed consent, confidentiality and maintaining privacy of the collected information. However, most of the protection measures are focussed on obtaining informed consent and doing less on monitoring the actual conduct of the research and promotion of justice on distribution of burdens and benefits of the research (Benatar,2002). It is therefore imperative for researchers to

ensure participants are protected from any harm either physically or psychologically (Lecture Notes). This call for a special strategy which can facilitate auditing of all research process to ensure evidence based human participant protection (Orb et al., 2001).

Confidentiality

Confidentiality basically focuses on protection of all information provided by participants (Thomasma et al., 2000). Every person has the right to personal privacy and hence their views and attitudes have to be protected from public access or from unauthorised persons (Behi & Nolan, 1995). This can be achieved using different techniques such as making the identities of participant anonymous, avoid data sharing, use of passwords and limiting number of data management team. In addition, all confidentiality strategies must be included in the informed consent to build trust to respondents about protection of the shared information. According to Gutierrez et al. (2020), researchers are required to observe confidentiality in conducting researches by ensuring that all information collected from participants are not disclosed to public except if required by law or obtaining a consent from participants. Practising confidentiality in the conduct of research requires commitment of researchers to observe professional attributes including respect, honest and autonomy. Another scenario which researchers are obliged to disclose participant's information is when a participant commits a crime (Petrova et al., 2016). However, it is not always possible to comply with confidentiality aspects. For instance, researchers are sometimes required by law to share participants' information for specific reasons to save the participants rights or the rights of the community (Thomasma et al., 2000).

Privacy

Privacy and confidentiality are research concepts that differ in meaning are closely associated in research process. Privacy in research entails protection of respondents from unwanted

involvement into their personal and private issues. On the other hand, confidentiality use different means to ensure protection of the collected private information (Thomasma et al.,2000). These are very important concepts in research because they protect participants, respect participants' autonomy and promote trust of participants to researchers. It has been insisted that, privacy should be observed in conducting researches, it is the right of participants to volunteer their information to researchers and they have right to decide type and amount of information to expose to researchers. In the same vein, researchers are obliged not to reveal the individual information collected from participants (Guthrie, 2010). Researchers are required to use different strategies to protect participants' information including use of strong passwords, limiting number of people who can access participants' information and destroying all questionnaires with individual information after the research. However, it is not always easy to maintain confidentiality and privacy if some information of participants is needed according to the available laws for the benefit of both responsible individual or the public at large (Thomasma et al.,2000). Gutierrez et al. (2020) asserted that, protection of questionnaires by password in the quantitative research approach which are normally distributed to respondents via email or online service are critical to ensure only relevant participants can access and respond to questions. On the other hand, during interviews for qualitative approach, interviewing techniques of ensuring privacy and confidentiality during data collection should be implemented effectively. Anonymous techniques can also be used to protect all information collected from both approaches.

Withdrawal from an Investigation

According to Haggerty (2004), in the course of attaining informed consent, participants are supposed to be knowledgeable that, they can make a decision at any moment to end their participation in the research without fear of facing any repercussions. It is vital for researchers to

ensure participants are informed on their rights to withdrawal from the research at any moment before commencement of collection of data (Guthrie, 2010). Furthermore, persons participating in a research have the rights to withdraw their consent after having agreed to take part at any moment without any fear of undesirable consequences (Hug et al., 2012). A similar instance on participants' liberties to withdraw from research is documented by several scholars including Haggerty, 2004. Haggerty, 2004 upholds the generally accepted practice in research that, participants can be made aware of freedoms they have to end participation in a research study at any moment without fearing any negative consequences in parallel with obtaining of informed consent prior to data collection. However, withdrawal from the study results into methodological challenges which researchers are supposed to correct to guarantee integrity of research findings, validity and representativeness to the population. Some of the options which could be considered by researchers in this scenario could be to continue with the partial data, impute the missing data or drop the whole case (Thorpe, 2014).

Other Ethical Issues for Consideration

Other important issues which researchers are required to consider before conducting research include cultural variations with regard to particularities of the planned research and legal issues pertaining to regulatory bodies which require approval prior to research (Yip et al., 2016). Research integrity is another important aspect of consideration; this can be achieved by ensuring compliance to all research ethics at all stages but also sound methods which can justify reliability of the research findings (Behi & Nolan, 1995). Separation of researchers' roles as investigator and as a professional in specific subject under study is another important issue to consider because may lead to conflict of interest and misconduct of the research (Oliver, 2010). According to Guthrie (2010), the research community is becoming more complex and there is a growing concern about

research ethical issues at all stages of research implementation. The recent upsurge in research undertakings has equally resulted into increased concerns on ethical and legal aspects, and several principles have been articulated by various research bodies, which assist as a guidance to uphold integrity, compliance and ethical principles in research implementation (Yip et al., 2016). Practising ethical principles in conducting researches in any field is imperative, since they provide guidance on the professional conduct of researches which can address research problem along with maintaining liberties of participants of a research process (Orb et al., 2001). However, debate on implementation of ethics has achieved a high profile due to inadequate implementation of some ethics and sometimes conflicting of research ethics and the existing laws (Benatar, 2002). More research is required to reduce the conflict between two or more ethical principles and provide clear guidance for researchers (Evans & Thompson, 2016).

Basing on the discussions above, research ethics are of paramount importance in implementation of all types of research undertakings. Ethical aspects in a research have huge influence and implications on the quality of research findings and the future studies. Researchers are therefore required to comply with all research ethics depending on particularities and nature of the research studies.

Summary of the Literature Review

In summary, the literature review, both empirical and theoretical literature from different scholars, ranging from seminal literature, peer-reviewed and scholarly research contributions issued in the last 5 years has provided robust economic perspectives that, labour market information systems have significant influence on the levels of unemployment for both developed and developing economies (Mangozho, 2003). For instance, an information systems research conducted by Huang et al. (2020) in United States using labour market information from Bureau

of Labour Statistics demonstrated the power of Labour Market Information Systems on reducing barriers to employment, increasing labour force participation in the gig economy and positive relationship between availability of internet access to job seekers and reduction of unemployment levels. The findings of this study indicated that a unit increase in unemployment results into 21.8 units increase of active job seekers using Labour Market Information Systems looking for work. In addition, a study conducted by Ngoa and Song, (2021) in 48 African countries to determine the role of information and communication technologies on female participation in the labour market indicated that, for every unit increase in the use of information and communication technologies there is associate increase of 0.223 in female labour force participation rates, meaning increased female employment and reduction of unemployed persons.

Furthermore, performance of any economy depends on the quality of the workforce, with regards to skills demanded in the labour market, qualification and expertise in production of quality goods and services demanded by customers (Kahanec & Zimmermann, 2008). Apart from other important factors of production process, namely land, capital and technology, Labour has its unique importance in coordinating all other factors and making rational decisions about the optimal performance of the economy (Novotná & Volek, 2014). However, there is huge gap between the skills possessed by most of graduates in developing countries and the skills demanded by employers in the market for labour, which affects employment and output per unit of input, that is productivity of employees. This phenomenon calls for an urgent need of a clear mechanism to balance between skills offered by training institutions and skills demanded by employers in the market for labour (Pitan & Adediji, 2012). It has been reiterated by several researchers across different fields that, large proportion of labour force in developing countries do not possess the demanded skills to perform the existing jobs. Standardised labour market information systems,

updated information and adequate data sharing mechanisms could support answering the skills mismatch problem in countries (Handel, 2003). It is critical for countries specifically developing economies to invest on establishment of labour market information systems to support policy makers in making evidence- based decisions regarding the quality of their labour force, focusing on reducing the existing wide gap between skills possessed by job seekers and the skills required in production of goods and services (Adepoju & Aigbavboa, 2021). Inadequate labour market information systems have been mentioned by many previous scholars as the barrier for most of job seekers in developing economies to employment (Ismail, 2020). In addition, the high speed of technological advancement in productions of goods, emerging digital economies and the need for more sophisticated labourers affects employability of graduates and job seekers which overshadows the government efforts on education sector and human development programmes (Bello et al.,2013). Inadequacy performance of labour market functions leads to more disequilibrium between labour demand and supply in the labour market. The disequilibrium between labour demand and supply is the core cause of increased unemployment in many developing economies.

For instance, according to ILFS (2020), seeking help of friends, relations or unions is the mostly used way of searching job in Tanzania, indicated by around 38.4 percent of job seekers; On the other hand, registering at employment agencies is the least used mode of job search, indicated by merely 0.4 percent of those who were looking for jobs. This phenomenon demonstrates the need for integrated labour market information systems to better inform job seekers in making right decisions about their carrier development and accelerate transformation from the ineffective approaches to modern approaches. Several scholars have indicated the importance of labour market information systems which acts as a principal interface to support

data collection, evaluation and use of labour market information by all stakeholders (Razzaque et al., 2019). It acts as a fuel to labour market functions which is critical in economic development, combat poverty and inequality, promote decent work, and in address employment concerns including employability of the labour force (Pabian et al., 2011). In addition, labour market information systems contribute strongly to making evidence-based decisions about labour force participation, wages, tripartite dialogues and disputes settings (Razzaque et al., 2019). There are several empirical evidences from various scholars in economics that demonstrate vital role of effective labour market information systems in enhancing functions of the labour market and balancing of labour supply and demand. This is manifested in developed economies with Sophisticated labour market information systems and its impact on levels of unemployment (Woods & O'Leary, 2006).

In developing countries perspectives, development of effective labour market information systems is a key policy agenda in Tanzania to enhance standardised methods, data storage, data analysis, data flows and data use to facilitate formulation of labour related policies and monitoring its implementation (Tandari, 2004). Tanzania has formulated and is implementing several labour related policies and legal frameworks to promote job creation and labour related issues. Some of the existing policies include the National Employment Policy of 2008, Employment and Labour Relations of Act of 2004 and many other job creation programmes focusing on promoting micro and macro enterprises to boost employment and economic development (Mjema, 2017).

Despite the Government efforts to enhance functions of the labour market, unemployment is still a big macroeconomic challenge facing the country. According to ILFS (2020) unemployment rate in Tanzania is 9.3 percent and about 45.2 of unemployed persons in the country are discouraged workers, this means that they are not actively looking for jobs, and they cite several

explanations such as having a feeling of lacking suitable qualifications, Not knowing how and where to seek job and or having feeling that no appropriate jobs are available. In addition, youth unemployment rate has reached 10.1 percent and 20.0 percent of them are inactive. Furthermore, around 17.5 percent of youth population in Tanzania are Not in Employment and Not in Education or Training (NEET) and the share of such youth is more pronounced in big cities like Dar es Salaam with 29.5 percent. Youth who are Not in Employment and not in Education or Training face substantial risks of suffering social and economic exclusion. They need carrier guidance and it call for immediate establishment of the effective labour market information systems to inform about job opportunities, skills development opportunities and other labour related information to support in making right decisions about job markets (Razzaque et al., 2019).

Basing on the literature review conducted and explanations above, it can be revealed that, existence of policies and legal frameworks alone is not enough in reducing unemployment rate in a country, other factors have to be considered to enhance employability of the job seekers and devise a mechanism to enforce implementation of employment related policies and programmes. Similar findings as explained by Ismail (2020) indicate that, there is substantial number of unemployed youth with inadequate information about job vacancies available, and also employers not well informed about the availability of qualified job seekers to fill vacant posts in their organisations. According to Mjema (2017) unemployment in Tanzania has continued to be major problem to working age population and this could be catalysed by lack of effective labour market information systems which limits job opportunities to job seekers.

Furthermore, relationship between Labour Market Information Systems and employment has been reiterated by many scholars in developed and developing economies though they are at different levels of development. A series of study conducted by Barnes et al., (2023) in some

developed countries namely; Australia, Canada, France, Finland, Germany, Scotland and Sweden indicate the impact of LMIS on employment in various dimensions ranging from enhanced skills development, training programs that suits the needs of employers, easy access to available job vacancies, projections for number of future vacancies by occupation and economic activities and wages. For instance, the Australian Labour Market Information consisted of 1,100 Australian skills categories with different levels of qualification which is used as a base search engine to inform employers about the available skills in the labour market and on the other hand individuals identify skills which are highly demanded in the market for making right decisions on career development. Furthermore, according to Barnes et al., (2023), online information about the competence level needed by employers as indicated in the list of skills by priority of this study are critical to job seekers and training institutions on making evidence-based decisions to enhance their competencies and training courses that increase employability of graduates. Similar arguments have been provided by Drummond and Halliwell (2016) that in Canada Labour Market Information Systems are used by labour market analysts, job seekers and labour market intermediaries to inform development of Skills Information System Portal which has around 900 categories of occupations. The portal contains important information which contributes to fostering investment, job creation and reduction of unemployed persons in the labour market.

Moreover, in developed economies such as Germany and Canada a database driven Labour Market Information Systems have demonstrated its importance and relationship to employment through reliable information to employers, training institutions and individuals with regards to balancing between labour supply and demand (Sharpe & Qiao, 2006). A well-functioning LMIS brings key stakeholders into a common pool and simplifies dialogues focussing on improving data sharing, data accessibility and highly demanded skills which will ultimately boost economic

growth and creation of more jobs (Woods & O'Leary, 2006). It has been demonstrated by the study conducted by Barnes et al. (2023) that LMIS provides facility occupational information and barometer to key stakeholders with regards to shortages, surplus, balanced supply of labour and also occupations with serious shortages of job seekers.

Similar situation has been explained by other scholars for developing economies though most of LMIS in developing countries are at infant stage. A study conducted by Mgaiwa (2021) about fostering employability of graduates from developing countries taking Tanzania as a case study indicates that, strengthening partnership between training institutions and employers, mapping the training programmes with the national development plans and a joint review of the university curriculum through LMIS to improve the matching between the knowledge and skills taught and that need in the labour market is of paramount important. According to the study conducted by Chege and Wang (2020) on determination of LMIS roles on job creation in small and medium scale businesses in Africa, justifies that LMIS have positive relationship with the job creation in small and medium scale businesses and promotes economic growth. Thus, use of LMIS influence decisions to investment, increase aggregate demand and markets of goods and service which have a multiplier effect to job creation, employment and reducing number of unemployed persons in the labour market.

Thorough literature review conducted, which explains vividly the magnitude of unemployment problem in Tanzania and the significant role labour market information system could contribute in addressing the problem has motivated further studies in this area. This study which focussed on conducting deep research to ascertain the optimal mechanisms for effective labour market information system acts as a policy tool for the government, private sector, training

institution, employees and job seekers in making right decisions about labour related aspects in the country and ultimately reduce unemployment.

CHAPTER 3: RESEARCH METHODS AND DATA COLLECTION

Introduction

This Chapter focuses on research methods and data collection techniques to facilitate collection of comprehensive information for making evidence-based decisions in addressing research problem and to meet its objectives of exploring performance of Labour Market Information System and its effect on unemployment. The definition of LMIS as explained by Cazes and Verick (2013) involves set of institutional arrangements with mutually exclusive roles and functions to ensure collection, processing, storage and dissemination of LMI using a user friend interfaces to support policy makers and other key stake holder in making evidence-based decisions. It serves as a one stop platform for labour relates issues, reduces data gaps and enhances the functions of the labour market (Razzaque et al., 2019). Effective LMIS has important role to play on job creation which will definitely increase income of people, poverty reduction and well-being of the people (Berdegúe & Escobar, 2001).

According to Woods and d O'Leary (2006) efficiency LMIS affects positively the skills gaps, productivity and levels of unemployment. It has been echoed by Lawrence et al. (2008) that LMIS are critical in promoting decent work, improve productivity, boost employment, poverty reduction and well-being of the people. According to Razzaque et al. (2019) LMIS is an important policy tool that connects economic policies and economic growth in multidimensional factors including development of proper training programmes that meet demanded skills in the market, increases participation rates of the working age population in production of commodities and delivery of services, support carrier development and job prospect decisions. Availability of relevant and comprehensive labour market information is a cornerstone for policy makers in

making evidence-based decisions about human development including manpower planning to attain equilibrium between labour supply and the associated demand.

Despite the effectiveness and power of LMIS in supporting formulation of labour related policies which enhance job creation and reduction of unemployment demonstrated in developed economies, LMIS in many less developed economies like Tanzania are inadequate. The inadequacies of LMIS in less developed economies like Tanzania are manifested in terms of bottlenecks in coordination, data flows, completeness and reliability (Blanchard et al., 2014; Mangozho, 2003). Due to this phenomenon, most of developing countries strive to develop LMIS which can inform policy processes in a more optimal manner to enhance the balance the available supply of labour and prevailing demand for labour in the labour market (Cazes & Verick, 2013; Desjardins, 2019). In addition, according to O'higgins (2001) school to job transition period is prolonged by ineffective LMIS to inform graduates about available jobs, required skills, work places, wages and other related information which can support job seekers in making right decisions about their lives. On the other hand, lack of effective LMIS on the demand side hinder employers to find the job seekers who possess the required skills and qualifications in specific productive activities for commodities and services delivery. Inadequate coordination of LMIS with regards to expertise, data accessibility as well as data sharing has been cited as a barrier to job creation and contributes to high level of unemployment (Martín, 2011). Availability of effective LMIS could play a great role of bringing to a common pool employer, training institutions, jobs seekers and other players to address unemployment problem in the economy.

Tanzania as other developing countries is experiencing huge gap between supply and demand for labour which results from ineffective coordination of labour market actors with regards to data production, information sharing and data updates and uptakes in decision making. As a

results, unemployment in Tanzania stood at 9.0 percent and specifically highest in Dar es Salaam region where unemployment reached 20.5 percent (ILFS, 2020). There is inadequate coordination of LMI in Tanzania, they are fragmented, not complete, unreliable and not readily accessible to better inform labour market agents and practitioners such as policy makers, employers, training institutions and others on issues related to career development of the society (Amani, 2017). The government is therefore promoting development of effective LMIS to harness the existing opportunities given the advanced level of technology which favours digital economy and virtual means of doing businesses (Cazes & Verick, 2013). It has been reiterated by Shamchiyeva and Kahyarara (2014) that there is insecure school to work transition for youth population in Tanzania and they even find difficulties in finding jobs which matches the skills they possess due to weak linkages between the training institutions and employers. Therefore, findings from this research study will make significant contributions in addressing the existing problem in the country regarding malfunctions of LMIS.

The complexities and nature of variables used in this study, necessitates a critical appraisal of methods and techniques adopted by the study. The appraisal is important to provide adequate answers to the research problem and contribute knowledge to the existing theories and understanding on the subject of LMIS. According to Bryman (2006) the dominant approaches in the conduct of research are quantitative, qualitative and mixed research. The Quantitative approach is characterised by collection of numeric information using closed ended survey questions to facilitates use of statistical packages during data processing and analysis. Qualitative research focuses on collection of non-numeric information using open ended questions through interviews, observations and focus group discussions which are common procedures used in qualitative research approach (Hesse-Biber, 2018). Furthermore, according to Kern (2018) mixed methods

research method is underpinned by quantitative and qualitative principles and is becoming superior to individual approaches due to its ability of conducting researches which have many but complex variables and the need for collection of deep information using qualitative methods to complement information collected using quantitative approach. In a nutshell, this chapter has nine sections which focuses on research approaches and designs, data collection tools, validity and reliability, operational variables, ethical procedures, sampling procedures and data analysis techniques.

Research Approach and Design

According to Williams (2007) the common research approaches are quantitative, qualitative and mixed or mixed methods approach which combines techniques and methods of quantitative and qualitative approaches. Each approach operates under different assumption and principles such as data types which could be either numerical or non-numerical data. Other factors include techniques for data collection, analysis and interpretation of the study findings (Creswell, 2014). Differences of research approaches are based on various facts such as use of close-ended questionnaires to collect numeric data to facilitate testing of statistical hypothesis in quantitative approach as opposed to open-ended questions intended to facilitate data collection for non-numeric data in qualitative research approach (Shields & Twycross, 2003). Furthermore, other facts for consideration to differentiate the two approaches are the strategies deployed in conducting a research and data collection methods for each strategy (Sackett & Larson, 1990).

Quantitative Research Approach and Design

This approach involves collection of numeric data using structured data collection questionnaires and use of statistical data processing tools for testing objective theories (Walker, 2005). According to Guetterman et al. (2015) quantitative research approach support collection of information which can be used to investigate relationship among variables using statistical

procedures. These includes use of deductive theory in data collection, focusing on minimising biases, support drawing inferences to the population and replication of the results (Sukamolson, 2007). Quantitative research support use of statistical producers and tools to collect, process and analyse numeric information to test objective theories (Queirós & Almeida, 2017). Furthermore, the common quantitative research designs are case studies, correlational studies and experimental designs (Price & Lovell, 2018).

Case Study Design □ Researches based on case study designs are used in quantitative or qualitative approaches to facilitate collection of deep information of complex variables to inform the research problem and objectives (Seawrightn & Gerring, 2008). A case study design in quantitative approach is considered as a descriptive or non-experimental research design which uses questionnaire survey as a data collection tool to facilitate collection, processing and analysis of comprehensive and deep information about complex variables of the phenomenon (Lecture Notes). According to Creswell (2014) a survey supports collection of numeric information of a sampled population and the application of statistical packages in data processing and analysis in addressing the research problem. Surveys may be considered as cross sectional which collects information once during a specific period of time or longitudinal surveys which collects information of over different time periods (Sankoff, 2008).

Correlational Studies Design □ Correlational study is a non-experimental design which uses statistical techniques such as structural equation modelling and regression equations to test simple and complex relationship among variables under study (Creswell, 2014). It has been also stated by Williams (2007) that, correlational design focuses on statistical testing of association among variables under investigation. Correlational study design supports investigation of complex

variables of the study and determination of their relationship to inform decisions about appropriate solutions to address the research problem (Seeram, 2019).

Experimental Studies Design □ Experimental designs are mostly used in medical researches and operates within a conceptual framework which facilitates both random and non-random assignment of a subject into treatment conditions and the possibility to measure nature of the subject under investigation before and after interventions (Baker, 2017). The design support altering independent variables while observing outcomes of dependent variables and at the same time holding extraneous variables constant (Walker, 2005). In the same vein Creswell (2014) explained that, experimental design can either be true experiment which involves random assignment of subjects to interventions or quasi experiment characterised by non-random assignment of subjects to treatment conditions.

Qualitative Research Approach and Design

Qualitative approach as opposed to quantitative approach focuses on collection of non-numerical information in a complex situation using open ended and unstructured questions through interviews, observations or through small group discussions (Creswell, 2014). Qualitative research is purely subjective and data collection and analysis use inductive theory focusing on deep investigation of a complex variables to compliment quantitative findings (Rust et al., 2017). Qualitative research is classified into three main research designs namely: - case study, grounded theory and ethnography (Lecture Notes).

Case Study Design □ The difference between the case study design used in qualitative research when compared to the same design in quantitative approach is noted under types of information collected, data collection methods, processing and interpretation of results (Maxwell, 2012). Hyett et al. (2014) asserted that, case study in qualitative research approach focusses on

conducting deep investigation of one or selected cases to enable collection of comprehensive information of a complex phenomenon under study. It has been reiterated by Williams (2007) that, case study in qualitative approach intends to explore more about a phenomenon to enhance understanding of little known about the research problem. The dominant method used in data collection are interviews and observations and collected information are processed and analysed using qualitative techniques such as NVivo (Hilal & Alabri, 2013). However, the main constraint of this design is limitation to generalise the findings to the population of interest due to applications of smaller sample sizes for such studies (Ochieng, 2009).

Grounded Theory Design According to Babchuk (2011) the core concept of the grounded theory design is development of new theory by collection of information and perceptions of the society and their experiences about the topic under investigation. It is a step by step and systematic procedures used to collect information from individuals with vast experience about the phenomenon to support development of a new theory (Ploeg, 1999). It demands multiple data collection from participants in a systematic manner to better inform the researcher about different variables in development of the new theory (Creswell, 2014). The design use inductive approach in development of a new theory and data collection methods used are observations and talking with participants. Given the complexity of the design, it is time consuming and require a senior researcher with vast knowledge about the research design which could be difficult to novice researchers (Schreiber & Noerager, 2001).

Ethnographic Design Ethnography design intends to collect comprehensive information which can explain and interpret the complete setting of a certain society including behaviours and other cultural settings over time (Merriam & Grenier, 2019). In this design, data collector or Ethnographer becomes part and parcel of the society under study to facilitate collection of deep

information and also clear understanding of the context in natural settings (Creswell, 2014). According to Williams (2007), in ethnography design, a researcher become immersed in all lives of the society on daily basis to facilitate observation of their behaviour and gaining wider understanding of the society. Main Data collection approaches relevant in Ethnography are observations and interviews and sometimes a group discussion is employed to gain a deep insight about cultural principles of the society (Webster & Rice, 2019). However, it is expensive undertaking because it demands more resources such as time and financial resources than other techniques and; Ethnographer is prone to risks during data collection from the natural settings (Burke & Kirk, 2001).

Mixed Methods Approach and Design

Mixed methods approach originates from the two competing paradigms which are mostly used in social science research namely; positivists paradigms and interpretivist paradigms (Alharahsheh & Pius, 2020). Positivists believe on testing objective theories using quantitative approach while interpretivist believe on social cultural phenomenon using qualitative approaches and designs (Ryan, 2018). In quantitative research approaches, a researcher is independent from the study and involves empirical testing of objective theories using statistical procedures (Alharahsheh & Pius, 2020). On the other hand, under interpretivist paradigms a researcher is part of the research to ensure construction of theory from the natural context settings. These assumptions facilitate collection of deep and complex information in addressing the research problem (Hunt, 2009). However, each approach has its strengths and weakness which could be optimised by combining the quantitative and qualitative approaches. According to Terrell (2012) most researchers around the world are focusing on using mixed method approach in their studies

to enhance collection of more reliable, valid and comprehensive to enable deep understanding of the phenomenon in addressing research problem and objectives.

According to Creswell (2014) mixed or mixed methods approach is a flexible approach which use good aspects of quantitative and qualitative approaches to support collection and analysis of data to enhance understanding of the problem; rather than using single research approach. Mixed methods approach is superior to other approaches because it tends to maximise by drawing strengths from individual approaches which minimise the weaknesses of quantitative and qualitative researches if were to be used separately (Leech & Onwuegbuzie, 2009). Mixed methods approach integrates methods of quantitative and qualitative research from collection of data, processing and analysis of the results (Heale & Forbes, 2013).

The approach is flexible and allows use of both closed ended questions to collect numeric information and open- ended questions to collect non numeric information through interviews, focus group discussions or any other methods depending on the type of the research study (Triangulation, 2014). Mixed methods design can also employ both deductive and inductive research methods in the same study to address a research problem (Williams, 2007). In accordance to Creswell (2014), there are about three main forms of mixed methods designs which include convergent parallel mixed method, explanatory sequential and exploratory mixed methods. The convergent parallel mixed method is the most popular and the design that allows conducting the study using quantitative and qualitative approaches concurrently and results are analysed and interpreted separately to address the research problem (Younas & Sundus, 2018). With regard to explanatory sequential mixed method, the process starts from quantitative research followed by qualitative research and the results are interpreted in that sequential order. Furthermore,

exploratory mixed method starts with qualitative approach which builds to quantitative approach and interpretation of the results (de Graaf et al., 2020).

Selection of Research Approach and Design for this Study

Owing to the nature of this study, which is characterised by collection of comprehensive labour market information to facilitate in-depth analysis of research problem and objectives, mixed methods approach is the perfect fit to accomplish the multifaceted needs of the study (Creswell, 2014). The design is a hybrid approach which facilitates use of quantitative and qualitative techniques across all phases of the research cycle (Williams, 2007). Since the study objective is to investigate in details effects of Labour Market Information Systems (LMIS) on unemployment and; the LMIS concept is wide with various players and has many operational variables, mixed methods approach is the optimal choice that can address the problem under investigation.

The main research approach for the study was quantitative approach and the qualitative research was used to collect information for key variable of the LMI on a sub sample basis to complement information collected from quantitative approach. Information collected from qualitative approach was very useful to enhance understanding and widen the knowledge in addressing the research problem. Statistically it is recommended to use bigger sample in quantitative research to obtain reliable information to test objective theories. On the other hand, smaller sample is required for qualitative approaches to facilitate collection of extensive and deep information to add knowledge to the existing phenomenon (Creswell, 2014).

There are several advantages of using mixed methods approach as opposed to a single quantitative or qualitative approach. The mixed approach is a superlative approach for the study because it has broad strengths derived from quantitative and qualitative research approaches compared to a limited use of a single approach (Casey and Murphy, 2009; Connelly, 2009). It

facilitates collection of comprehensive, complete, valid and reliable information to address the research questions and drawing valid and complete conclusions (Johnson & Turner, 2003). The approach supports collection, processing and analysis of parallel data using techniques underpinned by quantitative and qualitative research methods to broaden the coverage and completeness of the collected data to better inform the research questions (Creswell, 2013). Quantitative approach facilitated collection of numeric data to test research hypothesis and to add more precision to the data collected from qualitative approach to enhance understanding in addressing a research problem (Olsen, 2004). This study used qualitative approach for some key Labour Market Indicators which are complex to obtain deeper insight of the situation from the experiences of the labour market actors (Thurmond, 2001). Data from qualitative approach were also used to add more insights to Labour Market Information which might be missed from the quantitative approach.

Mixed methods approach was chosen basing on its power and flexibility explained by various scholars on using research approach and methods from quantitative and qualitative in the same study (Kern, 2018; Casey & Murphy, 2009). Other strengths of mixed methods approach are rooted on its ability to support collection of deep information for multiple variables and the ability to water down the research design limitations which could occur by using single research approach (Thurmond, 2001). In addition, it enhances reliability and validity of the research findings (Olsen, 2004). The notable challenge regarding the use of mixed methods approach is the need for high expertise and experience in working with huge databases with multiples variables from both quantitative and qualitative researches and production of the report in time (Duffy, 1985). However, given the experience of working on this area over time and the techniques used

by previous scholars in similar research design was used during the designing stage to address the challenges.

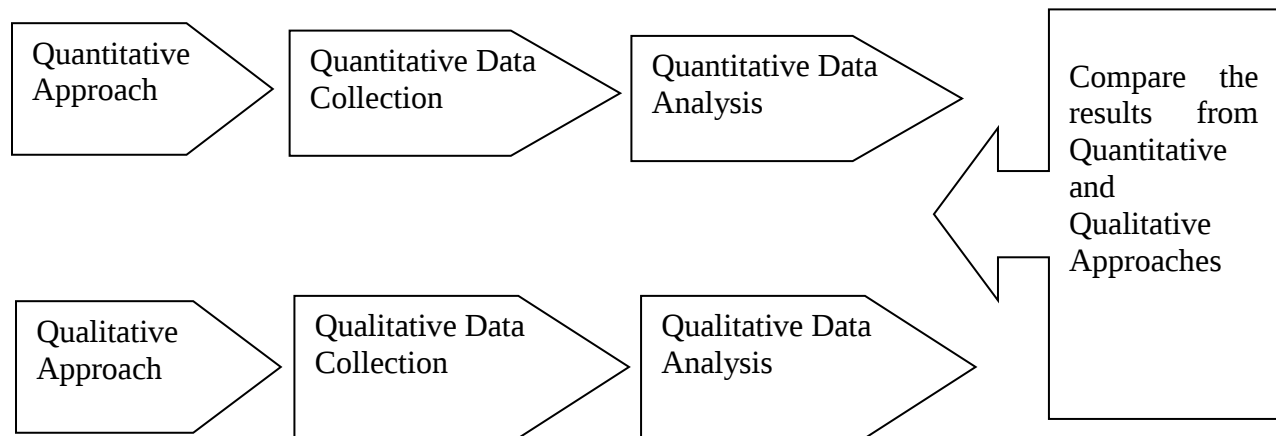
This Study used convergent parallel mixed design to facilitate collection of quantitative and qualitative information to complement one another (Creswell, 2014). Under the quantitative approach, quantitative case study design was used as the main method for data collection. Furthermore, the proposed survey used descriptive cross-sectional survey to facilitate collection of labour market information once at a particular time period (Sankoff, 2008). The research approach used facilitated collection of numeric labour market information using closed ended questions from a sample of training institutions and employers to facilitate testing the research hypotheses (Walker, 2005). Survey questionnaires were developed and were shared with the respondents using online platforms (google forms) for self-administration which is a cost-effective approach in terms of time and financial. Filled questionnaires were shared back with the researcher using the same online route. Analysis of the collected information was done using statistical packages such as SPSS and Microsoft Excel (Levesque, 2007). According to Bhattacharjee (2012) SPSS and Microsoft Excel are the common data processing statistical packages recommended for social sciences and are powerful in performing statistical operations for a huge and complex data set with multiple variables.

Under qualitative approach, this study used qualitative case study to collect non numeric labour market information for key LMI variables using unstructured open-ended questions by conducting in-depth Computer Assisted Telephone Interview (CATI). This enabled collection of participants' perceptions about the effects of LMIS on unemployment (Holmes & Hazen, 2013). The proposed approach is economical and facilitated collection of robust LMI which are important elements on widening understanding and the magnitude of the problem wholistically (Chowdhury

et al., 2020). Computer Assisted Telephone Interview techniques reduces the respondent bias which is a common limitation for qualitative research approaches (Harding, 2018). Collected qualitative information was analysed using TAGUETTE software which is common and easy to use qualitative research tool used by social scientists (Hilal & Alabri, 2013).

Data processing and analysis from quantitative and qualitative approaches was done separately and compare the results using side by side approach for making evidence-based decisions about the research problem which are critical knowledge to inform future studies (Creswell, 2014). In addition, secondary data about labour market information from the surveys conducted within a country was also used to complement information collected using convergent parallel mixed methods approach during the analysis. Similar research approach and design was used by Classen et al. (2007) in their study about older driver safety and the results from qualitative research design was useful in complementing the findings from quantitative research.

Data Collection Tools □ This study used the convergent parallel mixed design to facilitate application of both quantitative and qualitative research approaches and methods in collection of data, processing and analysis. (Kern, 2018). All principles and assumptions under quantitative and qualitative researches approaches were observed during implementation of the mixed approach to guarantee quality, validity and reliability of collected labour market information (Terrell, 2012). The chosen design is flexible and allows collection of data using two approaches in the same study and conducting data analysis and interpretation of results separately to inform about research questions, problem and objectives as indicated in Figure.3.1 (Younas & Sundus, 2018). Basing on the complex nature of the study, quantitative approach was used as the basic research approach and data collected from qualitative approach was compared side by side with the data from quantitative approach to enhance understanding of the results (Creswell, 2013).

Figure 3.1*Convergent Parallel Mixed Design, Modified from Creswell (2013)*

Data Collection Strategy used in Quantitative Approach This study used quantitative cross-sectional case study design which is underpinned by confirmatory, deductive approach in data collection, use of structured and close-ended questions to collect numerical information to facilitate use of statistical procedures in addressing the research questions (Johnson & Turner, 2003). Since this study is a cross sectional study in nature, data collection was done once at a particular point in time from a sample of labour market actors using predesigned survey questions (Sankoff, 2008). Structured Survey questionnaire with close-ended questions was used as a tool for data collection to collect labour market information from sample of employers and trainings institutions. Questionnaires were distributed to respondents using online Google Forms for self-administration (Roberts, 2000). Closer follow up were made to ensure questionnaires are filled and return on time to minimise non-responses (Evans & Mathur, 2005). The administration of the questionnaires followed four main procedures as explained by Dillman (2011) which include: - firstly an advanced notice letter about the study; secondly after one-week distributions of the actual questionnaire to respondents, thirdly a polite reminder email was sent to a sample of respondents

and lastly a signed letter was sent to all respondents three week after the second email making a total of four weeks for administering the questionnaire.

Ethical procedures were taken on board throughout all phases of research circle. The designed questionnaire had several sections, starting with introduction part which asked for consent from respondents. All questions in the questionnaire were designed in a way that, they were simple and clear in order to enhance comprehension and also reduce respondent burden (Buchanan & Hvizdak, 2009). The proposed method is simple, easy and economical in terms of reaching out many respondents on a timely manner and is cost effective (Van & Jankowski, 2006). In addition, administrative data were used to complement information collected from the Study.

Common statistical data processing applications and techniques such as SPSS and Microsoft Excel were used to process the collected information (Levesque, 2007). The chosen data processing applications have high capacity to process large datasets with multiple variables (Bhattacharjee, 2012). Given the complexity nature of the study which includes many labour market actors, SPSS and Microsoft Excel was the optimal choice.

Data Collection Strategy used in Qualitative Approach

Under qualitative approach, the study used inductive approach which is underpinned by application of unstructured and open-ended questions to enable collection of detailed labour market information to inform multiple variables under study (Alharahsheh & Pius, 2020). This study used a qualitative case study design and Computer Assisted Telephone Interviews (CATI) to collect key labour market information for selected variables from employees to complement quantitative data collected from employers and training institutions (Maguire, 2009). The study collected qualitative labour market information for selected variables from the sub sample of employees used in

quantitative approach. In addition, administrative data was also used to complement information collected from CATI.

Validity and Reliability of the Study

According to Heale and Twycross (2015) validity is the extent to which a study measures the context intended in terms of content, construct and instrument criterion. It is the ability of the study tools such as questionnaires to measure what its planned to be measure (Ismail, 2020). On the other hand, reliability is centred on the consistent measure of the constructs on obtaining similar results in different time periods (Bhattacharjee, 2012). In order to ensure reliability and validity of findings obtained from the study, sample of questions used in similar labour related surveys at establishment level were adapted specifically those used in conducting the Manpower Survey developed by Tanzania National Bureau of Statistics. In addition, same sample frame used in labour related establishment-based surveys in the country and in particular the Manpower Survey was used to select respondents to ensure reliability of the results.

Operational Definition of Variables Used in the Study

The study variables which were used in this research were derived from the research problem, objectives, research questions and hypothesis (Sukamolson, 2007). This section explains three dimensions of variables used in the study covering domains, variable descriptions and data types as indicated in Table 3.1

Table 3.1*Variables Domains, Description and Data Types (Modified from Ismail, 2020)*

Variables Domain	Variables and Description	Data Types
Independent variables	Labour Force Supply: The study examined the extent Labour Market Information System affects manpower planning by collecting and analysing information from training institutions using the following as key variables: - ownership of establishment; type of establishment; availability of communication services; access to Information and Communication Technology (ICT); Relevance of the training programs and School to work transition Additional information was collected from employees selected from employers' establishments using the following as key variables: - level of education; level of skills match; ICT and LMIS use and Job search methods.	Dichotomous, Nominal, Ordinal, interval or ratio
Independent variable	Labour Force Demand: The study examined the extent Labour Market Information System affects unemployment rates among employable persons by collecting and analysing information from employers about the nature of the current occupation; the current job vacancies and future job vacancies using the following as key variables: - nature of current occupation; occupation title; level of skills match; employment status; level of education; employee characteristics; ownership of establishment; ICT and LMIS use; current job vacancies and future job vacancies in the next three years; ownership of establishment; required level of education; main qualification/skill required; required work experience; sex preference; ICT and LMIS knowledge required and Methods used for sourcing required staff	Dichotomous, Nominal, Ordinal, interval or ratio
Intervening Variables	Factors Affecting Performance of LMIS: The study collected and analysed information about factors affecting performance of LMIS using the following variables: - access to ICT; use of ICT; knowledge and experience with LMIS; and cooperation between employers and suppliers of labour	Dichotomous, Nominal, Ordinal, interval or ratio
Dependent variable	Performance of LMI Systems: The study used collected labour market information from employers on the demand side and training institutions on the supply side to inform	Dichotomous, Nominal,

Variables Domain	Variables and Description	Data Types
	making evidence-based decisions on the performance of the LMIS and unemployment levels.	Ordinal, interval or ratio
	In addition, perceptions of employees with regards to factors affecting performance of the LMIS were collected using qualitative approach and analysed to complement findings obtained from the quantitative approach.	
Demographic and personal information variables	This study collected demographic and personal information such age, sex, level of education and working experience to facilitate making decisions about the collected information of the key LMI.	Dichotomous, Nominal, Ordinal, interval or ratio

Study Procedures and Ethical Assurances

The study observed all ethical principles and procedures as per the Unicaf University in Zambia Research Ethics Committee (UREC) requirements before starting data collection. These includes filling the Research Ethics Application Form for approval by the UREC which entails the funding arrangements, objectives, significance of the study, research approach, characteristics of participants such as age, sex, eligibility criterion used for inclusion or exclusion of participants and consideration for disabled participants. Other details include recruitment process for human research participants if any, obtaining informed consent from respondents, assurance of participants protections, privacy and confidentiality (Guthrie, 2010). Furthermore, in order to ensure confidentiality, questionnaires did not capture personal particulars which could be used to identify personal information.

Population and Sampling for the Study

Sampling is a vital step in implementation of surveys, is a scientific technique used to select a few units from a predefined population to act as representative subjects during data collection and

findings from the study can be generalised to the entire population of interest (Sharma, 2017). Importance of sampling in research process is also echoed by Schreuder et al. (2001). According to Schreuder et al. (2001), sampling involves scientific selection of a sub set of population under investigation of which results of the study can be used to draw statistical extrapolations about the population studied. According to Bhattacharjee (2012), there are many advantages of using sample instead of total population in a research process because of resource constraints in terms of finance, equipment, personnel and time. Sampling is mostly used by researchers because is cost effective, convenience and it serves time of conducting the study. However, it is of paramount importance that, selected sample provides accurate, reliable and valid results about the population (Omair, 2014). A researcher should consider several factors such as objective of the study, population variance, population size, level of heterogeneity of the population, precision of the desired results, available resources for the study including funds and level of accuracy need for making inferences about the population to ensure selection of a representative sample (Sharma, 2017).

Types of Sampling Techniques

According to Etikann and Bala (2017), sampling procedures can be grouped into two main categories namely: - probability sampling and non-probability sampling.

Probability Sampling Procedures **Advantages and Disadvantages** Probability sampling techniques is a scientific sampling procedure whereby probability of selecting a unit in a sampling frame is known (Taherdoost, 2016). According to Alvi (2016) probability sampling is further categorised into stratified sampling, cluster sampling techniques, systematic sampling and simple random sampling (Alvi, 2016). All techniques have pros and cons which have to be considered critically during the sample design. According to Sharma (2017), there are several advantages of using probability sampling techniques which are basically rooted under simple

random sampling and stratified sampling. Among the main pros under probability sampling techniques includes its ability to provide equal chance for each unit in a population to be selected under the simple random sampling and therefore selected samples are more representatives to the study population and allows generalisation of results to the entire study population. However, the overarching cons of simple random sampling is based on the need for a complete set and updated list of units of the targeted population, which is not always feasible (Bornstein & Putnick, 2013).

In addition, stratified sampling technique which involves stratification of the population into homogenous strata and use of simple random sampling technique proportional to size to draw sample units within the strata, results into highly representative samples with less human errors, is considered to have external validity and therefore recommended for drawing inferences to the population. It is the most recommended techniques for a population with missing data (Jawale, 2012). However, it is not useful if the population cannot be divided into homogenous sub groups and it also require a vast experience and more time to prepare (Acharya et al., 2013).

Non-Probability Sampling Techniques: Advantages and Disadvantages. Non-probability sampling approach is a purely judgmental approach and the common techniques used are purposive sampling, quota sampling, self-selection sampling and snowball sampling (Sharma, 2017). Similar explanation is provided by Acharya et al. (2013) that, under non-probability sampling techniques, the probability that a unit in a population will be selected is unknown and this results into a biased result which can't be generalised to the population. These techniques such as purposive sampling is useful in a special study which needs a small sample to conduct deep investigation about the subject, it is less expensive and easy to manage. On the other hand, it is not possible to measure and control variability and biases of the results and is not possible to make inference to the targeted population (Rai & Thapa, 2015). In addition, non-probability sampling is

mostly used when probability sampling is not relevant for the targeted population under study (Acharya et al., 2013). For instance, quota sampling techniques is used when a researcher want to draw a representative sample, it is equivalent to stratified random sampling approach but does not need sampling frame which makes it easier because is a simple division of the population into strata basing on the needs of the researcher (Iliyasu & Etikan, 2021). The main disadvantage of quota sampling is inability to determine sampling errors and is prone to problems of external validity.

Sample Design Used in this Study

The sample selection for the study on the Effects of Labour Market Information Systems (LMIS) on Unemployment was based on a two-stage stratified probability sampling approach. The chosen approach was the best fit for the needs of the study which focused on studying different categories of labour market actors namely: - employers, employees and training institutions. In addition, according to Jawale (2012), the approach is suitable for a population prone to data gaps which is a shared attribute of labour market sampling frames in developing economies. The approach supports selection of a representative sample to the population which is an important factor for consideration if the study results aim at making inferences to the population.

The Primary Sampling Units (PSU) for this study were stratified into two strata namely: - Employers' Establishment (EE) and the Training Institutions Establishments (TIE). The Secondary Sampling Units (SSU) were employers or employees within the sampled establishments in the PSU. Selection of PSU at the first stage used Probability Proportional to Size (PPS) and selection of SSU in the second stage used Simple Random Sampling techniques as the main method and;

the KISH GRID¹ approach was used to select a sub sample of employees under the employers' establishments (McBurney, 1988). Selection of establishments in each stratum was done using Probability Proportional to Size (PPS), implying that greater chance of inclusion into the sample was accorded to larger establishments, using number of employees engaged as the measure of size. During data collection, two main modules of questionnaires were administered, the first module was dedicated to EE and the second module to TIE domain; in addition to qualitative questions which was administered to a sub sample of EE. Results from the two main modules were analysed to reveal various characteristics of LMIS as required by the objectives the study. Results from the qualitative method have been used to complement results obtained from the two main module of questions.

Characteristics of Sampling Frame Used for the Study

A Business Register of Establishments (BRE) with at least 5 employees developed and maintained by the National Bureau of Statistics was used a sampling frame. The BRE is a comprehensive database of establishments which is maintained by the Tanzania National Bureau of Statistics (NBS). It is a list of establishments engaged in different social economic activities in each region of Tanzania. The BRE is used as a sampling frame for establishment- based surveys in Tanzania. The Dar es Salaam region section of the BRE has a total of 8,246 establishments whereby 7,961 are Employers Establishments; and 285 are Training Institutions Establishments.

¹ KISH GRID is used to select subjects within units containing multiple subjects for interviewees. It is based on the use of random numbers to identify the subject to be interviewed (McBurney, 1988).

Estimation of the Sample Size for the Study on LMIS The sample for this research study was designed to give estimates of LMIS characteristics in two domains of the study which are: - Employers Establishments (EE) domain and the Training Institutions (TIE) domain. Stratification into the two domains is warranted due to heterogeneity in characteristics regarding collection, storage, processing, dissemination and use of Labour Market Information (LMI) between EE and TIE. The sample was drawn from Employers Establishments (EE) domain; and all establishments in the Training Institutions (TIE) domain were included in the study owing to small number of population in the training institutions domain in the study area (285 Training Institutions Establishments). Sampling assumptions for EE domain are shown below: -

Domain I: Employers' Establishment (EE)	Domain II: Training Institutions (TIE)
Sample optimization parameter, p-value is 0.25; Relative Standard Error (RSE ²) is 0.05; and Design effect ³ is 1.5.	All establishments in this domain were included in the study owing to small number of TIE in the study area

Assumptions used for Determination of Sample Size The sampling process assumes values for Sample Optimization Parameter (p-value); Relative Standard Error (RSE) and Design effects for each domain. The Sample Optimization Parameter (p-value) measures the probability of an event related to collection, storage, processing, dissemination and use of LMI in the population (Murdoch et al., 2008). The value for such probability is adopted from previously conducted similar surveys on the Labour Market Information and for the present study the value

² This is the error of estimation. It is the standard error of survey estimate divided by the estimate and multiplied by 100.

³ Values for design effect from previous similar surveys is normally used for sample size calculations, if not available, a default value ranging from 1.3 to 2.0 is typically used by sampling practitioners.

used is 0.25 in Domain I, which has been used in the previous Labour Force Surveys. Values for design effect is normally adopted from previous similar surveys, if not available, default value ranging from 1.3 to 2.0 are typically used. Superimposing values for the given parameters in the Cochran Sample Determination Equations as shown below, the sample size becomes 2,700 for Employers' Establishment which is equal to 33.9 percent of the study population; and 285 establishments are Training is 100.0 percent of the population.

Sample Determination Equations

$$n = \text{deft}^2 * (1/p-1) / \text{rse}$$

whereby;

n = Sample Size;

deft = design effect;

p = probability of an event to occur and

rse = a relative standard error

Table 3.2
Sample Size Determination for the Research

Domain	Sampling Parameters	Definition of Sampling Parameters	Value	Individual Sample Size	Number of Establishments in the Sampling Frame	Percentage of Establishments Sampled
I	p	Sample Optimization Variable	0.25	2,700	7,961	33.9
	rse	Relative Standard Error	0.05			
	def	Design Effect	1.5			
II		Training Institutions		285	285	100.0
		Total Sample Size		2,985	8,246	

Table 3.2 Provides the sample size computational details.

Data Collection Summary

Table 3.3

Data Collection Summary

Type of survey	The Study used mixed methods approach and therefore both Questionnaires and Interview methods were used during data collection (Creswell, 2014; Williams, 2007).
Distribution method	Questionnaires were distributed using online method through google forms and also Computer Assisted Telephone Interviews (CATI) was used for qualitative questions (Creswell, 2014; Sankoff, 2008; Walker, 2005)
Date survey commenced	Data collection started on 22 September, 2022
Number of respondents participated	A total of 2,896 participants out of 2,985 which is equivalent to 97 percent of the sampled units responded to the study questions. Under Qualitative study, out of 100 selected individuals, 77 responded to the study questions which is equivalent to 77 percent response rate. This level of saturation permits analysis of collected qualitative information in providing more insight to the findings obtained from quantitative study.
Type of respondents	Participants were employers or permanent employees aged between 18 and 75 years from the formal sector of employment including training institutions in Dar es Salaam region working in establishments employing 5 persons or more.
Location of respondents	Dar es Salaam region, Tanzania
Date survey was completed	23 rd October, 2022

Table 3.3 presents a summary of the basic characteristics of data collected for the study, ranging from types of the survey, methods used to distribute questionnaires, type of respondents, location of respondents, and starting date and completion date of data collection exercise.

Techniques for Data Analysis

The main objective of data analysis in any research is to answer research questions ranging from determination of relationships of variables under study, their characteristics and patterns to support making evidence-based decisions in addressing a research problem (Kenny et al.1998). It has been emphasised by Blaikie (2003) that data analysis is a vital phase in a research circle which

focusses on drawing conclusions from the collected data by testing of research hypotheses (Blaikie, 2003). According to Bhattacharjee (2012), data analysis and choice of suitable statistical test techniques is an important stage in any research undertaking, it involves several steps including coding, data transformation, classification, validation, identification of missing values, imputation and running of statistical tests to convert the collected data into a more meaningful information. Data analysis plays an important role in understanding the essential features of the collected data, detection of outliers and data which were recorded incorrectly, all of which could results into serious distortion of the data if they remain on the dataset (Lecture Notes). Proper use of statistics tests demonstrates the validity and reliability of the collected data and consequently increases trust of users in utilization of the research results in making evidence-based decisions and; furthering the research work (Taherdoost, 2022).

This section explores the main parametric and non-parametric data analysis techniques including levels of measurement in quantitative researches, types of data analysis and statistical software for quantitative and qualitative approaches (Ali & Bhaskar, 2016). The outcome of the review facilitated making rational decisions about the optimal test statistics which have been used for analysis of data collected for the study.

Parametric Test

According to Kaur and Kumar (2015) it is important for researchers to make comparative analysis to determine reasons which could support them in making decision about use of parametric or non-parametric test in their studies. Underlying reasons to opt using parametric tests includes its robustness and ability of using less data in making stronger conclusions than non-parametric tests (Yavuz & Utku, 2021). However, parametric tests are underpinned by assumptions of normality that, data are approximately normally distributed, have equal variance and standard

deviation. Some of the common parametric tests includes Student t- Test, Chi-square and Analysis of variance (ANOVA) (Kelter, 2021).

Non-Parametric Test

Non-Parametric as opposed to parametric tests do not depend on any distribution, it is also called free distribution methods. If assumption of parametric tests is not valid, using parametric tests will lead into invalid conclusions, it is therefore recommended to use non parametric tests instead (Kaur & Kumar, 2015). However, non-parametric tests have less power compared to parametric tests because it lacks key information of the sample such as mean, variance and standard deviation which are critical in making decisions about the collected data. Some of the common non-parametric tests are Sign Test, Wilcoxon Sign-Rank Test and Mann- Whitney U-test (Lecture Notes).

Levels of Measurement in Quantitative Research

There are different ways in which collected data using quantitative approach can be measured. According to Blaikie (2003) measurement levels can be classified as categorical or metric whereby categorical measurement is done by assigning observations into discrete categories; and metric measurement is concerned by identification of observation features using numeric values according to pre-described rules or principles. Categorical measurement is used for observations that have mutually exclusive attributes such as gender which could be male or female or any other the categories. The main scales used in categorical easements are nominal or ordinal scales while the dominant metric measurements are interval and ratio.

Nominal Scales

This type of measurement is merely names or labels of variables in a data set and could be numeric or non-numeric (Bhattacharjee, 2012). In addition, it is a set of categories which classifies

observations into mutually exclusive and exhaustive groups regardless of their order, examples of such groups could be marital status, religion and tribes (Blaikie, 2003). The relevant measures of central tendency of nominal scales are mode and the suitable test statistics techniques is Chi-square (Suparji et al., 2021).

Ordinal Scales

This scale is used for ranked ordered observations such as ranking of student performances from first to the last but the intervals between are not necessarily equal (Verhulst et al., 2021). It is also used to measure the level of agreements or disagreement of respondents to specific attributes using five or seven likert scales such as unsatisfied to satisfied (Blaikie, 2003). The recommended central tendency measure for ordinal scale is mode or median and therefore the statistics involves non-parametric tests and percentiles. It is not suitable for more sophisticated analyses such as regression analysis, correlation and Analysis of Variance (Suparji et al., 2021).

Interval Scales

These are metric measurement which are used for ranked ordered observations and also have equal distance or equidistance from each other. Given its metric nature, all measures of central of tendency can be used and the most of statistical tests such as correlation, regression analysis and others can be used (Bhattacharjee, 2012).

Ratio Scales

Ratio scales have all attributes of nominal, ordinal and interval scales and in addition have true zero values which has a meaning and can be interpreted. All measures of central tendence and all statistical analysis tests are permissible (Higgins & Deeks, 2019). Basing on the generic types

of measurement scales explained above, several other scales such as likert scales, Binary scales, Guttman scales and semantic differential can be developed (Blaikie, 2003).

Descriptive, Explanatory and Inferential Data Analysis Techniques

There are various methods of data analysis used to describe, explore, explain, predict patterns and understand the characteristics of a phenomenon under study which is critical in drawing inferences to the respective population (Pluye et al., 2018). The main data analysis types are univariate descriptive, bivariate descriptive, explanatory and inferential (Blaikie, 2003). Similar arguments have been provided by Bhattacharjee (2012), that the dominant data analysis techniques used in analysing numeric data collected using quantitative research approach are descriptive, inferential and explanatory. Other techniques include predictive, causal and mechanistic depending on the type and objectives of the study (Herodotou et al., 2019).

Descriptive Data Analysis Techniques

Descriptive analysis is mainly used to portray the basic characteristics of the data to support making meaningful interpretation of the data. It explains association between variables and could be univariate, bivariate or multivariate analysis (Taherdoost, 2022; Blaikie, 2003).

Univariate Descriptive Analysis Univariate descriptive analysis is used for presentation and description of properties of a single variable item in a data set using various techniques such as frequency distribution, dispersion and measures of the central tendency, which includes averages, mode and median (Li et al., 2022). Frequency distribution determines number of times the value of variables is in the dataset, it is the common method used to identify uncommon behaviours of the variables in the data set (Bertani et., 2018). Measures of the central tendency helps to determine centre of the distribution of values or determination of number of the most represented variables to support making meaningful interpretation of the collected data. For instance, mean informs

about the average of values, the median determines the middle value and the mode provides the most frequency occurring values in the distribution (Taylor-Powell, 2003). Furthermore, dispersion measures the extent values are spread from the central tendency in terms of range, variance, and square root of the variance commonly known as standard deviation (Chakrabarty, 2021). However, it should also be noted that descriptive analysis provides baseline tests for quantitative data analysis but can't be used to make generalisations about the population and it has a limited cognitive impact (Bhattacharjee, 2012; Bertani et., 2018).

Bivariate Descriptive Analysis Bivariate analysis is an extension of univariate analysis as it involves more than one variable in the analysis focusing on explanations of the existing relationships between variables, strength of the existing association and is also used to assess if characteristics of one variable predicts characteristics of the other variable (Blaikie, 2003). It examines the relationship between two variables, it explores how the predicted variable is explained by the predictor variable without cause-and-effect relationships (Bertani et., 2018). However, for complex research a multivariate analysis (MANOVA) is employed which explores the relationship between more than one variable (Ricotta et al., 2021)

Explanatory Data Analysis

Explanatory data analysis is more complex technique compared to univariate and bivariate descriptive analysis which are confined into description of the variables and establishments of relationships between variables (Taguchi, 2018). This type of analysis goes deeper on answering 'what' and 'why' part of the research and also the causality of the observed characteristics such as patterns, associations, predictions and relationships (DSouza, 2020). According to Meyer and Sanusi (2019) and Blaikie (2003) there are several theories of causality which depends on several conditions including the necessary conditions to cause the event to occur or sufficient condition to

cause a certain event to occur (Blaikie, 2003). For non-experimental research, the causal concept is translated into relationship between two variables, the predicted variable and predictor variables to measure their relationships, connections and patterns of the collected data (Swart et al.,2019).

Inferential Data Analysis Techniques

Inferential data analysis is used to make analysis of sample data to estimate attributes, behaviour and patterns of the population from which the sample was selected using some scientific procedures (Blaikie, 2003). It has been reiterated by Ali and Bhaskar (2016) that; inferential data analysis techniques are used if a study was designed to use the findings obtained from a sample to make inference about the population. According to Blaikie (2003) there are about two chief categories of inferential data analysis. Firstly, those which use characteristics of a sampled data to estimate characteristics of the population; and the second are those which are used to establish whether pattern or relationship found in the sampled data can also occur in the population. The latter type is more critical and is tested using the levels of significance by determination of the probability ' p ' value which ranges between 0 and 1. This helps researchers in making rational decision of whether to reject or retaining a null hypothesis (Blaikie, 2003). A null hypothesis denoted by H_0 asserts absence of relationship between variables studied. The Alternative Hypothesis denoted by H_1 indicates existence of relationship among variables studied. According to Ali and Bhaskar (2016) interpretation of values of ' p ' with regards to rejection or maintaining the H_0 is as show below: -

P -Value	Results	Null
< 0.01	Highly Significant	Reject H_0
≥ 0.01 But < 0.05	Significant	Reject H_0
≥ 0.05	Not Significant	Do not Reject

Basing on the summary above, if the p values is less than the chosen arbitrarily value α which is the level of significance, the decision is to reject H_0 . It should be noted that, if H_0 is wrongly rejected it leads to Type I error that a Null Hypothesis is overruled while it was true. Moreover, if Null hypothesis is maintained while is false, it results into Type II error (Dushoff & Bolker, 2019). The main inferential data analysis techniques are t-test, Analysis of Variance (ANOVA), chi- square, regression and time series (Ali & Bhaskar, 2016).

t-test or student's t-test. This type of analytical technique is used for testing comparison of means between groups where there are two main categories (Mishra et al., 2019). The first category is two tailed tests also known as non-directional test which determines presence of significant differences between means of the two groups. The second category is one tailed test or directional test which tests if the mean of the first group is significantly larger than the mean of the second group (lecture Notes).

Analysis of Variance (ANOVA). This technique is similar to t-test because it employs use of multiple t-tests and therefore have more statistical power in addressing spurious results. With different roles and applications to the student's t test which is used for comparing means of two datasets, ANOVA is used for comparing means of three or more datasets (Mishra et al., 2019). It is also used to demonstrate the validity of the complicated results and conclusions by using differences between means of the population groups (Blaikie, 2003).

Chi-Square (χ^2). This technique is used for detecting association between two variables. Such variables may be in the form of categorical or ordinal variables from the same population. The smaller value for the χ^2 implies smaller discrepancies between variables (Nihan, 2020).

Regression Analysis Regression analysis is the best statistical tool used for studies with large number of variables and observations and is used to investigate the relationship between

variables (Sykes, 1993). There exist two principal types of regression analysis. These are simple regression analysis and multiple regression analysis. Simple regression analysis allows a single explanatory or independent variable in the analysis while keeping other possible unobservable independent variables into an error term (ϵ) (Weisburd et al., 2022). On the other hand, multiple regression analysis allows use of more than one explanatory or independent variable in the analysis which enables a separate analysis of effect of each predictor variable on the predicted variable (Sykes, 1993). It is more powerful than simple regression analysis because it facilitates quantification of various simultaneous effects of independent variables into single dependent variable (Weisburd et al., 2022)

Statistical Software for Data Analysis

A choice of statistical analysis software is a critical decision in any research; it needs a clear understanding of the study methodologies including its design and objectives, research questions and types of data collected to ensure meaningful interpretations are made from observations (Kaur & Kumar, 2015). All quantitative research collects numeric data which can be analysed using different statistical packages such as STATA or SPSS which have proved to be powerful in running most of statistical tests including testing of research hypothesis (Purwanto et al., 2021). SPSS has proved to be the optimal statistical software for in analysing both parametric and non-parametric data, it can handle massive and complex data set with multiple variables. (Bhattacharjee, 2012). Furthermore, it can produce outputs using charts, graphs, plots and other statistical reports (Levesque, 2007).

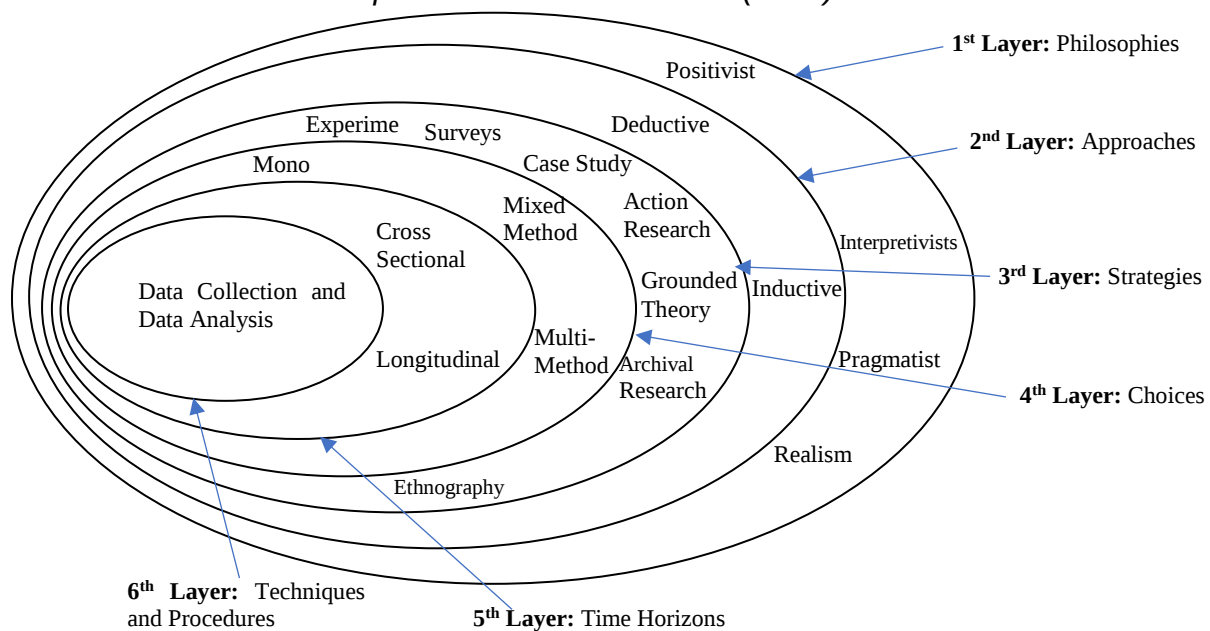
On the other hand, the common software used in analysing qualitative data are NVivo and TAGUETTE which enable a step-by-step content and thematic analysis of the collected data to facilitate making of meaningful interpretations (Rampin & Rampin, 2021; Dalkin et al., 2021).

Techniques used in Data Collection and Analysis

This section provides detailed information about techniques used in data collection and data analysis and their statistical benchmarks. It presents the systematic procedures used to select the appropriate research philosophy and associated underpinnings to support collection of reliable labour market information which can be analysed to provide meaningful information in addressing the research problem and objectives. According to Park et al. (2020) a research onion model developed by Saunders et al. (2009) is an important tool to support social science researchers to conceptualise and determine relevant research philosophy, approach, strategy and development of coherent research methods. It is critical to note that any decision made at the outer layer has an impact on the decisions to be made on the inner layers of the onion including techniques and procedures for data collection and data analysis. This study which explored the effects of labour market information system on unemployment utilized the research onion model with six layers as indicated in Figure 4.1. The model was very useful in determination of the relevant research philosophical consideration and associated underpinnings towards the inner core of the onion namely; techniques and procedures used in data collection and data analysis.

Figure 4.1

The Research Onion adopted from Saunders et al. (2009)



Research Processes and the Underpinning Philosophies

As indicated in Figure 4.1 and according to Park et al. (2020), research process as explained by Saunders et al. (2009) using research onion as an example; it includes several important layers. Each layer leads to another layer till the core of research onion which includes, among other things the selection of methods for data collection and data analysis. The outer layer of the research onion involves research philosophies relating to the nature and development of knowledge. There are four common research philosophies in the first layer which researchers are supposed to consider namely: - positivism, interpretivism, pragmatism and realism. Each philosophy is underpinned by four main different philosophical elements which are ontology, epistemology, axiology, and rigor (Park et al., 2020). Ontology focuses on how the knowledge is viewed while Epistemology is an understanding of knowledge which focuses on how knowledge is perceived and its justification (Ekström & Westlund, 2019). Axiology denotes roles and values of the research process while

rigor focus on principles used to justify quality of research study (Park et al., 2020). The next layer of the research onion presents two main approaches of research; deductive and inductive approaches which researchers can consider in the research process. The deductive approach entails development of assumptions built on prevailing theories and forming a research plan to assess the assumptions while inductive approach starts with a particular phenomenon and the conclusions are inferred to the general population (Zalaghi & Khazaei, 2016).

The next layer in the research onion entails various research strategies which researcher have to critically choose to ensure are consistence with the selected philosophy and approach in the first and second layers. Basing on the previous three layers, researchers at the fourth layer are supposed to choose research methods. The dominant research methods are mono method, mixed method and multi methods. The fifth layer focuses on time horizon which could either be a cross-sectional research or longitudinal research. Cross sectional research involves collection of data once at specific reference period while longitudinal studies collect data multiple times across a period of time. Finally, the sixth layer focuses on collection of data and various techniques for data collection and processing basing on the selected methods.

Research Philosophies

This section presents discussion of the three dominant research philosophies namely: - positivism, interpretivists and pragmatism.

Positivists. According Antwi and Hamza (2015), positivists assert that, reality is objectively given and it is examinable using characteristics which are autonomous of the researcher and instruments. Research conducted under this philosophy use deductive reasoning which entails development of assumptions based on the prevailing theories and forming a research approach to test the assumptions as opposed to inductive reasoning which starts with a particular observation

and the conclusions are inferred to the general population (Zalaghi & Khazaei, 2016). In addition, quantitative research methods and its associated research strategies are used to determine causal effect relationships between variables. Quantitative research collects numerical data using data collection tools like a structured closed-end questionnaire through mail or online methods. Data processing and data analysis is done using quantitative statistical packages and procedures to test the objective theories. The common research strategies used by Positivists are categorised into two main groups, namely: - experimental and non-experimental strategies. Experimental strategy involves measurement of phenomenon before and after the treatment while non-experimental strategies measure the phenomenon without any intervention. Examples of non-experimental strategies are cross sectional study, longitudinal study and the case study. Some limitations of Positivists include inability to collect in depth information for a complex social phenomenon, the need for big sample to have reliable statistical tests which has cost implications and misuse of statistical tests which may lead into misinterpretation of the research findings.

Interpretivists Interpretivists at ontological level believe that, reality is socially constructed and therefore its epistemology is subjectivist. Under this philosophy, reality should not be viewed narrowly focusing on causal and effect relationship but should be viewed broadly by examining human behaviour as it occurs naturally (Bhattacharjee, 2012). The common research approach used by Interpretivists is inductive which starts with specific observations and the conclusions are generalized (Newman, 2000). Furthermore; interpretivists rely on qualitative research methods which collects non-numerical data using unstructured open-ended questions. The main methods of data collection are interviews, observations and focused group discussions. The dominant research strategies used in this philosophy are ethnography, grounded theory and case studies. Collected non-numerical data is processed using qualitative data processing tools and

involves content or thematic analysis. However, according to Alharahsheh and Pius (2020), the limitation of this philosophy is inability of generalisation of the results into population due to small sample used to facilitate collection of deep information about the phenomenon.

In-depth interviewing is among the common method used in data collection for research based on qualitative approach. The technique entails holding rigorous interviews with a small number of individuals to understand their perceptions on a particular situation (Boyce & Neale, 2006). Interviews in qualitative researches normally use unstructured questions to collect in depth non-numerical information for a complex phenomenon using open ended questions (Paradis et al., 2016) as opposed to structured questionnaires which use predetermined questions. Use of predetermined questions is a rigid method which does not allow integration of key emerging issues during data collection (Alshenqeeti, 2014). On the other hand, unstructured interviews are more flexible approach which allows researchers to integrate key emerging issues in the course of interview and probe to gather richer and more in-depth data which could not be possible using structured questions (Paradis et al., 2016).

Advantage of in-depth interviews is rooted on its capacity to collect deep information from participants about the phenomenon under investigation and the flexibility which allows probing for clarity and integration of key issues in the course on interviews as opposed to other methods such as surveys (Boyce & Neale, 2006). However, the method is time sensitive because of many stages involved including time for conducting in depth interviews, transcription and analysis of detailed and complex data. In additions, it requires vast experience of using the approach to ensure data quality and minimise bias. According to Harding (2018), in-depth interviews are less naturalistic than participant observation and does not provide for collective understanding offered by focus group discussions.

Participant observation is another qualitative data collection method. In this method, the researcher conducts observations of the phenomenon and collects data based on the observations (Mair et al., 2013). It is the widely used method in ethnographic qualitative research design in studying the culture of the society or organisation (Lecture Notes). The method is powerful in understanding the relationships among people and events and the immediate socio-cultural settings in which human existence unfolds (Mair et al., 2013). However, the method is expensive in terms of time required for data collector to familiarise with the socio-cultural aspects of the society (Lecture Notes). In addition, there is high possibility of obtaining biased results because researcher acting as data collection instrument and experience gained may influence the results.

Another important method of data collection is Focus Group Discussion which is a special type of interviewing technique used when individual participants may not be willing to speak individually or when there is need of collecting joint perceptions about the phenomenon (Boyce & Neale, 2006). It involves facilitator and small group of individuals with common understanding and interest about a particular phenomenon. The main role of facilitator is to gather information in a group setting through predetermined set of questions to ensure focused discussions or through a script to stimulate group conversations (Paradis et al., 2016). However, the method requires a facilitator who has wide experience and skills in managing discussion to avoid biased results. The method is not relevant for sensitive topics whereby individuals will not be willing to express their views in a group discussion (Harding, 2018). Furthermore, information collected can't be generalised to total population because of the small non-random sample of participants.

Pragmatists. Pragmatists believe that, optimal combination of philosophical consideration under Positivists and Interpretivists results into a more reliable research results (Kivunja &

Kuyini,2017). The main research method in this philosophy is a mixed method. However, researchers are required to intensively review researches conducted using the mixed method in order to determine the ideal model to be applied. The chosen model should be able to provide results which will address research problem and research objectives.

Qualitative and Quantitative Research Approaches

Identification and selection research approach is among the important step for any research (Basias & Pollalis, 2018). Researchers are required to critically review the two main research approaches namely; quantitative and qualitative to identify strengths, weaknesses and their relevance depending on the nature of the planned study (Lee,1992). In addition, the review should consider the two main research paradigms; the Positivism and Interpretivism and their respective philosophical consideration at epistemology, ontology and axiology levels (Yilmaz, 2013). This stage is crucial because the reliability and validity of the research results is influenced by the used research approach.

Quantitative research approach is aligned with Positivists belief that focuses on testing objective theories by investigation of relationship between variables. Positivists also assert that; knowledge and information can be attained through scientific methods as opposed to persons' perceptions (Lecturer Notes). It is also noted that, quantitative research approach uses deductive methods for collection of numeric information using questionnaires which can be processed and analysed using statistical techniques (Abawi, 2008). Quantitative approach normally treats researchers independent of what is being studied. Furthermore, the widely applied designs for quantitative research studies are experimental, quasi experimental and non-experimental or descriptive research designs (Lecture Notes). Queirós et al. (2017) asserted that, quantitative approach focusses on obtaining reliable and validly results through hypotheses testing.

On the other hand, as opposed to quantitative research approach, qualitative approach follows Interpretivists assumptions that, reality is socially constructed and uses inductive methods to collect primary data in its natural context. Qualitative approach collects non-numeric data using unstructured open-ended questions. The main methods of data collection for research based on qualitative approach include qualitative are interviews, observations and focus group discussions (Lecture Notes). Interpretivists believe that, there is no objective theory which is independent of person perceptions (Queirós et al.,2017). Qualitative approach is purely subjective and seeks to investigate a complex phenomenon of the society by studying peoples' perceptions in their natural context. It facilitates deep understanding and description of the complex problem in its natural forms (Rust & Abrams, 2017). Furthermore, validity in qualitative approaches must be established within qualitative designs to ensure credibility and trustworthiness of the study results as well as dependability and transferability of the study process. (Lecture Notes).

Importance of Qualitative Research Approach

The key aspects to consider in understanding the importance of qualitative research approach are rooted in the Interpretivists believes. Interpretivists believes that, reality is socially constructed, is not fixed or measurable phenomenon that is assumed by Positivists or quantitative research approach (Merriam & Grenier, 2019). Qualitative research uses inductive approach which support collection of in depth and complex information from participants using open ended questions. It gives detailed contextual account of how people perceive a given study phenomenon (Lecture Notes). This approach is flexible and allows inclusion of emerging issues from participants during interviews which were not easy to be pre-determined by the researcher. In contrast to the available flexibility in qualitative approach, quantitative research uses deductive

approach which set hypotheses ahead of time to be tested for validity after conducting a research (Zalaghi & Khazaei, 2016).

Furthermore, there are various types of qualitative research designs, namely: - grounded theory, ethnography, and case study (Lecture Notes). Researchers ought to choose a relevant qualitative research design that would address research problem, objectives and research questions. This is important because each design operates under different methods including tools for data collection, means of data collection and data processing.

Qualitative Research Designs - Grounded Theory

The main objective of grounded theory in qualitative research is development or discovery of new theories (Lecture Notes). The main distinct feature of grounded theory is the need to apply sampling decisions throughout the study process in which respondents of the study are included in the study on the basis of their understanding of the subject and on the basis of evolving study findings (Ploeg, 1999). It is a systematic research procedure whereby researchers compare research findings from different samples of participants to facilitate development of conceptual categories. Basing on the findings from categories, researcher develops a theory which can address both the problem of the research and its objectives. Main data collection methods used in grounded theory are personal interviews and direct observations. However; the main challenge of using this design is the need for researchers to collect many theoretical thoughts to facilitate development of substantive theory (Lecture Notes). The design therefore requires more resources in terms of funds and time.

Qualitative Research Designs – Ethnography

Ethnography qualitative design focuses on studying the culture of people, community or organisations. According to Ploeg, (1999), Ethnography is based on the cultural anthropology,

underpinned by all aspects of cultural life of people or communities including their values, beliefs, and practices. The commonly used data collection methods in this design are participant's direct observations, personal interviews and focused group discussions. These methods enable researcher to study people and communities in their natural settings or by sharing their communal engagements to have an understanding of their context (Bamkin & Maynard, 2016). Data collectors in this approach are known as Ethnographer and immerse themselves in the world of participants to understand better the cultural aspect in its natural settings (Merriam & Grenier, 2019). The main challenge of using this method is the difficulties on completing the research according to the time frame; it has no real end (Lecture Notes). Additionally, ethnographic studies use small sample of participants because large samples can be enormously challenging to handle, as such samples would be costly in terms of communication and the general effort required (Burke & Kirk, 2001).

Qualitative Research Designs - Case Study

Qualitative case study entails an in- depth examination of a complex occurrence with multiple variables (Kratt, 2019). The main methods used for gathering of information in this particular research design are personal interviews and direct researcher's observations (Lecture Notes). These methods enable researchers to collect deep information of a phenomenon which facilitates detailed analysis to address research problem, objectives and research questions. However, the bottleneck of studies based on case study design is the overall inability to summarize and make generalisations of propositions or theories based on particular phenomenon studied (Starman, 2013).

Strengths and Weaknesses of Qualitative Research

The strengths of qualitative approach are based on its ability of developing new theories to address research problem as opposed to quantitative approach which can't develop new insights (Bryman, 2006). Qualitative studies use open ended questions and is iterative process which provides flexibility of incorporating key emerging issues from respondents in the course of interviews as opposed to the fixed closed ended questions and rigid methods used in quantitative studies. Basing on the nature of qualitative designs and methods of data collection; it has ability of collecting in-depth information of a complex phenomenon which could not be addressed by quantitative approach using deductive methods (Carr, 1994). Furthermore, qualitative research provides solutions to the quantitative problem of generalisation of data to individual cases for sensitive studies such as health studies (Guba & Lincoln, 1994). Conducting qualitative research in tandem with quantitative research provides additional information to illuminate and understand the complex numerical results of a quantitative research to address the research problem in a broader view.

On the other hand, qualitative research approach has some weakness. For instance, basing on the nature of qualitative research such as ethnography, it may happen to collect data using more than one language which will require translation. The challenge is to get a translator who has the same level of understanding as the researcher regarding the topic under investigation (Temple & Young, 2004). Translators may therefore distort the original information provided by participants and consequently leading to irrelevant results. In addition, direct participation by researchers during data collection may result into subjective and biased findings. Most of the qualitative designs use small samples and therefore results can't be generalised into total population with

statistical significance observed in quantitative studies (Ochieng, 2009). Also, there is a regrettable lack of tools available for the analysis of qualitative material (Attride-Stirling, 2001).

Importance of Quantitative Research Approach

Researches based on quantitative and qualitative approaches share some common features but they differ considerably in philosophical considerations and research designs. For instance, all of them are the approaches used to investigate and provide information to support formulation of policies and programmes to solve specific problems in the society. It has been reiterated by Hussein (2009) that, both paradigms focus on collection of information which can be used to enhance understanding of the existing problem to support formulation of policy actions to meet the research objectives. Furthermore, Ochieng (2009) indicated that, important differences of qualitative and quantitative study approaches are predominantly on the level of epistemological and ontological assumptions of the research than at the data level. The fundamental intention of research based on qualitative approach is to obtain an insight into a complex reality and the significance of actions in a particular setting, while quantitative approach allows to get precise measurements that are important for a statistical analysis (Queirós et al., 2017). In addition, some studies use mixed methods approach which combines quantitative and qualitative approach. Researches based on quantitative approach focuses on examining the theories by investigating presence of relationships or lack of among variables in the research. Normally data is gathered using quantitative research statistical tools such as questionnaires, processed using statistical packages and analysed using statistical procedures (Martin & Bridgmon, 2012). According to Walker, (2005), a distinguishing feature of the quantitative research studies is the ability of using quantitative tools for collecting of numerical data which can be used to test hypotheses in making decisions about the relationship associated between variables under study.

Differences between Quantitative and Qualitative Research Approaches

Ochieng, (2009) maintained that, main differences of quantitative and qualitative approaches are underpinned by the research paradigms and their associated philosophical considerations of epistemological and ontological. Based on the context, objective and nature of the research, researchers are required to choose either of the approach or the optimal combination of the approaches keeping in mind their strengths and limitations. For instance; the strengths of quantitative approach include its ability to collect numeric data using structured closed ended questionnaires and testing of objective theories. This approach is useful in reducing biases which may be caused by researchers because researchers are independent from the problem under investigation. However, use of closed ended questions limits inclusion of emerging issues during the study which could not be easily determined before (Duffy,1985).

On the other hand, qualitative approach collects non-numeric data using open-ended unstructured interviews to collect in-depth information on the phenomenon under investigation. This approach is very useful in understanding a complex phenomenon under study which cannot be studied by relying on cause-effect approach of quantitative approach. Despite this strength, the approach is attributed to biases which results from the research due to the inductive logic used to collect information. In qualitative approach, researchers sometimes become part and parcel of the society under study. This approach sometimes makes researchers to forget their main role as researcher and introduce biases in the collected information (Farmer et al.,2006).

Furthermore, quantitative approach use large samples as the main goal is to generalise the results into total population, as opposed to qualitative approach which study small samples to gain deep understanding of the problem (Taheri et al.,2015). Duration required to conduct qualitative studies for some designs is longer than that of quantitative approach. Therefore, qualitative

approach is more cost on the basis of financial and time required compared with the quantitative approach (Lecture Notes). Another feature for consideration in qualitative approach is its ability of having fewer risks to external validity because the objects are studied at their regular contexts which have fewer controlling factors as opposed to quantitative study designs (Lecture Notes).

Therefore, both research approaches, namely quantitative and qualitative have their advantages and limitations. Most of the identified differences are basically derived from the philosophical considerations (Lee,1992). Furthermore, each approach is appropriate to specific type of study depending on the nature of the subject under the study. It is imperative for implementers of research to critically engage into literature reviews to get deeper understanding of the two approaches in advance. This is of paramount importance because, the used research approach has great impact on the final results in addressing research problem.

Selection of the Most Appropriate Research Philosophy, Methods and Techniques Used in Data Collection and Data Analysis

Building from the research onion model developed by Saunders et al. (2009) with six layers as explained above, this section explains the research process used to explore the Effects of Labour Market Information on Unemployment Level in Dar es Salaam region. It provides critical information ranging from selection of the most appropriate research philosophy from the first layer to techniques and procedures used in data collection and data analysis in the sixth layer.

1st Layer: Research Philosophy of the Study

According to Holden and Lynch (2004), development of philosophical perspectives requires a researcher to make some basic assumptions regarding two dimensions. These dimensions include the type of society and the type of the science. These assumptions will guide a researcher to decide level of involvement of the society in the study and scientifically helps in

making decisions on whether to use objective or subjective philosophical approach. The later dimension is underpinned by three main sequential philosophical elements of ontology, epistemology and axiology which guide on selection of relevant methodology. Inconsistencies in philosophical considerations and methods used may result into spurious research findings. Furthermore, the research methods chosen by the researcher is a consequent of the researcher's philosophical stand and the nature of phenomenon to be studied (Holden & Lynch, 2004). Selected research philosophy and its associated philosophical considerations such as ontology, epistemology and axiology have great impact on the type of research methods to be employed, validity and the reliability of the study results. For this reason, it is therefore critical for researchers to critically review different types of research philosophies, their strengths and weaknesses to support determination of relevant research methods which can precisely respond to research problem and research objectives. It has been insisted by Abawi (2008) that, assumptions under Positivists philosophy are used to test objective theories and to facilitate testing hypotheses in making evidence-based decisions about refuting or accepting the null hypothesis. On the other hand, assumptions under the interpretivist's philosophy at ontology and epistemology level and the associated methods facilitate collection of deep information to address the research problem and its objectives.

According to Farsio and Quade (2003), labour market information and unemployment are essential elements for economic growth of any country. The rapid change in technology, globalization, skills mismatch and the increased demand for entry into employment has increased the complexity of the labour market (Mann & Huddleston, 2017). For instance, Tanzania and specifically in Dar es Salaam region, is experiencing rapid expansions of higher learning institutions associated with higher rate of unemployment due to several reasons. According to

Kessy, (2020), employment for graduates from Tanzania derived by the large population in Dar es Salaam region has been a serious issue and enrolment is increasing tremendously where the enrolment increased by 10.5 percent between 2009/2010 and 2012/13. Given multifaceted and complexities of the Labour market information in both supply and demand side of the country's economy; the study requires an optimal research approach which can benefit from both positivists and interpretivists during collection of information from the key actors of the Labour Market namely; employers, representatives from training institutions and the workforce. Collection of robust information from demand and supply sides of the Labour Market facilitates availability of reliable information to address the existing problem.

Basing on the complexity of labour market information and employment as explained above, this study adopted pragmatist view in assessing the effect of Labour Market Information System on unemployment in Dar es Salaam region. According to Wills and Lake (2020) pragmatist has been used by many scholars in social science due to its power of combining different research underpinnings in addressing the research problem using different techniques depending on the nature of the research. It facilitates holistic approach in understanding the research problem from different angles and narrow the gap which could occur by focusing on a single philosophical consideration. Researchers are also flexible to incorporate many variables in the study to better inform the research problem (Biesta, 2021). Assumptions of deploying different techniques and procedures in the study as per pragmatists are based on the need to ensure usefulness of the study findings, testing of the research hypotheses to determine the truth of the findings using statistical procedures. According to Shannon-Baker, (2016) pragmatist allows use of mixed methods and techniques such as use of questionnaires and interviews in collection of information to better inform the research questions.

Therefore, the chosen philosophy is relevant and suit the needs of this study which has multiple and complex variables from demand and supply side of the labour market. According to Allemang et al. (2022), Pragmatists support use of both Positivism and Interpretivists assumptions in addressing a research problem and objectives and is superior to using single philosophical consideration in addressing as complex research problem such as LMIS. All decisions regarding research processes from approaches to techniques and procedures used in data collection and analysis in this study were underpinned by pragmatist assumptions.

2nd Layer: Research Approach of the Study

Research approach is the second layer in the research onion which has two main approaches, the deductive and inductive approach. Given the complexity nature of the study which is also guided by Pragmatists views, both deductive and inductive research approaches as explained in the Research Onion Model were used. Deductive approach was used as the main research strategy to support collection of numeric labour market information from employers and training institutions to facilitate testing of the study hypotheses. Information collected from this strategy was also used to perform several statistical tests and analysis to inform the research problem and objectives. It has been reiterated by Stephens et al. (2020) that, deductive research approach support use of statistical procedures to test theories and determine the relationship between variables under study, is effective on making correct decisions on whether to reject or accept the null hypothesis and informs about generalization of the research findings. On the hand, inductive approach was used under qualitative study to facilitates collection of deep labour market information from a sub sample of employees to complement findings collected from quantitative approach.

3rd Layer: Research Strategy Used in this Study

Selection of the research strategy was informed by the previous two layers of the Research Onion Model namely; the philosophical consideration and the research approaches. Therefore, decisions on the research strategy for the study was guided by the views of pragmatists as the philosophical stance of the study, deductive and inductive research approach underpinnings for quantitative and qualitative studies respectively. Based on the nature of the labour market information which involves several actors from demand and supply side, and the need to collect both numeric and non-numeric information for variables to inform the existing problem, a case study strategy suited the needs of the study. According to Seawrightn and Gerring (2008) a case study approach is suitable for both quantitative and qualitative studies which aims to collect information to address a complex phenomenon such a labour market information system. The chosen strategy was flexible, easy to used and facilitated collection of robust labour market information from employers, training institutions and employees with multiple variables to ensure the research problem is well informed from different angles.

4th Layer: Research Method used in this Study

Mixed methods method was the most suitable methodology for this study which collected large amount of labour market information for many variables from demand and supply side of the labour market. The power of this method is attached to its ability to collect numeric and non-numerical information using a diverse data collection and data analysis techniques to facilitate use of a whole approach in understanding the research problem. According to Kern (2018), the mixed methods approach permits application of the quantitative and qualitative methods in carrying out research and data collected from qualitative approach can be used to complement data collected from quantitative approach.

Under quantitative approach, as explained by other scholars including Walker (2005), the study collected numeric labour market information from employers and training institutions using closed ended equations and used statistical tools and procedures such as SPSS in data processing to test the study hypotheses. Questionnaires were distributed to respondents using google forms and a closer follow up was made to increase the survey response rate which reached 97 percent.

On the other hand, the study under qualitative approach, data collection for non-numeric data was done by conducting detailed unstructured interviews to facilitate collection of comprehensive perceptions of employees about the effects of Labour Market Information System on Unemployment (Holmes & Hazen, 2013). To address challenges associated with conducting interviews including respondent biases as explained by Harding (2018); interviewing techniques and control of interactions to ensure collection of relevant information about the labour market information were employed. Qualitative labour market information was collected from a sub sample of employees using Computer Assisted Telephone Interviews (CAPI) and data analysis was done using TAGUETTE application, a dominant data processing application in qualitative studies (Tong & Dew, 2016).

In addition, the study used convergent parallel mixed design to facilitate parallel data collection and data analysis from both quantitative and qualitative methods (Creswell, 2013). The chosen design allows parallel collection of numeric labour market information under quantitative method and non-numeric labour market information under qualitative method. Data analysis is done separately and results are compared side by side to provide more insights of the findings in addressing the research problem, questions and objectives.

5th Layer: Time Horizons

As in the previous four layers of the Research Onion Model, decision on the layer number five regarding the time horizon for this study was based on the methods, approaches, strategies and philosophical stand of the study. Given the nature of economic activities in the labour market which is highly influenced by the rapid change of technology and existence of many actors from demand and supply side, it required a cross sectional study to provide key labour market information to inform policies and development programmes focussing on carrier development and job creation to reduce the problem of unemployment. The cross-sectional descriptive survey permitted collection of labour market information at one time period as opposed to longitudinal surveys which collect information more than once in different periods of time. The chosen time horizon is simple to use and relatively cheap in terms of cost and time needed to conduct the survey. It is a superior and optimal time horizon as opposed to longitudinal survey which needs collection of information in different periods to inform the phenomenon (Sankoff, 2008).

In addition, the same strategy was used in qualitative study to collect one-time deep labour market information from a sub sample of employees using a Computer Assisted Telephone Interviews to facilitate broader understanding of the existing problem and providing a robust recommendation to address the problem.

6th Layer: Techniques and Procedures for Data Collection and Data Analysis Used in this Study

Since the study used mixed methods, it was guided by both quantitative and qualitative underpinnings as follows: -

Techniques and Procedures Used under Quantitative Study

Sampling Method. Under quantitative study, the target population was employers' establishments and training institutions. A Business Register of Establishments employing at least five persons in Dar es Salaam region was used as a sample frame to scientifically select the primary and secondary sampling units. The frame had detailed information for both public and private institutions. A two-stage stratified probability sampling approach was used whereby, the first stage used Probability Proportional to Size (PPS) to select eligible establishments within the stratum namely; employers and training institutions. The second stage used a Simple Random Sampling technique to select eligible respondents from both employers and training institutions. Using a Cochran sample determination equation, the sample size for the study became 2,985 whereby 2,700 are employers and 285 are training institutions. These techniques and approaches were the best fit for this study because it provides each unit in the population with an equal probability of being included into the sample and therefore reducing sampling biases (Bhattacharjee, 2012).

Possible Biases in the Sampling Method. According to Bhattacharjee (2012), Sampling is explained as the scientific procedures used to select sampling units from the population under study which is then used to investigate specific phenomenon on the ground. Results obtained from the study are normally used to draw statistical inferences about the population under consideration. However, according to Panzeri et al. (2008) sampling procedures are prone to sampling biases which may result into unrepresentative results obtained from the sampled units. This may be caused by using irrelevant sampling frames, methods or incorrect inclusion or exclusion of sampled units in the study. It has been reiterated by Onwuegbuzie and Collins (2017) that, incorrect sampling procedures and application may jeopardise study results and limit generalisation of the results into population. It affects quality of data in terms of reliability, trustworthiness, credibility

and other quality aspects which could build confidence to users to use the results in making evidence-based decisions about the development processes.

According to Sedgwick (2014), sampling bias if not known and well managed are systematically spread throughout the research processes from collection of data to publications of the results. However, it can occur at any phase of the research course, from the research design phase, collection of data, data processing and analysis which could results into spurious results and negatively affects decisions made based on them (Noble, 2014). Furthermore, according to Bhandari (2020), choice of research design or data collection method can result into sampling bias. Sampling bias occurs in both probability and non - probability. The following are the main identified sample biases and their consequences in research: -

Sample Selection or Participant Bias □ This type of sample bias is in order when the selected sampling unit is not representative of the study's population. According to Smith and Noble (2014), sample biases related to selection or participants occurs when the sampling units are not representative to the population it serves. Bias in selection of participants should be considered important aspect to avoid or to minimize because will results into unrepresentative results which will not address the research problem.

In order to achieve this milestone of reducing or avoiding this type of sampling biases, it was critical to ensure all relevant sample units across different groups or stratum for both employers and training institutions are included in the sample frame (Cheung et al., 2017). It was important to avoid this type of bias because it could threaten both internal and external validity of the study findings (Berk, 1983). Furthermore, random sampling techniques used in this study

ensures population units are guaranteed equal probability of selection reduced the sample selection bias tremendously.

Under Coverage Bias. Under coverage bias results from several reasons mainly missing and omission of some sampling units which have no chance of been selected due to incorrect sampling strategy (Eckman & Kreuter, 2013). Furthermore, under coverage may occur due to the research limitations in terms of methods used for collection of data and analysis of the collected information including large number of unanswered questions and limited knowledge to analyse massive data with multiple variables such as Labour Market Information (Mohorko et al., 2013). Biases resulting from under coverage distort both internal and external validity of the research findings because of the small sample, and thus limit generalization of the results to total population.

In order to evade bias of this nature in this study, for quantitative approach, simple questionnaires were designed using simple words, structured with instructions for each question on how to respond to the questions.

Sampling Bias on the Study Design. This type of bias results from errors occurring in the designing phase of the study. These errors span from the identification of the research approach, methods for data gathering and processing. It may be amplified by judgemental decisions made by the researcher for own interest which are subjective and results into inappropriate sampling strategy. This results into biased findings which distorts the validity of the research findings. It results into findings which are not relevant and it is costly in terms of resources used to conduct the research including funds, time, equipment and others which could have been used in other critical development areas for the benefit of the society (Eckman & Kreuter, 2013).

In order to address this bias, this study adapted a Research Onion Model developed by Saunders et al. 2009 to critically determine the philosophy relevant for studying the labour market

information and its associated underneath layers ranging from research approaches, strategies, methodological choices, time horizon and techniques used in data collection and data analysis. The model is easy to use and has been very useful given its step by step guidance towards collection and analysis of reliable and valid labour market information to inform the research problem.

Non-response Bias. This type of bias is realized if part of sampling units is not represented during the sampling stage or during data collection stage. This type of bias is common for non- probability sampling approach. According to Sedgwick (2014), this type of bias is noted if there is significant difference between expected number of responses and the actual non-responses. For instance, if participants of the study are purposively selected and not a randomly selected from different sampling strata, could result into larger number on non-response. It occurs if some units of interest from the population are not scientifically selected and well represented in the sampled units to facilitate collection of information which can be used to explain characteristics of the population in general. According to Berg (2005), non-response bias is among important research element researchers have to consider avoiding because omission of responses which could have been provided by excluded units could have huge impact on study results. It is therefore imperative to avoid this potential error to facilitate conducting researches of high quality and better address the existing problem in the society.

Researchers are therefore required to consider using statistical techniques to adjust for non-responses. However, the techniques will reduce but not avoid the impacts to the final results. Other scholars such as Cheung et al. (2017), argued that, this type of bias is even worse in health sector of which study results are used in making decisions which directly affect health of people, plans and programs of strengthening health sector. Incorrect decision in this sector affects several other sectors including health labourers who can actively participate in production of goods and services.

In order to avoid this type of bias and according to augment by Sedgwick (2014), this study used recommended statistical procedures including close follow up during data collection to increase response rates, ensure reasonable sample which include all important units of interest, use of simple and clear questions which did not bother respondents in providing responses. Furthermore, use of probability random sampling techniques and close follow-up during data collection increased the response rate and avoid this type of biasness.

Response Bias. Response biasness results from many misconducts of the study including intentionally provision of answers by respondents to meet researcher expectations. It may also result from inadequate designing of leading questions which indirectly guides respondents to provide biased answers which will jeopardise the quality of the collected data. Respondents may also feel insecure to provide some confidential information to the researcher. This occurs when the respondents are not well taken on board with the objectives of the research and the ethical conducts underpinning the confidentiality and privacy of respondents.

In order to avoid this type of bias, the study used simple structured and closed ended questions with clear explanation of how to fill the questionnaire. At introduction part, the questionnaire asked for informed consent and provided a clear objective of the study including how ethical issues are well observed at all stages of the study. It explained about confidentiality of the collected information that will only be used for statistical purposes and that individual information will not be disclosed to anybody.

In addition, development of the questionnaires used in the quantitative part of this study was guided by similar labour related questions used the country to guarantee reliability and validity of the study. A structured closed ended questionnaire was developed for quantitative study to support collection of numeric labour market information from participants aged between 18 and

75 years. Collected information was analysed using SPSS and ordinal regression model was used to test research hypothesis whereby, performance of Labour Market Information was treated as dependent variables while manpower planning, unemployment and other factors affecting performance of LMIS were treated as independent variables.

Techniques and Procedures Used under Qualitative Study

All assumptions underpinned by the qualitative method was observed during the study to ensure collection of deep labour market information to complement findings obtained from the quantitative. The targeted participant for this study was a sub sample of employees from the employer's establishments used in the quantitative study. With regards to sampling techniques, two stages sampling procedure was used. The first stage used a Systematic Random Sampling technique with sampling interval $k=27$ to select 100 establishments from the 2,700 sampled employers' establishments for quantitative study. Establishments were sorted in ascending order and the first unit was randomly selected followed by a systematic selection of the remaining 99 units at an interval of 27 cases. The second stage used a KISH GRID approach which is a table of random numbers to select eligible employees from the sampled 100 employers' establishments. This approach has proved to be effective in selection of individuals from the population and it avoids biases because each unit in the population has equal probability of being selected (McBurney, 1988).

Furthermore, unstructured and open-ended questions were used to collect labour market information from the selected employees. In order to ensure validity and reliability of the study results, similar questions used in the previous labour related surveys were adapted. The study collected non-numeric labour market information using Computer Assisted Telephone Interviews (CATI). Furthermore, interviewing techniques such as avoiding interruptions during interviews

and flexibility for call backs to gather missed information were used to ensure full participation of respondents and to increase the response rate which reached 77 percent. Data processing and analysis for non-numeric labour market information was done using TAGUETTE application. TAGUETTE is among common data processing application used in qualitative studies, it is simple to use, compatible to many other file types such as Microsoft Excel to facilitates further analysis using unique created codes and tags.

The Study Measurements

Study measurements are the cornerstone of any scientific research, it requires appropriate planning given its close interlinkages with the research philosophy, research methods, conceptual and theoretical conceptual frameworks. It is also closely linked to the instruments used to collect information to facilitate testing of research hypothesis. It is important to note that if measurements are not appropriate, rigour, systematic and scientifically designed at all stages of research process, collected information cannot be measured to inform the research questions and objectives (Hagan, 2014) specifically for studies conducted using quantitative approach. On the other hand, measurements in qualitative studies are not direct due to subjectivity attached to it from the information collected regarding knowledge, attitudes and perceptions provided by respondents on the phenomenon under study. However, it has been explained by Biemer et al. (2013) that each measurement has some degree of errors regardless of the used research method. These errors can affect the final results of the study, it is therefore argued to properly define and mention measurements errors if identifies to increase transparency and guide users on how to use research findings with caution of existing measurement errors. According to Bravyi et al. (2021) measurement errors would be response bias, coverage errors, reliability and validity falling outside the recommended standards.

Basing on those facts, determination of measurements for this study was guided by the used underpinnings of mixed methods approach. Mixed methods approach permits use of quantitative and qualitative approaches and therefore study measurements are presented differently for quantitative and qualitative approaches.

The Study Measures under Quantitative Approach

The quantitative study used a closed ended research questions to collect numeric information from a representative sample of 2985 units from trainings institutions and employers. A systematic structured questionnaire with pre-coded responses were distributed to respondents using google forms for self-administration to facilitate collection of labour market information to inform research questions and objectives. Questions were designed and aligned with the research conceptual and theoretical frameworks to inform both dependent and independent study variables. Given the complex nature of the labour market, the study used both categorical and metric measurement scales to quantify collected information and enable testing the research hypothesis. Categorical measurement was used to collect information which are mutually exclusive such as gender, occupations and industries of work according to international recommended categories of classifications. On the other hand, metric measurement was used to measure collected numeric values using prescribed codes such as number of years worked in the institutions.

In addition, the main scale used under categorical measurements are nominal and ordinal scales and interval scales were used in metric measurement. In nominal scale, responses were exclusively categorized into named or labeled groups with pre-codes regardless of the order to facilitates conducting the statistical testing and analysis. In additions, chi-square tests were used as a measure of central tendency and to determine if the collected information fits the study module, conceptual and theoretical frameworks.

As opposed to nominal scales which is not sensitive in ranking; the used ordinal scale was meant to rank the collected information into order of five likert scales to measure level satisfactions or agreements from respondents related to performance of labour market information in relation to unemployment and the level of satisfaction of employers from their employees with regards to skills possessed. In addition, interval scale which ranked collected information into equal distance was used to group the population into specific age groups to facilitate analysis of information related to special population such as youth and adults.

The Study Measurement under Qualitative Approach

The study collected non-numeric information from a sub sample of 100 employees from employers' module using open ended questions. The intentions were collected perceptions of employees regarding performance of labour market information including systems, manpower planning and unemployment. Information was collected using CAPI and analyzed using TAGUETTE software. Collected information were transformed into themes with similar meaning, coded and transferred into Microsoft Excel for further analysis and measurements including frequencies and cross tabulation to determine patterns and special characteristics of the population under study. Reliability and validity of the study were measured using credibility, transferability, dependability and confirmability.

Conclusions of Chapter Three

Research methods and data collection procedures underpinned by approved ethical assurance procedures are critical in any research undertaking. Proper selection of the research methods guides other processes such as identification of the population under study, operational definitions, approaches to data collection and analysis techniques. Therefore, optimal selection of

the research methods has huge impact on the results of the research in addressing the research objectives.

In addition, the study was designed to use mixed methods approach which draws the benefits from the advantages and suitability of quantitative and qualitative research approaches. However, quantitative approach was the main method used in this study while data from qualitative methods was used to enrich data collected using quantitative methods to facilitate better understanding of the phenomenon. This research study collected data from employers and training institutions which permit use of parametric data analysis techniques. Given the complexity and specificity of the research study, both categorical and scale-type information were collected using online self-administered questionnaires and through Computer Assisted Telephone Interviews from employees. Availability of these data types permits discrete and continuous measurements during data analysis (Blaikie, 2003).

Furthermore, the study used a cross sectional case study approach to gather raw data from a sample of employees and employers selected at random from the respective populations. The main quantitative data analysis techniques which are underpinned by the research methods employed are univariate descriptive, bivariate descriptive, multivariate analysis and inferential data analysis techniques to facilitate testing of the research hypotheses. Among the descriptive techniques which were used are measures of central tendency such as mean, mode and median to describe different attributes of the labour market variables and the normality of the collected data using report, plots and graphs. Other descriptive techniques used are frequencies and measures of dispersion to facilitate determination of outliers in the data set and any spurious data which could be subjected to further statistical tests. In addition, inferential data analysis techniques such as t-

test, Chi-square, Analysis of Variance (ANOVA), multiple regression analysis was used to test research hypotheses and, interpretation of the findings were done using p-values.

Furthermore, TAGUETTE software was used to analyse data collected using qualitative approach to facilitate content analysis aiming at exploration of similarities, differences and extraction of the core meaning of their responses. Qualitative results have been used to complement quantitative results in making robust conclusions about the research hypothesis.

CHATER 4: ANALYSIS OF RESEACH FINDINGS

Introduction

Data analysis is an important stage in any study, it covers transformation of the collected information into a meaningful and easy to take into actions in addressing the research problem and objectives. According to Lilford et al. (1998) data analysis includes data cleaning and validation such as checking if information were collected using the planned format, coding, data transformation, missing data to inform the need for any statistical imputations, response rates, existence of outliers which needs follow-up for justification of their existence. It facilitates preparations of key findings summarized and packed according to specific research questions to simplify understanding and interpretation of the collected information (Hanneman, 2008). Therefore, data analysis of the information collected in this study, provides summary and detailed tables, visualization of the study findings using charts and graphs, showing meaningful relationship between labour market variable from employees, training institutions and employers. Analysis of the collected information and results provide explanations to support beneficiaries including government and private sector training institutions, investors and individuals to understand the existing relationship between key labour market indicators and important role they can play on strengthening synergies between them for effective functioning of LMIS. Effective LMIS is a cornerstone for all decisions related to balancing labour demand and labour supply (Hanneman, 2008).

Data analysis facilitated testing of the study hypothesis and helped to show case by tell the story about the existing problem of unemployment in Dar es Salaam, practical and theoretical implications and, recommendations to improve the situation based on the scientific results from the study. It has been reiterated by Willig (2014) that data analysis facilitates interpretation of the

collected information which should be underpinned by the research questions, theoretical and conceptual frameworks and experiences from the literature reviews. Analysis was in line with the arguments from other scholars including Bailey (1987) that, it justifies the reliability and validity of the study findings by providing evidence-based data and to ensure results are coherence to provide the full picture of the phenomenon internally and externally in the sense of relationships between variables under study and how the findings inform existing theories and conceptual frameworks. Data analysis is important as it provides insightfulness of the study in the area of originality of the findings (Bailey,1987).

In the same vein, analysis of the collected information from this study provides new and optimal conceptual and theoretical framework for LMIS along with the key labour market variables from the tripartite practitioners namely, employers, training institutions and individuals. Analysis of collected information from the key actors ensure optimal utilization of the available opportunities in addressing unemployment by leveraging on the information technology. Use of mixed method research facilitated collection of numeric and non-numeric information which have been used to conduct robust analysis to better inform the research problem. Analysis was done using both statistical and non-statistical packages whereby SPSS was used to analyze numeric information collected from quantitative study and to test research hypotheses and the TAGUETTE software was used to perform deep analysis of the perceptions from employees on the labour market situation in Dar es Salaam and associated interlinkages from demand and supply side to complement findings obtained from quantitative study. It has been reiterated by Taherdoost (2022) that proper selection of data analysis procedures and the right software are important in building trust to users on using study findings in making evidenced based decisions and strategically contribute to research work.

Analysis of the Research Findings from Quantitative Study

In quantitative research method, the study collected numeric information using closed ended questions to facilitate use of statistical tools during data processing and analysis. In order to have comprehensive and robust information to inform the labour market status in Dar es Salaam, the study collected information from both demand and supply side of the market. On the demand side of the labour market information were collected from employers and training institutions provided information on the supply side. Collected information was analyzed using parametric tests to check for normality and both descriptive and inferential data analysis was conducted to understand key characteristics of the labour market in the region and to determine patterns which are important in making meaningful implications and recommendations of the study. Analysis of information collected under quantitative study are in line with other scholars including Pluye et al. (2018) with regards to data type, used software and other underpinnings of quantitative data analysis.

Statistical Software Used to Analyze Quantitate Data

Given the big volume of numeric information collected from employers, training institutions and employees, SPSS which is the common and easy to use software for social scientists was used to analyze quantitative data. SPSS has been proved perfect to handle massive datasets with many variables such as labour market information and can perform both parametric and non-parametric analysis. It has several features embedded to facilitate meaningful tests and analysis including generation of tables, charts and plots and others statistical reports (Levesque, 2007).

Data Transformation

Collected information were critically reviewed validated, coded and transformed whenever necessary to ensure meaningful combination of key questions and variables to be used in the analysis. Data transformation was done to improve coherence and to formulate more concrete proxy questions with key information to inform about employment, unemployment, manpower planning and LMI using ordinal scales in the form of five likert scales. This process facilitated running ordinal regression module using performance of labour market information system as dependent variable and manpower planning, unemployment and other factors affection performance of LMIS as independent variables. Results from this analysis is vital for accelerating human capital development in Tanzania and specifically in Dar es Salaam region because it the first time the country will have reliable data on the extent LMIS affects levels on unemployment and can support making right decisions which will have huge impact in a shorter period of time.

Trustworthiness

Determination of the study trustworthiness of the collected information was conducted first to pave the way to further analysis. Trustworthiness of data under quantitative research was measured by internal validity, external validity, reliability and objectivity. Apart from adapting similar tools, concepts, definitions and methods in labour related surveys to justify internal validity, the study used scientific sampling methods to draw a representative sample for the population. The study used SPSS and Microsoft Excel to determine convergent and discriminant validity of the study in the sense that if the tools were able to measure the correlations between variables and to ascertain if un expected relationships between variables do not exist. This was done using responses from the five likert type questions and the factor analysis for employers' module. The scored values for the average factor loading for component one and two lied within

the recommended scores of 0.5 or above (0.7 and 0.8) respectively justifying existence of convergent validity of the study tools. In addition, discriminant validity was also justified because according to Schimmack et al. (2021) that, the square of components correlation matrix was 0.218 which is less than the average of square of variance of the same components (0.4 and 0.7) for component one and two respectively.

Reliability of the data was determined and evidenced using Cronbach's Alpha method whereby coefficient of the instruments scored 0.73 which is greater than 0.6 (McNeish, 2018; Taherdoost, 2016). In addition, objectivity of the study was justified under the quantitative underpinnings because the study used mixed research methods which permits use of quantitative research method.

Descriptive Data Analysis

Given the complex nature of the labour market, descriptive analysis was conducted using multivariate analysis to determine the relationship between variables on employers and training institutions and for each research questions. Furthermore, a weight was constructed to weigh the sampled estimates to facilitate generalization of findings and collected information were transformed into a more meaningful categories for dependent and independent variables using various assumptions. Among of the key tables, charts and analysis provided includes key labour market variables such as sex, age groups, level of education, sector of employment, type of economic activities and number of employees. Other multivariate analysis covered relevance of training programmes in relation to the skills demands in the labour market, level of satisfaction of performance of recruited personnel, level of agreement that LMIS affects manpower planning, level of satisfaction of performance of employees hired from TVET institutions by type of

industry, use of LMIS, ICT and the most important challenges faced by employers and training institutions related to labour market.

Inferential Data Analysis

Test of Normality of Quantitative Data. Test for normal distribution was conducted for employers' and training institutions module using Kolmogorov-Smirnov measurement since the cases for analysis were more than 100 (Drezner and Turel, 2011). It was evidenced that performance of Labour Market Information System which is dependent variable, unemployment, manpower planning and other social economic as independent variables have p-values which are less than 0.05 and therefore are significantly not normally distributed. This implies that ordinal regression model was suitable for the study to conduct further analysis since variables were not normally distributed and also the study used a likert type data (Elamir & Sadeq, 2010).

Data Model Fitting information (MFI) Goodness-of-Fit. Other tests such as Model Fitting Information (MFI), Goodness-of-Fit using Pearson and Deviance chi-square tests were significant (above 0.05) indicating that the collected data fits the established module. In addition, Pseudo R-Square measured by Nagelkerke statistic was 0.986 which is above 0.7 and therefore justifying that about 0.986 of variations in the Performance of LMIS are results of manpower planning, unemployment and other social economic factors (Dias & Sucharitharathna, 2020). Similar results were obtained from training institutions.

Parameter Estimates. Furthermore, the parameter estimates of the ordinal regression in this study provides coefficient of the estimates which explains a unit change in dependent variable resulting from a unit change in independent variable while other variables are kept constant (Bürkner & Vuorre, 2019). It was noted that, manpower planning and use of ICT at work places are significant positive predictor of the performance of LMIS with 21.485 units and 1.433 units

respectively while unemployment is a significant negative predictor of the performance of LMIS with 3.560 units.

Analysis of the Research Findings from Qualitative Study

Under Qualitative research method, the study collected non-numeric information from employees using open ended questions to facilitate gathering deep and comprehensive information to complement information collected from quantitative study. Given the nature of the collected information analysis was done using non-parametric tests which is the recommended test for qualitative studies, it is also known as test for free distribution (Kaur & Kumar, 2015). Analysis of collected information focused on critical familiarization of the collected information in making right decisions on determination of similar patterns and coding to enable proper analysis and interpretation of the findings.

Statistical Software Used to Analyze Qualitative Data

Non-numeric information collected under qualitative study was analyzed using a TAGUETTE software. It is a common software used in qualitative studies and is effective in conducting step by step analysis using content and thematic analysis in making meaningful case stories out of the data (Rampin & Rampin, 2021.)

Trustworthiness of the Qualitative Data

Trustworthiness of collected information with regards to criteria of true value, applicability, consistency and neutrality was established through measurement of credibility, transferability, dependability and confirmability. Findings from qualitative study confirmed to be credible because it went several checks including peer reviews of the findings by similar experts in the field of labour market and was also compared with the results obtained from similar studies in the country including employment and earnings and labour force surveys. Results of the study

demonstrated that are consistent with the research questions and objectives in addressing the research problem. Furthermore, use of CAPI to collect non-numeric information facilitated collection of comprehensive information which were very useful during analysis in capturing employees' perceptions and are important to inform future studies (Malakoff, 2015).

Data Transformation, Coding and Interpretation of the Results

Features of the TAGUETTE software facilitated exploration and analysis of qualitative information collected from employees including determination of similar perceptions, outliers, coding and extraction of information into Microsoft Excel for further processing. The analysis used thematic approach which provides descriptive analysis of non-numeric information. This included determination and coding of recurring patterns of information which provides employees perceptions in relation to the research questions and the general knowledge on the performance of labour market in Dar es Salaam region. Identified themes were critical information in making proper interpretation of the collected data and to complement information collected from quantitative study. In addition, a code book was extracted from TAGUETTE for key variables which were used to analyze and making meaningful interpretation of the study findings. Findings are presented in tables and graphs along with descriptions of the findings in relation to research questions and objectives.

Conclusion of Chapter Four

Explanations around data analysis of the collected information from this study are very useful to all key stakeholders. The right choice and application of parametric and non-parametric test for quantitative and qualitative studies resulted into meaningful results in addressing the research problem and meeting research objectives. Trustworthiness of the collected data and parameter estimates computed are basis for making evidenced implications and recommendations

on the effects of labour market information system on unemployment. It increases trust on the data by users and therefore increase data uptake in making rational decisions to address the existing problem of unemployment in Dar es Salaam. There is a mounting evidence that, Tanzania and specifically Dar es Salaam city which is the largest business city where more the 8 percent of the population resides, lack reliable labour market information to inform on human capital development processes, specifically on skills development to gauge the existing gap between demand and skills supplied in the labour market. Information from this chapter also provides baseline information in advancing future studies in the area of labour market.

CHAPTER 5: DATA ANALYSIS AND RESEARCH FINDINGS

Introduction

The study aimed at exploring the effects of Labour Market Information Systems (LMIS) on Unemployment in Dar es Salaam region in Tanzania. Definition of LMIS used in this study was adapted from Cazes and Verick (2013) which states that LMIS is a set of institutional arrangements with mutually exclusive roles and functions to ensure collection, processing, storage and dissemination of Labour Market Information (LMI) using user friend interfaces for evidence-based decisions. It has been reiterated by Razzaque et al. (2019) and Berdegúe and Escobar (2001) that LMIS plays a key role on bringing LMI in a common pool to enhance making evidence-based decisions regarding manpower planning. This includes among others, enhance job creation, reduce unemployment, fill data gaps and fuel economic growth at both micro and macro levels. Tanzania being a developing country is experiencing high unemployment which emanates from imbalances between labour supply and labour demands (Blanchard et al., 2014). The problem is more prominent in Dar es Salaam region where about 9 percent of the population resides and therefore affect a larger portion of the population in the country (TPHC, 2022). It is therefore imperative for a country to invest on strengthening production of LMI and ensure its availability and use to support formulation and updating of labour related policies and programs which are critical on reducing unemployment. Furthermore, effective Labour Market Information Systems is an engine of all labour market transformative and modernization initiatives a country like Tanzania is implementing or planning to employ (Bhuller et al., 2023). In this regard, results obtained out of this research will have great contribution to the government and other stakeholders' efforts on addressing unemployment by providing baseline information and recommendations which can be used to enhance functions of the LMIS. The study, collected information from labour supply

and labour demand to facilitate measurement of the effects of LMIS on Unemployment. On the supply side, information was collected from training institutions and employers provided labour market information on the demand side. The study is of its kind and is the first ever conducted in the country to address critical labour market aspects from both demand and the supply side. In addition, the study employed mixed methods approach which is a hybrid approach underpinned by quantitative and qualitative research principles. Under qualitative approach, the study administered sample of questions to a sub sample of employees from employers' module. The information collected helped to establish employees' perspectives and attitudes about the performance of LMIS to complement information collected through quantitative research approach.

This Chapter presents data analysis and study findings focusing on the research questions and hypotheses in addressing a research problem. The chapter starts with a brief background information and gives a summary of the study and its relevance. Thereafter, a critical discussion of the trustworthiness of the collected data is presented using different criteria and strategies depending on the used research approach. Since the study employed mixed methods approach which permits application of quantitative and qualitative principles, trustworthiness of the collected data has been established for both approaches. Establishment of trustworthiness of data are critical in any research because it supports building trust to users regarding the status of validity and reliability of the data which are vital aspects of ensuring the study adds knowledge to the society. It builds user's confidence specifically to the policy makers and other scholars in using the study results in making rational decisions, recommendations and to inform further studies. Furthermore, the Chapter explains characteristics of key variables of the study and assumptions used to facilitate making relevant statistical tests such as regression analysis. Presented results are guided by three main research questions and their corresponding hypotheses which focus on

investigation of the impacts of LMIS on manpower planning, unemployment and investigation of other social and economic factors which affect performance of LMIS as shown in Table 5.1.

Table 5.1
List of Research Questions and their Hypotheses

S/N.	Research Questions	Hypotheses
RQ1	To what extent Labour Market Information System affects manpower planning in Dar es Salaam Region?	Ho: Labour Market Information System does not affect manpower planning H1: Labour Market Information System affects manpower planning
RQ2	To what extent Labour Market Information System affects unemployment rates among employable persons in the region?	Ho: Labour Market Information System does not affect unemployment rates H1: Labour Market Information System affects unemployment rates
RQ3	What are the factors affecting performance of labour market information system in Dar es Salaam Region?	Ho: There is no association between different factors and performance of labour market information H1: There is an association between different factors and performance of labour market information

Trustworthiness of Data

Trustworthiness of data is a broad concept and it spans from the designing stage to collection of data, processing and analysis for both quantitative and qualitative researches. Building trustworthiness of data to users is an important element in any study and it is used to measure the extent data can be used in making correct decisions and conclusions (Anney, 2014). It is used to inform how well a design of a particular study fitted the planned research activities from data collection, data processing and analysis (Merriam, 1995). According to Bertino (2015), given an increased demand for data in making evidence-based decisions, data sharing became an important element in data ecosystem and therefore building trustworthiness of data from data producers enhances data use for making effective decisions.

There are different approaches used to establish data trustworthiness for quantitative and qualitative studies. The dominant approach used to warrant trustworthiness of data in quantitative researches are validity, reliability and objectivity (Malakoff, 2015 & Amin et al., 2020). In contrast to quantitative methods, common methods use to establish trustworthiness in qualitative studies are credibility, transferability, dependability and confirmability. Similar methods have been provided by Elo et al. (2014) that the common methods used to establish trustworthiness of data in qualitative studies are transferability, dependability, credibility, conformability and authenticity. However, it has been insisted that incorrect use of quantitative trustworthiness strategies in qualitative studies or vice versa distorts the quality of data and leads into incorrect decisions in making inferences of data collected (Anney, 2014). However, according to Birt et al. (2016) it is not easy to establish the trustworthiness of qualitative data using quantitative strategies due to the nature of qualitative underpinnings. Other scholars insisted that trustworthiness of data involves assessment of the extent a researcher was able to cultivate a conceptual framework of collection of data and analysis, organize guidelines, observing timeliness, consistency in data cleaning and conduct of several statistical tests to justify the trustworthiness of data (White et al., 2012). The same perspectives have been reiterated by Elo et al. (2014) that establishment of the trustworthiness of data throughout all phases of the study is important for users to have an overall trust of the data. Basing on the discussions above and the mixed methods approach used in this study, criteria and strategies relevant for assessing trustworthiness of data in quantitative and qualitative approaches are discussed.

Trustworthiness of Data Collected using Quantitative Research Approach

Trustworthiness of data under quantitative research approach is underpinned by the criteria of true value, applicability, consistency and neutrality which are commonly measured by internal

validity, external validity, reliability and objectivity strategies in that order (Malakoff, 2015; Rolfe, 2006; and Zeng et al., 2017).

Validity of Collected Data. Validity is among the common measure of trustworthiness of quantitative data, it measures the extent survey instruments measures what was intended to be measured in terms of relevance of survey instruments such as questionnaires in capturing the background of the study, content and the whole construct of what is being studied (Heale & Twycross, 2015). It has been reiterated by Ismail (2020) that validity is a statistical procedure used to assess the extent survey instruments measures what is expected to measure. Validity is multifaceted and can be viewed in four main dimensions depending on the nature of study, these includes: - content validity, construct validity, criterion validity and face validity (Sürücü & MASLAKÇI, 2020). Furthermore, validity is grouped into two classes namely; internal validity and external validity which are used to measure two different elements to warrant the trustworthiness of data (Taherdoost, 2016). Internal validity focusses on the tests of instruments used in the study and external validity assess the ability of generalization of research findings into the population it serves (Lecture Notes). Internal validity provides proof of reality of the collected data or in other words if the study measured what was supposed to be measured or what was being observed while; external validity proves the possibility of extrapolating findings attained from a representative sample to the total population under consideration (Merriam, 1995). This approach is not relevant to qualitative researches because are not meant for using random sampling and generalization of the results but to conduct deep research to collect information which can facilitate exhaustive analysis of the subject studied (Amin et al., 2020).

Internal validity of the study was established using different approaches including adaptation of questions used in similar studies in Tanzania such as National Manpower Survey

and Labour Force Surveys. Questions for these surveys are traditionally developed by technical experts in the sector of Labour Market Information and they normally undergo pilot study and refinement using the results of the pilot study. This research study used close-ended structured questionnaires to collect information from respondents which are in consonant with the principles of quantitative researches and warrant the face validity of the study (Van et al., 2022). Therefore, the judgmental approach used which permits use of similar questions, concepts and definitions applied in previous surveys justifies and are the bases for establishment of internal and content validity of the study under applicability criteria of trustworthiness that the instruments measures effectively what was intended to be measured (Taherdoost, 2016). This approach is similar to credibility procedures used in qualitative approaches for applicability criteria of trustworthiness although in qualitative approach the method is more subjective as it mainly depends on users' perceptions (Van et al., 2020).

Furthermore, according to Findley et al. (2021) external validity builds on ensuring consistency criteria of trustworthiness of the collected data. This research study applied scientific sampling method to draw a sample of establishment involved in the study which can permit drawing inferences to the population. A two-stage stratified sampling procedure were used to draw a sample of 2,985 establishments whereby 2,700 units are employers and 285 are training institutions. The sampling procedures used standard values employed in similar previous surveys for sample optimization variable (0.25), Relative Standard Error (0.05) and Design Effect of 1.5 to ensure external validity of the collected data.

In addition, factor analysis using SPSS and Microsoft excel has been used to establish validity of the study tools specifically the convergent and discriminant validity (Taherdoost, 2016). The convergent validity is used to examine the correlation between variables, it aims to assess if

the tools are able to measure the existing correlations between variables while discriminant validity measured if the relationship which was not expected to exist in fact does not exist (Ljótsson et al., 2020). The analysis used responses from five likert type questions (Question I3 to I5) from employers Module which were the key questions used to collect information to inform about the core construct of the phenomenon.

Table 5. 2

Pattern Matrix and Computed Variance for Component 1 and 2 using Factor Analysis for Employers Module

	Component		Variance of Component 1 Extracted	Variance of Component 2 Extracted
Selected Variables	1	2	1	2
Question_I3a	0.695		0.483	
Question_I3b	0.669		0.448	
Question_I3c	0.627		0.393	
Question I4		0.788		0.6
Question I5		0.835		0.7
Average Factor Loading Components and Average of variance	0.7	0.8	0.4	0.7

Results from Table 5.2 and according to Shrestha (2021) justifies existence of convergent validity of the study tools using factor analysis since the scored values for the average factor loading for component one and two lies with the recommended scores of 0.5 or above (0.7 and 0.8 respectively).

Table 5. 1
Component Correlation Matrix for Employers Module

Components	1	2
1	1.000	0.218
2	0.218	1.000

Furthermore, Table 5.1 and 4.3 reveal that, discriminant validity is also established because the square of components correlation matrix (0.218) is 0.05 each, which is less than the average of square of variance of the same components (0.4 and 0.7 for component one and two respectively (Schimmack, 2021).

Reliability of Collected Data According to Bhattacharjee (2012), reliability of data is assured only if same research instruments and procedures can be reused in different periods and consistently produce similar results. It is used for measurement of the neutrality criteria of trustworthiness of data collected for the study. Reliability focusses on the possibility of replicating survey instruments to produce similar results over different periods (Taherdoost, 2016). However, in some instances reliability is not feasible for human studies in qualitative researches because human behaviours are not statistic which limits getting same results when researches are replicated (Merriam, 1995). In different methods to reliability in quantitative studies, studies based on qualitative approach use dependability strategy which measures if findings from the study consistently mirrors the collected information (Chiacchio et al.,2020). Reliability is commonly measured using Cronbach Alpha coefficient and the study results are termed reliable if the coefficient of Cronbach Alpha statistic is more than 0.6 (McNeish, 2018).

Different strategies were used to guarantee reliability of the research study, these comprises use of a business register of establishments which is the recommended sample frame for

establishments- based surveys in the country to draw sample units of the study. In addition, the study used same concepts and definitions of key labour market variables such as unemployment, labour force and working age population which are normally used in labour market related surveys in Tanzania and at international level. These ensure reliability of the results and conform to stability or test-retest methods to prove reliability (Lecture Notes). These are the initial efforts made during the designing stage of the study to demonstrate study reliability and validity. Furthermore, Cronbach's Alpha Test has been used as a post enumeration statistical test to warrant reliability of the study tools and the results. According to McNeish (2018) Cronbach's alpha is the widely used statistical indicator for internal consistency and reliability of the data and is expressed as: -

$$\alpha = 1 - \frac{k}{k-1} \left(1 - \frac{\sum s_i^2}{s_x^2} \right); \text{ whereby,}$$

k is the number of items,

s_i^2 is the variance of individual item i where $i = 1, \dots, k$, and

s_x^2 is the variance for all items on the scale.

Similar arguments have been provided by Heo (2015) that the Cronbach's Alpha is used to compute evidence of reliability of data by combining responses of the likert scale ranging from high to lower scales to ensure optimal representation of the altitudes for variables with highest scores and those with lowest scores. The Cronbach's Alpha measure ranges between 0 and 1 whereby a measure above 0.6 means the study instruments and results are acceptable (McNeish, 2018; Taherdoost, 2016). In contrast to the importance of reliability in any study, the test cannot stand alone, it needs to be valid as well (Taherdoost, 2016).

Table 5.2
Reliability Statistics Derived from the Employers Module

Cronbach's Alpha	Number of Items
0.730	19

Based on the key likert scale questions used in the study, the Cronbach's Alpha Coefficient of the instruments scored 0.73 is greater compared to 0.6, and therefore provides evidence of the reliability of instruments used in the study (Table 5.4).

Objectivity Strategy. Objectivity focuses on facts that research undertakings are detached from a researcher which reduces biases significantly (Stahl & King, 2020). Objectivity in quantitative studies is implemented in all phases of the study cycle from designing of data collection instruments, collection of data, processing and analysis (Lecture Notes). It is the basis on which validity and reliability are constructed (Hipps, 1993). It has been insisted by Merriam (1995) that, objectivity strategy intends to ensure investigators are detached from the phenomenon under study to enhance trustworthiness of the collected data that are not jeopardized by researcher interests. This is not the case for qualitative studies which believe that researcher and the respondents are not solely independent (Anney, 2014). To warrant objectivity of the study, mixed methods approach which allows application of quantitative and qualitative research approaches was used. Quantitative approach was used as the main research method and information collected from qualitative approach was meant to supplement information collected from quantitative approach. Quantitative approach is underpinned by objective theories at all stages of conducting the study and therefore it justifies objectivity trustworthiness of the collected data.

Research Findings

This section provides overall findings of the study which when combined with other statistical tests are critical in making deep analysis and to facilitate interpretation of the findings and making conclusions. The section provides descriptive statistics of respondents ranging from level of education, age groups, ownership of establishment, number of years at work and distribution of respondents by main type of economic activity. Furthermore, results are presented for each research question and their respective hypotheses and for both employers and training institutions modules which followed quantitative approach. On the other hand, results for qualitative study conducted on a sub sample bases are also presented.

Response Rate and Weighting Procedures for Quantitative Study

The study used a sample of 2,985 units to collect Labour Market Information from employers and training institutions. Data collection was successfully implemented, with a percentage of units responded to the survey being 97 percent meaning, out of 2,985 total units sampled, 2,896 units responded to the study questions. Furthermore, an adjustment factor was computed to weigh the sample estimates to ensure are representative to the population under study. The weights were computed as a fraction number of establishments in the population to the number of establishments in the sample, expressed as: -

$$W_i = N/n_i$$

Whereby;

W_i = basic weight for the sampled establishments;

N = number of establishments belonging to the population in the study area and,

n_i = number of establishments in the sample

However, it is universally accepted that, sampling frame are not perfect and are affected by errors. Though sampling frames errors tend to affect both frames used for household and

establishment-based surveys but such errors are more pronounced for frames used in establishment-based surveys. Sampling frame errors occur when the frame is not complete representation of the population. It was noted during collection of data that, the used sampling frame for this research study was characterised by under coverage of units belonging to training institutions. In order to correct for this anomaly, a weight was constructed to ensure that it represents the population of interest using the total number of training institutions from the latest Labour Force Survey conducted in 2020 as the population.

Assumptions on Data Transformation

The questionnaire for this Study on the exploration of the Effects of Labour Market Information on Unemployment in Dar es Salaam region, incorporated a number of Questions whose responses have been used as proxy measures for various characteristics regarding performance of Labour Market Information Systems (LMIS) and factors which affects performance of LMIS in Tanzania. Table 5.5 provides details of assumptions made and the logical underpinnings behind such assumptions as they have been used in transformation of key variables of the study in employers' module to provide proxy measures of the performance of LMIS and associated attributes. The key variables of the research study are performance of LMIS (Pf) which is the dependent variable; and manpower planning (Mp), unemployment (Un), and other social economic factors influencing performance of LMIS (fc) which are the independent variables. Similar procedures are also used to transform information collected from training institutions.

Table 5.3*Assumptions Used in Data Transformation*

S/N	Main Variables	Assumptions Used in Data Transformation
1.	Performance of LMIS (Pf)	Performance of LMIS (Pf) is designated as the dependent variable of the research study. Responses of Qn35(I2) which solicited information on employers' experience regarding LMIS were used as proxies to gauge performance of LMIS in the study area. Qn35 (I2) was transformed into likert-type question with options '1' very ineffective; '2' ineffective; '3' neutral; '4' effective and '5' very effective. The transformed question is designated as dependent variable of the ordinal regression model which is applied in the study as one of the methods for data analysis.
	Manpower planning (Mp)	Three questions from the study questionnaire were combined to mould a proxy variable to measure the extent Manpower planning (Mp) affects performance of LMIS in the study area. These questions are: - Qn16 (E.2.2.a) which enquires about employers' satisfaction with graduates hired from TVET institutions; Qn10 (D1) which is about institutional ownership of the establishment; and Qn18 (E2.3) which enquired skills of employees in relation to what is needed by employers at the work place. Each of the three-question used to provide proxy measure for the extent of the effects of manpower planning on the performance of LMIS in the research area was transformed into a corresponding likert-type question with options '1' very ineffective; '2' ineffective; '3' neutral; '4' effective and '5' very effective.
2.	Unemployment (Un),	Unemployment is defined as those persons who did not perform any economic activity in a designated period of time but they indicated availability for work even if they did not take any step looking for work during a reference period (Garcia-Louzao, 2021). There are several causes of persistent unemployment ranging from bottlenecks of the labour market to provide jobs to persons who want to work to inadequate and inaccessibility of information on job openings or vacancies, skills mismatches and others which affects performance of LMIS. In this research study, a combination of two variables from the employers' module questionnaire has been used to provide a proxy measure for unemployment situation in relation to performance of LMIS. The two questions are Qn33 (H1) which is enquired methods

S/N	Main Variables	Assumptions Used in Data Transformation
		used by employers to source potential staff to be recruited; and Qn40 (J2) which is about functional areas where ICT is used in an establishment. Each of the question used to provide proxy measure for unemployment experience in the study area was transformed into a corresponding likert-scale question with options '1' very ineffective; '2' ineffective; '3' neutral; '4' effective and '5' very effective.
3.	Factors Influencing Performance of LMIS (fc)	There are several other factors that influence performance of LMIS in the labour market (fc). In this study a combination of two questions from the study questionnaire were used to provide proxies for such factors: - Qn39 (J1) on whether or not an establishment has introduced the use of ICT; and Qn40 (J2) on functional areas of ICT use in an establishment. Establishments with response 1 in Qn39 (J1) have introduced use of ICT, which is a critical and relevant factor for effective performance of LMIS. Establishments with response 2 in Qn39 (J1) have not introduced the use of ICT which militates against effective performance of LMIS. Qn40 (J2) had 7 coded options representing different functional areas where ICT could be used in an organisation. These options were arranged in such a way that, those higher on the list represented usage of ICT in functional areas more amenable to effective performance of LMIS, and options placed lower on the list, otherwise. Qn40 (J2) was transformed into likert-type question with options '1' very effective; '2' effective; '3' neutral; '4' ineffective and '5' very ineffective. A variable capturing influence of other factors in performance of LMIS in the labour market was generated by averaging responses in Qn39 and Qn40 and letter used in the study equations.

Values in questions used as proxies for Manpower panning (Mp), Unemployment (Un) and Factors influencing performance of LMIS (fc) were averaged to get mean value for such variables and used in the ordinal regression analysis as independent variables to establish relationship (if any) with the dependent variable which is the Performance of LMIS (Pf).

Descriptive Quantitative Research Findings from Employers and Training Institutions Module

Table 5.4 (a)

Number and Percentage Distribution of Employers by Age Group and Sex, Dar es Salaam, 2022 –International Definition of Youth

Age Group	Male		Female		Both	
	Number	Percent	Number	Percent	Number	Percent
18 - 24	252	0.4	151	0.2	403	0.6
25 - 35	9,765	15.2	6,694	10.4	16,459	25.7
36 - 75	25,871	40.4	21,366	33.3	47,238	73.7
Total	35,887	56.0	28,212	44.0	64,099	100.0

Table 5.5 (b)

Number and Percentage Distribution of Employers by Age Group and Sex, Dar es Salaam, 2022 – National Definition of Youth

Age Group	Male		Female		Both	
	Number	Percent	Number	Percent	Number	Percent
18 - 35	10,016	15.6	6,845	10.7	16,862	26.3
36 Years and above	25,871	40.4	21,366	33.3	47,238	73.7
Total	35,887	56.0	28,212	44.0	64,099	100.0

Table 5.6 (a) and 5.6 (b) shows that youth in the age group 18-24 years and 18-35 years for international and national definition respectively contributes less than 30 percent of employers who participated in this study. This is the group which most of them are still in school or training institutions and those who have completed their studies are looking for jobs rather than being employers. Table 5.6 (b) indicates that 73.7 percent of the employers who participated in the study are adult aged 36 years and above and 26.3 percent of them are youth aged between 18 to 35 years. As expected, there were more male employers (56.0 percent) than females (44.0 percent). Pattern of the results from the study is similar to the findings from the Labour Force Survey (2020) implemented in Tanzania which revealed that there are more males in employment (51.4 percent) than their female counterparts (48.6 percent) (ILFS, 2020).

Table 5.6 (a)

Number and Percentage Distribution of Respondents from Training Institutions by Age Group and Sex, Dar es Salaam, 2022 – International Definition of Youth

Age Group	Male		Female		Both	
	Number	Percent	Number	Percent	Number	Percent
15 - 24	24	1.4	39	2.3	63	3.7
25 - 35	448	26.4	389	22.9	837	49.3
36 - 75	448	26.4	351	20.6	798	47.0
Total	920	54.2	779	45.8	1,699	100.0

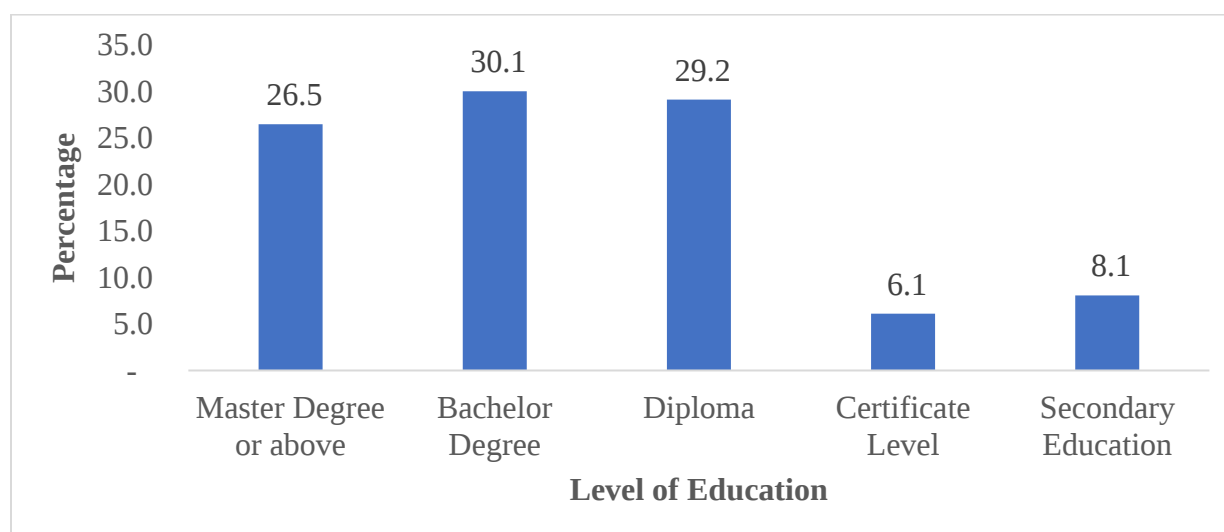
Table 5.7 (b)

Number and Percentage Distribution of Respondents from Training Institutions by Age Group and Sex, Dar es Salaam, 2022 – National Definition of Youth

Age Group	Male		Female		Both	
	Number	Percent	Number	Percent	Number	Percent
18 - 35	472	27.8	428	25.2	901	53.0
36 Years and above	448	26.4	351	20.6	798	47.0
Total	920	54.2	779	45.8	1,699	100

Distribution of respondents by age group and sex in the training institutions are similar to the distribution observed from employers' module whereby there are more male employees (54.2 percent) than females (45.8 percent). As opposed to the Employers module, 53.0 percent of respondents are youth in the age group 18 - 35 years and 47.0 percent are elders aged 36 years and above (Table 5.7a and 5.7b).

Figure 5.1 *Percentage Distribution of Employers by Levels of Education, Dar es Salaam, 2022*



It can be noted that more than 50 percent of the study's respondents possessed a bachelor degree or masters' degree and above which prompts for the quality of collected information. Only 14.2 percent of respondents had a certificate or secondary level education (Figure 4.1).

Table 5.8

Number and Percentage Distribution of Employers by Level of Education and Ownership of Establishments, Dar es Salaam, 2022

Level of Education	Public		Private		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Master Degree or above	5,788	9.0	11,224	17.5	17,013	26.5
Bachelor Degree	7,776	12.1	11,501	17.9	19,278	30.1
Diploma	7,701	12.0	10,998	17.2	18,699	29.2
Certificate Level	3,624	5.7	302	0.5	3,926	6.1
Secondary Education	3,548	5.5	1,636	2.6	5,184	8.1
Total	28,438	44.4	35,661	55.6	64,099	100.0

Table 5.8 shows that 55.6 percent of employers works with private sector and 44.4 percent are in public sector. Moreover, 30.1 percent of employers who participated in the study have a

bachelor degree, 26.5 percent have master's degree or above and 29.2 percent have diploma level education. Proportionately, only 8.1 percent of employers had secondary level education and 6.1 percent had certificate level of qualification.

Table 5.9

Number and Percentage Distribution of Respondents from Training Institutions by Education and Ownership of Establishment, Dar es Salaam, 2022

Level of Education	Public		Private		Total	
	Number	Percent	Number	Percent	Number	Percent
Master Degree or above	151	8.9	68	4.0	219	12.9
Bachelor Degree	536	31.5	204	12.0	740	43.6
Diploma	443	26.1	170	10.0	613	36.1
Certificate Level	58	3.4	54	3.2	112	6.6
Secondary Education	10	0.6	5	0.3	15	0.9
Total	1,198	70.5	501	29.5	1,699	100

Table 5.9 shows that 43.6 percent of respondents hold a bachelor's degree and majority of them (31.5 percent) are engaged in public training institutions while 12.0 percent of them are in private training institutions. Respondents who hold a diploma level education took the second large proportion with 36.1 percent. Results further portrays that there are very few respondents (0.9 percent) from training institutions who hold a secondary education level.

Table 5.10

Number and Percentage Distribution of Employers by Main Type of Economic Activity, Dar es Salaam, 2022

Type of Economic Activity	Public		Private		Total	
	Number	Percent	Number	Percent	Number	Percent
Mining and quarrying	2,139	7.5	2,592	7.3	4,731	7.4
Manufacturing	2,064	7.3	2,542	7.1	4,605	7.2
Electricity, gas, steam and air conditioning supply	1,787	6.3	2,366	6.6	4,152	6.5
Water supply, sewage, waste management and remediation activities	2,089	7.3	2,240	6.3	4,329	6.8
Construction	2,038	7.2	1,988	5.6	4,027	6.3
Wholesale and retail trade; repair of motor vehicles and motorcycles	1,862	6.5	2,391	6.7	4,253	6.6
Transportation and storage	1,938	6.8	2,416	6.8	4,354	6.8
Accommodation and food service activities	2,240	7.9	2,416	6.8	4,656	7.3
Information and communication	1,762	6.2	2,743	7.7	4,505	7.0
Financial and insurance activities	1,661	5.8	2,114	5.9	3,775	5.9
Real estate activities	1,887	6.6	2,366	6.6	4,253	6.6
Professional, scientific and technical activities	1,434	5.0	2,366	6.6	3,800	5.9
Administrative and support service activities	1,636	5.8	2,265	6.4	3,901	6.1
Public administration and defence; compulsory social security	1,787	6.3	2,366	6.6	4,152	6.5
Education	2,114	7.4	2,491	7.0	4,605	7.2
Total	28,438	100.0	35,661	100.0	64,099	100.0

There is no noticeable difference between distribution of employers by main type of economic activities performed in their establishments as shown in Table 5.10. However, mining and quarrying; accommodation and food service activities; education and manufacturing are three leading economic activities which has higher share of respondents than others with 7.4 percent; 7.3 percent, and 7.2 percent respectively.

Table 5.11

Number and Percentage Distribution of Employers by Number of Employees Engaged, Dar es Salaam, 2022

Category of Employees	Number	Percent
Less than 10 Employees	38,429	60.0
10 - 49 Employees	25,645	40.0
50 Employees or More	25	0.0 ⁴
Total	64,099	100

Results further reveal that large proportion of employers (60 percent) who responded to the study questions are working in establishments which have less than 10 employees followed by 40 percent of employers who works in establishments with 10 to 49 employees. There are few employers (25 out of 64,099 employers) participated in the research working in establishments with 50 employees or more (Table 5.11).

⁴ Results indicate that, 0.04 percent of institutions with 50 or more employees participated in the study

Figure 5. 2

Number of employees in Training Institutions Participated in the Study by Sex, Dar es Salaam, 2022

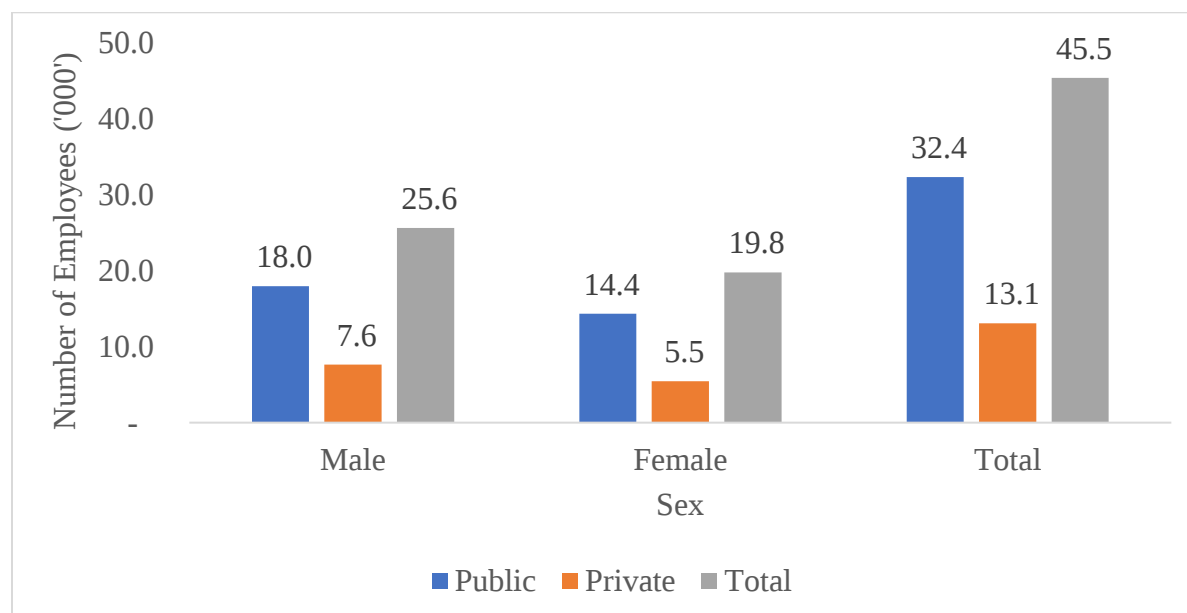


Figure 5.2 reveals the size of employment for establishments participated in the study whereby about 45,000 employees working in the training institutions participated in the study and 25,646 were males and 19,818 females. Furthermore, 32,354 employees are working with public training institutions and 13,110 employees are working with private training institutions. Information collected from public and private training institutions are crucial on setting baseline data for strengthening functions of the institutions including development of inclusive training programs between training institutions, employers and employees.

Table 5.12

Number and Percentage Distribution of Respondents in Training Institutions by Number of Years Worked, Dar es Salaam, 2022

Number of Years	Number	Percent
Less than 5 Years	720	42.4
Between 5 and 10 Years	944	55.6
10 or more Years	34	2.01
Total	1,699	100.0

Table 5.12 explains that respondents from training institutions have enough experience with the institutions because 55.6 percent of them have worked within the same institution for a period of between 5 and 10 years and 2.0 percent have worked for more than 10 years in the same institution. It is also noted that 42.4 percent of respondents have worked with the institution for less than five years. There is good mix of respondents which provided an opportunity to collect unbiased information from respondents who have experience in the institution ranging from those with higher experience to those with medium and low experience.

Quantitative Results for Research Question One and Its Hypothesis

The first research question aimed to inquire information to examine the extent Labour Market Information System affects manpower planning in Dar es Salaam Region. Collected Information related to this question are critical on assessing and making decision of rejecting or accepting null hypotheses that Labour Market Information System does not affect manpower planning.

Table 5.13

Number and Percentage Distribution of Employers by the Status of Skills Match by Sector of Ownership, Dar es Salaam, 2022

Possessed Skills	Public		Private		Total	
	Number	Percent	Number	Percent	Number	Percent
Yes	8,003	28.1	1,636	4.6	9,639	15.0
No - other jobs than possessed qualification	8,632	30.4	11,954	33.5	20,586	32.1
No - lower level than possessed qualification	5,637	19.8	10,796	30.3	16,434	25.6
No - higher level than possessed qualification	5,360	18.8	10,570	29.6	15,930	24.9
Not applicable-no training	805	2.8	705	2.0	1,510	2.4
Total	28,438	100.0	35,661	100.0	64,099	100.0

As indicated in Table 5.13 there is high level of skills mismatch in Dar es Salaam whereby 32.1 percent of respondents said that they have other skills than the skills needed in their current job, 25.6 percent has lower skills level than the required qualification and 24.9 percent has higher skills than the skills needed for the current job. Only 15.0 percent of respondents indicated that they possess skills required for their current job. Level of skills mismatch is an important indicator used to determine maturity of manpower planning in the economy. The higher the skills mismatch the high the ineffective manpower planning.

Table 5.14

Percentage Distribution of Employee's in Training Institutions by the Status of Skills Match by Sector of Ownership, Dar es Salaam, 2022

Status of Skills	Public		Private		Total	
	Number	Percent	Number	Percent	Number	Percent
Their skills need to be further developed	623	36.7	282	16.6	905	53.3
They have higher skills than required	117	6.9	5	0.3	122	7.2
They have the required skills	458	26.9	214	12.6	672	39.5
Total	1,198	70.5	501	29.5	1,699	100.0

Results reveals that, more than half of employees (53.3 percent) in training institutions in Dar es Salaam region their skills need to be further developed. Regarding skills mismatch, 7.2 percent of the employees have higher skills than required by their employers. However, 39.5 percent had the required skills to perform their daily duties (Table 5.14).

Figure 5. 3

Distribution of Training Institutions by Means Used to Ensure Relevance of Training Programmes by Type of Institution, Dar es Salaam, 2022



Proportionately, there are few training institutions in Dar es Salaam which review their curriculum with employers (9.2 percent), National Employment Agency (7.4 percent) or with Council of Higher Learning Institutions (9.7 percent). The observed situation could result into irrelevance training programs which are directly related to skills mismatch and higher levels of unemployment. Most of training institutions (40.1 percent) in Dar es Salaam use professional experience to ensure relevance of training programs. This approach is subjective and not reliable since it depends on the perceptions of individuals.

Table 5.15

Percentage Distribution of Type of Skills Lacking Among Staff by Sector of Ownership, Dar es Salaam, 2022

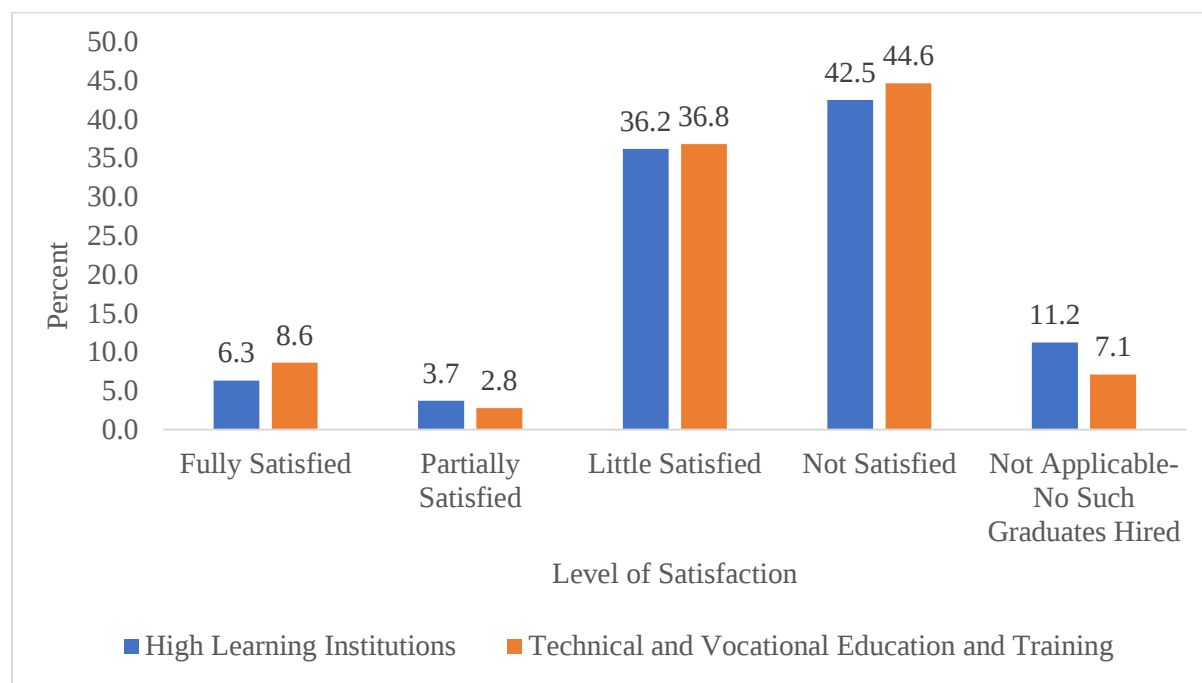
Type of Skills	Public		Private		Total	
	Number	Percent	Number	Percent	Number	Percent
Managerial Skills	1,359	4.8	1,988	5.6	3,347	5.2
Technical Skills	4,933	17.3	8,632	24.2	13,565	21.2
Entrepreneurial Skills	2,668	9.4	4,933	13.8	7,600	11.9
Language Skills	2,542	8.9	4,480	12.6	7,021	11.0
Customer Care Skills	101	0.4	-	-	101	0.2
Innovativeness and Creativity	2,491	8.8	201	0.6	2,693	4.2
IT Skills	12,759	44.9	14,748	41.4	27,507	42.9
Communication Skills	981	3.5	428	1.2	1,409	2.2
Other Skills	604	2.1	252	0.7	856	1.3
Total	28,438	100.0	35,661	100.0	64,099	100.0

Note: (-) means there were no responses

Table 5.15 indicates that majority (42.9 percent) of employers in Dar es Salaam responded that their staff lack IT and technical skills in performing their daily duties as compared to other skills. The findings further reveal that 21.2 percent of employers indicated that their staff lack technical skills. In addition, 11.9 percent and 11.0 percent of employers reported their staff have inadequate entrepreneurial and language skills respectively. The proportion of staff who have inadequate skills on managerial, customer care, innovative and creativity, communication and other skills is less than 6.0 percent. Again, this information is critical on informing manpower planning in Dar es Salaam region.

Figure 5. 4

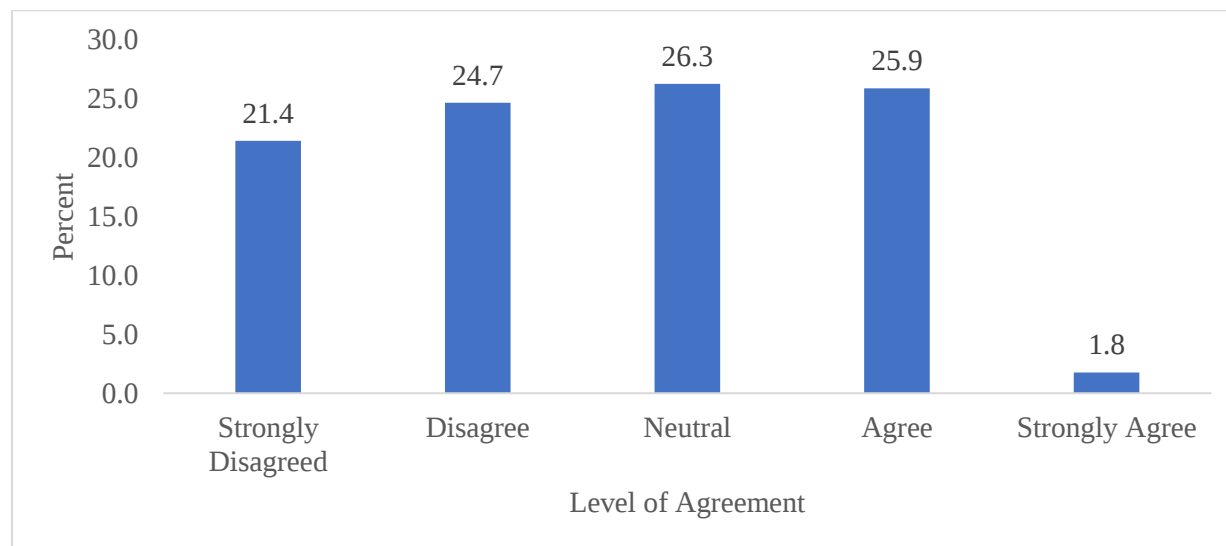
Percentage Distribution of Institutions which Hired Graduates from TVET or HLI by Level of Satisfaction of Performance of Recruited, Dar es Salaam, 2022



More than 40 percent of employers indicated that they are not satisfied with the performance of their employees who graduated from High Learning Institutions (HLI) or Technical and Vocations Education Training Institutions (TVET). This implied existence of high skills mismatch in the economy which hinder employees to perform at their optimal scale. Either, more than 30 percent of employers said that they are little satisfied with the performance of their employees, while less than 10 percent of employers indicates that they are satisfied (Figure 5.4).

Figure 5.5

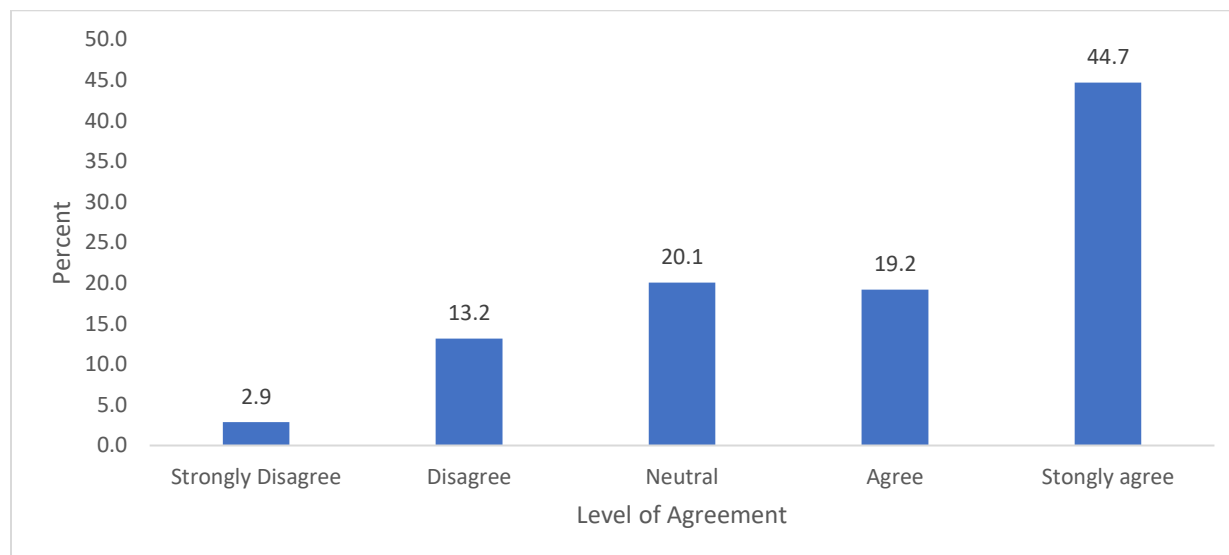
Percentage Distribution of Employers Regarding the Extent of Agreement that LMIS Affects Manpower Planning, Dar es Salaam, 2022



The study used a five likert type questions to inquire perceptions of employers regarding the extent of agreement that Labour Market Information System affects manpower planning. Results depict that 1.8 percent of employers strongly agreed with the statement and 25.6 percent agreed. On the other hand, 21.4 percent of the employers strongly disagreed with the statement and 24.7 percent disagreed with the statement. There are 26.3 percent of employers who are neutral with regards to the statement (Figure 5.5).

Figure 5. 6

Distribution of Training Institutions Regarding the Extent of Agreement that LMIS Affects Manpower Planning, Dar es Salaam, 2022



There is high proportion of training institutions (44.7 percent) which believe that Labour Market Information System affects manpower planning followed by those which simply agreed with the statements at 19.2 percent. About 20 percent of the training institutions are neutral and 13.2 percent disagreed with the statement. Only few (2.9 percent) of institutions strongly disagreed with the statement (Figure 5. 6).

Table 5.16

Distribution of Employers by Industrial Activities and Level of Satisfaction of Performance of Employees Hired from TVET institutions

Industry	fully satisfied	partially satisfied	little satisfied	Not satisfied	Total	Number
Mining and quarrying	8.7	2.3	42.8	46.2	100.0	4,354
Manufacturing	10.2	4.5	36.2	49.2	100.0	4,454
Electricity, gas, steam and air conditioning supply	10.4	2.6	35.7	51.3	100.0	3,876
Water supply; sewage, waste management and remediation activities	8.0	3.7	35.6	52.8	100.0	4,102
Construction	8.8	2.7	39.5	49.0	100.0	3,699
Wholesale and retail trade; repair of motor vehicles and motorcycles	11.3	0.6	40.3	47.8	100.0	4,001
Transportation and storage	9.6	3.8	42.3	44.2	100.0	3,926
Accommodation and food service activities	5.3	2.4	44.1	48.2	100.0	4,278
Information and communication	13.6	3.0	39.6	43.8	100.0	4,253
Financial and insurance activities	3.0	3.8	40.6	52.6	100.0	3,347
Real estate activities	11.8	2.0	42.8	43.4	100.0	3,825
Professional, scientific and technical activities	12.6	0.7	37.8	49.0	100.0	3,599
Administrative and support service activities	8.3	5.6	38.2	47.9	100.0	3,624
Public administration and defence; compulsory social security	7.6	4.4	39.2	48.7	100.0	3,976
Education	9.5	3.0	39.9	47.6	100.0	4,228
Total	9.3	3.0	39.6	48.1	100.0	59,544

Findings in Table 5.16 indicate that, nearly half (48.1 percent) of employers who hired graduates from TVET institutions were not satisfied with performance of such recruits at the work place. Across industries, employers in the industries of water supply; sewage, waste management and remediation activities (52.8 percent) and financial and insurance activities (52.6 percent) constitute higher proportions among those who were not satisfied with performance of recruits from TVET institutions. The findings also indicate that, employers in the industries of Information and communication (13.6 percent); Professional, scientific and technical activities (12.6 percent); and Real estate activities (11.8 percent) had relatively higher satisfaction with recruits from TVET institutions compared to employers in other industries.

Quantitative Results for Research Question Two and Its Hypothesis

Research Question Two focusses on determination of the extent Labour Market Information System affects unemployment among employable persons in Dar es Salaam. Results related to this question are baseline data of conducting further analysis to facilitating making correct decisions of either to nullify or to accept the null hypothesis that Labour Market Information System does not affect unemployment.

Table 5.17

Percentage Distribution of Skills Mismatch Among Staff by Sector of Ownership, Dar es Salaam, 2022

Skills Mismatch of Employees	Public		Private		Total	
	Number	Percent	Number	Percent	Number	Percent
They Have the Required Skills	8,355	13.0	1,837	2.9	10,192	15.9
They Have Higher Skills than Required	453	0.7	428	0.7	881	1.4
Their Skills Need to be further Developed	19,630	30.6	33,396	52.1	53,026	82.7
Total	28,438	44.4	35,661	55.6	64,099	100.0

The findings show that 82.7 percent of employers responded that the skills of their employees need to be developed further indicating existence of skills mismatch which could hinder employability of job seekers in Dar es Salaam. In addition, private sector has higher proportion of employees (52.1 percent) whose skills need to be developed further compared to 30.6 percent for employees in the public sector. However, 15.9 percent of employers responded that their employees have the required skills to perform their daily duties (Table 5.17).

Table 5.18

Distribution of Training Institution's perception Regarding Areas which need to be Improved by Type of Ownership, Dar es Salaam, 2022

Areas which need to be Improved	Public		Private		Total	
	Number	Percent	Number	Percent	Number	Percent
Curriculum review with employer	122	10.2	44	8.7	166	9.7
Curriculum review with National Employment Agency	68	5.7	58	11.7	127	7.4
Curriculum review with council of higher education	68	5.7	54	10.7	122	7.2
Tracer studies	122	10.2	39	7.8	161	9.5
Industrial attachment	131	11.0	58	11.7	190	11.2
Labour market studies	117	9.8	44	8.7	161	9.5
Entrepreneurial skills	472	39.4	161	32.0	633	37.2
IT skills	97	8.1	44	8.7	141	8.3
Total	1,198	100.0	501	100.0	1,699	100.0

Results indicated in Table 5.18 depicts that 26.4 percent of training institutions in Dar es Salaam indicated the needs for improvement on the curriculum review by employers, National Employment Agency and Council of Higher Learning Education to ensure the relevance of the training programs. Furthermore, 37.2 percent said improvement is need on entrepreneurial skills,

11.2 percent in industrial attachment and 9.5 percent indicated the need to improve tracer studies. Results are promising that training institutions are looking towards improving key areas which have huge impact on enhancing skills of graduates and their employability.

Figure 5.7

Percentage Distribution of Graduates from Training Institutions by Duration they Took to Get Employment, Dar es Salaam, 2022

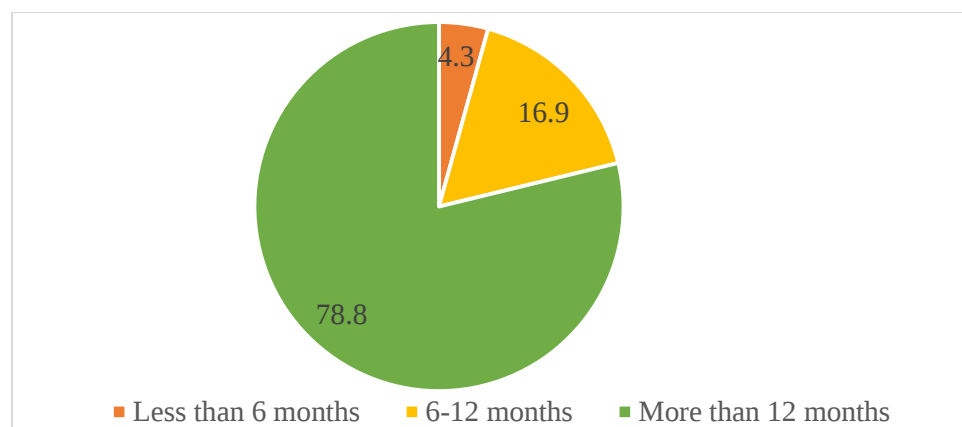
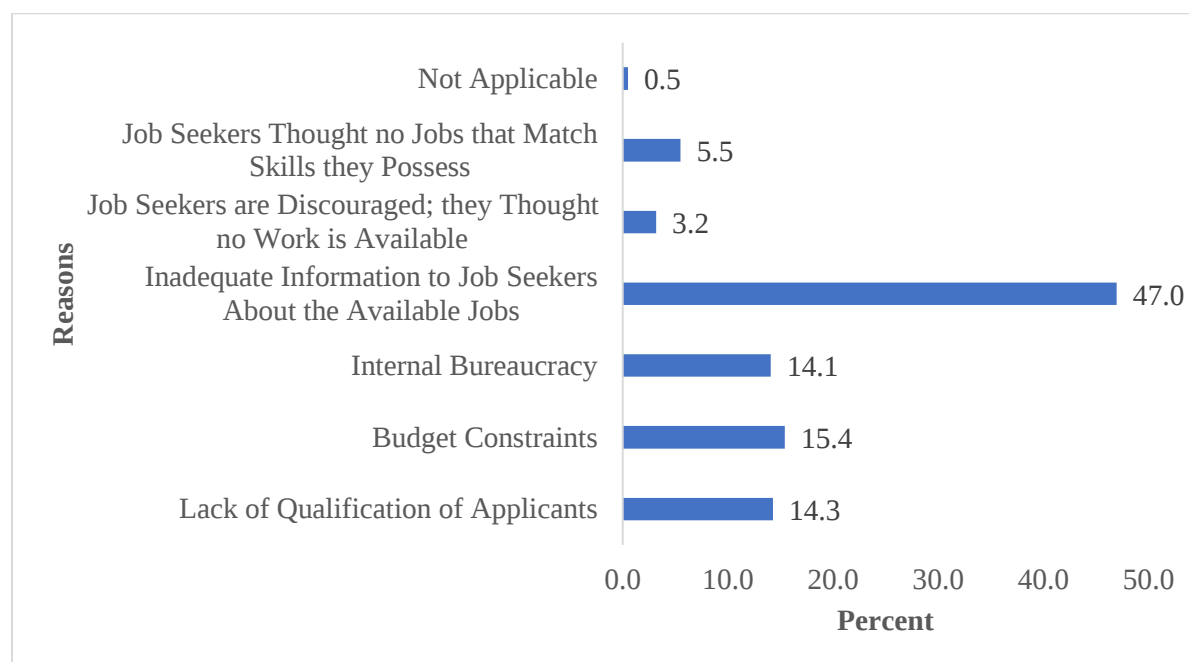


Figure 5.7 reveals that 78.8 percent of graduates took more than 12 months to secure a job in the labour market in Dar es Salaam, followed by 16.9 percent of those who stayed between 6 and 12 months to get a job. Only 4.3 percent of graduates got employment for a period of less than 6 months after their graduation. These results call for more strategic plans to reduce school to work transition period which will directly reduce unemployment and contribute to increased income of individuals and poverty reduction.

Figure 5.8

Percentage Distribution of Reasons for Posts which have been Vacant for Six Months or More, Dar es Salaam, 2022



As indicated in Figure 5.8, the study collected information to inform about the reasons for posts which were vacant for six months or more in the institutions. Results revealed that majority of responses (47.0 percent) are related to inadequate information to job seekers about the available jobs followed by budget constraints (15.4 percent) and lack of qualified applicants (14.3 percent). Furthermore, there is indication of discouraged job seekers combining those who thought there is no job that match with the skills they possess and those who thought there is no job available for them (8.7 percent). Provided reasons are important to inform about the effectiveness of functions of Labour Market Information System including coordination of production, dissemination and use of Labour Market Information to unlock employment opportunities.

Table 5.19

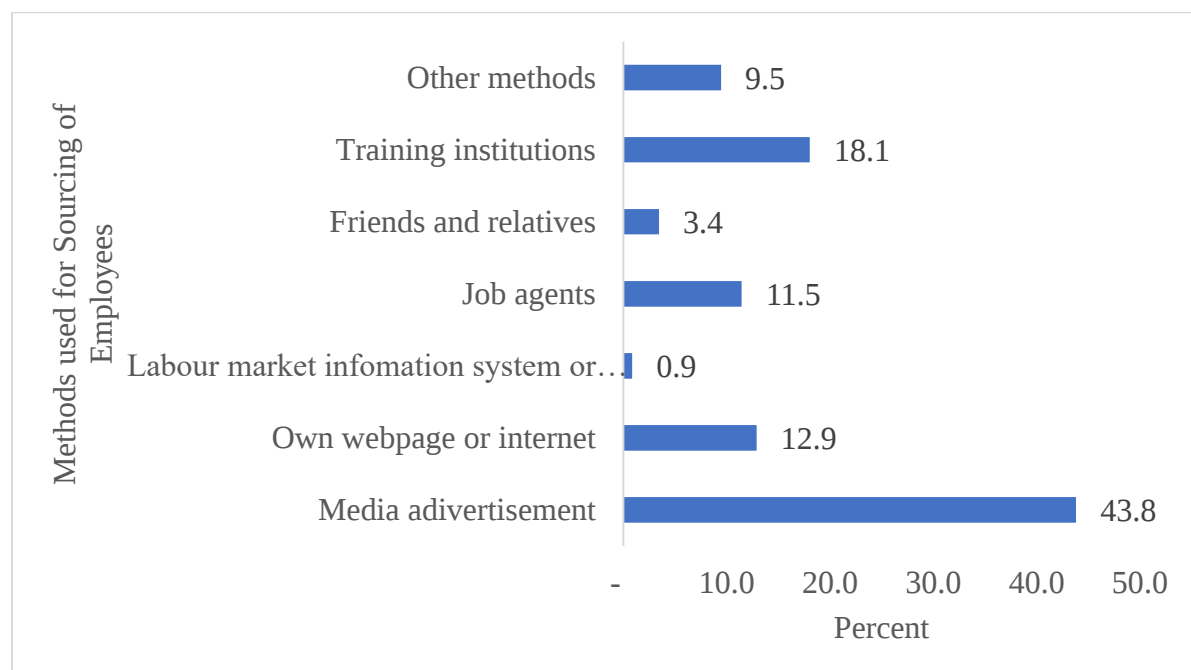
Percentage Distribution of Methods used for Sourcing of Employees by Sector of Ownership, Dar es Salaam, 2022

Methods Used for Sourcing of Employees	Public		Private		Total	
	Number	Percent	Number	Percent	Number	Percent
Media Advertisement	4,253	6.6	5,788	9.0	10,041	15.7
Own Webpage or Internet	3,070	4.8	5,839	9.1	8,909	13.9
Labour Market Information System or Employee Registration System	2,768	4.3	201	0.3	2,970	4.6
Job Agents	8,104	12.6	5,587	8.7	13,691	21.4
Friends and Relatives	-	-	11,904	18.6	11,904	18.6
Training Institutions	10,218	15.9	6,065	9.5	16,283	25.4
Other Methods	25	0.0	277	0.4	302	0.5
Total	28,438	44.4	35,661	55.6	64,099	100.0

Table 5.19 shows that the dominant methods used by employers to source employees are through training institutions (25.4 percent), use of job agents (21.4 percent) and media advertisements (15.7 percent). There is minimal proportion of employers (4.6 percent) who use Labour Market Information Systems to source the required staff. Moreover, 18.6 percent of employers use traditional means such as use of friends and relatives to acquire the required staff. Each method of sourcing staff has advantages and disadvantages with regards to ability of the economy to absorb available job seekers and the need to balance labour supply and demand in economy.

Figure 5.9

Percentage Distribution of Methods used by Training Institutions for Sourcing of Employees, Dar es Salaam, 2022



The dominant method used by training institutions in Dar es Salaam to source employees is media advertisement (43.8 percent) followed by training institutions (18.1 percent) and job agents (11.5 percent). Other methods used are webpages (12.9 percent) and friends or relatives (3.4 percent). Only 0.9 percent of training institutions use Labour Market Information Systems to source employees. Given the rapid change of technology in the world, there is a need of embracing opportunity of using technology to share labour market information to a wider group of users specifically training institution, employers and job seekers to enhance making evidence-based decisions related to career development and investment.

Figure 5.10

Percentage Distribution of Employers by whether they have Used Labour Market Information System by Sector of Ownership, Dar es Salaam, 2022

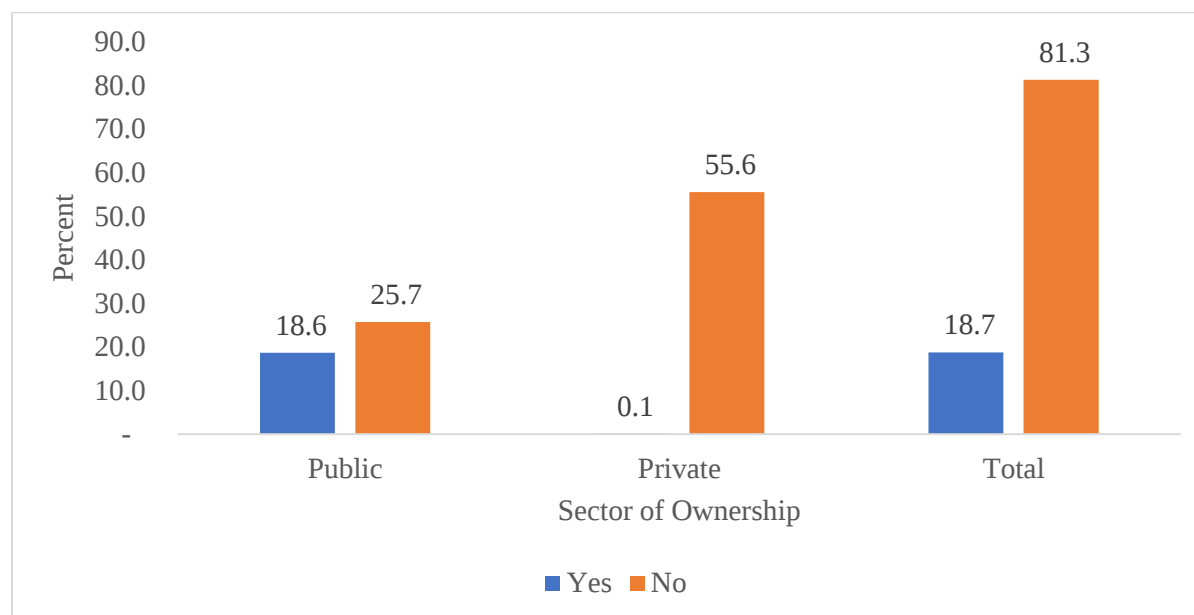
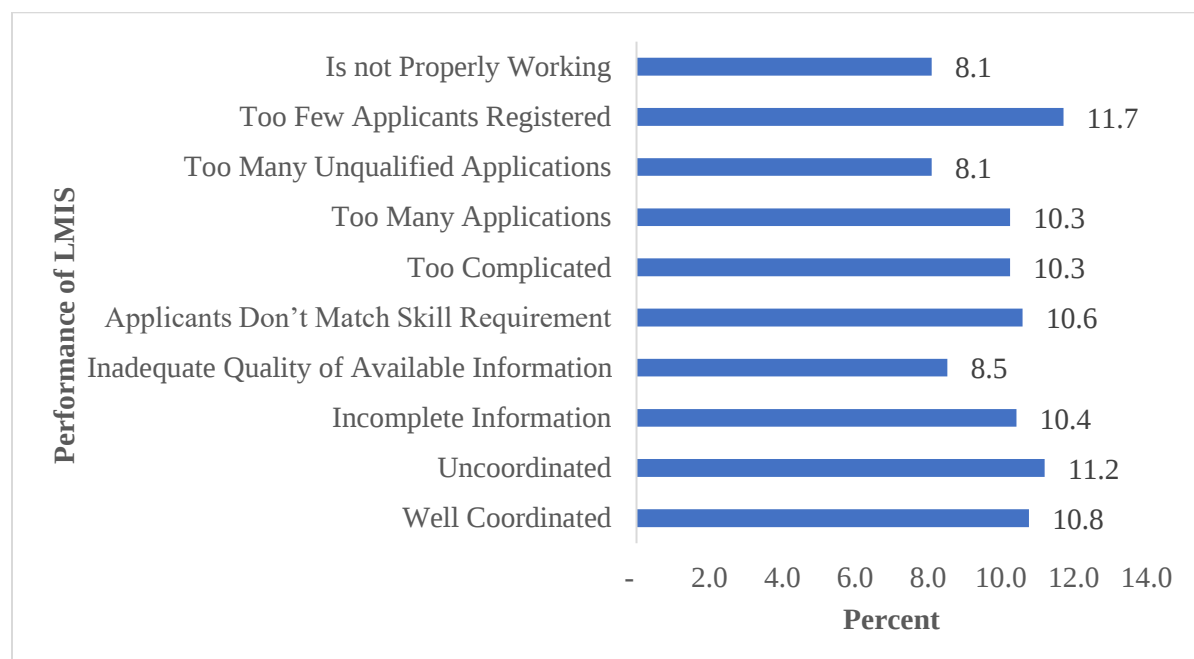


Figure 5.10 shows that 81.3 percent of the employers in Dar es Salaam indicated that they have never used Labour Market Information Systems of which 55.6 percent of them are in private sector and 25.7 percent are in public sector. Furthermore, proportionately, public sector is more likely to use Labour Market Information Systems (18.6 percent) than private sector (0.1 percent).

Figure 5.11

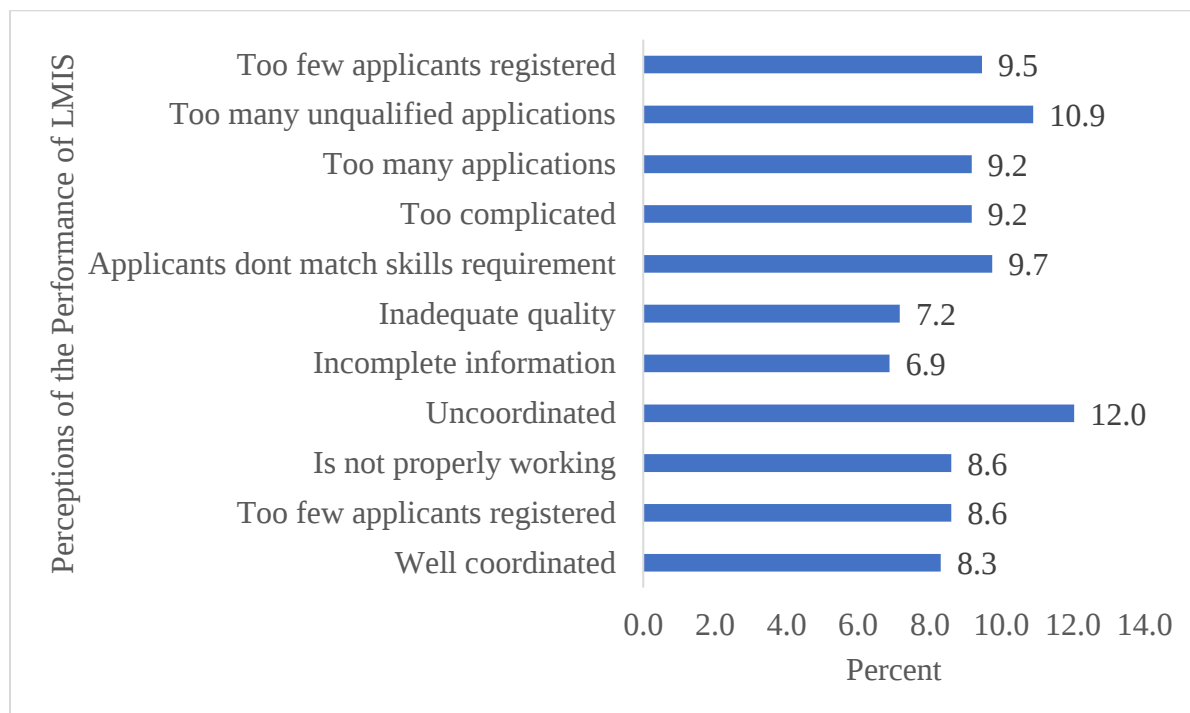
Percentage Distribution of Experience on the Performance of LMIS, Dar es Salaam, 2022



Furthermore, institutions which indicated that they have used Labour Market Information Systems they were asked to give their opinions on the performance of LMIS in Dar es Salaam region. Figure 5.11 shows that about half (48.4 percent) of employer's responses are related to the existence of inadequate or uncoordinated Labour Market Information Systems. Other attributes related to the performance of Labour Market Information Systems which had higher proportion of responses are too few applicants registered (11.7 percent), too complicated (10.3 percent) and not properly working (8.1 percent). On the other hand, 10.8 percent of respondents indicated that existed Labour Market Information Systems are well coordinated. Performance of Labour Market Information systems depends on many factors such as availability of labour market information, level of ICT use, institutional setup, collaboration between training institutions and employers which affects levels of unemployment in the economy (Woods and O'Leary, 2006).

Figure 5.12

Percentage Distribution of Experience on the Performance of LMIS by Training Institutions, Dar es Salaam, 2022



Similar question was administered to training institutions to ascertain experiences on the performance of Labour Market Information Systems. Most of training institutions (12.0 percent) responded that are uncoordinated and 10.9 percent of them said that they have too many unqualified applicants. In addition, other institutions indicated that existing Labour Market Information Systems have information which are inadequate in terms of quality and completeness (7.2 and 6.9 percent) respectively.

Table 5.20

Percentage Distribution of Employers Regarding the Extent of Agreement that LMIS Affects Unemployment, Dar es Salaam, 2022

Opinions	Number	Percent
Strongly Disagree	13,741	21.4
Disagree	15,805	24.7
Neutral	16,836	26.3
Agree	16,585	25.9
Strongly Agree	1,132	1.8
Total	64,099	100.0

Table 5.20 shows number and percentages distribution of perceptions of employers regarding the extent of agreements that Labour Market Information Systems affects unemployment. Results indicates that 27.7 percent of employers agreed with the statement while 46.1 percent disagreed. There are 26.3 percent of employers who are neutral with regards to the statement.

Table 5.21

Distribution of Training Institutions Regarding the Extent of Agreement that LMIS Affects Unemployment, Dar es Salaam, 2022

Level of Agreement	Number	Percent
Strongly Disagree	78	4.6
Disagree	127	7.4
Neutral	175	10.3
Agree	531	31.2
Strongly agree	789	46.4
Total	1,699	100.0

Results show that, as opposed to employers, 77.6 percent of training institutions agreed with the statement that Labour Market Information System affects unemployment while 12.0 percent of them disagreed with the statement. There are 10.3 percent of training institutions which are neutral with regards to the statement (Table 5.21). Results from training institutions provides

a signal that there is high correlation between Labour Market Information System and unemployment.

Quantitative Results for Research Question Three and Its Hypothesis

Research Question three inquired information to inform about social economic factors affecting performance of LMIS in Dar es Salaam Region. Collected information were used to draw conclusion on the null hypothesis that there is no association between different social economic factors and the performance of LMIS.

Table 5.22

Percentage Distribution of Employers Regarding the Extent of Agreement that there is Association between Different Social Economic Factors and Performance of LMIS, Dar es Salaam, 2022

Opinions	Number	Percent
Strongly Disagree	12,659	19.7
Disagree	14,395	22.5
Neutral	20,184	31.5
Agree	15,956	24.9
Strongly Agree	906	1.4
Total	64,099	100.0

Results of the study depict that 26.3 percent of employers agreed that there is association between different social economic factors and the performance of LMIS. On the other hand, 42,2 percent disagree and 31.5 percent are neutral with regards to the statement (Table 5.22). Generally, there is no big difference between those who agreed and disagreed with the association of other social economic factors and their impact to the performance of LMIS.

Table 5.23

Percentage Distribution of Training Institutions Regarding the Extent of Agreement that there is Association between Different Social Economic Factors and Performance of LMIS, Dar es Salaam, 2022

Opinions	Number	Percent
Strongly Disagree	0.0	0.0
Disagree	97	5.7
Neutral	146	8.6
Agree	540	31.8
Strongly Agree	915	53.9
Total	1699	100.0

There is high level of agreement from training institutions (85.7 percent) that there is association between different social economic factors and the performance of Labour Market Information Systems. Only 5.6 percent of training institutions are against the statement (Table 5.23).

Table 5.24

Percentage Distribution of Employers by whether they have Used ICT by Sector of Ownership, Dar es Salaam, 2022

Uses of ICT	Public	Private	Total
Yes	44.1	53.1	97.3
No	0.2	2.5	2.7
Total	44.4	55.6	100.0

Table 5.24 shows that 97.3 percent of employers use Information and Communication Technology (ICT) in their business operations and only 2.7 percent do not use ICT in their businesses. The proportion of ICT use by employers is significant and set a conducive environment for enhancing the performance of Labour Market Information Systems.

Table 5.25

Percentage Distribution of Areas of ICT Uses in Organizations by Sector of Ownership, Dar es Salaam, 2022

Main Areas of ICT Uses	Public	Private	Total
Jobs advertisement	14.2	13.2	13.6
Human resource management	16.9	14.5	15.6
Records management	17.2	14.4	15.7
Production	14.6	15.6	15.1
Marketing	12.7	14.6	13.7
Communication	11.7	13.0	12.4
Accounting/Finance/Planning/Budgeting	12.6	14.8	13.8
Total	100.0	100.0	100.0

More than 70 percent of the employers use ICT in activities which are not directly related to Labour Market Information Systems such as production, marketing, and accounting. Only 29.2 percent of employers use ICT in Labour Market Information Systems related activities such as job advertisements (13.6 percent) and human resource management (15.6 percent) (Table 5.25). The pattern of ICT use by employers in institutions provides an indication of the extent ICT is used to foster performance of LIMS and its effect on unemployment in Dar es Salaam region.

Table 5.26

Percentage Distribution of Areas of ICT Uses in Training Institutions by Sector of Ownership, Dar es Salaam, 2022

Main Areas of ICT Uses	Public	Private	Total
Job advertisement	1.2	15.5	5.4
Human resources management	18.3	9.7	15.8
Records management	11.8	5.8	10.0
Teaching	15.4	10.7	14.0
Marketing	13.0	10.7	12.3
Communications	8.5	15.5	10.6
Accounting/Finance/Planning/Budgeting	31.7	32.0	31.8
Total	100.0	100.0	100.0

Results from training institutions about the main areas of ICT use portray a similar pattern noted for employers whereby more than 70 percent of uses are not related to Labour Market Information Systems (Tables 4.26). However, there is no significant difference between proportion of training institutions which use ICT in job advertisement, human resources management, communication and marketing as main areas of intervention.

Table 5.27

Percentage Distribution of the Most Important Challenges Faced by Organizations with Regard to the Use of ICT by Sector, Dar es Salaam, 2022

Skills	Number	Percent
Lack of skilled employees/trainers	8,884	39.7
Insufficient / unreliable connectivity	7,500	11.7
Unreliable electricity	8,783	13.7
Costs of equipment	8,582	13.4
Availability of equipment	9,060	14.1
Others	3,599	5.6
No challenge	1,158	1.8
Total	64,099	100.0

The important challenge faced by organizations with regards to use of ICT is lack of skilled employees or employers (39.7 percent) followed by availability of equipment (14.1) and cost of equipment (13.4 percent). These are areas which could be considered to be improved to enhance the performance of Labour Market Information System in the region.

Figure 5.13

Distribution of the Most Important Challenges Faced by Training Institutions with Regard to the Use of ICT, Dar es Salaam, 2022

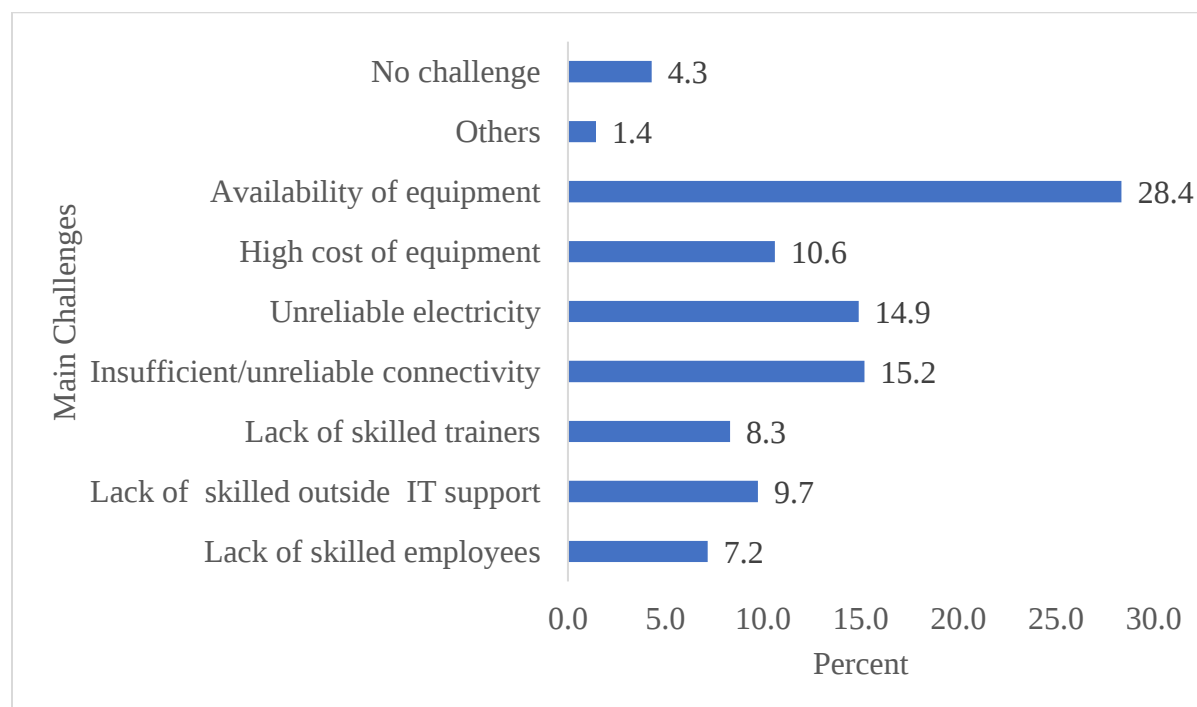


Figure 5.13 shows that, in contrast to employers, the most important challenge faced by training institution with regards to use of ICT is the availability of equipment (28.4 percent), followed by unreliable connectivity and electricity (15.2 percent and 14.9 percent respectively). Lack of skills related responses as the main challenge related to ICT was recorded by 25.2 percent of the consulted institutions.

Table 5.28

Distribution of Employers by Industrial Activities and Status of the Use of Information and Communication Technology

Industry	Across Industries			Within Industries			
	Introduced ICT	Have not introduced ICT	Total	Introduced ICT	Have not introduced ICT	Total	Number
Mining and quarrying	7.5	4.3	7.4	98.4	1.6	100.0	4,731
Manufacturing	7.2	5.7	7.2	97.8	2.2	100.0	4,605
Electricity, gas, steam and air conditioning supply	6.3	11.4	6.5	95.2	4.8	100.0	4,152
Water supply; sewage, waste management and remediation activities	6.7	8.6	6.8	96.5	3.5	100.0	4,329
Construction	6.3	7.1	6.3	96.9	3.1	100.0	4,027
Wholesale and retail trade; repair of motor vehicles and motorcycles	6.7	5.7	6.6	97.6	2.4	100.0	4,253
Transportation and storage	6.7	8.6	6.8	96.5	1.1	100.0	4,354
Accommodation and food service activities	7.4	2.9	7.3	98.9		100.0	4,656
Information and communication	7.0	8.6	7.0	96.6	3.4	100.0	4,505
Financial and insurance activities	5.9	5.7	5.9	97.3	2.7	100.0	3,775
Real estate activities	6.5	12.9	6.6	94.7	5.3	100.0	4,253
Professional, scientific and technical activities	6.1	1.4	5.9	99.3	0.7	100.0	3,800
Administrative and support service activities	6.1	7.1	6.1	96.8	3.2	100.0	3,901
Public administration and defence; compulsory social security	6.6	2.9	6.5	98.8	1.2	100.0	4,152
Education	7.2	7.1	7.2	97.3	2.7	100.0	4,605
Total	100.0	100.0	100.0	97.3	2.7	100.0	64,099
Number	62,338	1,762	4,099	62,338	1,762	64,099	

Findings on Table 5.28 indicate that, there is no significant difference with regard to the use of Information and Communication Technology across employers in various industries surveyed. However, it is observed that employers engaged in industries of Real estate activities

(12.9 percent); and Electricity, gas, steam and air conditioning supply (11.4 percent) have relatively larger proportions among those who have not introduced Information and Communication Technology at their work places. On the other hand, employers in the industries of public administration and defence; compulsory social security (2.9 percent) and Professional, scientific and technical activities (1.4 percent) constitute the lowest rates among those who have not introduced the use of Information and Communication Technology.

Analysis of the status of use of Information and Communication Technology within industry indicates that most of employers have embraced the use of Information and Communication Technology, with proportions in industries such as Professional, scientific and technical activities (99.3 percent); and public administration and defence; compulsory social security (98.8 percent). Moreover, there are proportionately more employers in industries of Real estate activities (5.3 percent); Electricity, gas, steam and air conditioning supply (4.8 percent) who have not introduced ICT compared to those who have introduced Information and Communication Technology.

Trustworthiness of Data Collected using Qualitative Research Approach

Qualitative approach in the study was used to collect information to complement information collected using quantitative approach. As opposed to quantitative methods explained to establish trustworthiness of data, the criteria of true value, applicability, consistency and neutrality in qualitative researches are commonly measured using credibility, transferability, dependability and confirmability techniques respectively (Malakoff, 2015). However, each procedure or criteria of trustworthiness measurement are specific to particular approach of data collection along with the need of generalization of the research results.

Credibility. Credibility is centred on the procedures employed by a researcher to enhance chances that the results of the research are true (Cope, 2014). There are several procedures which are used to ensure credibility of data collected under qualitative approach. The dominant procedures are peer debriefing, member checks, triangulation, prolonged engagement, persistent observation, referential adequacy, and researcher's experiences (Merriam, 1995). Each procedure is relevant to a specific method used during data collection. The study used Computer Assisted Telephone Interviews during data collection in qualitative approach and therefore the relevant procedures used to ensure credibility of data were peer debriefing, referential adequacy and triangulation procedures. Peer debriefing involved engagement of colleagues with similar knowledge of LMIS to review the study tools and results to determine if they make sense within the context to the research problem and its objectives (Spall, 1998). Moreover, questions used in qualitative approach was shared with the supervisor of this Study for comments and approval before starting data collection (Anney, 2014). In addition, referential adequacy procedure was also used by comparing the study results from qualitative approach with the results obtained from similar studies conducted in Tanzania to examine the accuracy, reality and truthy of the collected data (Hays et al., 2016). Furthermore, in order to learn if credibility exists, triangulation procedure was also used whereby results from the study were compared with results from multiple sources of data such as Labour Force Survey results and Employment and Earnings Survey results to help justify that collected data reflects the true and valid status of the subject matter under study (Nowell et al., 2017).

Dependability. Dependability entails possibility of the study to explicitly describe methods used at all stages of conducting research to enable audits and to facilitate other researchers to follow the study, it is used to measure neutrality criteria of the qualitative studies (Tong & Dew,

2016). There are different methods which can demonstrate dependability of the collected data such as overlap methods, stepwise replication, triangulation, peer examination and audit trail (Merriam, 1995). Different methods were used to ensure dependability of the collected data, these includes peer reviewing whereby the results of the study were reviewed by labour market experts from the National Bureau of Statistics to find out if they are consistent with the collected information and provided comments to improve the dependability of data. In addition, a TAGUETTE software has been used to code the collected information in order to support analysis of qualitative data and establish a baseline information to ensure coherence and traceable coding processes (Tong & Dew 2016).

Confirmability. Confirmability focusses on the degree to which findings from the research study can be reaffirmed by others (Anney, 2014). It involves use of triangulation and research audit at all stages of the research study. To warrant confirmability in the research study, technology was used to ensure all tools and results are archived in electronic form to facilitate research audit by other researchers. A Computer Assisted Telephone Interviews was used to collect information from respondents and all data are stored in Statistical Package for Social Scientists (SPSS) and Excel software to facilitate use and reuse including research audits and triangulation purposes.

Qualitative Research Findings

The study collected qualitative information from a sub-sample of employers' institutions using two stage sampling approach. The first stage was a Systematic Random Sampling procedure with sampling interval $k=27$ to selected eligible employers from the 2,700 sample of Employers institutions. In this approach the first case was selected at random and subsequent cases were systematically selected after an interval of 27 cases making a sub-sample of 100 Establishments for the study. The second stage involved selection of one employee within an establishment

eligible for qualitative study. A KISH grid approach was used in this stage. This approach uses a table of random numbers to select eligible respondents. In this case, the rows of the KISH GRID included the last digit of serial number of selected establishments which were sorted in ascending order based on geographical codes and nature of economic activity carried by an organization. This was meant to ensure that responses on the Labour Market Information System questions are representative in terms of spatial distribution and nature of economic activities of the organizations. On the hand, the column of the KISH GRID represents total number of employees engaged in an organization. The employee in every eligible organization were previously sorted on the basis of occupation functions and gender. The intersection between the column and the rows of the KISH GRID was the serial number of an employee who was selected for qualitative study. A TAGUETTE qualitative data analysis software was used to facilitate coding and transfer of the same data into Microsoft Excel for further processing and analysis.

Table 5.29

Code Book Extracted from TAGUETTE; Number and Percentage Distribution of Tags and Descriptions Regarding Employees Perception about the Performance of LMIS, Dar es Salaam, 2022

Name of the Tag	Description	Number of Highlights	Percent
Coordination	Weak coordination ranging from institutional Framework, data production, dissemination and use	14	29.8
Technology	Inadequate technology on LMI functions	7	14.9
Skills, Knowledge and education	Inadequate skills, knowledge and education related to development, maintenance and use of LMIS	17	36.2
Finance	Lack of funds to run effective LMIS	3	6.4
Awareness	Lack of awareness regarding the importance of LMIS	6	12.8
Total		47	100.0

Analysis from qualitative study shows that reasons with high frequency about the factors affecting performance of LMIS in Dar es Salaam are inadequate skills, knowledge and low level of education (36.2 percent), followed by poor coordination in terms of institutional frame work, data production, dissemination and use (29.8 percent) and inadequate technology by 14.9 percent. Furthermore, lack of awareness regarding the importance of LMIS recorded a frequency of 12.8 percent and inadequate funds 6.4 percent (Table 5.29). These results are critical in complementing the results obtained from quantitative research because they are closer to the pattern observed in quantitative results.

Table 5.30

Code Book Extracted from Taguette: Number and Percentage Distribution of Tags and Descriptions Regarding the Main Methods Used by Job Seekers to Search for Jobs, Dar es Salaam, 2022

Name of the Tag	Description	Number of Highlights	Percent
Friends or Relatives	Use of friends and relative to search for job	19	24.7
Social Networks	Use of social networks such as Community Forums, Facebook, Instagram and others	13	16.9
Webpages	Posted vacancies on the respective institution's webpages	16	20.8
Newspapers/ Applications	Use of newspapers and making application direct to institutions	9	11.7
Visiting the Institutions	Making physical visits to organisations	10	13.0
Advertisements	Include all other advertisements	10	13.0
Total		77	100.0

Table 5.30 depicts that out of 77 highlights recorded, the most used method for job search in Dar es Salaam is through friends or relatives (24.7 percent). It is promising to note that the second method mentioned is through webpages with 20.8 percent, this includes webpages

This section presents results of regression model of relationship between Performance of Labour Market Information Systems (Pf) which is the dependent variable and the independent variables namely Manpower planning (Mp); Unemployment (Un); and other social economic factors influencing performance of Labour Market Information System (fc). Decision of the type of regression model to be used was made after conducting a normality test of the transformed collected information into likert-type data collected for all key variables.

Table 5.31

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Performance	0.446	2547	0.000	0.618	2547	0.000
Unemployment	0.177	2547	0.000	0.937	2547	0.000
Manpower	0.415	2547	0.000	0.689	2547	0.000
Factors	0.470	2547	0.000	0.553	2547	0.000

a. Lilliefors Significance Correction

Table 5.32*Test of Normality of Log of the Quantitative Data Collected from Employers Module*

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
log_performance	0.413	2547	0.000	0.678	2547	0.000
log_unemployment	0.129	2547	0.000	0.943	2547	0.000
log_manpower	0.357	2547	0.000	0.756	2547	0.000
log_factors	0.471	2547	0.000	0.557	2547	0.000

a. Lilliefors Significance Correction

Kolmogorov-Smirnov measurement has been used to test for normality since the cases for analysis are more than 100 (Drezner and Turel, 2011). Results show that performance of Labour Market Information System, unemployment, manpower planning and other social economic factors affecting performance of Labour Market Information System have p-values which are less than 0.05. This means that all variables under study are significant and therefore are not normally distributed (Table 5.31). Furthermore, additional test carried using a log of variables as indicated in table (Table 5.32) reiterated that variables under consideration are not normally distributed as they all have p-values less than the recommended threshold of 0.05 (Cael & Mashayek, 2021).

According to Elamir and Sadeq (2010) and basing on the normality test which proves that variables are not normally distributed, an ordinal model suits to conduct further analysis of the collected data. Moreover, ordinal regression analysis is also recommended for a study which collected information using likert type data as it was done for the employers' and training institutions' module in this study (Williams & Quiroz, 2020). Basing on those facts, ordinal regression analysis was used to analyse the relationship between the Performance of LMIS (Pf) which is dependent variable; and the manpower planning, unemployment and other social economic factors as independent variables (equation 1). Notations used in the equation are β_0

which is the intercept term and $\beta_1, \beta_2, \beta_3$ are the partial coefficients of Manpower planning (Mp); Unemployment (Un); and factors influencing performance of LMIS (fc) respectively. The subscript t captures the time dimension.

$Pf_t = \beta_0 + \beta_1 Mp_t + \beta_2 Un_t + \beta_3 Fc_t$ Equation 1 (Elamir & Sadeq, 2010).

Regression Analysis for Quantitative Research Study from Employers Module.

Table 5.33
Case Processing Summary

Dependent Variable	Likert Scale	N	Marginal Percentage
Performance of LMIS (Pf)	Very Ineffective	139	5.50
	Ineffective	1,906	74.80
	Neutral	168	6.60
	Effective	164	6.40
	Very Effective	170	6.70
Valid		2547	100.00
Missing		0	
Total		2,547	

Table 5.33 indicates case processing summary of the dependent variable, namely Performance of LMIS (Pf) which shows that nearly three quarters (74.8 percent) of the 2,547 employers surveyed (un-weighted) indicated ineffective performance of the LMIS in the study area. Less than 10 percent of employers had higher opinions regarding performance of LMIS. Generally, these findings indicate inefficient performance of LMIS in the study area.

Table 5.34
Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	4464.623			
Final	0.000	4464.62	3	0.000

Table 5.34 provides Model Fitting Information (MFI) to determine the extent model fits the collected data. According to Kook et al. (2022) and ordinal regression analysis, (2003), p - value for MFI should be less than 0.05 to justify that there is significant difference between the established model which has dependent and independent variables as opposed to the baseline model which has dependent variable only. Table 5.34 reveals that, the significance value is 0.000 which is sufficiently low than the threshold p-value of 0.05. This indicates that the model fits the data well and therefore there is significant difference between baseline model and final model.

Table 5.35
Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	43.051	157	1.000
Deviance	50.962	157	1.000

Table 5.35 provides Pearson and Deviance chi-square tests to assess the goodness of fit. Persons' significant value must be greater than 0.05 to prove that observed data fits the established module (Turel, 2011). Table 5.35 shows that both the Person and Deviance statistics have significance values of 1.000 each. The Pearson and Deviance chi-square computed value is much higher than the significant value of 0.05 indicating that the collected data fits the established module.

Table 5.36
Pseudo R-Square

Cox and Snell	0.827
Nagelkerke	0.986
McFadden	0.961

Table 5.36 shows the explanatory power of the model. Basing on the ordinal regression model used in the study, the statistic of interest is Nagelkerke statistic which is 0.986. The Nagelkerke statistic is recommended to be above 0.7 and the maximum value of 1.0 to explain the strength of the proportion of the variance explained by the independent variables on the dependent variables (Dias & Sucharitharathna, 2020). Therefore, the computed Nagelkerke statistic explains that about 0.986 of variations in the Performance of LMIS are results of manpower planning, unemployment and other social economic factors. In other words, 99 percent of changes in the performance of LMI results from the changes on manpower planning, unemployment and other factors.

Table 5.37
Parameter Estimates of the Ordinal Regression Model

							95 percent Confidence Interval	
		Estimate	Std. Error	Wald	df	Sig.	Lower Bound	Upper Bound
Threshold	[performance = 1]	5.096	1.217	17.525	1	0.000	2.71	7.482
	[performance = 2]	27.001	2.331	134.175	1	0.000	22.432	31.569
	[performance = 3]	38.175	2.993	162.66	1	0.000	32.309	44.042
	[performance = 4]	48.742	3.716	172.041	1	0.000	41.458	56.025
	Manpower	21.485	1.642	171.243	1	0.000	18.267	24.703
Location	Unemployment	-3.56	0.448	63.189	1	0.000	-4.438	-2.682
	Factors	1.433	0.253	32.096	1	0.000	0.937	1.929

Parameter estimates of the ordinal regression provides key coefficients of the estimates which are interpreted as the estimated unit change of dependent variable into high categories as opposed to lower categories resulting from a unit increase or decrease on independent variable while other variables are kept constant (Bürkner & Vuorre, 2019). Therefore, positive coefficient of parameter estimate is interpreted as follows: - for every unit increase on independent variable there is estimated increase in probability of a dependent variable to fall in the higher categories. On the other hand, a negative coefficient of a parameter estimate is explained that, for every unit increase on independent variable there is predicted probability of dependent variables to fall into lower categories (Liu, 2009; (DINH, 2020).

Table 5. 37 reveals that Manpower planning (Mp) is a positive significant predictor of the performance of LMIS with coefficient value of +21.485 and p-value of .000. This implies that any effort to enhance good practices of Manpower planning in the study area there is a predicted increase of 21.485 on the performance of Labour Market Information Systems to fall in the higher categories. On the other hand, the coefficient of Unemployment (Un) is -3.560 with p-value of 0.000 implies that, unemployment is a significant negative predictor of the performance of LMIS. For every unit increase in unemployment there is a predicted decrease of 3.560 in the performance of LMIS to be in the higher category. Furthermore, results depict that, other social economic factors are significant positive predictor of performance of the LMIS with coefficient value of +1.433 and p-vale of 0.000. This means that for every unit increase on other social economic factors such as use of ICT there is expected increase of 1.433 on the performance of LMIS to be in the higher category. In addition, a Test of Parallel Lines which tests if the location parameters (manpower, unemployment and other factors) are the same across response categories of the dependent variable (performance of LMIS) is 1.000. As expected, this value is greater than the p-

Table 5.40

Model Fitting Information of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	587.318			
Final	0.000	587.318	3	0.000

Table 5.41

Goodness-of-Fit of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022

	Chi-Square	df	Sig.
Pearson	0.001	25	1.000
Deviance	0.001	25	1.000

Table 5.42

Pseudo R-Square of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022

Cox and Snell	0.814
Nagelkerke	0.985
McFadden	0.962

Table 5.43

Parameter Estimates of the Ordinal Regression Model of the Quantitative Data Collected from Training Institutions, Dar es Salaam, 2022

							95 percent Confidence Interval	
							Lower Bound	Upper Bound
		Estimate	Std. Error	Wald	df	Sig.		
Threshold	[performance = 1]	64.605	1236.263	0.003	1	0.958	-2358.426	2487.635
	[performance = 2]	65.904	1236.263	0.003	1	0.957	-2357.127	2488.935
	[performance = 3]	77.408	1283.929	0.004	1	0.952	-2439.045	2593.862
	[performance = 4]	104.956	1307.368	0.006	1	0.936	-2457.438	2667.350
	Manpower	50.803	239.218	0.045	1	0.832	-418.056	519.663
	Unemployment	-4.310	343.038	0.000	1	0.990	-676.651	668.031
	Location Factors	0.632	265.311	0.000	1	0.998	-519.369	520.632

Table 5.38 to 4.43 shows different tests of the quantitative data collected from training institutions in Dar es Salaam. Results reveal similar pattern as the findings obtained from the ordinal regression using data collected from employers' module with different magnitudes. Results depict that, a unit increase in manpower planning results into estimated increase of 50.803 of the performance of LMIS to be in higher value categories. Similarly, for every unit increase in social economic factors there is expected increase of 0.632 on the performance of LMIS to be on higher category. As indicated in the employer' data, unemployment is negatively related to the performance of LMIS whereby, a unit increase in unemployment there is predicted decrease of 4.310 of the LMIS performance to be in the higher category.

Generally, establishment of the trustworthiness of the study tools and the presented general research findings builds a strong foundation which warrant the quality of the instruments used, validity and reliability of the collected information. In addition, results of the study, methods, statistical tests and ordinal regression used to analyse data significantly contributed to the existing

knowledge and will paves a way towards enhancing the performance of LMIS; and subsequently positively impact the balance of labour supply and demands. Furthermore, the presented general descriptive statistics and results of the study for each research question and their respective hypotheses glitter on the key issues for consideration in drawing smart conclusions and recommendations for policy makers; to support formulation and updating of labour market related policies and programs.

Evaluation of Findings and Reconnection with Literature

This section presents evaluation of the study findings and reconnection of the results with the existing literature. A conceptual framework of the study adapted from Woods and O'Leary (2006) has been used as a guiding tool to evaluate the extent the research findings inform the research questions and the level results confirm or contradicts with the existing literature. The Conceptual module explains the performance of Labour Market Information System (LMIS) as dependent variable and functions of supply and demand side of the Labour Market as independent variables.

Evaluation of the results focuses on the performance of labour supply which are training institutions and employers representing the demand side of the labour market in relation to the existing labour related policies in Tanzania and the existing institutional framework (Sparreboom, 2001). On the Supply side, the LMIS performance is directly related to the quality of human capital in the economy in terms of level of education and skills they possess; the extent training institutions involve employers and other related stakeholders during the designing of training programs to ensure they impart relevant knowledge and skills to their students as needed in the market; level of interactions between training institutions and intermediaries and other social economic factors

such as use of Information and Communication Technologies (ICT) at their work places (Sorensen & Mas, 2015).

On the other hand, the demand side of the labour market was evaluated by assessing the employers' responses which basically depends on the dynamics of demand for goods and service from consumers. Change in aggregate demand for commodities attract or discourages investment in production of goods and services and subsequently affects levels of employment and wellbeing of people (Katsanevas & Livanos, 2011). According to Mwalongo et al. (2020) labour is still a key factor of production in a developing economy such as Tanzania, therefore changes in demand for commodities is correlated to changes in investment, skills and knowledge required in production of commodities which also affects levels of employment. In addition, other factors such as technology and existing labour related policies and legal framework in an economy influence the performance of LMIS functions (Benner, 2006). Evaluation of the research findings are presented for each research questions, there are three research questions used in the study as follows: -

RQ1. To what extent Labour Market Information Systems affects manpower planning in Dar es Salaam Region?

RQ2. To what extent Labour Market Information Systems affects unemployment rates among employable persons in the region?

RQ3. What are the factors affecting performance of labour market information systems in Dar es Salaam Region?

Evaluation of the Study Results to Inform Research Question One (RQ1)

The first Research Question (RQ1) collected information to inform about the extent Labour Market Information System affects manpower planning in Dar es Salaam Region. Key information for this question were collected from the training institutions as a supply side of the labour market which is responsible for skills and career development and manpower planning. Training institutions were asked if they have ever used LMIS and also the period their graduates took to get employment. The findings from the study show that 80.0 percent of training institutions in Dar es Salaam region which are using LMIS, their graduates took six to twelve months to get into employment. On the other hand, about 60 percent (59.9 percent) of training institutions in Dar es Salaam which have never used LMIS, their graduates took more than 12 months to get employment. This means that training institutions which use LMIS are more informed about needs of employers such as the skills needed in production of commodities, available job vacancies for their graduates and wages which has contributed to shorten the school to work transition period. According to Mangozho (2003) inadequate LMIS with insufficient information about available jobs and the related labour market information to a large number of graduates or school leavers entering the labour market contributes to a longer school to work transition. It has been reiterated by Nilsson (2019) that a well-functioning LMIS is among the determinants of getting first employment. According to Celestin (1983) development aspirations which focuses on equal distribution of national wealth cannot be realized unless effective LMIS are established to support provisioning of labour market signals to policy makers in making evidence-based decisions. It should also be noted that there is no effective manpower planning and career development if there is no effective LMIS (Alexander et al., 2019). In addition, training institutions were also asked to choose the main method they use to ensure relevance of their training programs to fill the skills

needed by employers. Responses can be grouped into firstly, those related to review of the training programs with employers, review with national employment agency, conduct of tracer studies and labour market studies and; the second category is the traditional methods which are not related to involvement of employers such as relying on professional experiences. An assessment of the findings from this question and the responses from the same training institutions about the period their graduates took to secure employment provide invaluable information which can be used to inform areas which need policy actions to foster coordination; enhance performance of LMIS and reducing unemployment in Dar es Salaam. Results reveal that majority (45.6 percent) of the training institutions rely on professional experiences to ensure relevance of their training programs with the skills demanded by employers, as a result their graduates took more than 12 months to get employment. This is contrary to those institutions which engages employers during the designing on their training programs whereby only 7.3 percent of them their graduates took more than 12 months to get first employment. This implies that in order to ensure relevance of training programs, training institutions should consider changing from using traditional experiences to more inclusive approach of engaging employers on the demand side during designing on the training programs (Nkya et al., 2021). In order to operationalize this change, modernization in production of labour market information and sharing through LMIS is critical which stands as a policy tool for both employers and training institutions. According to Mutalemwa et al. (2020) the need to reduce existing gap between the skills imparted to students and the skills needed by employers has been a priority in Tanzania development agendas. However, employability skills for graduates in Tanzania has never been sufficient which calls for deep studies to inform actions which can be used to enforce implementation of related policies and programs (Guardia et al., 2021). This includes establishment

and operationalization of LMIS which can easily connect key actors of the labour market from demand and supply side.

Results further depicts that 48.4 percent of employers who shared their experiences on the performance of existing LMIS in Dar es Salaam region said that they are inadequate and uncoordinated in terms of incomplete information, not properly working and have low quality information. These signals from the inefficient functioning of the existing LMIS are directly related to the weak working relationship between training institutions and employers in designing the training programs that match with the demanded skills in the labour market and therefore improper manpower planning. It is therefore imperative for the Government to put in place conducive environment which supports a well-functioning of LMIS which would highly contribute in addressing the impaired manpower planning in the Dar es Salaam.

Furthermore, as expected more than 90 percent of the training institutions indicated that are using ICT in their institutions. However, among them, only 38.0 percent of those institutions use ICT in manpower planning related activities such as human resource management, job advertisement and teaching. About 62.0 percent use ICT in activities which are not related to manpower planning such as records management, accounting, financing and budgeting. This situation again results from ineffective functioning of the LMIS in Dar es Salaam which limits its use by training institutions in spite of available environment for ICT use.

The study collected information to assess whether a training institution have ever used LMIS and its level of agreement with the statement that Labour Market Information Systems affects manpower planning. Results were capture using a five likert scale question ranging from strongly disagree, disagree, neutral, agree and strongly agree. Results show that all training institutions which have used LMIS strongly agreed that LMIS affects manpower planning and

unpredictably 44.0 percent of institutions which have never used LMIS also strongly agreed that LMIS affects manpower planning. Furthermore, 19.0 percent of them agreed with the statement. In addition, more than half (53.2 percent) of the training institutions in Dar es Salaam which have never used LMIS indicated that skills of their employees need to be further developed. Surprisingly 60.0 percent of training institutions which have used LMIS also indicated that skills of their employees need to be further developed. These results are similar to the findings from the study conducted by Mangozho (2003) that LMIS is an important tool to support evaluation of the supply side of the labour market such as training institutions and the employment processes on the demand side for evidence-based decision making about human development process. However, according to Alexander et al. (2019) LMIS in many countries in Africa are poor and hampered by structural factors which requires concerted efforts to ensure relevant information is communicated to users on a timely manner.

Evaluation of the Study Results to Inform Research Question Two (RQ2)

Research Question Two (RQ2) inquired information to examine the extent LMIS affects unemployment in Dar es Salaam region. Employers were asked to provide information whether they have used LMIS in their institutions. They were also requested to provide the common method used to acquire employees for the vacant posts. Results show that, there are small proportion of employers (18.7 percent) who indicated that they have ever used LMIS while 81.3 percent said they have never used LMIS. Given the limitations of the LMIS in Dar es Salaam region, among the employers who have used LMIS, more than half (61.0 percent) are still using traditional means such as friends, relative and job agents to fill the vacant posts and only 12.6 percent of employers who use LMIS to source employees to fill existing vacant post. As expected, 85.4 percent of employers who have never used LMIS use conventional methods including job agents, friends,

relatives and training institutions to fill the vacant posts. Similar results are presented in Tanzania Integrated Labour Force Survey Report (ILFS, 2020) conducted by Tanzania National Bureau of Statistics whereby 38.4 percent of persons who were seeking work cited seeking of assistance of friends, relatives or unions as the most common job search method they used. Similarly, a small proportion of job seekers who uses LMIS portrayed by the study findings, the results from ILFS (2020) also show that only 0.4 percent of job seekers used registration and employment agency to search for job. Traditional approaches of sourcing employees or use of non LMIS to search for work limit accessibility to available job opportunities and suppresses the Government efforts of reducing unemployment, reduction of poverty and wellbeing of people. Effective LMIS would have played a great role of unlocking job opportunities by enhancing accessibility to job related information to job seekers, employers and training institutions (Maurya & Shah, 2014). It has been also proved by Chege and Wang (2020) that use of technology and LMIS enhances investment, increase job creation and boost employment at national and international levels due to simplified access to labour market information including job openings.

It is also interesting to note that, 52.8 percent of employers who said they have used LMIS indicated inadequate information to job seekers about the available Jobs as the main reason for the posts in their institution which has remained vacant for more than six months. Similarly, 45.7 percent of employers who have never used LMIS provided the same reason for the posts in their institution which has remained vacant for more than six months. The results underline the importance of effective LMIS which brings job seekers, employers and training institutions into a common interface to inform about available jobs, skills required and other related labour market information for career development (Maurya & Shah, 2014). Moreover, the study collected information to evaluate the status of skills mismatch for institutions which have used LIMS and

those which have never used LMIS. Results show that 84.7 percent of institutions which have never used LMIS, skills of their employees need to be further developed while 74.0 percent of institutions who have used LMIS also said that skills of their employees need to be further developed. These results mean that, even for institutions which are using existing LMIS, skills of their employees need to be further developed indicating that, there is high skills mismatch in Dar es Salaam resulting from ineffective functioning of LMIS. In addition, weak coordination in production, storage and dissemination of labour market information are bottleneck to a well-functioning LMIS (Mangozho, 2003).

Evaluation of the Study Results to Inform Research Question Three (RQ3)

The main objective of Research Question Three (RQ3) was to collect information which can support evaluation of respondents' knowledge and awareness of the relationship between different social economic factors such as use of ICT and the performance of LMIS. Employers were asked if they have introduced ICT in their work places and their perceptions regarding the extent of agreement that there is association between different social economic factors and performance of Labour Market Information System which were rated in a five scale Likert Question. Results show that about one employer out of every four employers (25.2 percent) who have introduced ICT in their work places agreed with the statement that there is association between different social economic factors and performance of LMIS. On the other hand, 28.6 percent of employers who have never used ICT in their work places disagreed with the statement. These findings reveal that, employers who are using ICT are more likely to introduce and use LMIS in their operations which will have huge impact on reducing unemployment in Dar es Salaam region. Furthermore, use of ICT infrastructure and ICT use is among of the giant enabling environment for adequate performance of LMIS which cannot be ignored (Maurya & Shah, 2014).

Summary of Data Analysis and Research Findings

This section provides a summary of data analysis and research findings spanning from the trustworthiness of data, research findings, evaluation of findings and its reconnection with literature. In order to ensure a good flow of information, summary of the findings presented in this section follows research questions as it has been done in the analysis for easy referencing and clarity.

Summary of Trustworthiness of Data

Since the study used mixed methods approach which is considered to be a high breed approach, it provided a wide room of testing trustworthiness of data using several statistical and non-statistical methods for quantitative and qualitative research approaches respectively. All tests conducted confirmed that collected data met the recommended thresholds from the designing of the study to data collection and can therefore be used to add knowledge in the area under investigation and trusted by policy makers for proper intervention in addressing a research problem. This means that, results of the study are true, applicable, reliable in the sense that they can consistently be reproduced because the value of Cronbach's Alpha Coefficient of the instruments scored 0.7, a value higher than the threshold of 0.6 and results are neutral meaning that are not affected by the interests of the researcher (Zeng et al., 2017). These are critical justification which users of labour market information specifically decision makers would like to hear and prove, it enhances trust of employers, training institutions and job seekers to rely on the study results in making correct decisions and interventions related to career development.

Under quantitative approach, adaptation of questions, sampling parameters and sample frame used in similar previous surveys conducted in Tanzania and use of statistical tests confirmed existence of internal and external validity, reliability of data and compliance with the objectivity underpinnings. This means that internal validity was achieved because research questions were able to capture what was intended to be captured and this has been reaffirmed from the results of the study which are closely related to research objectives, research problem and answers to research questions (Merriam, 1995). In addition, external validity which warrant generalization of the findings to the population was established through sampling optimization parameter (0.25), RSE of 0.05 and Design Effect of 1.5. Furthermore, convergent validity which measures the existence of correlation between variables was justified through factor analysis with average factor loading of 0.7 and 0.8 for component one and two which are much higher than the threshold of 0.5 (Ljótsson et al., 2020). Discriminant validity which measures the existence of impaired correlation was also established because the square of components correlation matrix (0.218) was 0.05 each, which is less than the average of square of variance of the same components (0.4 and 0.7 for component one and two respectively (Schimmack, 2021). Similarly, under qualitative research approach trustworthiness of the data was established using credibility, dependability and confirmability assessments.

Summary of Research Findings

Generally, the findings from the study consistently demonstrates the existence of unemployment problem in Dar es Salaam region, inadequate LMIS in terms of weak coordination, incomplete information, low quality data, outdated labour market information reported by 48.4 percent of employers. Furthermore, employers were asked to provide their experience on the performance of LMIS in Dar es Salaam using a five likert question ranging from very ineffective,

ineffective, neutral, effective and very effective. Results revealed that 74.8 percent of employers mentioned that LMIS are ineffective, 5.5 percent said is very ineffective and small proportions of about 6.0 percent each were either neutral or said LMIS are effective or very effective.

Summary of Results for Research Question One (RQ1) Analysis of the results from employers' module to determine the extent LMIS affects manpower planning in Dar es Salaam shows that manpower is a significant positive predictor of the performance of LMIS. For every one unit increase in manpower planning, there is a probability that performance of LMIS will increase by 21.485 units into higher categories of the likert scale, meaning that towards effectiveness of its functions. Similar results were obtained from the training institutions module. Despite the high correlation between manpower planning and LMIS, there is high skills mismatch in Dar es Salaam of which 82.6 percent of employers indicated that the skills of their employee do not match with the skills needed to perform their current work. Similar responses were provided by training institutions whereby 60.5 percent responded that skills of their employees do not match with the required skills to accomplish their tasks. Responses from other question related to the extent training institutions ensure relevancy of training programs to increase employability of their students indicated that, training institutions rarely involve employers during the designing of the programs. The traditional means of ensuring relevance of training programs to the labour market prevails in Dar es Salaam whereby 40.1 percent of training institutions rely on professional experiences. Effective LMIS would have contributed significantly and efficiently on bridging the existing gap by providing reliable and updated labour market information to both training institutions and employers. Furthermore, majority (53.7 percent and 51.7 percent) of employers are not satisfied with the performance of their employees graduated from Higher Learning Institutions and Technical and Vocational Education and Training respectively. Given the power

manpower planning has demonstrated on influencing the performance of LMIS, it is rational to enhance frequency of labour market data production and making them available to users such as the Government to facilitate formulation of more effective manpower policies, employers to appropriately adjust their recruitment plans and individual to make right decisions and choices of available work and trainings.

Summary of Results for Research Question Two (RQ2) In a nutshell, the findings of the study provided vital information which reveals the real situation about the extent LMIS affects unemployment in Dar es Salaam region. Results clearly show that unemployment is a significant negative predictor of the performance of LMIS in the sense that for every one unit increase in unemployment there is predicted decrease of 3.560 units in the performance of LMIS to be on higher categories of the likert scale. Similar pattern was obtained from the training institutions module. Furthermore, the findings revealed higher level of skills mismatch reported by 82.7 percent of employers. In the same vein, majority (78.8 percent) of graduates from training institutions in Dar es Salaam took more than 12 months to get employment. Longer school to work transition period contributes to increased number of potential workers in the labour market, contribute to increased poverty in the society which affects the general wellbeing of the people in all sectors from education, health, water, infrastructure and others. These findings also provide signals that skills mismatch and inadequate manpower planning are barriers to job seekers to secure employment. In addition, inadequate labour market information to job seekers was cited by 47 percent of employers as the most common reason for the posts which have been vacant for more than six months in their institutions. It is also noted that, there is small proportion (4.6 percent) of employers who use LMIS to source employees, majority uses traditional methods including friends and relatives (18.6 percent), training institutions (25.4 percent) and job agents

(21.4 percent). Use of LMIS to source employees would reduce unemployment because it would increase awareness about the available jobs for job seekers to choose; enhances skills mismatch because job seekers would choose the right jobs and employers would have access to many job seekers to support making correct employment decisions. Generally, 77.6 percent of training institutions and 27.7 percent of employers agreed with the statement that LMIS affects levels of unemployment.

Summary of Results for Research Question Three (RQ3) This question aimed to capture information to support assessment of whether there is association between various social economic factors such as use of ICT and the performance of LMIS. Results from the parameter estimates of the ordinal regression model for employers' data show that, use of ICT is significant positive predictor of the LMIS performance whereby for every unit increase in ICT use there is corresponding prediction of 1.433 increase in the probability of the LMIS performance to fall into higher categories of the likert scale. Comparable results were obtained from the training institutions module. Furthermore, results reveal that proportionately, there more training institutions (85.7) who agreed that there is association between ICT use and performance of LMIS as opposed to 26.3 percent of employers. In addition, more than 90 percent of employers indicated that they are using ICT in their routine activities and the main areas (70 percent of them) where the ICT is being used are not directly related to LMIS. The noted correlation between LMIS and ICT use in work places are important information to decision makers to support migration from traditional means of manpower planning, job advertisement, labour market information sharing and use to harness opportunities of LMIS.

CHAPTER 6: IMPLICATIONS RECOMMENDATIONS AND CONCLUSIONS

Introduction

The fundamental objective of the research study was to explore the Effects of Labour Market Information System (LMIS) on Unemployment in Dar es Salaam region. The study collected information to evaluate the status of LMIS in Dar es Salaam and its effects on unemployment, manpower planning and other factors which affect performance of LMIS. Although no previous studies on LMIS have been conducted in Dar es Salaam, but Blanchard et al. (2014) indicated that LMIS in Tanzania are complex and inadequate, they are fragmented, uncoordinated, incomparable, incomplete, not comprehensive and have low-quality information to serve different users in their different purposes. The issue of quality of information used in the LMIS has been emphasized by Alexander et al. (2019) that quality information in the LMIS is more important than the quantity of information shared. This means that, in order to make decisions which will have direct impact on manpower planning, reduce unemployment and boost wellbeing of people, quality information in terms of reliability, validity, frequency, completeness and other dimensions of quality are of critical significance. Arguments from other scholars on ineffective performance of labour market and its importance on development processes reflects the actual practices in Tanzania and specifically in Dar es Salaam region whereby there are many labour market actors, each of them producing labour related information using different methods which are no comparable over time and therefore jeopardise the quality of labor market produced.

It is important to note that, labour market information is among the top social economic pillars that are used to demonstrate level of development of any country given its high synergies with other sectors. These includes all key labour market indicators from demand and supply side such as available economically active population by demographic characteristics disaggregated by

total labour force, employed persons, unemployed persons, job seekers and methods used for seeking jobs in a specified period of time. In addition, inactive population is of special interest in identifying their number, qualifications they possess and the reasons for being inactive to better inform policy makers in making right interventions which will be used to engage them in production processes. This reflects the recommendations of Keynesian theory about the importance of government interventions and specifically tailor-made interventions to gauge the demand and supply side of the labour market.

Despite the importance role labour market information can play on development processes in the National Statistical System and specifically in Dar es Salaam region, produced labour market information in the region do not meet the required quality in terms of completeness, frequency, timeliness, levels of disaggregation by administrative levels and special or mostly marginalised groups such as women, children, youth, disabled persons, displaced persons, migrants and elderly. Moreover, produced labour market information do not meet the high demand prevailing in the market to inform development agendas in both demand and supply side of the labour market. These inadequate practises coupled with conventional methodologies in data collection, archiving, processing, analysis and data sharing through ineffective labour market information systems, hinders clear understanding of population dynamics including trend analysis of the labour force, levels of employment, skills available and the demanded skills in the labour market, limits forecasting of key macroeconomic variables including expansion of businesses which are key element in job creation. It also affects planning for the optimal training programmes that will impart the skills and knowledge to students to make them employable or engage on self-employment after their studies. In addition, lack of effective labour market information systems to facilitate effective functioning of the labour market including coordination on bringing labour

market practitioners into a common pool for effective dialogues related to career development has hampered several development efforts at micro and macro levels.

It is from these strong arguments that, this study was conducted in Dar es Salaam region to investigate the effects of Labour Market Information System on manpower planning, assess the effects of Labour Market Information System on unemployment and to assess factors affecting performance of Labour Market Information System in Dar es Salaam region. Results from this study is an important tool to support modernisation of labour market information production in the region. The findings provide new and effective methods for data collection, storages, processing, analysis and use of effective labour market information system framework by leveraging on the use of Information and Communication Technologies to increase transparency, sharing and dialogues among key labour market practitioners in Dar es Salaam region. In addition, findings from this study will facilitate and increase production of real time labour market that are comparable over time to enable monitoring and evaluation of development policies and programmes related to human capital and social economic development.

Moreover, the knowledge and meaning of LMIS and its importance is limited in Tanzania, specifically for data producers, decision makers and career professionals who are the key actors in the labour market. Results obtained from qualitative approach of this study reveals that 12.8 percent of respondents indicated that limited performance of LMIS in Dar es Salaam is due to lack of awareness regarding the importance of LMIS. This results into narrow interpretation of LMIS by practitioners which leads to irrelevant decisions to address common challenges in the community such as long-term unemployment of youth, investments and training decisions that matches with the skills demanded by employers (Miyamura, 2016). Excellent LMIS is an important policy tool which could facilitate dialogues between government, training institution,

employers and other actors in making excellent decision related to carrier development (Pember & Dakar, 2005). In order to address the situation, this study collected information from employers who are considered as buyers of labour services on the demand side of the labour market and training institutions as suppliers on the supply side of the labour market in the world space of work. In addition, a sub sample of employees were selected from employers' institutions to provide some qualitative perspectives for key labour market indicators to complement information collected from employers using quantitative research approach. Moreover, given the complex nature of LMIS, the study used mixed methods approach; the method is flexible and provides room of optimizing on the benefits exemplified by both quantitative and qualitative approaches (Bryman, 2006). The method is underpinned by application of quantitative and qualitative approaches, it is a superior method to individual methods and reduces the limitations which could have been encountered if individual method were used (Thurmond, 2001). Furthermore, all research ethics were in accordance to the international standards and all ethical procedures were approved by UNICAF Research Ethics Review Committee (ERC) prior to the start of data collection in the field.

Therefore, this Chapter discusses implications, recommendations and conclusions on the basis of research results. The Chapter has its uniqueness compared to other chapters as it holds the main theme of the study by translating the results into actions, recommend areas of low hanging fruits, medium term and long-term plans in addressing a research problem but adding knowledge to the community and propose areas for conducting additional research. Discussions in this chapter provide insights into the extent to which study findings address the study objectives, research questions and significance of the research study and draw conclusions for each research questions and its hypothesis which are critical on development processes.

Implications of Research Findings

Practical Implications by Research Questions

Implications of research findings are presented for both practical and theoretical implications. The practical implications are centred on how the findings can inform LMIS practitioners to plan better, make wise decisions to support transformation of labour market from traditional methods of performing their duties to a more modern approach by embracing opportunities of technology to increase productivity which will have a positive multiplier effect on LMIS and employment (Woods & O'Leary, 2006). Findings from this study will have positive spillover effects on several sectors to increase economic growth, decrease unemployment levels, enhance equal allocation of national wealth, price stability, labour productivity and balance of payments of the country. These are among top priority agendas of the country and specifically for Dar es Salaam region which is the business region in Tanzania. Results of this study are cornerstone to development of human capital in the region which are critical in balancing demand and supply side of the labour market. Likewise, this section provides key results which will have short term, medium and long-term impact on the society in the area of employment, career development, data production, dissemination, data sharing and utilisation of LMI for informed decisions.

Practical Implications of Research Findings for Research Question One (RQ1)

The Study collected information to inform research questions and specific objectives related to the extent Labour Market Information System affects manpower planning in Dar es Salaam Region. Results revealed that manpower planning is a key aspect in human capital development and is a positive predictor of LMIS in the region. Furthermore, there are inadequate quality of education, existence of high skills mismatch which results into low productivity and a

weak coordination between training institutions, employers and students. The following are detailed practical implications of research findings based on Research Question One: -

a) Manpower Planning is a Positive Predictor of LMIS

It has been noted from the results of this study that, there is high correlation between manpower planning, training institutions, employers, job seekers and the important role LMIS can play to enhance the performance of the labour market. Effective manpower planning is essential because it will create a vibrant society where every individual, regardless of background or circumstance, has equal access to LMIS opportunities and enjoys a high quality of life. Results from this study revealed that an effective manpower planning results into more than 21 units improvements in the performance of LMIS. This is a strategic area which labour market actors specifically the Government and private sector should consider in formulation of national development policies and programmes related to improvement of the labour market. Results therefore calls for labour market practitioners to put strategies for joint planning, implementation, monitoring and evaluation of labour related programmes to ensure availability of adequate and quality labour force which is flexible to cope with the dynamic nature of the labour market. Policies and joint action efforts will significantly contribute to provision of high-quality education and skills development at all levels by leveraging on the use of technology and LMIS to comprehensively curb the existing high level of unemployment. It is critical to note that persistent high unemployment if not well addressed have negative spills over effects on other dimensions of human development such as increased poverty, healthcare and living standards.

Furthermore, results indicate that 63.9 percent of training institutions agreed with the statement that LMIS affects manpower planning. In other words, effective LMIS is a fundamental policy tool as it facilitates availability of reliable information related to manpower planning

including skills demanded in the labour market which informs training institutions and individuals in making right decisions about courses they should teach or take, available jobs vacancies, projection of job vacancies, salaries and other related labour market information for better human capital development plans. According to Aslam et al. (2013) manpower planning is a systematic, well integrated and continuous process of human capital development which includes among others skills development, competencies, health, quantity and quality of personnel needed to meet corporate objectives of institutions. It is therefore evident from the research conceptual framework on the supply side that population which enters the labour market have different qualities and attributes which includes level of education, skills possessed and experiences which are important elements in the labour market competition. In addition, labour force can enter the labour market after completion of formal education studies at different levels, or direct entry and develop through on job training without formal education or from migration (Woods & O'Leary, 2006). These are critical quality and quantity attributes of work force in any economy. Despite the huge role manpower planning can play to improve performance of LMIS, manpower planning in Tanzania has never performed to its optimal and there is lack of reliable information to formulate policies which can be translated into actions to address the situation in more effective manner (Kaaya & SHISHIWA, 2021; Mwang'amba, 2020). Basing on the evidences from this study, employers from public and private sectors collectively and training establishments should consider and invest on manpower planning and human capital development as potential areas of intervention to boost performance of LMIS and contribute to reduction of high rate of unemployment in Dar es Salaam region. This can be realized by strengthening partnerships between the government, training institutions and investors; and establishment of regulations which can enforce alignment of all national development initiatives to the national development visions and plans. Findings from this

study have highly contributed to the mounting evidence that strengthening manpower planning enables countries to achieve sustained and inclusive economic growth which are critical on job creation and reduction of unemployment. Therefore, investment in manpower planning is essential and can be accelerated through establishment of effective labour market information system as a one stop centre for LMI whereby investors, training institutions and job seekers can make optimal negotiations related to evidence-based decisions on career development.

b) At least 50 Percent of Workforce in Dar es Salaam Attained Higher Level of Education which Does Not Match with the Skills demanded in the Labour Market

The findings indicate that large proportion of employers in Dar es Salaam have attained high level of education whereby more than half (56.6 percent) have a bachelor degree or above, 29.2 percent holds diploma level of education and very few (8.1 percent) attained certificate or secondary level of education. Similar pattern is observed for training institutions of which 56.5 percent of employees attained a bachelor degree or above, 36.1 percent had diploma level and 7.5 percent holds certificate or secondary level education. Attainment of high education is a good predictor of employees' performance only and only if the trained courses imparted the right skills to them which are demanded by employers. The optimal matching of skills trained and the skills needed in the labour market have significant positive influence on employability of the graduates (Mgaiwa, 2021). Basing on the findings from this study, there is inadequate efforts towards provision of quality education in the region coupled with low skills to perform tasks as expected by employers. The government and private sectors should consider improving the learning outcomes at all levels from primary to universities by ensuring availability of competent and qualified trainers, increased engagement of employers in designing relevant courses, ensure sufficient instructional materials and adequate essential studying infrastructures by harnessing the

opportunities of technology. It will significantly improve both hard and soft skills needed in production processes.

c) More than 80 Percent of Employers in Dar es Salaam Region Indicated that their Employees Do not have the Needed Skills in the Labour Market

Contrary to higher level of qualifications attained by employers and employees in Dar es Salaam region, high level of skills mismatch exists between skills possessed by employees against what is needed by employers in the labour market. The findings depict that 84.1 percent of employers revealed that skills of their employees do not match with the skills needed by employers whereby, 82.7 percent of employers said that their employees have lower skills than what is required and 1.4 of employers said that their employees have higher skills than what is required in the labour market. Only 15.9 percent of employers said that their employees have the skills required by employers in the labour market. Furthermore, 85 percent of employers themselves have skill sets which do not conform with what is needed in production of goods and services and only 15 percent of them have skills that match with the skills demanded in their productive activities. This situation reflects the low quality of the workforce available in Dar es Salaam region which needs concerted efforts to transform education sector in the region to increase competency of the workforce in the labour market. These includes among others critical review of key stakeholders to partner with the government, courses taught, increase financing in education sector and easy to access LMIS to facilitate formulation of policies and effective implementation of the development programmes. In addition, the proposed conceptual framework in this study facilitates optimal linkages between sectors from micro to macro levels to gauge the existing gap between supply and demand in the labour market.

Moreover, Information and Technology (IT) and technical skills were cited by 42.9 percent of employers and 21.2 percent of employers as the most missing skills among employees respectively. This situation is also revealed by the qualitative findings whereby inadequate skills and knowledge accounts for 36.2 percent of the reasons which contribute to insufficient performance of LMIS in Dar es Salaam. These results imply that there is weak partnership between training institutions, employers from both public and private sector and; job seekers which results into a highly educated workforce with skills which do not match with what is demanded in the Labour Market. The situation is more pronounced in IT skills which are key element in LMIS operations and technical skills which are key input in productivity enhancement. It is also important to note that, Dar es Salaam region lacks the technical cadre which is considered as engine in production processes, despite of more than 50.0 percent of employees attained a bachelor degree or above who are more likely white colour workforce. There is a need of strengthening training institutions and employers or industries relationships; alignment of training programs with the national development vision and plans; conducting regular review of training curriculum to cope with skills needed in the labour market; and continuous quality control and assurance of the training programs to cope with the dynamics of the economy which is highly driven by rapid change of technology (Mgaiwa, 2021).

d) More than Half of Employers in Dar es Salaam Region are not Satisfied with the Performance of their Employees

As expected, basing on the discussions above, more than half (51.7 percent) of employers in Dar es Salaam region are not satisfied with the performance of their employees, 39.6 percent are partially satisfied and only 8.6 percent said that are satisfied with the performance of their employees. This state is highly contributed by the existence of high skills mismatch of employees

as explained above. Labour market practitioners, the Central Government (CG), Local Government Authorities (LGA), private sector, training institutions and individuals should put strategies to bridge the existing gap among their functions. The strategies should also consider identification of priority areas of intervention for quick and real time results. The findings have indicated the need for investing on IT and technical skills of the employees for quick results but also strengthening partnerships between training institutions, employers and job seekers. All these aspirations can be achieved by establishment of effective labour market information system given its potential power of coordination, information sharing and real time responses in addressing unemployment problem from all key stakeholders.

e) About 45.6 Percent of Training Institutions Rely on Conventional Methods to Ensure Relevance of the Training Programmes in Relation to Skills Demanded in the Labour Market

The study also collected information to determine methods which training institutions took to ensure relevance of the teaching programmes in relation to skills required in the labour market. Results revealed inadequate engagement of employers and other key stakeholders during the designing of teaching programs which results into huge skills gaps between skills taught and skills demanded. About 45.6 percent of training institutions use traditional approach of relying on professional experiences to ensure relevance of training programmes. On the other hand, it is promising to note that 26.4 percent of training institutions indicated the need of enhancing partnership with employers to improve relevance of the taught skills with those demanded in the labour market. The partnership can be enhanced by harnessing the opportunities of technology in development of effective LMIS which could act as a one stop centre for labour market information to facilitate interactions between training institutions, employers and individuals in making correct

decisions which will reduce the existing skills gap. For instance, a training institution as a supplier of the work force is interested in the employers' data which explains the projected growth or decline of the project to support making relevant decision on the course delivery in terms of quantity and duration. It is important for training institutions to have access to all key labour market information from the demand side to ensure designing and imparting appropriate skills mix to students to enable them to effectively participate in economic activities. As indicated in the conceptual framework, education system in Tanzania starts from primary level for basic education but there are secondary, vocational and higher learning institutions for enhancing knowledge and skills development. It is unfortunately that skills offered are not properly connected with the skills needed in the labour market due to weak linkages between training institutions and employers. This results into compounded inefficiencies as people invest heavily on educations and skills development that are not demanded in the market place and therefore affects their employment and increasing boom of unemployed youth. It also affects demands side of the labour market because investors fail to meet their expected production due to low labour productivity and ultimately affect the whole economic growth of the country.

Practical Implications of Research Findings for Research Question Two (RQ2)

Results of this study with regards to Research Question Two implies that effective LMIS has important role to play on combating unemployment in Dar es Salaam region. The findings show a negative relationship of an increase in unemployment and the decrease of 3.56 units in the performance of LMIS. This implies that, the government, private sector and other key labour market actors are required to invest on improving functions of LMIS which will improve availability and accessibility of labour market information to facilitate rational dialogues among them. The outcome of these discussions and utilization of labour market information in

development agendas will results into high economic growth, creation of more jobs and a well organised and managed training institutions which can offer relevant courses and impart right skills to their students.

This means that employers from the government and private sector and the training institutions should enforce formulation and implementation of labour and training related policies and programs to increase job creation and enhance employability of graduates which are directly related to good performance of LMIS. According to Maurya and Shah (2014) effective LMIS will boosts economic growth, employment, reduction of poverty and improved wellbeing of the society. Some key findings from this study and their implications based on Research Question Two are as follows: -

a) Inadequate Knowledge about LMIS, Insufficient Coordination, Low level of Technology, insufficient and low Quality of Labour Market Information are Hindrance Factors to Effective Performance of LMIS in Dar es Salaam and Fuels Unemployment

There are several evidences from results of this study to justify the stated implication. This includes 64.1 percent of employers who indicated the need of improving IT and technical skills of employees to improve performance of LMIS given its connection with unemployment. In addition, 48.4 percent of employers' responses which also shows that LMIS in Dar es Salaam are uncoordinated. Furthermore, according to the qualitative findings from this study, 80.9 percent of responses about factors that affect performance of LMIS in Dar es Salaam are related to inadequate coordination in production, dissemination and use of Labour Market Information which is related to limited knowledge of the LMIS; inadequate technology and low quality of Labour Market related information. These are barriers to development and implementation of LMIS which

could be used to precisely support policy formulation and address many malfunctions of reducing unemployment.

This situation demonstrates the difficulties which job seekers, training institutions and employers are facing in Dar es Salaam to effectively contribute to reduction of skills gaps and enhance employability of school leavers (Mgaiwa, 2021). Basing on the results above, it implies that the pace of technological changes does not match with the absorption rate by training institutions and employees in modernization of their operations which results into ineffective LMIS and high skills mismatch. For instance, an individual such as school leaver would like to know about available career options to enable them to make optimal decision on which jobs will pay more and enjoy working, available opportunities for apprenticeships, possibility for further studies and potential sponsors and other opportunities tied with the available jobs such as means of transportation and accommodation. However, it should also be noted that, non-statistical information attached to LMIS plays unprecedented role for labour market practitioners in making correct decisions but are sometimes neglected (Alexander et al., 2019). In connection to this, the mixed research method used in this study will highly contribute to improvement of methods used to conduct labour related surveys in Dar es Salaam. The methods permit use of both quantitative and qualitative approach to collect labour market information to facilitate better understanding of the situation. Inevitably, information collected from qualitative will add clear understanding of the situation and therefore complement one other for informed decisions.

b) About 44.0 percent of Employers in Dar es Salaam Depend on Friends, Relatives and Training institutions as the Main Recruitment Methods to Fill the Vacant Posts

The study collected information to assess the most used method of recruitment by employers to fill the vacant posts. Proportionately, there are few employers (4.6 percent) who use

LMIS as a recruitment method to source the required staff. Still there is significant proportion of conventional methods such as depending on friends, relatives and physical visits to training institutions which are used by 44.0 percent of employers as the main recruitment method. Traditional methods of recruitment have several limitations including inadequate facilitation of equal access to job opportunities and could result into high unemployment. Use of effective LMIS could inform job seekers better and on real time basis about number of jobs that are available, qualifications and skills required, salaries, working station and other related information for them to make decisions which suit better their career needs. Likewise, LMIS could provide information to employers about the quantity and quality of the available work force which could lead to hiring of competent workforce and increased productivity.

c) Use of LMIS Reduces School to Work Transition Period

As indicated in the previous sections, LMIS plays significant role of reducing skills mismatch, enhance employability of school leavers and consequently reduces school to work transition. It is noted from the study results that 80.0 percent of training institutions which use LMIS their students took six to twelve months to get employment while students who graduated from 59.9 percent of training institution which have never used LMIS took more than 12 months to get employment. The results demonstrate and reflected the power of LMIS in addressing unemployment problem in Dar es Salaam, but unfortunately most of existing LMIS in Dar es Salaam are uncoordinated and therefore have limited information, inadequate quality, outdated and incomparable since are based on different methods, standards, concepts and definitions. It is therefore important specifically for the Government, private sector and National Statistics Office in the country to encourage use of existing LMIS albeit their ineffectiveness, strengthening coordination in production, sharing, propagation and use of Labour Market Information to foster

formulation of effective policies which can drive sustainable economic growth, job creation and reduction of unemployment.

Results from this study also reflects that there is unequal access to labour market information in Dar es Salaam due to existence of ineffective LMIS. This situation implies that students fails to make right decisions because they are not aware of the prevailing labour market information in the region and therefore took longer school to work period. It also affects timely application for announced job vacancies, engagement into irrelevant training programmes and limit choices for job exchanges which suite their needs. Effective LMIS would provide equal access to a wider range of LMI practitioners to optimise decisions making from both demand and supply side of labour market. Equal access to LMI is among fundamental elements of a well-functioning LMIS and pave the way to improvement of many social economic wellbeing including increased investment and number of job creation, increased number labour participation, employment and reduction of poverty.

Practical Implications of Research Findings for Research Question Three (RQ3)

Findings from this Study implies that there is high correlation between the use of Information and Communication Technology and the performance of LMIS. It should be noted by labour market actors that ICT is an important enabling environment for establishment of a well-functioning LMIS and it has significant role to play on controlling unemployment in Dar es Salaam region. Strategic planning to invest and use ICT use at work places should be given priority because for every unit increase in ICT use at work places will result into 1.433 units increase in the performance of LMIS.

This situation was also supported by 85.7 percent of training institutions that there is association between ICT use and the performance of LMIS. The results inform LMIS practitioners

that there are other factors such as ICT which also influences performance of LMIS but at a low magnitude (parameter estimate value of 1.433) compared to manpower planning which had parameter estimate value of positive 21.485 and unemployment which had parameter estimates value of negative 3.56. This implies that, a policy maker could consider investing more on manpower planning to have big impact on the performance of LMIS which will have direct effects on reducing unemployment and enhancing performance of LMIS. However, ICT use should not be ignored as it builds favourable environment for development and sustainability of LMIS. Despite the noticeable role ICT can play on the performance of LMIS, lack of ICT skills for employees have been mentioned by 39.7 percent of training institutions as the major challenge which they are facing in ensuring optimal use of ICT, the second challenge is availability of equipment (14.1 percent) and high cost of equipment (13.4 percent). Those are critical areas of consideration by the Government and private sector in ensuring effective LMIS as a one stop centre for labour related and carrier development decisions.

Results from this study signifies the importance of ensuring availability of affordable ICT infrastructure for effective running of LMIS. With the growing pace of technology, huge transformation of both skills and infrastructure is needed for effective LMIS. Given the situation in Dar es Salaam as revealed by the findings from this study, use of modern data collection methods and techniques implies more data production, increased quality of data and more relevant and accuracy decisions related to reduction of unemployment in the regions.

Theoretical Implications of the Research Study

This section provides theoretical implications which focusses on the experiences and lesson learned from the used theories in the study including limitations encountered and how were addressed. The information will add knowledge to the existing literature and to help other researchers in future to choose research methods that suites their needs. The study collected massive information which can widely inform decision makers at different levels from central

government to local government authorities, members of parliaments, employers, training institutions and individuals such as job seekers. Theoretical part of this study provided vital information from both classical and neo-classical labour market theories. This study is underpinned by the Keynesian economic philosophy because it taps the strengths of classical and neo classical economic theories and it added a flexibility of government intervention in balancing demand and supply of labour in the labour market (Blinder,2008). Under this theory government intervention such as increased government spending and tax reforms tend to stimulate investments which results into creation of more jobs, increased employment and lessen levels of unemployment (Habanabakize & Muzindutsi, 2018). According to Deming (2022) LMI is an important element to human capital development in terms of its contribution to skills development and training that meet the needs of employers, job seekers, employees and other development partners. Functions of labour marker in Dar es Salaam that are inadequate such as traditional job search methods needs government intervention to formulate and enforce implementation of formal and modern recruitment procedures that are not leaving any one behind, equal access to information polices could be the bests option to this problem. In addition, revision of Tanzania Employment and Labour Relations Act, 2004 should consider mentioning the importance of government to make interventions from time to time to ensure emerging challenges are addresses in a timely manner to avoid big impacts in development processes which will also affect levels of investment and employment. This could be change of skills needed to operate modern machines in production processes of which, in house skills building could be the ideal solution.

In addition, several scholars including Gao and Yuan (2022) have highlighted the importance of government intervention in establishments and operation of a full scaled LMIS from practical and theoretical views. According to Li et al. (2020) the value of LMI reflects investment

made to education and production sectors increases as the information shared and used to accelerate economic growth, engagement and reduction of unemployment. This is not possible without strategic government interventions through revised policies and circulars that provides guidelines and regulations towards data production, sharing and use in making evidence-based decisions.

However, given the dynamic nature of the economic activities and people's choices there is no individual theory which suits all requirements but flexibility of the theory to cope with the real world are the key elements which makes Keynesian theory superior to others (Osanloo & Grant, 2016). In addition, since the economy involves many actors which are closely linked with the labour market, Keynesian theory will function at its optimal level if other economic theories such as monetarists theory are also critically observed and implemented concurrently (LISOVA, 2021).

Classical labour market theories assume full employment levels and that labour market is driven by labour demand and labour supply forces. However, due to the complexity nature of labour market it is nearly impossible nature to adjust itself to balance demand and supply side of the market. It has been evidenced by the results from this study that, there are many data producers of LMI in the region with varying inadequate standards, not complete and not comparable. It is therefore critical for government to intervene by imposing appropriate theories, policies and programmes to ensure there are reliable LMI to facilitate labour market analysis.

Basing on the discussions from various scholars regarding conceptual and theoretical models related to labour market, the study adapted a conceptual model from Woods and O'Leary (2006) and was guided by the Keynesian theory of employment at all stages. These modules were the best fit for the study which focused on studying dynamic labour market indicators resulting

from increased pace of globalisation and the rapid change of technology that require refined methodologies, theories and techniques for data collection and granularity of data. The used conceptual and theoretical models augment the existing theories by introducing key elements of the labour market which are critical in labour market analysis for making informed decisions. These includes the role of LMIS on enhancing coordination of key labour market actors specifically the training institutions, employers, employees, individuals and job seekers; information exchange mechanisms by harnessing the opportunities of Information and Communication Technologies and the role ICT as enabling environment for effective functioning of the LMIS.

The prevailing and traditional methodological and theoretical frameworks for collecting and analysing labour market data which coupled with limitations, particularly in understanding the dynamic nature of employment levels, trends, skill requirements, as well as wages among various socio groups will be improved using the refined frameworks used in this study. In addition, the refined methodologies will enhance production of labour market information, increase frequency and timeliness, reliability, accuracy and improved coverage.

Moreover, there is close interlinkage between the conceptual framework for this research study and the underpinnings of the Keynesian theory of employment. The conceptual framework explains labour market in two angles of labour supply and labour demand in the labour market and the need to equilibrate elements from the supply side and demand side of labour through various initiatives including increased aggregate demand which stimulates investment and ultimately job creations, increased employment and declines of unemployment (Woods & O'Leary, 2006). It is therefore imperative for researchers to ensure that the chosen theory and the conceptual framework of the study are correlated to ensure research findings address the study objectives and research

problem consistently. Furthermore, in the quest to ensure the study collects comprehensive information to address the complex phenomenon of the labour market, mixed methods approach was used. It is a hybrid method which taps strengths of both quantitative and qualitative research approaches (Kern, 2018; Casey & Murphy, 2009). The quantitative approach was employed as the principal method of the research study and qualitative approach was used in a sub sample of employee to complement information collected in quantitative approach. Basing on the statistical tests conducted, the chosen theories and approach resulted into a reliable and valid research findings which can be considered as a trusted source of labour market information to support formulation of policies and development programs related to labour market in the study area and by extension in Tanzania. However, use of mixed methods approach requires a researcher with high level skills of statistical packages and ability of managing big data sets from both quantitative and qualitative approaches.

Recommendations for Application by Research Questions

This section provides recommendations and policy implications based on research findings. It highlights specific actions to be taken by Labour Market actors in the research area, which includes Government agencies, private sector, training institutions, employers and other stakeholders in addressing the research problem. Information provided in this section are important to policy formulation, policy actions and are essential to other researchers on planning future researches which will further knowledge in effective operationalization of Labour Market Information Systems. Key findings from each of the research question and their implications are used as basis for making relevant recommendations for actions to address specific Labour Market phenomenon and therefore bridge gap between labour supply and demand and also enhance functions of LMIS. Recommendations for application are provided precisely for each research

questions which are also aligned with the key results to ensure are feasible, specific and focused (Lomotan et al., 2010).

Recommendations for Application Under Research Question One (RQ1)

Recommendations for Research Question One have been drawn based on the five key results explained in the implications section. The key findings from the research study under RQ1 demonstrated significance of relationship between manpower planning and the performance of LMIS in Dar es Salaam. Results revealed that manpower planning is a positive predictor of the performance of LMIS, and therefore will contribute to the control of unemployment mechanisms through a well-functioning of LMIS. Manpower is an important factor in production of goods and services specifically in developing economies including Tanzania which has low level of technology. It is directly linked to the education level, skills, know-how and ability of employees in performing their duties to meet the corporate objectives and targets (Al-Qudah et al., 2014). It has been reiterated by Mould (1994) that manpower planning is all about rescheduling the workforce to realize the desired outcome. This study used employers' satisfaction with graduates hired from TVET institutions; institutional ownership of the establishment; and skills of employees in relation to what is demanded by employers as proxies for manpower planning.

Despite the importance of manpower on enhancing performance of LMIS and the related influences of controlling unemployment, results of this study shows that at least 50 percent of workforce in Dar es salaam had higher level of education which did not match with what was required by employers. In addition, at least 80 percent of employers in Dar es Salaam indicated that their employees did not have the needed skills in the labour market and more than half of employers surveyed were not in satisfaction with the work-related performances of their employees. Practical recommendations to address these malfunctions and enhance manpower

planning in Dar es Salaam, and therefore influencing performance of LMIS and control unemployment are as follows:

i). Employers to Engage Professional Bodies to Conduct Skills Gaps Assessment of Employees as a Short-Term Solution

In the shorter-term period of between one to five years, employers are to engage professional bodies to conduct skills gaps assessment in relation to performance of the organization, quantity and quality of the available employees. The assessment should cover skills possessed by employees' vis-a-vis what is needed by employers, level of education and the extent of use of LMIS at an organization in making human resource related decisions. The outcome of this assessment will be a policy tool of the organization in making decisions for human development actions in short term period. Basing on the results of the assessment, employees who have lower skills than required should be considered for the following actions: -

- a) Participate in short-term tailor-made trainings to fill existing skills gaps;
- b) Being attached to experienced and qualified co-employees for on job training; and
- c) Being assigned to alternative tasks in the business process which can increase their productivity.

On the other hand, employees who have higher skills than the tasks they are assigned to should be considered for the following: -

- a) Being assigned to more tasks associated with more incentives to ensure they are not underutilized; and
- b) Being engaged to provide on job training for co-employees whose skills are lower than what is required.

The assessment should also indicate the need for employers to invest on using LMIS in making rational decisions related to filling vacant posts and manpower planning. These interlinkages between manpower planning and LMIS will contribute significantly in addressing unemployment in Dar es Salaam region.

ii). Employers Should Take Effective Inventory of Available Employees and Conduct Thorough Analysis to Determine Current and Future Needs of Manpower

Given the significance of manpower planning as a fundamental instrument in Human Resource Development, long term planning of a period ranging between 5 to 20 years or more is essential in fulfilling the vision and mission of organizations. A mistake on manpower planning leads to several uncertainties including shortages or surplus of employees and hiring employees with skills which do not match with skills needed in the production processes, this is highly undesirable (De Feyter & Guerry, 2011).

Recommendation for application in this area is directed to employers that, they should ensure to expand on the short-term skills gap assessment findings by taking effective inventory of available employees and conduct thorough analysis to determine current and future needs of manpower. Analysis should deep dive into employee's qualities and the related information including skills, level of education, wages, type of tasks they perform and also predict for future manpower needs including long term trainings to cope with the rapid technological advancement and economic dynamics. Projections of manpower needs should be done by assessing key determinant variables such as rate of retirement of existing employees, retrenchments, freezing of employment for some of the occupations, potentials of business expansion in future which will

also inform about predictions of total number of future job vacancies, skills needed and other resources of running a business.

iii).The Government Should Consider Revising the Education Related Policies and Increasing Vocational Education and Training (VET) Centres to Enhance Availability of Manpower with Adequate Skill Mix of Low, Middle and High Skills.

Results of the study indicates existence of conspicuous skills gap among graduate employees in Dar es Saalam region. The study indicated that more than 50 percent of the workforce who attained higher level of education, had skills which did not directly match with what was needed at the workplace. These results are aligned with results of the study undertaken by Malmqvist and Kullman (2022) which showed that, skills mismatch is among the principal bottlenecks facing graduates in Tanzania to secure employment. Furthermore, the problem of skills imbalances in Tanzania has been explored in many literatures including a research study implemented by Msigwa and Kipesha (2013) but mainly at macro level, there is a need of individual organizations to devise strategies which will help bridging the already existing skills gaps at the same time national efforts should focus on revisiting education policies to guarantee availability of workforce with adequate skill mix in terms of low, middle and high skills levels in the economy. The Government should consider increasing Vocational Education and Training (VET) Centres that will produce low and middle level manpower to fill the skills gap which are now inappropriately occupied by professionals from higher leaning institutions, which are termed to be skilled underutilized. In order to cope with the pace of technological advancements, VET centres in developing economies which is labour intensive should be strengthened, managed carefully and should be flexible in provision of skills which can respond to economic dynamics (Mangozho, 2003).

iv). The Government to Establish an Enforceable Circular to Require Employers to Accommodate Interns and Apprentices

Attachment of Interns and Apprentices in their respective areas of expertise has been cited by many scholars that plays a great role in enhancing their skills and are prone to be more employable than those job seekers who have never gone through the internship or apprenticeship (Votinius & Rönmmar, 2021). Similar results have been obtained from this study that, among the key areas which needs to be improved in training institutions is to enhance employability of their graduates includes entrepreneurial skills which was cited by 37.2 percent of training institutions and industrial attachment with 11.2 percent. It is therefore imperative for the Government to establish an enforceable circular to require employers to accommodate interns and apprentices whenever needed to enhance their skills. The proposed engagement will contribute to improve their skills and expertise which are critical elements of the effective manpower planning and consequently control of unemployment.

v). Leveraging on the Use of Technology in Long Term Manpower Planning by Using LMIS as the Main Platform of Recruitment and Selection Processes

Employers ought to consider leveraging on the use of technology in long term manpower planning. Specific and scientifically justified area of ICT use by this study is on the development and use of LMIS in manpower development including recruitment and selection processes. Effective use of LMIS will enhance accessibility and sharing of labour market information for making right decisions about filling vacant posts and to engage employees who are competent and updated with adequate skills and practices. In addition, it will help job seekers to take note of available jobs and related attributes for them to make optimal decisions about career development. Strengthening partnership and collaboration between employers and training institutions through

LMIS by sharing key Labour Market Information such as skills needed by employers will help training institution to design courses that will bridge the existing skills gaps (SALAAM, 2020). Furthermore, engagement of employers during the designing of training programs must be reflected and enforced in the implementation of policies related to skills development in Dar es Salaam. Training institutions should strategically encourage their potential graduates to use existing LMIS albeit not effective to access available jobs, skills required, working station and other related labour market information for them to make optimal decisions about their career development.

Recommendations for Application Under Research Question Two (RQ2)

Key results from this research study under RQ2 shows that, there is significant and negative correlation between unemployment and the performance of LMIS. This implies that, increased level of unemployment is related to low performance of LMIS. Furthermore, results revealed that inadequate knowledge about LMIS, insufficient coordination, low level of technology, insufficient and low quality of Labour Market Information are hindrance factors to effective performance of LMIS in Dar es Salaam and fuels unemployment. Furthermore, 44.0 percent of employers in Dar es Salaam depend on friends, relatives and training institutions as the main methods of recruitment to address vacant posts. In addition, results show that training institutions which use existing LMIS though ineffective reduces school to work transition period. Basing on those findings, the following recommendations are given out to improve performance of LMIS and ultimately control levels of unemployment in Dar es Salaam: -

i). The Government to Establish a National LMIS Coordination Committee to Oversee all Functions of LMIS

The proposed National LMIS Coordination Committee should be a multi-stakeholder oriented and coordination mechanism should be vested under the Prime Minister's Office Labour, Youth, Employment and Persons with Disability with a clear term of reference for each institution. The Prime Minister's Office is responsible for labour related issues in the country and is an opportunity to build Political will and actions regarding advancing and enhancing functions of the LMIS. Effective LMIS in a country will demonstrate strong Political support and engagement of the tripartite labour organs namely; employers, employees and Trade Unions in development and use of LMIS. Key stakeholders of the National LMIS Coordination Committee should include representative from the Government line Ministries, private sector, workers associations and the National Bureau of Statistics which is responsible for production, storage, dissemination and use of official statistics in the country. Fundamental roles of the Committee are to coordinate all actions related to the LMIS including periodical monitoring and evaluation of the performance of LMIS. The Committee should also focus on building effective LMIS in phases by building on the existing LMIS to ensure the first product can illustrate the potentials available in LMIS specifically in making decisions to enhance manpower planning and employment. This approach has been mentioned in the literature being effective in many countries and has been vital in using information posted in the LMIS to support making optimal decisions about manpower planning (Mangozho, 2003). In order to ensure all technical issues are addressed on a timely and professional manner, the National LMIS Coordination Committee should establish a National LMIS Technical Working Group which will be responsible for all technical issues and regularly report to the National LMIS Coordination Committee. The proposed coordination will enhance

effectiveness of the labour market in Dar es Salaam and will be uses a working tool to improve performance of labour market in the remaining regions in the country.

ii). The Government to Establish National Employment and Training Institutions

Observatory Body

Given the imbalances of skills mismatch revealed by the results from this study, there is urgent need of establishing National Employment and Training Institutions Observatory Body in the country. Key members of this Body should include employment and education planners from both public and private sectors, employers and employees' associations including Association of Tanzania Employers (ATE), Occupational Safety and Health Agency (OSHA), Commission for Mediation and Arbitration (CMA), Tanzania Investment Centre (TIC), Social Security Regulatory Authority (SSRA), National Institute of Productivity (NIP), Export Processing Zone Authority (EPZA), Immigration Department, Tanzania Employment Services Agency (TaESA), National Bureau of Statistics (NBS) and Ministry of Education, Science and Technology (MoEST). The Observatory Body should focus on skills development and training issues, publicity and awareness raising on the importance of producing quality LMI and use in making career development decisions and other information related to the labour market, like social dialogues and collective bargaining. In collaboration with the National LMIS Coordination Committee and the National LMIS Technical Working Group, the Body will form a yardstick to support measurement of the performance of LMIS (Healy & Verdier, 2009).

iii). The Government to Consider Enhancing Production, Storage and Sharing of Labour

Market Information

Basing on the current framework, the National Bureau of Statistics (NBS) is mandated by Statistics Act (2015) to produce and to coordinate production, dissemination and use of official

statistics including Labour Market Information in the country. Labour Market Information compiled by NBS are mainly from Labour Force Surveys which are conducted after every five years and Employment and Earnings Surveys which are irregularly conducted. Further, the Act provides power for Statistician General to delegates powers to Ministries, Departments and Agencies (MDAs) to produce and disseminate official statistics in their respective sectors. However, there is inadequate knowledge and expertise in the MDAs in production of quality administrative Labour Market Information. Produced LMI are not comparable, incomplete, outdated and are in patches. Furthermore, there is no formal and binding mechanism for data sharing, visualization, monitoring and evaluation of the standards and quality of LMI. In order to address this problem, the Government should consider to invest on the following: -

- a) Strengthen compilation and sharing of data from administrative sources by developing an enforceable circular to require individuals or institutions withholding data related to LMI to release them according to the prescribed mechanisms; the data would help to compile LMI according to the international and National standards developed by the Tanzania National Bureau of Statistics;
- b) Improve production of high frequency LMI surveys including Labour Force Surveys, Employment and Earning Surveys and Manpower Surveys to improve data availability to support decision makers in making real time decisions related to employment, unemployment and manpower planning and;
- c) Strengthen compilation and use of non-traditional data sources for LMI to fill data gaps for Labour Market indicators which are not collected using traditional labour market surveys. The large part of non-traditional data sources produced by Non-State Actors (NSA) are not used in the development processes which could bridge the existing data gap. There is an

urgent need of establishing inventory of all data sources for LMI in the country and devise a mechanism for harmonization of standards for Data Quality Assurance (DQA) at all stages. Furthermore, production of LMI from both traditional and non-traditional sources should be demand driven by considering the most demanded information to inform policy makers, employers, job seekers, and individuals which can provide solutions to specific policy questions.

iv). The Government in Collaboration with Labour Market Actors to Provide Training and Raise Awareness to Producers and Users About the Importance of Labour Market Information

Success of LMIS development and use will depend on a well-informed LMI producers, stakeholders and users. In this regard, therefore, it is necessary that an awareness campaign be conducted for LMI producers, users and other interested parties. The objective of the trainings and awareness campaigns will be to sensitize the producers on importance of producing quality LMI, data sharing and dissemination and how the information stimulates economic growth, job creation and controlling unemployment. According to Mangozho (2003) it is critical to note that, importance of LMI can only be realized if key stakeholders can effectively differentiate between holding LMI and the influence it can bring into development process if are used in planning and making decisions.

v). Employers to Enforce Changing Organization's Culture, a Transformation of Traditional Methods of Recruitment and Selection of Required Employees to Fill the Vacant Posts

Employers should develop a culture of harnessing opportunities of technology to change from business as usual to a more productive and focused approaches including use of LMIS in the recruitment and selection processes. This should go in tandem with increasing awareness of the needs to produce; share LMI to generate and update LMI; increase accessibility of LMI to improve timeliness and relevance of LMI for making real time decisions. It has been mentioned in the literature through the study conducted by Dewett and Jones, (2001) about the functions of information technology in the establishment that information systems have significant role in changing the organization culture including information efficiencies and information synergies.

Recommendations for Application Under Research Question Three (RQ3)

Recommendations under RQ3 are based on the evidence drawn from this Study that ICT use is among the determinant factors of the performance of LMIS. The results are similar to results obtained by other researchers that ICT use in many countries has improved availability and accessibility of LMIS and has contributed significantly to effective manpower planning, employment and control of unemployment (Kostoglou et al., 2004). ICT facilitates automation of data production, sharing and use and therefore has vital role in supporting performance of LMIS. Despite the important role which ICT contributes to the performance of LMIS, the study results showed that about 40 percent of training institutions cited their employees lacked ICT skills, 13.1 percent of training institutions mentioned high cost of equipment as among the three major challenges on using ICT in their work places. Therefore, the following recommendations will

unlock identified barriers of ICT adoption in work places and consequently contribute to improve performance of LMIS: -

i). Employers to Consider Providing Tailored ICT Courses to Employees to Bridge ICT Skills Gaps

Tailored training has proved to be effective in addressing skills gap in a short period of time. According to Arendt (2008) on his paper about Barriers to ICT Adoption in SMEs, tailored courses to employers and employees, it was indicated that, ICT skills played a vital function in bridging the digital divide between them.

ii). The Government to Consider Tax-Cuts for ICT Equipment and Software to Improve Accessibility and Use by Business Operators

In order to lower the overall cost of ICT equipment and software to end users, the Government should consider applying tax-cuts at various stages of its procurement and distribution process. One area which this will be most effective is instituting preferential tax rates for ICT equipment at importation (preferential import duties) and also for Value Added Tax (VAT). Charging selectively less for ICT equipment will result into low cost of equipment in the domestic market. The overall implications will be enhanced use of ICT equipment and software and also consequently adoption of good practices of LMIS.

iii).The Government to Leverage on Cost-Cutting Advantages of Bulk Procurement Systems

To implement this recommendation, the Government can institute the bulk procurement of ICT equipment and software. In this system, a few importers would import the equipment from manufacturers and sell to local distributors. The local distributors would then sell the equipment

directly to final users. The bulk procurement would have a practical advantage of cutting cost of equipment resulting from a long chain of players in the procurement and distribution processes.

iv). Building Partnership with Software Developers to Enhance Development of Tailor-Made Software Domestically

In addition, the Government can lay down enabling environment for the private sector to build partnership with software developers to facilitate development of tailor-made software packages. These would be cheaper than generic software which requires high level skills to customize to specific operations. However, in long run, Government and Employers should consider strengthening digital economy by harnessing opportunities of LMIS for sustainable development (Rufaro & Dick, 2008).

Limitations and Delimitations of the Study

Limitations

This section provides limitations of this study which explored the effects of Labour Market Information System on Unemployment in Dar es Salaam region. According to Theofanidis and Fountouki (2018) limitations of the study refers to potential weakness of the study that are out of researcher's control and are directly linked with the research design at all layers as explained by Saunders et al. (2009). Limitations of the study can affect the final study results and therefore is critical for researchers to explicitly state the study limitation to inform users to ensure results are used by taking into consideration the limitations. For instance, if response rates of the study was very low below 50 percent, statistically it is not recommended to generalise the results to the population it serves, results may be used as a proxy indicator to the situation and for further comprehensive studies to justify or nullify the initial results is of paramount important.

In addition, according to Dawadi et al. (2021) limitations of the study are associated with research methods if the underpinnings are not effectively integrated into the study. For instance, in quantitative studies if the sample size is not big enough to represent the population, is not recommended to generalise the results and in qualitative studies the saturation of findings would not be achieved. Another dimension of the study limitation among others is attached with timeline if the study is time sensitive and a researcher fails to conduct the study on a timely manner then the results would not be useful. A good example is experimental studies which needs measurement of the phenomenon before and after the treatment in a specified time period. If a treatment is supposed to be done one hour after the treatment then doing otherwise will affect the results and making wrong decisions which will have negative effects to the society (Gopalan et al.,2020).

This study used a mixed research method and therefore employed both quantitative and qualitative research underpinnings. In quantitative approach, the study used a sample of 2,700 for Employers' Establishment and 285 for Training Institutions Establishments. However, it was noted during data collection that, the used sampling frame for training institutions was characterized by under coverage. In order to correct for this anomaly, a weight was constructed to ensure that it represents the population of interest using the total number of training institutions from the latest Labour Force Survey conducted in 2020 as the population. Therefore, the findings from training institutions provides critical information which reflects the characteristics and settings of training institutions in Dar es salaam. Limitations of this study implies that the sampling frame used for training institutions was outdated or there is high investment in education sector in Dar es Salaam which resulted into an increasing number of training institutions which were not covered in the current frame. It is important for researchers to note this limitation and consider updating sampling frame for training institutions before conducting their studies to minimize this

type of limitation. This is a lesson to other fields of study intending to use sampled units in their studies to avoid this sampling bias.

Delimitations

According to Gosselv (2024) delimitations of the study refers to definitions and boundaries that researchers decided to use in the study but do not affect the aim and objectives of the study. It is therefore within the control of the researcher as opposed to limitations which cover issues which are beyond the control of the researcher. Delimitations are critically important as they allow a researcher to narrow down the study to provide more room of using the available scarce resources to conduct manageable studies to inform the research problem and objectives (Terrell, 2012).

Based on those facts, this study was conducted only in Dar es Salaam Region out of 26 regions of Tanzania Mainland and it covered only institutions with 5 employees and above; leaving out establishments with less than 5 employees. It is therefore imperative for the similar study to be extended to the remaining regions in the country and to increase the scope to include all establishments to ensure the problem of unemployment is curbed and no one is left behind (Terrell, 2012). Tanzania is characterised by the informal economy which employs about 30 percent of the population. It is therefore recommended further studies to consider including Small and Medium Enterprises into their sample to ensure full coverage of the population.

Recommendations for Further Studies

This research explored the effect of Labour Market Information System on Unemployment in Dar es Salaam region. The study collected information to address the research problem using three main Research Questions in the area of performance of LMIS, manpower planning, unemployment and other factors which affect performance of LMIS. Basing on results of this research study and review of literature conducted in Chapter Two, Dar es Salaam region does not

have updated manpower planning and effective Labour Market Information System to support making right decisions related to training, employment, seeking for work and unemployment. Furthermore, there is huge skills gap between the skills possessed and the skills needed by employers which contributes significantly to unemployment of graduates in Dar es Salaam region. There are various uncoordinated producers of Labour Market Information in Dar es Salaam region which are scattered in various organisations including the Government Ministries, Departments and Agencies. Available LMI are of low quality, not comparable, incomplete and outdated. Furthermore, the last stock taking of human resource skills in the country was conducted in 1980's, about four decades ago (Swere,1980). This is a long period and a lot of changes have occurred economically, socially, environmentally and technological changes which requires updated LMI to support Labour Market Analysis of the Country.

Labour Market Analysis focuses on measurement of performance of the economy which has aspirations of educated society, real time monitoring and appraisal of economic and demographic labour market dynamics in relation to training institutions and education on the supply side; and employment processes on the demand side (Mangozho, 2003). The analysis covers all key LMI including the quantity and quality of the labour force, population dynamics which influences demand and supply of goods and services, ability of the economy to absorb technological changes, recruitment processes and training institutions practises including their interrelationships with employers and employment related machineries in the economy (Alexander & De Backer, 2019).

National Manpower Survey (NMPS)

The hard facts explained above call for an urgent need for Tanzania to rollout a similar study in all regions in the country, a National Manpower Survey (NMPS) which will facilitate taking stock of the available human resource in terms of quality and quantity. The proposed NMPS should

focus on taking stock of available skills, identification of areas which have significant skills gaps or surpluses, available jobs, projection of job vacancies for short, medium and long term; assess collaboration between training institutions and employers and other LMI which can be pooled into an integrated Labour Market Information System to support formulation of labour related policies and programmes. The need for NMPS in Tanzania is even more important now than ever before to build a dynamic workforce which can cope with the pace of technological changes, digital economy, green and blue economies which are key aspirations of the Nation. The proposed NMPS should be comprehensive to facilitate collection of Labour Market Information from demand and supply side of the labour market. On the demand side, the core model should focus on employers and on the supply side training institutions should be the main module. Other modules for consideration which can be used to collect information to complement information collected from the main two proposed modules are employees' module, diaspora module and unemployment registration module. Furthermore, the proposed NMPS should aim to meet among others the following objectives: -

- i). Determination of the stock, characteristics and distribution of skilled manpower;
- ii). Identification of the emerging skills which need to be further developed;
- iii). Determine number of vacancies and demand arising from attrition and growth;
- iv). Determine current and future shortages and surpluses arising from economic dynamics;
- v). Ascertain the capacity of local training institutions to meet current and skills needs for the coming five to 20 years;
- vi). Establish an accessible human resource database which will be a backend input function to the Integrated Labour Market Information System for policy decision and planning;

- vii). Pulling together fragmented labour market information sources to generate and continuously update quality, relevant and timely information;
- viii). To provide pertinent, quality and timely labour market information to users and stakeholders for making relevant decisions related to the labour market in Tanzania;
- ix). To increase awareness of the need to produce quality and timely labour market information, and the requirement to share the information with individuals and institutions;
- x). To improve public awareness of availability and uses of labour market information; and;
- xi). To ensure equal access to optimal labour market information to users, potential users and stakeholders.

Implementation Arrangements of the MPS. It is recommended that the NMPS to be implemented through four level structure led by a coordinating committee. Other levels include steering committee, technical committee and the secretariat. Members of the coordination committee will be drawn from senior management of the National Bureau of Statistics, Ministry of Labour and Employment, research institutions and training institutions. The main functions of the committee will be to coordinate all survey activities from planning, development and testing of survey instruments, field work, quality control, data processing, report writing, dissemination of the results, data archiving and documentation. It will approve survey implementation tools, budget and guidelines submitted by other committees and ensure the scheduled meetings take place according to the NMSP work plan.

Steering Committee. It is recommended that the committee will report to coordination committee and be in charge of fund raising to ensure constant flow of funds to support implementation of all survey activities. It will also be in charge of enforcing application of national

and international standards of conduction labour related surveys, monitoring and evaluating LMI collection, processing and dissemination. Since government support is paramount in LMI production, the committee will ensure that both technical committee and the secretariat get political and top leadership support. The committee should meet every month to review progress and identify challenges, and provide corrective measures.

It is also recommended that members of the Steering Committee to be drawn from top leadership of National Bureau of Statistics and ministries responsible for labour and employment, finance, education and vocational training, agriculture which is the giant employer sector in the country, Local Government Authority and Public Service Management.

Technical Committee. The committee will report to Steering Committee and be responsible for all technical aspects of the NMPS including development of digital data capture applications, data processing, report writing and dissemination of the results. The technical committee should meet twice per month or as the need arises to ensure smooth implementation of survey activities. Members of the Technical Committee should be drawn from same institutions represented in the Steering Committee to ensure smooth communication with their leaders about the progress of implementation of the NMPS.

Secretariat. The secretariat members will be drawn from middle management of the key institutions represented in higher levels. The Secretariat will coordinate activities of the steering committee and technical committee. Prepare progress reports of NMPS and present to both technical and steering committee for comments and approval. The secretariat should meet weekly to discuss and provide solutions to emerging issues which needs their attention for effective implementation of the NMPS.

Table 6.1*Estimated Operational Budget for NMPS in Tanzania (1 USD = TZS 2,500)*

S/N	List of Activities	Budget (TZS)	Budget (USD)
		541,247,075	216,499
1	Planning and Administration	5,000,000	2,000
2	Survey Design and Sampling	5,000,000	2,000
3	Information, education and communication	2,750,000	1,100
4	Procurement of survey instruments	39,200,000	15,680
5	Preparations of survey instruments	55,004,575	22,002
6	Pre-test	9,895,000	3,958
7	Training of Trainers	35,975,000	14,390
8	Training of Enumerators and Pilot	50,975,000	20,390
9	Listing - Fieldwork	60,155,000	24,062
10	Data Collection	74,350,000	29,740
11	Quality Control	36,385,000	14,554
12	Data Validation	20,740,000	8,296
13	Production of key indicators and reports	12,235,000	4,894
14	Report writing	73,717,500	29,487
15	Dissemination of the Results	51,360,000	20,544
16	Data Archiving and Documentation	8,505,000	3,402

Table 6.2*Proposed Work Plan for Implementation of the Proposed NMPS in Tanzania*

S/ N	List of Activities	Weeks in 1 st Month				Weeks in 2 nd Month				Weeks in 3 rd Month				Weeks in 4 th Month				Weeks in 5 th Month				Weeks in 6 th Month			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Planning and Administration	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2	Survey Design and Sampling	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3	Information, education and communication	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4	Procurement of survey instruments	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5	Preparations of survey instruments	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6	Pre-test	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
7	Training of Trainers	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
8	Training of Enumerators and Pilot	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
9	Listing - Fieldwork	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
10	Data Collection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
11	Quality Control	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
12	Data Validation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
13	Production of key indicators and reports	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
14	Report writing	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
15	Dissemination of the Results	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
16	Data Archiving and Documentation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Work Plan, Budget and Time Frame. The proposed NMPS should be designed to be implemented for a period of six months from the planning stage to dissemination of the results. It is estimated that implementation of the NMPS will require a total of TZS 555,057,075/= distribute over the period of six months. The major source of funding will be the Government and development partners who are custodian agencies for labour market indicators at United Nations. Table Na.5.1 and 5.2 above shows detailed costed activities and the work plan for NMPS over the proposed period of six months of its implementation.

Other Recommended Future Studies

The following are additional studies which should be considered to improve production, dissemination and application of Labour Market Information in management of supply and demand for labour in the labour market. Segmentation of massive integrated labour force surveys to a mini-survey module which includes Employment Outlook Survey (EOS) at household levels and at establishment level to be conducted yearly by the National Bureau of Statistics. This type of Surveys would provide timely labour market status and accurate projections to human resource planners, and employers (Lacey & Wright 2009). Timely Employment Outlook Survey information would permit government to direct resources to areas with most need, while providing information to job seekers to adjust career planning and employers to project availability of skilled manpower. The Employment Outlook Survey could combine data from integrated labour force surveys targeting most common occupations and show average annual earnings, earnings by percentiles for the highly and lowly paid workers and the percentage of work force that is employed part time. It should put together information on occupational groups, statistical data on existing and forecasted labour market situation in particular occupational groups. The proposed Employment Outlook Survey at establishment level should also look at the interface between the education system and labour market outcomes of former students from a sample of institutions at the tertiary education level. Information from such an outlook would be of paramount importance in career development. Employer views should be sought as much as possible to show a clear indication of job projections, irrespective of whether the outlook is favourable or not. Furthermore, Job outlook survey at establishment level should target specific labour force indicators such as wages and earnings, occupation, educational achievement, economic activity for education achievement from a sample of post-secondary institutions.

In connection to the effective Labour Market Information System, Employment Outlook Survey data would be of considerable benefit to policy planners, job seekers, and potential employers. Training institutions could use the information to adjust future training programs. Employers could use the information to anticipate labour market needs. Job outlook information would provide the country with clear indication of labour market demand and supply, while job seekers can use the information to adjust future career planning in-line with labour market supply and demand. Job outlook information would help employment services agencies to advice potential employees on occupations likely to be in demand in future.

Critical Characteristics of Optimal Labour Market Information to be Considered in Future Studies

Production of Labour Market Information in future should consider compliance to the following specific characteristics which ought to be considered in production, storage, dissemination and use. These includes: - the need for Government control and participation to maintain awareness, accessibility, timeliness and accuracy of Labour Market Information. It is within the government mandates to guarantee public access to relevant, quality and timely information, and that the information is circulated in an appropriate manner, and to inform the public about importance of useful labour market intelligence (Gamble, 2016). The Government involvement would ensure equality in access to Labour Market Information by all interested demand and supply participants, to learn of opportunities and the required skills; ensure adequate Labour Market Information supply, which in turn would improve labour market performance and impact economic growth positively and ensure permanent flow of funds for wide coverage and timeliness in production of Labour Market Information, storage, analysis, dissemination and use. Coordination is another important element of consideration to ensure that Labour Market

Information from different sources are pulled together to one collection point, to ensure conformity to format required, and to ease processing and dissemination (Brekke, 2004). Ensure availability of sustainable funding systems in production of Labour Market Information to facilitate data mining methods recommended nationally to cover wide range of aspects where development activities take place, and that important data from census and surveys is available, and on time, to the users. Well-funded, coordinated data collection process will often produce timely Labour Market Information and therefore complied to the timeliness criteria of the United Nations Principles and Recommendations of Production of Official Statistics (Fall, 2009). Furthermore, well-coordinated Labour Market Information collection would produce timely, complete and accurate data which would lead to accurate decision support systems in guiding labour market policy formulation. LMI should be fit and complete for the purpose in the sense that, data concerning labour force supply and demand need to give a reliable availability of opportunities and required preparations; LMI should be capable of addressing and responding to concerns and needs of different users (Guardia et al., 2021). Enhancement of Labour Markert Information accessibility will ensure easily accessible by those who need the information such as institutions and the public in general. Monitoring and evaluation programs should be employed in LMI production, compilation and dissemination, making it easier in determining whether users are satisfied, or gaps requiring improvement are identified. This enhances dissemination method, timeliness and accuracy. LMI should be as complete as possible by ensuring total coverage from all sources and disseminated to all users and other stakeholders.

Conclusions of the Research Study by Research Questions

This section provides conclusions of this research study using inductive approach; the section highlights the context of the research problem, significance and objectives of the study,

research questions and conclusions for each research question which informs a broader and general conclusion of this important study. The study collected information to explore the Effects of Labour Market Information System on Unemployment in Dar es Salaam region. Effective LMIS plays an important role in the functioning of any economy in terms of job creation; enhancing capabilities of the economy to engage available labour force through its key functions of labour market analysis, coordination, monitoring and evaluation of the labour related policies and programs (Sardik, 2001). It improves availability of Labour Market Information for all users under a common web-based interface, foster transparency, brings employers and training institutions on a digital work space which fuels real time dialogues and interactions related to skills development, available jobs, working conditions, potential courses which will enhance employability of graduates and ultimately controls unemployment (Blanchard et al.,2014). It has been reiterated by other scholars including Mangozho (2003) and Barnes and Bimrose (n.d.) that effective LMIS and its interoperability with other systems in the economy facilitates easy communication and information sharing amongst labour market actors in making optimal labour related decisions. However, despite the potential benefits of LMIS in making rational decisions about career development and the part it can play on controlling unemployment, LMIS in Tanzania is at infant stage and is not performing at its optimal capacity. Existing LMIS in the country and specifically in Dar es Salaam lacks quality labour market information in terms of completeness, reliability, timeliness and comparability (Desjardins,2019). Furthermore, most of Labour Market Information in Dar es Salaam are in fragments across various institutions and are compiled using different methodologies, some of them are in hard copies and the existing soft copies are stored in various databases which are not compatible to each other. This becomes the basic bottlenecks of the

performance of LMIS in the study area which directly or indirectly affects performance of the economy and unemployment (O'higgins, 2001).

In order to provide solutions to existing problems of malfunctions of LMIS, this research study solicited information from employers and employees on the demand side of the Labour Market, and from training institutions which are conceptually on the supply side. These key actors or variables of the labour market and their relationship are well shown in the theoretical and conceptual framework of this study to ensure study results have significant impact on formulation of policies and programmes that addresses the existing problem in a more scientific and efficient manner. The study used a mixed methods approach which is a hybrid approach recommended for studying a multifaceted phenomenon, like Labour Market Information. Quantitative approach was used as the main method while qualitative approach was employed to obtain required information from a sub sample of employees to complement information collected from quantitative research approach. The study collected detailed information which facilitated demonstration of the significance of the study which is centred on the enhancement of the performance of the functions of LMIS ranging from proper coordination of institutional framework related to production, storage and distribution of LMI, simplified mechanisms for data and information sharing, possibilities of conducting Labour Market Analysis, monitoring, evaluation and reporting processes by all key users.

Conclusions of this study provides key take home messages explored during the study which are in line with the research objectives, three main research questions and their respective hypotheses. Objectives of the study was to investigate the effects of labour market information system on manpower planning in Dar es Salaam region; assess the effects of labour market information system on unemployment in Dar es Salaam region; and to assess factors affecting

performance of labour market information system in the Dar es Salaam region. Furthermore, the study collected information to address the following three research questions: -

RQ1. To what extent Labour Market Information Systems affects manpower planning in Dar es Salaam Region?

RQ2. To what extent Labour Market Information Systems affects unemployment rates among employable persons in the region?

RQ3. What are the factors affecting performance of Labour Market Information Systems in Dar es Salaam Region?

Conclusions Based on the Findings from Research Question One (RQ1)

Basing on the findings from the quantitative research study, manpower planning significantly and positively predicts performance of Labour Market Information System (LMIS). Therefore, the Government in collaboration with other labour market actors should focus on enhancing manpower planning specifically on the areas which will fill gaps identified during the study. These includes carrying out a skills gap assessment of employees and plan for a tailor-made short course to fill the observed big skills gap between the skills possessed by employees and skills needed in production of commodities and delivery of services. In the long term, decision makers should consider investing more on Vocational Education and Training (VET) to ensure availability of skills mix in the labour market, devise a mechanism to enforce accommodation of interns and apprentices to enhance skills development of the students. Similar arguments have been provided by Chao and Shih (2005) that internship is an important strategy of enhancing skills development and has proved to be effective in terms of increasing employability of graduates. Furthermore, leverage on the use of technology to build effective LMIS which will significantly contribute to the recruitments processes, designing training courses which will impart the right skills to students

demanded by employers; improve partnership between employers and training institutions for making optimal decisions related to career development and ultimately reduce unemployment.

Similarly; results obtained from qualitative research study revealed existence of inadequate coordination of LMIS with regards to manpower planning which stand as retardation element to the government and private sector efforts on combating unemployment in Dar es Salaam. In addition, weak coordination has negative multiplier effect on the data ecosystem in the region from production, availability of reliable data, data sharing mechanisms and also limit formulation of concerted efforts with a common goal and solutions from all sides of the labour market. It is therefore critical for the government and private sector including training institutions to ensure there are binding instruments which facilitates enhancement of their partnership through effective functioning of LMIS.

Conclusions Based on the Findings from Research Question Two (RQ2)

This question collected information to explore the extent LMIS affects unemployment in Dar es Salaam region. Results from quantitative study revealed existence of significant negative relationship between increase of unemployment and the performance of LMIS. Therefore, LMIS should be considered as an important and priority policy agenda by the government and other key actors of the labour market to facilitate building optimal LMIS to contribute on reducing the existing big problem of unemployment. Among of the key actions to be considered should include establishment of a well-defined institutional frameworks with clear terms of reference for each institution from national level to local levels. This should include establishment of a National LMIS Coordination Committee to oversee all functions of LMIS and the establishment of a National Employment and Training Institutions Observatory Body. Alongside the established bodies, improvement of data production in terms of quality ranging from timeliness, completeness,

reliability and validity, storage and a binding mechanism for data sharing will enhance data availability and attracts use of LMIS for making evidence-based decisions. Effective use of LMIS will boost economic growth, increase job creation, improve choices of relevant courses to undertake, improve designing and imparting relevant courses to students, increased access to available jobs, job conditions and locations which will significantly contribute in reducing the problem of unemployment. In addition, training, publicity and awareness campaigns about the importance of LMIS on reducing unemployment should be among the priority agendas of the Government, it will facilitate change of mindsets of employers, operators of training institutions, job seekers and other actors from traditional means to a modernized methodology of using LMIS in making rational decisions about career developments.

Results obtained from qualitative study shows similar negative relationship between level of unemployment and the performance of LMIS that, limited labour market information borne from weak coordination in all dimensions of data ecosystems results into high level of unemployment in the regions. Results of this study are instrumental to planners, job seekers and labour related intermediaries in making rational career development decisions in phases to narrow the existing problem of unemployment in Dar es Salaam region.

Conclusions Based on the Findings from Research Question Three (RQ3)

This question was administered in the quantitative study and aimed to collect information to support assessment of whether there are other factors which affects the performance of LMIS in Dar es Salaam region. Access and use of Information and Communication Technology (ICT) was used to test the null hypothesis that there are no other factors which affects performance of LMIS against the alternative hypothesis that there are other factors which affects performance of LMIS. It has been justified by the quantitative study that, performance of LMIS depends on other

factors also such as access and use of ICT, the strength of the ICT infrastructure available in an organization such as computers, servers and networking and; the ICT skills possessed by both employees and users. Basing on the study results, the Government and other partners should consider devising a mechanism to increase availability of ICT infrastructure including embarking into bulk procurement arrangements to reduce long procurement and distribution processes and; tax cuts of ICT equipment and software of which the big cost burden goes to the final consumer. Furthermore, in bridging the digital divide between employees, employers and training institutions operators in development and use of LMIS, tailored made courses and partnership with software developers to enhance development of tailor-made software domestically will significantly influence performance of LMIS and reducing levels of unemployment. It has been mentioned by Maurya and Shah (2014) in their LMIS study conducted in India that, investment on ICT professionals were crucial for development and maintenance of effective LMIS which brought job seekers, employers and training institutions into a common pool to make right decisions related to work and their carrier development.

It was also revealed by the findings from quantitative study that inadequate technology, low level of education in ICT and high cost of ICT equipment have significant positive impact on the performance of LMIS. Therefore, policies and programmes should be attached with the ICT requirements at any level of development.

General Conclusions of the Study

Building on the specific conclusions from Research Question One to Three, the findings of this study are instrumental policy tool and will bridge the gap between policy and practices on the area of Labour Market Information System and control of unemployment in Dar es Salaam region which has been a big and long-standing problem. Results of this study will practically help to

strengthen partnership and collaborations between employers, training institutions, employees and job seekers. Results will help to balance the demand and supply side of the labour market which will fuel development processes including investment in production of goods and services which will create more jobs and employ more domestic labour force. The findings of the study will facilitate employment forecast on various occupations for all economic activities which will ultimately control levels of unemployment in Dar es Salaam Region. Similar arguments have been mentioned by Katsanevas and Livanos (2011) that effective LMIS has significant contribution to human capital development and employment forecast in the economy. Furthermore, results of this study open a new page of LMIS and Human Resource Planning in the country which will significantly contribute to the availability of Labour Market Information to facilitate creation of more jobs and increased employment levels, improved courses trained in the training institutions which matches with the skills needed by the employers. This approach will increase employability of job seekers and therefore control unemployment. It has been reiterated by Mangozho (2003) that availability of reliable and precise Labour Market Information facilitates decision makers in making evidence-based decisions related to education and trainings which takes into account rapid change of technologies, globalization and economic dynamics in a more effective and sustainable manner. Results will also inform other researchers willing to undertake similar study in the domain of Labour Market Information System with regards to the available literature, methods and theories in making optimal decisions.

REFERENCES

- Abawi, K. (2008). Qualitative and quantitative research. *World health*, 2(1), 1-10.
- Abbott, L. F. (2013). Theories of the labour market and employment: A review. Mangozho, N. (2003). Current practices in labour market information systems development for human resources development planning in developed, developing and transition economies. International Labour Organization.
- Abebe, G., Caria, A. S., Fafchamps, M., Falco, P., Franklin, S., & Quinn, S. (2021). Anonymity or distance? Job search and labour market exclusion in a growing African city. *The Review of Economic Studies*, 88(3), 1279-1310.
- Acharya, A. S., Prakash, A., Saxena, P., & Nigam, A. (2013). Sampling: Why and how of it. *Indian Journal of Medical Specialties*, 4(2), 330-333.
- Acosta, A., & Secretary, U. S. (2018). RECOMMENDATIONS TO IMPROVE THE NATION'S WORKFORCE AND LABOR MARKET INFORMATION SYSTEM.
- Adams, A. (2018). Technology and the labour market: the assessment. *Oxford review of economic policy*, 34(3), 349-361.
- Adams, A. V., Middleton, J., & Ziderman, A. (1992). Market-based manpower planning with labour market signals. *International Labour Review*, 131(3), 261. Retrieved from <https://www.proquest.com/scholarly-journals/market-based-manpower-planning-with-labour/docview/224001742/se-2?accountid=188730>
- Adepoju, O. O., & Aigbavboa, C. O. (2021). Assessing knowledge and skills gap for construction 4.0 in a developing economy. *Journal of Public Affairs*, 21(3), e2264.
- Agarwal, J. D., Agarwal, M., Agarwal, A., & Agarwal, Y. (2017). Theory of Employment, Wealth and Efficient Labour Market through National Labour Exchange. Agarwal JD, Manju Agarwal, Aman Agarwal and Yamini Agarwal, 777-808.
- Ahmet, O. Ğ. U. Z. (2018). Analysis of the Factors Affecting Labour Supply. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, (56), 157-170.
- Akinyomi, O. J. (2016). Labour turnover: Causes, consequences and prevention. *Fountain University Journal of Management and Social Sciences*, 5(1), 105-112.
- Akkemik, K. A. (2007). The response of employment to GDP growth in Turkey: an econometric estimation. *Applied Econometrics and International Development*, 7(1).
- Aksoy, S., & Tenik, A. (2002). The 'four principles of bioethics' as found in 13 th century Muslim scholar Mawlana's teachings. *BMC Medical Ethics*, 3(1), 4.
- Alexander, R., McCabe, G., & De Backer, M. (2019). Careers and Labour Market Information: An International Review of the Evidence. *Education Development Trust*.
- Alharahsheh, H. H., & Pius, A. (2020). A Review of key paradigms: positivism VS interpretivism. *Glob Acad J Humanit Soc Sci*, 2, 39-43.
- Ali, Z., & Bhaskar, S. B. (2016). Basic statistical tools in research and data analysis. *Indian journal of anaesthesia*, 60(9), 662.
- Alshenqeeti, H. (2014) Interviewing as a Data Collection Method: A Critical Review, *English Linguistics Research*, 3(1), 39-45.
- Alvi, M. (2016). A manual for selecting sampling techniques in research.

- Amani, J. (2017). Prevalence of, and factors associated with, unemployment among graduates: Evidence from Tanzania. *Africa Education Review*, 14(3-4), 230-244.
- Amenta, E., & Ramsey, K. M. (2010). Institutional theory. *Handbook of politics: State and society in global perspective*, 15-39.
- Andrews, M., Bradley, S., Stott, D., & Upward, R. (2003). *Testing theories of labour market matching* (No. 0318). Economics, The University of Manchester.
- Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of emerging trends in educational research and policy studies*, 5(2), 272-281.
- Antwi, S. K., & Hamza, K. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European journal of business and management*, 7(3), 217-225.
- Arendt, L. (2008). Barriers to ICT adoption in SMEs: how to bridge the digital divide?. *Journal of systems and information technology*, 10(2), 93-108.
- Armour, K., & Macdonald, D. (Eds.). (2012). *Research methods in physical education and youth sport*. ProQuest Ebook Central <https://ebookcentral.proquest.com>
- Arnqvist, G., & Wooster, D. (1995). Meta-analysis: synthesizing research findings in ecology and evolution. *Trends in Ecology & Evolution*, 10(6), 236-240.
- Arpaia, A., Kiss, A., & Turrini, A. (2014). *Is unemployment structural or cyclical? Main features of job matching in the EU after the crisis* (No. 91). IZA Policy Paper.
- Aslam, H. D., Aslam, M., Ali, N., Habib, B., & Jabeen, M. (2013). Human resource planning practice in managing human resource: A literature review. *Human Resource Planning*, 3(1), 200-2012.
- Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative research*, 1(3), 385-405.
- Attwell, G., & Hughes, D. (2019). Learning about careers: Open data and labour market intelligence. *Revista Iberoamericana De Educación a Distancia*, 22(1), 81-106. doi:<http://dx.doi.org/10.5944/ried.22.1.22289>
- Awinia, C. S. (2024). Formal and Social Demography: Current Links in Tanzania.
- Azulai, A., & Rankin, J. A. (2012). Triangulation in canadian doctoral dissertations on aging. *International Journal of Multiple Research Approaches*, 6(2), 125-140. Retrieved from <https://search.proquest.com/scholarly-journals/triangulation-canadian-doctoral-dissertations-on/docview/1314696080/se-2?accountid=188730>
- Baah-Boateng, W. (2015). Unemployment in Africa: how appropriate is the global definition and measurement for policy purpose. *International Journal of Manpower*.
- Babchuk, W. A. (2011). Grounded Theory as a. *Online Submission*.
- Bailey, K. R. (1987). Inter-study differences: How should they influence the interpretation and analysis of results?. *Statistics in Medicine*, 6(3), 351-358.
- Baker, C. (2017). Quantitative research designs: Experimental, quasi-experimental, and descriptive.
- Bamkin, M., Maynard, S., & Goulding, A. (2016). Grounded theory and ethnography combined. *Journal of Documentation*.

- Banerjee, A., Chitnis, U. B., Jadhav, S. L., Bhawalkar, J. S., & Chaudhury, S. (2009). Hypothesis testing, type I and type II errors. *Industrial psychiatry journal*, 18(2), 127.
- Barnes, S. A., Bimrose, J., Owen, D., Wilson, R., Luchinskaya, D., Attwell, G., & Rustemeier, P. (2020). Developing and enhancing a labour market information database: LMI for All: stakeholder engagement and usage, data and technical developments (2018-2019).
- Barnes, S. A., Hogarth, T., Wright, S. A., & Cárdenas-Rubio, J. (2023). Labour market information and an assessment of its applications: a series of international case studies.
- Barnichon, R., & Yee, W. (2020). Adjusting the Unemployment Thermometer. *FRBSF Economic Letter*, 2020(27), 01-05.
- Basias, N., & Pollalis, Y. (2018). Quantitative and qualitative research in business & technology: Justifying a suitable research methodology. *Review of Integrative Business and Economics Research*, 7, 91-105.
- Bassey, G. E., & Atan, J. A. (2012). Labour market distortions and university graduate unemployment in Nigeria: Issues and remedies. *Current research journal of economic theory*, 4(3), 67-76.
- Bataille, W. G. (2020). What does Tanzania's move to lower-middle income status mean. *The World Bank Group: Washington, DC, USA*.
- Behi, R., & Nolan, M. (1995). Ethical issues in research. *British journal of nursing*, 4(12), 712-716.
- Bellaqa, B. (2021). YOUTH UNEMPLOYMENT AND LABOUR MARKET POLICIES: THE CASE OF THE REPUBLIC OF KOSOVO. *Journal of Global Business and Technology*, 17(2), 61-80. Retrieved from <https://www.proquest.com/scholarly-journals/youth-unemployment-labour-market-policies-case/docview/2623611402/se-2?accountid=188730>
- Bello, H., Shu'aibu, B., Saud, M., & Buntat, Y. (2013). ICT skills for technical and vocational education graduates' employability. *World Applied Sciences Journal*, 23(2), 204-207.
- Benatar, S. R. (2002). Reflections and recommendations on research ethics in developing countries. *Social science & medicine*, 54(7), 1131-1141.
- Benchimol, E. I., Manuel, D. G., To, T., Griffiths, A. M., Rabeneck, L., & Guttman, A. (2011). Development and use of reporting guidelines for assessing the quality of validation studies of health administrative data. *Journal of clinical epidemiology*, 64(8), 821-829.
- Benner, C. (2006). 'South Africa on-call': Information technology and labour market restructuring in South African call centres. *Regional studies*, 40(9), 1025-1040.
- Berdegúe, J. A., & Escobar, G. (2001). Agricultural knowledge and information systems and poverty reduction. *World Bank Discussion Paper*.
- Berk, R. A. (1983). An introduction to sample selection bias in sociological data. *American sociological review*, 386-398.
- Berry, A., & Sabot, R. H. (1978). Labour market performance in developing countries: A survey. *World Development*, 6(11-12), 1199-1242.
- Bertani, A., Di Paola, G., Russo, E., & Tuzzolino, F. (2018). How to describe bivariate data. *Journal of thoracic disease*, 10(2), 1133.

- Bertino, E. (2015). Data trustworthiness—approaches and research challenges. In *Data Privacy Management, Autonomous Spontaneous Security, and Security Assurance: 9th International Workshop, DPM 2014, 7th International Workshop, SETOP 2014, and 3rd International Workshop, QASA 2014, Wroclaw, Poland, September 10-11, 2014. Revised Selected Papers* (pp. 17-25). Springer International Publishing.
- Bhattacharjee, A. (2012). *Social science research: Principles, methods, and practices*.
- Bhattarai, K. R., & Wisniewski, T. (2000). *Determinants of Wages and Labour Supply in the UK*. University of Hull, Department of economics and commerce.
- Bhaumik, S. K., Estrin, S., & Meyer, K. E. (2007). Determinants of employment growth at MNEs: evidence from Egypt, India, South Africa and Vietnam. *Comparative Economic Studies*, 49(1), 61-80.
- Bhuller, M., Ferraro, D., Kostøl, A. R., & Vigtel, T. C. (2023). *The internet, search frictions and aggregate unemployment* (No. w30911). National Bureau of Economic Research.
- Bianchi, M., & Henrekson, M. (2005). Is neoclassical economics still entrepreneurless?. *Kyklos*, 58(3), 353-377.
- Biemer, P. P., Groves, R. M., Lyberg, L. E., Mathiowetz, N. A., & Sudman, S. (Eds.). (2013). *Measurement errors in surveys* (Vol. 548). John Wiley & Sons.
- Biesta, G. (2021). PRAGMATISM AND THE PHILOSOPHICAL FOUNDATIONS OF MIXED METHODS RESEARCH¹. *SAGE handbook of mixed methods in social & behavioral research*, 95.
- Bimrose, J., Barnes, S. A., Owen, D., Hughes, D., Wilson, R., Attwell, G., & Rustemeier, P. (2018). *Labour market information (LMI) for all: Stakeholder Engagement and Usage, Data and Technical Developments*. Research report, Department for Education.
- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: a tool to enhance trustworthiness or merely a nod to validation?. *Qualitative health research*, 26(13), 1802-1811.
- Blaikie, N. (2003). *Analyzing quantitative data : From description to explanation*. SAGE Publications, Limited.
- Blanchard, O. J., Jaumotte, F., & Loungani, P. (2014). Labor market policies and IMF advice in advanced economies during the Great Recession. *IZA Journal of Labor Policy*, 3(1), 1-23.
- Blinder, A. S. (2008). Keynesian economics. *The concise encyclopedia of economics*, 2(008).
- Blundell, R., Ham, J., & Meghir, C. (1998). Unemployment, discouraged workers and female labour supply. *Research in Economics*, 52(2), 103-131.
- Blustein, D. L., Olle, C., Connors-Kellgren, A., & Diamonti, A. J. (2016). Decent work: A psychological perspective. *Frontiers in Psychology*, 7, 407.
- Body, G. *Global Employment Agenda*, n.d.
- Böheim, R., & Taylor, M. P. (2003). Option or obligation? The determinants of labour supply preferences in Britain. *The Manchester School*, 71(2), 113-131.
- Bornstein, M. H., Jager, J., & Putnick, D. L. (2013). Sampling in developmental science: Situations, shortcomings, solutions, and standards. *Developmental review*, 33(4), 357-370.
- Boyce, C., & Neale, P. (2006). Conducting in-depth interviews: A guide for designing and conducting in-depth interviews for evaluation input.

- Brammer, S., Jackson, G., & Matten, D. (2012). Corporate social responsibility and institutional theory: New perspectives on private governance. *Socio-economic review*, 10(1), 3-28.
- Brandas, C., Panzaru, C., & Filip, F. G. (2016). Data driven decision support systems: an application case in labour market analysis. *Romanian Journal of Information Science and Technology*, 19(1-2), 65-77.
- Brandolini, A. V. (2018). Measuring employment and unemployment. *IZA World of Labor*.
- Brandolini, A., Cipollone, P., & Viviano, E. (2006). Does the ILO definition capture all unemployment?. *Journal of the European Economic Association*, 4(1), 153-179.
- Brandt, S., & Brandt, S. (1998). *Data analysis*. Springer-Verlag.
- Bravyi, S., Sheldon, S., Kandala, A., McKay, D. C., & Gambetta, J. M. (2021). Mitigating measurement errors in multiqubit experiments. *Physical Review A*, 103(4), 042605.
- Brekke, K. R. (2004). Competition or coordination in hospital markets with unionised labour. *International Journal of Health Care Finance and Economics*, 4, 65-89.
- Brö Marzano, M. (2007). Informed consent, deception, and research freedom in qualitative research. *Qualitative Inquiry*, 13(3), 417-436.
- der, A. (1998). Deception can be acceptable.
- Brown, J., Demou, E., Tristram, M. A., Gilmour, H., Sanati, K. A., & Macdonald, E. B. (2012). Employment status and health: understanding the health of the economically inactive population in Scotland. *BMC Public Health*, 12, 1-9.
- Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done? *Qualitative research*, 6(1), 97-113.
- Bryman, A., & Cramer, D. (2002). Quantitative data analysis with SPSS release 10 for Windows: A guide for social scientists. Routledge.
- Brynjolfsson, E., & Kahin, B. (Eds.). (2002). Understanding the digital economy: data, tools, and research. MIT press.
- Buchanan, E. A., & Hvizdak, E. E. (2009). Online survey tools: Ethical and methodological concerns of human research ethics committees. *Journal of empirical research on human research ethics*, 4(2), 37-48.
- Bulajic, A., Stamatovic, M., & Cvetanovic, S. (2012). The importance of defining the hypothesis in scientific research. *International Journal of Education Administration and Policy Studies*, 4(8), 170-176.
- Burke, J., & Kirk, A. (2001). Ethnographic methods. Maryland, USA: University of Maryland, <http://www.otal.umd.edu/hci-rm/ethno.html>.
- Bürkner, P. C., & Vuorre, M. (2019). Ordinal regression models in psychology: A tutorial. *Advances in Methods and Practices in Psychological Science*, 2(1), 77-101.
- Byrne, D., & Strobl, E. (2004). Defining unemployment in developing countries: evidence from Trinidad and Tobago. *Journal of Development Economics*, 73(1), 465-476.
- Cael, B. B., & Mashayek, A. (2021). Log-skew-normality of ocean turbulence. *Physical Review Letters*, 126(22), 224502.
- Calmfors, L. (1994). Active labour market policy and unemployment: A framework for the analysis of crucial design features.
- Card, D. (2011). Origins of the unemployment rate: the lasting legacy of measurement without theory. *American Economic Review*, 101(3), 552-57.

- Carr, L. T. (1994). The strengths and weaknesses of quantitative and qualitative research: what method for nursing?. *Journal of advanced nursing*, 20(4), 716-721.
- Casey, D., & Murphy, K. (2009). Issues in using methodological triangulation in research. *Nurse Researcher* (through 2013), 16(4), 40-55. Retrieved from <https://search.proquest.com/scholarly-journals/issues-using-methodological-triangulation/docview/200847759/se-2?accountid=188730>
- Cason, T. N., & Wu, S. Y. (2019). Subject pools and deception in agricultural and resource economics experiments. *Environmental and resource economics*, 73(3), 743-758.
- Castillo, M. D., Unit, C. D. W. D. P., & Chief, D. W. D. P. U. (2011). Labour Force Framework: Concepts, Definitions, Issues and Classifications. *ILO, presentation on Spain. CBS (2002). Nepal Labour Force Survey I, Kathmandu: Central Bureau of Statistics. CBS (2008). Official Statistics of Nepal, Kathmandu: Central Bureau of Statistics. CBS (2014). Annual Household Survey, Kathmandu: Central Bureau of Statistics.*
- Cazes, S., & Verick, S. (Eds.). (2013). *Perspectives on labour economics for development*. Geneva, Switzerland: International Labour Organization.
- Celestin, J. B. (1983). Manpower planning and labour market information in French-speaking Africa. *Int'l Lab. Rev.*, 122, 507.
- Chakrabarty, D. (2021). Model Describing Central Tendency of Data. *International Journal of Advanced Research in Science, Engineering and Technology*, 2350-0328.
- Chao, C. A., & Shih, S. C. (2005). ORGANIZATIONAL AND END-USER INFORMATION SYSTEMS JOB MARKET: AN ANALYSIS OF JOB TYPES AND SKILL REQUIREMENTS. *Information Technology, Learning & Performance Journal*, 23(2).
- Chege, S. M., & Wang, D. (2020). Information technology innovation and its impact on job creation by SMEs in developing countries: an analysis of the literature review. *Technology Analysis & Strategic Management*, 32(3), 256-271.
- Chiacchio, F., Iacono, A., Compagno, L., & D'Urso, D. (2020). A general framework for dependability modelling coupling discrete-event and time-driven simulation. *Reliability Engineering & System Safety*, 199, 106904.
- Chowdhury, M. S., Ahmmed, F., & Hossain, I. (2020). Methodological dilemma in microfinance research: Applicability of a qualitative case study design. *The Qualitative Report*, 25(2), 271-290. Retrieved from <https://search.proquest.com/docview/2375477445?accountid=188730>
- Çoğaltay, N., & Karadağ, E. (2015). Introduction to meta-analysis. *Leadership and organizational outcomes: Meta-analysis of empirical studies*, 19-28.
- Connelly, L. M. (2009). Mixed methods studies. *Medsurg Nursing*, 18(1), 31-33.
- Cooper, M., & Kuhn, P. (2020). Behavioral job search. *Handbook of Labor, Human Resources and Population Economics*, 1-22.
- Cope, D. G. (2014, January). Methods and meanings: credibility and trustworthiness of qualitative research. In *Oncology nursing forum* (Vol. 41, No. 1).
- Corrigan, O. (2003). Empty ethics: the problem with informed consent. *Sociology of health & illness*, 25(7), 768-792.

- Cörvers, F. (2003). Labour market forecasting in the Netherlands: a top-down approach. *Early identification of skill needs in Europe, Cedefop Reference Series*, 40(2003), 72-83.
- Costescu, M. A., & Costescu, M. R. (2013). The role of information systems in analyzing the EU labour market. *Revista De Stiinte Politice*, (37), 260-264. Retrieved from <https://www.proquest.com/scholarly-journals/role-information-systems-analyzing-eu-labour/docview/1398811693/se-2?accountid=188730>
- Creswell, J. W. (2013). Steps in conducting a scholarly mixed methods study.
- Crust, L. (2008). A review and conceptual re-examination of mental toughness: Implications for future researchers. *Personality and individual differences*, 45(7), 576-583.
- Cully, M. (2006, October). The role of labour market information systems and research in workforce development in Australia. In *Asian Development Bank Institute workshop on Workforce Development* (Vol. 26, pp. 1-9).
- Curtis, J., & FitzGerald, J. D. (1996). Real wage convergence in an open labour market.
- Dalkin, S., Forster, N., Hodgson, P., Lhussier, M., & Carr, S. M. (2021). Using computer assisted qualitative data analysis software (CAQDAS; NVivo) to assist in the complex process of realist theory generation, refinement and testing. *International Journal of Social Research Methodology*, 24(1), 123-134.
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, 2(2), 25-36.
- de Graaf, E., van Klinken, M., Zweers, D., & Teunissen, S. (2020). From concept to practice, is multidimensional care the leading principle in hospice care? An exploratory mixed method study. *BMJ Supportive & Palliative Care*, 10(1), e5-e5.
- De Wet, K. (2010). The importance of ethical appraisal in social science research: Reviewing a faculty of humanities' research ethics committee. *Journal of Academic Ethics*, 8(4), 301-314. doi:<http://dx.doi.org/10.1007/s10805-010-9118-8>
- Del Regil, A. (2021). Keynesian economics and the welfare state. *Revista Internacional de Salarios Dignos*, 3(01), 86-115.
- Deming, D. J. (2022). Four facts about human capital. *Journal of Economic Perspectives*, 36(3), 75-102.
- Desjardins, R. (2019). The labour market benefits of adult education from a global perspective. *International Review of Education*, 65(6), 955-973.
- Dewett, T., & Jones, G. R. (2001). The role of information technology in the organization: a review, model, and assessment. *Journal of management*, 27(3), 313-346.
- Di Fabio, A., & Blustein, D. L. (2016). From meaning of working to meaningful lives: The challenges of expanding decent work. *Frontiers in psychology*, 7, 1119.
- Dias, D. P. P., & Sucharitharathna, K. P. G. D. (2020). Predicting Employee Satisfaction of Academics in Sri Lankan Universities: Ordinal Regression Approach. *International Journal of Advanced Studies in Computers, Science and Engineering*, 9(1), 6-14.
- Dickens, R., Machin, S., & Manning, A. (1999). The effects of minimum wages on employment: Theory and evidence from Britain. *Journal of labor economics*, 17(1), 1-22.
- Dillman, D. A. (2011). Mail and Internet surveys: The tailored design method--2007 Update with new Internet, visual, and mixed-mode guide. John Wiley & Sons.

- DINH, D. V. (2020). Optimal inflation threshold and economic growth: Ordinal regression model analysis. *The Journal of Asian Finance, Economics and Business*, 7(5), 91-102.
- Drezner, Z., & Turel, O. (2011). Normalizing variables with too-frequent values using a Kolmogorov–Smirnov test: A practical approach. *Computers & Industrial Engineering*, 61(4), 1240-1244.
- Driver, C., & Temple, P. (2012). The unbalanced economy. *A policy appraisal*. Palgrave Macmillan, London.
- Drummond, D., & Halliwell, C. (2016). Labour Market Information: An Essential Part of Canada's Skills Agenda. Business Council of Canada.
- DSouza, J. (2020, July). Using Exploratory Data Analysis for Generating Inferences on the Correlation of COVID-19 cases. In *2020 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT)* (pp. 1-6). IEEE.
- Duffy, M. E. (1985). Designing nursing research: the qualitative-quantitative debate. *Journal of advanced nursing*, 10(3), 225-232.
- Dushoff, J., Kain, M. P., & Bolker, B. M. (2019). I can see clearly now: reinterpreting statistical significance. *Methods in Ecology and Evolution*, 10(6), 756-759.
- Ekström, M., & Westlund, O. (2019). Epistemology and journalism. Oxford University Press.
- Elias, P. (2000). Status in Employment: A world survey of practices and problems. *Bulletin of Labour Statistics*, 1, 11-19.
- Ellis, T. J., & Levy, Y. (2008). Framework of problem-based research: A guide for novice researchers on the development of a research-worthy problem. *Informing Science*, 11, 17.
- Eslake, S. (2021). The ‘effective’ unemployment rate.
- Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, 5(6), 00149.
- Evans, C. M., Lee, J. C., & Thompson, W. C. (2016). “First, Do No Harm?”: A Framework for Ethical Decision-Making in Teacher Evaluation. In *Student Growth Measures in Policy and Practice* (pp. 169-188). Palgrave Macmillan, New York.
- Evans, J. R., & Mathur, A. (2005). The value of online surveys. *Internet research*.
- Evers, M., De Mooij, R., & Van Vuuren, D. (2008). The wage elasticity of labour supply: a synthesis of empirical estimates. *De Economist*, 156(1), 25-43.
- Faggian, A. (2021). Job search theory. *Handbook of regional science*, 481-495.
- Fall, P. L. (2009). Corporate sponsoring in the United Nations system: Principles and guidelines. *Geneva: United Nations*.
- Farmer, T., Robinson, K., Elliott, S. J., & Eyles, J. (2006). Developing and implementing a triangulation protocol for qualitative health research. *Qualitative health research*, 16(3), 377-394.
- Farooq, R. (2017). A framework for identifying research gap in social sciences: Evidence from the past. *IUP Journal of Management Research*, 16
- Farrugia, P., Petrisor, B. A., Farrokhyar, F., & Bhandari, M. (2010). Research questions, hypotheses and objectives. *Canadian journal of surgery*, 53(4), 278.
- Farsio, F., & Quade, S. (2003). An empirical analysis of the relationship between GDP and unemployment. *Humanomics*.

- Feng, S., Hu, Y., & Sun, J. (2018). On the robustness of alternative unemployment measures. *Economics Letters*, 166, 1-5.
- Figueroa, A. (1994). Labour market theories and labour standards. *International labour standards and economic interdependence*, 57-64.
- Findley, M. G., Kikuta, K., & Denly, M. (2021). External validity. *Annual Review of Political Science*, 24, 365-393.
- Fitzgerald, T. (1998). An introduction to the search theory of unemployment. *Economic Review*, 34(3), 2-15.
- Folawewo, A. O., & Adeboje, O. M. (2017). Macroeconomic determinants of unemployment: Empirical evidence from economic community of West African states. *African Development Review*, 29(2), 197-210.
- Fouka, G., & Mantzorou, M. (2011). What are the major ethical issues in conducting research? Is there a conflict between the research ethics and the nature of nursing?. *Health science journal*, 5(1), 3.
- Fox, L., & Gandhi, D. (2021). Youth employment in sub-Saharan Africa: Progress and prospects.
- Freeman, R. B. (2002). The labour market in the new information economy. *Oxford Review of Economic Policy*, 18(3), 288-305.
- Gamble, J. (2016). From labour market to labour process: Finding a basis for curriculum in TVET. *International Journal of Training Research*, 14(3), 215-229.
- Gangl, M. (2002). Changing labour markets and early career outcomes: labour market entry in Europe over the past decade. *Work, employment and society*, 16(1), 67-90.
- Gao, K., & Yuan, Y. (2022). Government intervention, spillover effect and urban innovation performance: Empirical evidence from national innovative city pilot policy in China. *Technology in Society*, 70, 102035.
- Garcia-Louzao, J. (2021). Beyond the traditional unemployment rate during Covid-19 in Lithuania. In *Beyond the traditional unemployment rate during Covid-19 in Lithuania: Garcia-Louzao, Jose*. Vilnius: Lietuvos Bankas.
- Gazier, B. (2013, October). Labour market institutions. In *Employment targeting and sectoral approaches to job creation*.
- Gehman, J., Glaser, V. L., Eisenhardt, K. M., Gioia, D., Langley, A., & Corley, K. G. (2018). Finding theory–method fit: A comparison of three qualitative approaches to theory building. *Journal of Management Inquiry*, 27(3), 284-300.
- Gelling, L. (2015). Stages in the research process. *Nursing Standard (2014+)*, 29(27), 44.
- Geo-JaJa, M. A. (1989). Information asymmetry, education and occupational choice. *International Journal of Educational Development*, 9(2), 79-90.
- Ghai, D. (2003). Decent work: Concept and indicators. *Int'l Lab. Rev.*, 142, 113.
- Ghiță, S. (2005). The statistics of human resources, Ed.
- Goher, G., Masrom, M., Amrin, A., & Rahim, N. A. (2021). Disruptive technologies for labor market information system implementation enhancement in the UAE: A Conceptual Perspective. *Int J Adv Comput Sci Appl*, 12(2), 370-9.
- Goldfarb, R. S., & Adams, A. V. (1993). Designing a system of labor market statistics and information. World Bank.

- Goos, M. (2018). The impact of technological progress on labour markets: policy challenges. *Oxford review of economic policy*, 34(3), 362-375.
- Gopalan, M., Rosinger, K., & Ahn, J. B. (2020). Use of quasi-experimental research designs in education research: Growth, promise, and challenges. *Review of Research in Education*, 44(1), 218-243.
- Gordon, R. J. (2010). Okun's law and productivity innovations. *American Economic Review*, 100(2), 11-15.
- Gossel, B. M. (2024). Analogies in entrepreneurial communication and strategic communication: Definition, delimitation of research programs and future research. In *Start-up and Entrepreneurial Communication* (pp. 11-33). Routledge.
- Gottlieb, C., Onken, J., & Valladares-Esteban, A. (2021). On the Measurement of the Elasticity of Labour. *European Economic Review*, 139, 103879.
- Graduates' labour market preps for increased employability. (2020, Nov 21). *The Citizen* Retrieved from <https://www.proquest.com/newspapers/graduates-labour-market-preps-increased/docview/2463174527/se-2?accountid=188730>
- Graham, M., & Anwar, M. A. (2019). The global gig economy: Towards a planetary labour market?. *First Monday*.
- Gray, D. E. (2019). *Doing research in the business world*. Sage Publications Limited.
- Green, J. M., Ahmed, A. A., & Mlhyo, P. B. LABOUR MARKET INFORMATION SYSTEMS-TOWARDS AN INTEGRATIVE, EFFICIENT, AND EFFECTIVE APPROACH FOR HUMAN RESOURCE PLANNING.
- Greene, J., & McClintock, C. (1985). Triangulation in evaluation: Design and analysis issues. *Evaluation review*, 9(5), 523-545.
- Guardia, L., Mancini, F., Jacobetty, P., & Maina, M. (2021). Graduates' employability skills in East Africa. *Journal of Teaching and Learning for Graduate Employability*, 12(2), 169-184.
- Guataqui, J. C., & Taborda, R. (2006). Theoretical and empirical implications of the new definition of unemployment in Colombia. *Revista de economía del Rosario*, 9(1), 21-38.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, 2(163-194), 105.
- Guetterman, T. C., Fetters, M. D., & Creswell, J. W. (2015). Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *The Annals of Family Medicine*, 13(6), 554-561.
- Günther, I., & Launov, A. (2012). Informal employment in developing countries: Opportunity or last resort?. *Journal of development economics*, 97(1), 88-98.
- Guthrie, G. (2010). *Basic research methods: An entry to social science research*. SAGE Publications India.
- Gutierrez, A. M., Hofstetter, J. D., Dishner, E. L., Chiao, E., Rai, D., & McGuire, A. L. (2020). A Right to Privacy and Confidentiality: Ethical Medical Care for Patients in United States Immigration Detention. *The Journal of Law, Medicine & Ethics*, 48(1), 161-168.

- Habanabakize, T., & Muzindutsi, P. F. (2018). Analysis of the Keynesian theory of employment and sectoral job creation: The case of the South African manufacturing sector. *Folia Oeconomica Stetinensia*, 18(1), 123.
- Hagan, T. L. (2014, July). Measurements in quantitative research: How to select and report on research instruments. In *Oncology Nursing Forum* (Vol. 41, No. 4, pp. 431-433). Oncology Nursing Society.
- Haggerty, K. D. (2004). Ethics creep: Governing social science research in the name of ethics. *Qualitative sociology*, 27(4), 391-414.
- Hall, R. E. (2003). Modern theory of unemployment fluctuations: Empirics and policy applications. *American Economic Review*, 93(2), 145-150.
- Ham, J. C. (1986). Testing whether unemployment represents intertemporal labour supply behaviour. *The Review of Economic Studies*, 53(4), 559-578.
- Hamermesh, D. S. (1986). The demand for labor in the long run. *Handbook of labor economics*, 1, 429-471.
- Handel, M. J. (2003). Skills mismatch in the labor market. *Annual Review of Sociology*, 29(1), 135-165.
- Hanneman, S. K. (2008). Design, analysis, and interpretation of method-comparison studies. *AACN advanced critical care*, 19(2), 223-234.
- Hanneman, S. K. (2008). Design, analysis, and interpretation of method-comparison studies. *AACN advanced critical care*, 19(2), 223-234.
- Hardicre, J. (2014). Valid informed consent in research: An introduction. *British Journal of Nursing*, 23(11), 564. doi:<http://dx.doi.org/10.12968/bjon.2014.23.11.564>
- Harding, J. (2018). *Qualitative data analysis: From start to finish*. SAGE Publications Limited.
- Hasell, J., Roser, M., Ortiz-Ospina, E., & Arriagada, P. (2023). Poverty. *Our World in Data*.
- Hassan, S., & Gil-Garcia, J. R. (2008). Institutional theory and e-government research. In *Handbook of research on public information technology* (pp. 349-360). IGI Global.
- Hays, D. G., Wood, C., Dahl, H., & Kirk-Jenkins, A. (2016). Methodological rigor in Journal of Counseling & Development qualitative research articles: A 15-year review. *Journal of Counseling & Development*, 94(2), 172-183.
- HDR, U. (2009). Human development index.
- Heale, R., & Forbes, D. (2013). Understanding triangulation in research. *Evidence-based nursing*, 16(4), 98-98.
- Healy, A., & Verdier, E. ECER 2009" Theory and Evidence in European Educational Research" Symposium "Knowledge and policy in the education sector in Europe" Network 23. Policy Studies and Politics of Education Knowledge systems and vocational training policy in the regions. The case of two regional Observatories on Employment and Training: Rhône-Alpes vs Provence-Alpes-Côte d'Azur.
- Heintz, J. (2008). Revisiting labour markets: implications for macroeconomics and social protection.
- Hennig-Thurau, T. (2004). Customer orientation of service employees. *International journal of service industry management*.

- Heo, M., Kim, N., & Faith, M. S. (2015). Statistical power as a function of Cronbach alpha of instrument questionnaire items. *BMC medical research methodology*, 15(1), 1-9.
- Herodotou, C., Rienties, B., Boroowa, A., Zdrahal, Z., & Hlosta, M. (2019). A large-scale implementation of predictive learning analytics in higher education: the teachers' role and perspective. *Educational Technology Research and Development*, 67(5), 1273-1306.
- Hesse-Biber, S. (2018). Toward an understanding of a qualitatively driven mixed methods data collection and analysis: Moving toward a theoretically centered mixed methods praxis. *The SAGE handbook of qualitative data collection*, 545-564.
- Higgins, J. P., Li, T., & Deeks, J. J. (2019). Choosing effect measures and computing estimates of effect. *Cochrane handbook for systematic reviews of interventions*, 143-176.
- Hilal, A. H., & Alabri, S. S. (2013). Using NVivo for data analysis in qualitative research. *International interdisciplinary journal of education*, 2(2), 181-186.
- Hipps, J. A. (1993). Trustworthiness and Authenticity: Alternate Ways To Judge Authentic Assessments.
- Hofer, A. R., Zhivkovikj, A., & Smyth, R. (2020). The role of labour market information in guiding educational and occupational choices.
- Hoffmann, E. (2003). International classification of status in employment, ICSE-93. In *Advances in Cross-National Comparison* (pp. 125-136). Springer, Boston, MA.
- Holden, M. T., & Lynch, P. (2004). Choosing the appropriate methodology: Understanding research philosophy. *The marketing review*, 4(4), 397-409.
- Holmes, J., & Hazen, K. (Eds.). (2013). *Research methods in sociolinguistics : A practical guide*. ProQuest Ebook Central <https://ebookcentral.proquest.com>
- Holton, Elwood F., I., II, & Lowe, J. S. (2007). Toward a general research process for using dubin's theory building model. *Human Resource Development Review*, 6(3), 297-299, 301-314, 317-320. Retrieved from <https://search.proquest.com/docview/221795860?accountid=188730>
- Hopkins, M. J. (2000). *Manpower planning revisited* (Doctoral dissertation, University of Geneva).
- Huang, N., Burtch, G., Hong, Y., & Pavlou, P. A. (2020). Unemployment and worker participation in the gig economy: Evidence from an online labor market. *Information Systems Research*, 31(2), 431-448.
- Hudea, O. S. (2015). Classical, neoclassical and new classical theories and their impact on macroeconomic modelling. *Procedia Economics and Finance*, 23, 309-312.
- Hug, K., Hermerén, G., & Johansson, M. (2012). Withdrawal from biobank research: considerations and the way forward. *Stem cell reviews and reports*, 8(4), 1056-1065.
- Hunt, M. R. (2009). Strengths and challenges in the use of interpretive description: reflections arising from a study of the moral experience of health professionals in humanitarian work. *Qualitative health research*, 19(9), 1284-1292.
- Hussmanns, R. (2004). Defining and measuring informal employment. *Geneva: International Labour Office*.

- Hussmanns, R., Mehran, F., & Varmā, V. (1990). *Surveys of economically active population, employment, unemployment, and underemployment: an ILO manual on concepts and methods*. International Labour Organization.
- Hwang, H., & Colyvas, J. A. (2020). Ontology, levels of society, and degrees of generality: Theorizing actors as abstractions in institutional theory. *Academy of Management Review*, 45(3), 570-595.
- Hyett, N., Kenny, A., & Dickson-Swift, V. (2014). Methodology or method? A critical review of qualitative case study reports. *International journal of qualitative studies on health and well-being*, 9(1), 23606.
- Hyytinen, H., & Löfström, E. (2017). Reactively, proactively, implicitly, explicitly? academics' pedagogical conceptions of how to promote research ethics and integrity. *Journal of Academic Ethics*, 15(1), 23-41. doi:<http://dx.doi.org/10.1007/s10805-016-9271-9>
- Ilyasu, R., & Etikan, I. (2021). Comparison of quota sampling and stratified random sampling. *Biom. Biostat. Int. J. Rev*, 10, 24-27.
- ILO (2013). *Key indicators of the labour market*. International Labour Office.
- Integrated Labour Force Survey, (2014). National Bureau of Statistics.
- Integrated Labour Force Survey, (2020). National Bureau of Statistics.
- International Labour Organisation (ILO) - DW4SD. *Labour Market Information Systems*. Retrieved from <https://www.ilo.org/global/topics/dw4sd/themes/lm-info-systems/lang-en/index.htm>
- International Labour Organisation Staff. (2002). *Key Indicators of the Labour Market (KILM), 2000-2001*. International Labour Organization.
- International Labour Organization (ILO). (1982). Resolution Concerning Statistics of the Economically Active Population, Employment, Unemployment and Underemployment, Adopted by the Thirteenth International Conference of Labour Statisticians (October 1982).
- International, L. O. (2013). *Global employment trends for youth 2013 : A generation at risk*. ProQuest Ebook Central <https://ebookcentral.proquest.com>
- Iredale, R. R., Toner, P., Turpin, T., & Fernández-Esquinas, M. (2014). A Report on the APEC Region Labour Market: Evidence of Skills Shortages and General Trends in Employment and the Value of Better Labour Market Information Systems.
- Ismail, A. (2020). Determining the Effectiveness of Labour Market Information System on Services Delivery at Tanzania Employment Services Agency.
- Jackson, E. A. (2019). Informal employment.
- Jawale, K. V. (2012). Methods of sampling design in the legal research: Advantages and disadvantages. *Online International Interdisciplinary Research Journal*, 2(6), 183-190.
- Johnson, B., & Turner, L. A. (2003). Data collection strategies in mixed methods research. *Handbook of mixed methods in social and behavioral research*, 297-319.
- Johri, R. (2005). Work values and the quality of employment: a literature review. *New Zealand: Department of Labour*.
- Jones, S. R., & Riddell, W. C. (1999). The measurement of unemployment: An empirical approach. *Econometrica*, 147-161.

- Kaaya, N. D., & SHISHIWA, J. D. (2021). Factors affecting effective staff training programmes in the Public organizations in Tanzania.
- Kahanec, M., & Zimmermann, K. F. (2008). Migration, the quality of the labour force and economic inequality.
- Kalbfleisch, P. J., & Docan-Morgan, T. (2019). Defining Truthfulness, Deception, and Related Concepts. In *The Palgrave Handbook of Deceptive Communication* (pp. 29-39). Palgrave Macmillan, Cham.
- Kale, Y., & Doguwa, S. I. (2015). On the compilation of labour force statistics for Nigeria. *CBN Journal of Applied Statistics*, 6(1), 183-198.
- Kareem, R. O. (2015). Employment level and economic growth of Nigeria. *Journal of Sustainable Development Studies*, 8(1).
- Kassi, M., Achakzai, A. M., Ali, D., & Henry, W. (2009). What is Research? What, Why and How?. *What, Why and How?*, 32.
- Katsanevas, T., & Livanos, I. (2011). The Balance of Demand and Supply of Professions: A Labour Market Information System for Greece. *Essays in economics: applied studies on the Greek economy*, 50, 407-426.
- Kaur, A., & Kumar, R. (2015). Comparative analysis of parametric and non-parametric tests. *Journal of computer and mathematical sciences*, 6(6), 336-342.
- Kelter, R. (2021). Bayesian and frequentist testing for differences between two groups with parametric and nonparametric two-sample tests. *Wiley Interdisciplinary Reviews: Computational Statistics*, 13(6), e1523.
- Kenny, D., Kashy, D., & Bolger, N. (1998). Data analysis. In *The handbook of social psychology: Vols. 1 and 2*, (pp. 233-265). New York: McGraw-Hill.
- Kern, F. G. (2018). The trials and tribulations of applied triangulation: Weighing different data sources. *Journal of Mixed Methods Research*, 12(2), 166-181.
- Kessy, A. T. (2020). Higher Education and Prospects of Graduates' Employability in Tanzania. *Higher Education*, 11(9).
- Khumalo, Z. Z., & Eita, J. H. (2015). Determinants of unemployment in Swaziland. *Journal of Applied Sciences*, 15(9), 1190.
- King, R. G., Plosser, C. I., & Rebelo, S. T. (1988). Production, growth and business cycles: I. The basic neoclassical model. *Journal of monetary Economics*, 21(2-3), 195-232.
- Kinsey, B. H. (2004). Zimbabwe's Land Reform Program: Underinvestment in post-conflict transformation. *World Development*, 32(10), 1669-1696.
- Kivunja, C., & Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education*, 6(5), 26-41.
- Knight, J., & Yueh, L. (2008). The role of social capital in the labour market in China 1. *Economics of transition*, 16(3), 389-414.
- Kolev, A., & Saget, C. (2005). Understanding youth labour market disadvantage: Evidence from south-east Europe. *International Labour Review*, 144(2), 161-187.
- Kook, L., Herzog, L., Hothorn, T., Dürr, O., & Sick, B. (2022). Deep and interpretable regression models for ordinal outcomes. *Pattern Recognition*, 122, 108263.

- Kostoglou, V., Paparrizos, K., & Zafiropoulos, C. (2004). Investigating human resource management policies of the ICT labour market. *Operational Research*, 4, 57-72.
- Kratt, D. (2019). Teachers' perspectives on educator mental health competencies: A qualitative case study. *American Journal of Qualitative Research*, 2(1), 22-40.
- Kucera, D., & Roncolato, L. (2008). Informal employment: Two contested policy issues. *International Labour Review*, 147(4), 321-348.
- Kumar, R. (2019). *Research methodology: A step-by-step guide for beginners*. Sage Publications Limited.
- Kumatongo, B., & Muzata, K. K. (2021). Research paradigms and designs with their application in education. *Journal of Lexicography and Terminology (Online ISSN 2664-0899. Print ISSN 2517-9306)*, 5(1), 16-32.
- Lacey, T. A., & Wright, B. (2009). Employment outlook: 2008-18-occupational employment projections to 2018. *Monthly Lab. Rev.*, 132, 82.
- Lawrence, R. J., Gil, M. P., Flückiger, Y., Lambert, C., & Werna, E. (2008). Promoting decent work in the construction sector: The role of local authorities. *Habitat international*, 32(2), 160-171.
- Lawrence, T. B., & Shadnam, M. (2008). Institutional theory. *The international encyclopedia of communication*.
- Lee, H. L., & Whang, S. (2000). Information sharing in a supply chain. *International journal of manufacturing technology and management*, 1(1), 79-93.
- Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School psychology quarterly*, 22(4), 557.
- Leech, N. L., & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality & quantity*, 43(2), 265-275.
- Lefebvre, L. (2000). Classical vs. neoclassical economic thought in historical perspective: the interpretation of processes of economic growth and development. *History of Political Thought*, 21(3), 525-542.
- Leontaridi, M. (1998). Segmented labour markets: theory and evidence. *Journal of economic surveys*, 12(1), 103-109.
- Levesque, R. (2007). SPSS programming and data management. *A guide for SPSS and SAS Users*.
- Levine, L. (2012). Economic growth and the unemployment rate.
- Levine, L. (2013). The increase in unemployment since 2007: Is it cyclical or structural?.
- Li, G., Xu, W., Li, Y., & Wang, F. (2022). Univariate analysis of scaling effects on the aerodynamics of vertical axis wind turbines based on high-resolution numerical simulations: The Reynolds number effects. *Journal of Wind Engineering and Industrial Aerodynamics*, 223, 104938.
- Li, J., Shan, Y., Tian, G., & Hao, X. (2020). Labor cost, government intervention, and corporate innovation: Evidence from China. *Journal of Corporate Finance*, 64, 101668.
- Lilford, R. J., Pauker, S. G., Braunholtz, D. A., & Chard, J. (1998). Decision analysis and the implementation of research findings. *Bmj*, 317(7155), 405-409.

- LISOVA, N. (2021). Keynesian and Monetarist Approaches to Regulation of the Labor Market in the Transition Economies of EECCA Countries. *ELIT–Economic Laboratory for Transition Research Dz. Washingtona* 4/5, 17(4), 75.
- Liu, X. (2009). Ordinal regression analysis: Fitting the proportional odds model using Stata, SAS and SPSS. *Journal of Modern Applied Statistical Methods*, 8(2), 30.
- Ljótsson, B., Jones, M., Talley, N. J., Kjellström, L., Agréus, L., & Andreasson, A. (2020). Discriminant and convergent validity of the GSRS-IBS symptom severity measure for irritable bowel syndrome: A population study. *United European gastroenterology journal*, 8(3), 284-292.
- Lomotan, E. A., Michel, G., Lin, Z., & Shiffman, R. N. (2010). How “should” we write guideline recommendations? Interpretation of deontic terminology in clinical practice guidelines: survey of the health services community. *BMJ Quality & Safety*, 19(6), 509-513.
- Loveridge, R., & Mok, A. L. (2012). *Theories of labour market segmentation: a critique*. Springer Science & Business Media.
- Ludwinek, A., Dubois, H., & Anderson, R. (2017). Reactivate: Employment opportunities for economically inactive people.
- Luse, A., Mennecke, B. E., & Townsend, A. M. (2012). Selecting a research topic: A framework for doctoral students. *International Journal of Doctoral Studies*, 7, 143.
- Maguire, K. B. (2009). Does mode matter? A comparison of telephone, mail, and in-person treatments in contingent valuation surveys. *Journal of environmental management*, 90(11), 3528-3533.
- Mair, J., Whitford, M., & Mackellar, J. (2013). Participant observation at events: theory, practice and potential. *International Journal of Event and Festival Management*.
- Malmqvist, C., & Kullman, L. (2022). Skills development to support graduates in entering the labor market in Tanzania: A Minor Field Study.
- Mamotte, N., & Wassenaar, D. (2009). Ethics review in a developing country: A survey of South African social scientists' experiences. *Journal of Empirical Research on Human Research Ethics*, 4(4), 69-78.
- Mangozho, N. (2003). *Current practices in labour market information systems development for human resources development planning in developed, developing and transition economies*. International Labour Organization.
- Mann, A., & Huddleston, P. (2017). Schools and the twenty-first century labour market: perspectives on structural change. *British Journal of Guidance & Counselling*, 45(2), 208-218.
- Marinescu, I., & Skandalis, D. (2021). Unemployment insurance and job search behavior. *The Quarterly Journal of Economics*, 136(2), 887-931.
- Martín, I. (2011). Labour market information systems and labour migration information in six developing countries: the challenge of integration. *International Organization for Migration, Brussels*.
- Martin, W. E., & Bridgmon, K. D. (2012). *Quantitative and statistical research methods: From hypothesis to results*. John Wiley & Sons.

- Marzano, M. (2007). Informed consent, deception, and research freedom in qualitative research. *Qualitative Inquiry*, 13(3), 417-436.
- Mason, G., Williams, G., & Cranmer, S. (2009). Employability skills initiatives in higher education: what effects do they have on graduate labour market outcomes?. *Education Economics*, 17(1), 1-30.
- Maurya, M., & Shah, N. (2014). Labour market information system. *International Journal of Application or Innovation in Engineering & Management (IJAIEEM)*, 3(3), 534-541.
- Maxwell, J. A. (2012). *Qualitative research design: An interactive approach* (Vol. 41). Sage publications.
- McBurney, P. (1988). On transferring statistical techniques across cultures: The Kish grid. *Current Anthropology*, 29(2), 323-325.
- Mcdonald, M., & Cox, S. (2009). Moving toward evidence-based human participant protection. *Journal of Academic Ethics*, 7(1-2), 1-16. doi:<http://dx.doi.org/10.1007/s10805-009-9082-3>
- McKenzie, D. (2017). How effective are active labor market policies in developing countries? a critical review of recent evidence. *The World Bank Research Observer*, 32(2), 127-154.
- McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological methods*, 23(3), 412.
- McQuaid, R. W., & Lindsay, C. (2005). The concept of employability. *Urban studies*, 42(2), 197-219.
- Merriam, S. B. (1995). N of I?: Issues of Validity and Reliability in. *PAACE Journal of lifelong learning*, 4, 51-60.
- Merriam, S. B., & Grenier, R. S. (Eds.). (2019). *Qualitative research in practice : Examples for discussion and analysis*. ProQuest Ebook Central <https://ebookcentral.proquest.com>
- Meulders, D., & Wilkin, L. (1991). Labour market flexibility: Critical introduction to the analysis of a concept'. *International Institute For Labour Studies*, 1.
- Meyer, D. F., & Sanusi, K. A. (2019). A causality analysis of the relationships between gross fixed capital formation, economic growth and employment in South Africa. *Studia Universitatis Babes-Bolyai Oeconomica*, 64(1), 33-44.
- Mezmir, E. A. (2020). Qualitative data analysis: An overview of data reduction, data display, and interpretation. *Research on humanities and social sciences*, 10(21), 15-27.
- Mgaiwa, S. J. (2021). Fostering graduate employability: Rethinking Tanzania's university practices. *SAGE Open*, 11(2), 21582440211006709.
- Mickelsson, G. (2016). *DSGE Model Estimation and Labor Market Dynamics* (Doctoral dissertation, Department of Economics, Uppsala University). Sparreboom, T., & Powell, M. (2009). *Labour market information and analysis for skills development* (No. 994340413402676).
- Miles, D. A. (2017, August). A taxonomy of research gaps: Identifying and defining the seven research gaps. In *Doctoral student workshop: finding research gaps-research methods and strategies*, Dallas, Texas (pp. 1-15).

- Milot-Lapointe, F., Savard, R., & Paquette, S. (2018). Effect of labour market information (LMI): Comparison between independent and assisted use of LMI. *Canadian Journal of Career Development*, 17(1), 43-52.
- Mishra, P., Singh, U., Pandey, C. M., Mishra, P., & Pandey, G. (2019). Application of student's t-test, analysis of variance, and covariance. *Annals of cardiac anaesthesia*, 22(4), 407.
- Mitchell, E. S. (1986). Multiple triangulation: a methodology for nursing science. *Advances in nursing science*.
- Mitchell, W. F., & Muysken, J. (2006). *Employment is driven by aggregate demand*. Centre of Full Employment and Equity, University of Newcastle.
- Miyamura, S. (2016). Rethinking labour market institutions in Indian industry: forms, functions and socio-historical contexts. *The Journal of Peasant Studies*, 43(6), 1262-1284.
- Mjema, E. A. (2017). Analysis Of Factors Affecting Technological Innovativeness In Engineering Enterprises In Tanzania.
- Model, B. P. The Generic Statistical Business Process Model.
- Mohorko, A., de Leeuw, E., & Hox, J. (2013). Internet coverage and coverage bias in Europe: Developments across countries and over time. *Journal of official statistics*, 29(4), 609-622.
- Morgan, J. N., & Sonquist, J. A. (1963). Problems in the analysis of survey data, and a proposal. *Journal of the American statistical association*, 58(302), 415-434.
- Mouhammed, A. H. (2011). Important theories of unemployment and public policies. *Journal of Applied Business and Economics*, 12(5), 100-110.
- Msigwa, R., & Kipasha, E. F. (2013). Determinants of youth unemployment in developing countries: Evidences from Tanzania. *Journal of Economics and Sustainable Development*, 4(14), 67-76.
- Müller-Bloch, C., & Kranz, J. (2015). A framework for rigorously identifying research gaps in qualitative literature reviews.
- Murdoch, D. J., Tsai, Y. L., & Adcock, J. (2008). P-values are random variables. *The American Statistician*, 62(3), 242-245.
- Murray, A. (2010). The State of Knowledge on the Role and Impact of Labour Market Information: A Survey of the International Evidence (No. 2010-05). Centre for the Study of Living Standards.
- Mutalemwa, D. (2021). An Empirical Study of University Education and Graduate Employability in Tanzania. *Economic Insights-Trends & Challenges*, (4).
- Mutalemwa, D., Utouh, H., & Msuya, N. (2020). Soft skills as a problem and a purpose for Tanzanian industry: Views of graduates. *Economic Insights-Trends & Challenges*, 4, 45-64.
- Mwalongo, S., Akpo, E., Lukurugu, G. A., Muricho, G., Vernooy, R., Minja, A., ... & Varshney, R. (2020). Factors influencing preferences and adoption of improved groundnut varieties among farmers in Tanzania. *Agronomy*, 10(9), 1271.
- Mwang'amba, N. (2020). The Effect of Manpower Planning on Ground Handling Operations in Tanzania Aviation Industry: The Case Study of Julius Nyerere International Airport (JNIA)" (Doctoral dissertation, The Open University of Tanzania).

- Myers, C. A. (2003). Managing brand equity: a look at the impact of attributes. *Journal of product & brand management*.
- National Bureau of Statistics. *Integrated Labour Force Survey* (2014)
- National Bureau of Statistics. *Integrated Labour Force Survey* (2020)
- Ndebele, P. (2013). The Declaration of Helsinki, 50 years later. *Jama*, 310(20), 2145-2146.
- New job seekers short of skills: GIZ. (2018, Nov 21). *The Citizen* Retrieved from <https://www.proquest.com/newspapers/new-job-seekers-short-skills-giz/docview/2135951181/se-2?accountid=188730>
- Newhart, M., & Patten, M. L. (2023). Understanding research methods: An overview of the essentials.
- Newman, I. (2000). A Conceptualization of Mixed Methods: A Need for Inductive/Deductive Approach to Conducting Research.
- Ng'andwe, C. (2020). Inadequacies of monetarism for Developing Countries with Mass Unemployment: A Theoretical Framework. *Journal of Economics*, 8(4), 50-67.
- Ngoa, G. B. N., & Song, J. S. (2021). Female participation in African labor markets: The role of information and communication technologies. *Telecommunications Policy*, 45(9), 102174.
- Niemiec, B., Lavin, D., & Owens, L. A. (2009). Establishing a national employment first agenda. *Journal of Vocational Rehabilitation*, 31(3), 139-144.
- Nihan, S. T. (2020). Karl Pearson's chi-square tests. *Educational Research and Reviews*, 15(9), 575-580.
- Nijhawan, L., Janodia, M., Muddukrishna, B., Bhat, K., Bairy, K., Udupa, N., & Musmade, P. (2013). Informed consent: Issues and challenges. *Journal of Advanced Pharmaceutical Technology and Research*, 4(3), 134-140. doi:<http://dx.doi.org/10.4103/2231-4040.116779>
- Nilsson, B. (2019). The school-to-work transition in developing countries. *The Journal of Development Studies*, 55(5), 745-764.
- Nkya, H., Fang, H., & Mwakabungu, F. (2021). Implementation of competence-based curriculum in Tanzania: perceptions, challenges and prospects. A case of secondary school teachers in arusha region. *Journal of Education and Practice*, 12(19), 34-41.
- Novakova, L. (2020). The impact of technology development on the future of the labour market in the Slovak Republic. *Technology in Society*, 62, 101256.
- Novotná, M., & Volek, T. (2014). Labour as a factor of production in the context of gross value added growth in Sector A. *Scientia Agriculturae Bohemica*, 45(2), 129-135.
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International journal of qualitative methods*, 16(1), 1609406917733847.
- Nsabimana, A., & Funjika, P. (2019). Mobile phone use, productivity and labour market in Tanzania.
- Ochieng, P. A. (2009). An analysis of the strengths and limitation of qualitative and quantitative research paradigms. *Problems of Education in the 21st Century*, 13, 13.
- O'higgins, N. (2001). Youth unemployment and employment policy: A global perspective. *O'Higgins*, (2001).

- Okojie, C. E. THE LABOUR MARKET AND THE ADJUSTMENT PROCESS IN NIGERIA.
- Olayiwola, W. K., & Rutaiwa, J. L. (2010). Trade liberalization and employment performance of textile and clothing industry in Tanzania. *International Business Research*, 3(3), 47-55.
- Olsen, W. (2004). Triangulation in social research: qualitative and quantitative methods can really be mixed. *Developments in sociology*, 20, 103-118.
- Omair, A. (2014). Sample size estimation and sampling techniques for selecting a representative sample. *Journal of Health specialties*, 2(4), 142.
- Onwuegbuzie, A. J. (2000). Expanding the framework of internal and external validity in quantitative research.
- Onwuegbuzie, A. J., & Leech, N. L. (2006). Linking research questions to mixed methods data analysis procedures. *The qualitative report*, 11(3), 474-498.
- Onwuegbuzie, A. J., Leech, N. L., & Collins, K. M. (2012). Qualitative analysis techniques for the review of the literature. *Qualitative Report*, 17, 56.
- Opie, C. (2019). Research approaches. *Getting Started in Your Educational Research: Design, Data Production and Analysis*, 137.
- Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. *Journal of nursing scholarship*, 33(1), 93-96.
- ordinal regression analysis. (2003). *China & World Economy*, Retrieved from <https://www.proquest.com/scholarly-journals/2-ordinal-regression-analysis/docview/237239327/se-2>
- Osabohien, R., Matthew, O., Gershon, O., Ogunbiyi, T., & Nwosu, E. (2019). Agriculture development, employment generation and poverty reduction in West Africa. *The Open Agriculture Journal*, 13(1).
- Osanloo, A., & Grant, C. (2016). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your “house”. *Administrative issues journal: connecting education, practice, and research*, 4(2), 7.
- Pabian, P., Šima, K., & Kynčilová, L. (2011). Humboldt goes to the labour market: How academic higher education fuels labour market success in the Czech Republic. *Journal of Education and Work*, 24(1-2), 95-118.
- Paradis, E., O'Brien, B., Nimmon, L., Bandiera, G., & Martimianakis, M. A. (2016). Design: selection of data collection methods. *Journal of graduate medical education*, 8(2), 263-264.
- Parinsi, M. T., Palilingan, V. R., & Surjono, H. D. (2018, February). The Development of Indonesian Labour Market Information System (LMIS) for Vocational Schools and Industries. In *IOP Conference Series: Materials Science and Engineering* (Vol. 306, No. 1, p. 012087). IOP Publishing.
- Park, S., Kim, B., Jang, W., & Nam, K. (2014). Imperfect information and labor market bias against small and medium-sized enterprises: A Korean case. *Small Business Economics*, 43(3), 725-741. doi:<http://dx.doi.org/10.1007/s11187-014-9571-7>
- Park, Y. S., Konge, L., & Artino Jr, A. R. (2020). The positivism paradigm of research. *Academic Medicine*, 95(5), 690-694.

- Pember, R. J., & Dakar, I. L. O. (2005). Development of labour statistics systems. *Bulletin of Labour Statistics*, 1, 2005-1.
- Perç, S. (1990). Labour market. Concept. Characteristics. Trends. Work published in "Economic studies and research.
- Peters, B. G. (2022). Institutional theory. In *Handbook on theories of governance* (pp. 323-335). Edward Elgar Publishing.
- Petersson, F., Baadsgaard, M., & Thygesen, L. C. (2011). Danish registers on personal labour market affiliation. *Scandinavian journal of public health*, 39(7_suppl), 95-98.
- Petrova, E., Dewing, J., & Camilleri, M. (2016). Confidentiality in participatory research: Challenges from one study. *Nursing ethics*, 23(4), 442-454.
- Pheko, M. M., & Molefhe, K. (2017). Addressing employability challenges: A framework for improving the employability of graduates in Botswana. *International Journal of Adolescence and Youth*, 22(4), 455-469.
- Piana, V. (2003). Consumer theory: the neoclassical model and its opposite evolutionary alternative. *J. Econ. Issues*, 31, 651-664.
- Pitan, O. S., & Adedeji, S. O. (2012). Skills Mismatch among University Graduates in the Nigeria Labor Market. *Online Submission*.
- Plankey-videla, N. (2012). Informed consent as process: Problematizing informed consent in organizational ethnographies. *Qualitative Sociology*, 35(1), 1-21. doi:<http://dx.doi.org/10.1007/s11133-011-9212-2>
- Ploeg, J. (1999). Identifying the best research design to fit the question. Part 2: qualitative designs. *Evidence-Based Nursing*, 2(2), 36-37.
- Pluye, P., Bengoechea, E. G., Granikov, V., Kaur, N., & Tang, D. L. (2018). A world of possibilities in mixed methods: review of the combinations of strategies used to integrate the phases, results, and qualitative and quantitative data. *International Journal*, 10(1), 1-16.
- Prasad, S., Rao, A., & Rehani, E. (2001). Developing hypothesis and research questions. *500 Research Methods*, 18.
- Price, O., & Lovell, K. (2018). Quantitative research design. In *A research handbook for patient and public involvement researchers*. Manchester University Press.
- Profile, C. Decent Work Country Profile TANZANIA (mainland).
- Purwanto, A., Asbari, M., & Santoso, T. I. (2021). Education Management Research Data Analysis: Comparison of Results between Lisrel, Tetrad, GSCA, Amos, SmartPLS, WarpPLS, and SPSS For Small Samples. *Nidhomul Haq: Jurnal Manajemen Pendidikan Islam*.
- Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*.
- Rada, C., Tavani, D., Von Arnim, R., & Zamparelli, L. (2023). Classical and Keynesian models of inequality and stagnation. *Journal of Economic Behavior & Organization*, 211, 442-461.
- Rai, N., & Thapa, B. (2015). A study on purposive sampling method in research. *Kathmandu: Kathmandu School of Law*, 5.

- Rampin, R., & Rampin, V. (2021). Taguette: open-source qualitative data analysis. *Journal of Open Source Software*, 6(68), 3522.
- Randolph, J. (2009). A guide to writing the dissertation literature review. *Practical Assessment, Research, and Evaluation*, 14(1), 13.
- Razzaque, M. A., Khondker, B. H., Uddin, M., & Rahman, J. (2019). Towards an effective and integrated labour market information system for Bangladesh.
- Regmi, P. R., Aryal, N., Kurmi, O., Pant, P. R., Van Teijlingen, E., & Wasti, S. P. (2017). Informed consent in health research: Challenges and barriers in low-and middle-income countries with specific reference to Nepal. *Developing world bioethics*, 17(2), 84-89.
- Renold, U. (2020). Factbook Education Systems: Tanzania. *CES Factbook Education Systems*, 2.
- Resnik, D. B. (2015). What is ethics in research & why is it important. *National Institute of Environmental health sciences*.
- Resnik, D. B. (2018). *The ethics of research with human subjects: Protecting people, advancing science, promoting trust* (Vol. 74). Springer.
- Ricotta, C., Pavoine, S., Cerabolini, B. E., & Pillar, V. D. (2021). A new method for indicator species analysis in the framework of multivariate analysis of variance. *Journal of Vegetation Science*, 32(2), e13013.
- Rihova, H. (2016). Using labour market information: guide to anticipating and matching skills and jobs: volume.
- Roberts, P. (2000). Alternative methods of gathering and handling data: maximising the use of modern technology. *Nurse Researcher (through 2013)*, 8(2), 84.
- Robinson, K. A., Saldanha, I. J., & Mckoy, N. A. (2011). Development of a framework to identify research gaps from systematic reviews. *Journal of clinical epidemiology*, 64(12), 1325-1330.
- Rolfe, G. (2006). Validity, trustworthiness and rigour: quality and the idea of qualitative research. *Journal of advanced nursing*, 53(3), 304-310.
- Rolph, E. R. (1980). What does a supply schedule of labor services look like in a money economy?: III REDISTRIBUTION MEASURES IV EFFECTS OF TAXATION ON THE SUPPLY OF LABOR V INCENTIVES AND TAX RATES VI CONCLUSIONS NOTES REFERENCES. *The American Behavioral Scientist (Pre-1986)*, 23(3), 415. Retrieved from <https://www.proquest.com/scholarly-journals/what-does-supply-schedule-labor-services-look/docview/194667971/se-2?accountid=188730>
- Rowley, J., & Slack, F. (2004). Conducting a literature review. *Management research news*.
- Rufaro T. Chiware, E., & Dick, A. L. (2008). The use of ICTs in Namibia's SME sector to access business information services. *The electronic library*, 26(2), 145-157.
- Rust, N. A., Abrams, A., Challender, D. W., Chapron, G., Ghoddousi, A., Glikman, J. A., ... & Sutton, A. (2017). Quantity does not always mean quality: the importance of qualitative social science in conservation research. *Society & Natural Resources*, 30(10), 1304-1310.
- Ruxton, G. D., & Mulder, T. (2019). Unethical work must be filtered out or flagged. *Nature*, 572(7768), 171-172. doi:<http://dx.doi.org/10.1038/d41586-019-02378-x>
- Ryan, G. (2018). Introduction to positivism, interpretivism and critical theory. *Nurse researcher*, 25(4), 41-49.

- Sackett, P. R., & Larson Jr, J. R. (1990). Research strategies and tactics in industrial and organizational psychology.
- Sala, G. (2011). Approaches to skills mismatch in the labour market: A literature review. *Papers: revista de sociologia*, 96(4), 1025-1045.
- SALAAM, D. (2020). MAPPING SKILLS GAP AND SKILLS NEEDS FOR TECHNICIAN GRADUATES IN THE SELECTED ECONOMIC SECTORS FOR INDUSTRIAL GROWTH IN TANZANIA.
- Salmeron, J. L., & Bueno, S. (2006). An information technologies and information systems industry-based classification in small and medium-sized enterprises: An institutional view. *European journal of operational research*, 173(3), 1012-1025
- Sankoff, G. (2008). Cross-sectional and longitudinal studies. In *Volume 2* (pp. 1003-1013). De Gruyter Mouton.
- Sapsford, D., & Tzannatos, Z. (1993). Labour Demand: The Basic Model. In *The Economics of the Labour Market* (pp. 109-134). Palgrave, London.
- Sarma, S. E., & Bonvillian, W. B. (2018). Fixing an imperfect labor market information system. *Issues in Science and Technology*, 35(1), 56-61. Retrieved from <https://www.proquest.com/scholarly-journals/fixing-imperfect-labor-market-information-system/docview/2177597633/se-2?accountid=188730>
- Sarycheva, T. V., & Shvetsov, M. N. (2015). Statistical approaches to the evaluation of the demand and supply at the labour market based on panel data. *Rev. Eur. Stud.*, 7, 356.
- Saunders, M. N., & Bezzina, F. (2015). Reflections on conceptions of research methodology among management academics. *European management journal*, 33(5), 297-304.
- Schimmack, U. (2021). The Implicit Association Test: A method in search of a construct. *Perspectives on Psychological Science*, 16(2), 396-414.
- Schreiber, R. S., & Noerager, S. P. (Eds.). (2001). *Using grounded theory in nursing*. ProQuest Ebook Central <https://ebookcentral.proquest.com>
- Schroeder, R. G. (2008). Introduction to the special issue on theory development in operations management. *Production and Operations Management*, 17(3), 354-356. Retrieved from <https://search.proquest.com/docview/228761589?accountid=188730>
- Seawright, J., & Gerring, J. (2008). Case selection techniques in case study research: A menu of qualitative and quantitative options. *Political research quarterly*, 61(2), 294-308.
- Sedgwick, P. (2014). Non-response bias versus response bias. *Bmj*, 348, g2573.
- Seeram, E. (2019). An Overview of Correlational Research. *Radiologic technology*, 91(2), 176-179.
- Sehnbruch, K., Burchell, B., Agloni, N., & Piasna, A. (2015). Human development and decent work: why some concepts succeed and others fail to make an impact. *Development and Change*, 46(2), 197-224.
- Serena, P. C. (2016). Labour market—concepts, functions, features, patterns. *Management Strategies Journal*, 34(4), 201-209.
- Serena, P. C. (2017). Labour market—concepts, functions, features, patterns.
- Shamchiyeva, L., Kizu, T., & Kahyarara, G. (2014). Labour market transitions of young women and men in the United Republic of Tanzania. Geneva, Switzerland: ILO.

- Shamoo, A. E., & Resnik, D. B. (2009). *Responsible conduct of research*. ProQuest Ebook Central <https://ebookcentral.proquest.com>
- Shannon-Baker, P. (2016). Making paradigms meaningful in mixed methods research. *Journal of mixed methods research*, 10(4), 319-334.
- Sharma, G. (2017). Pros and cons of different sampling techniques. *International journal of applied research*, 3(7), 749-752.
- Sharpe, A., & Qiao, S. (2006). *The Role of Labour Market Information for Adjustment: International Comparisons*. Industry Canada, Micro-Economic Policy and Analysis.
- Shaukat, M. (2009). Impact of Information Technology on Management Efficiency. *Bahauddin Zakariya University, Multan (Pakistan)*.
- Shaukat, M., Zafarullah, M., & Wajid, R. A. (2008). Impact of information technology on organizational performance: A comparative quantitative analysis of Pakistan's banking and manufacturing sectors. In *Oxford Business and Economics Conference Program* (Vol. 1, No. 4, pp. 1-42).
- Shields, L., & Twycross, A. (2003). The difference between quantitative and qualitative research: this paper is one of a series of short papers on aspects of research by Linda Shields and Alison Twycross. *Paediatric nursing*, 15(9), 24-25.
- Shrestha, D. P. (2003). Trends, patterns and structure of economically active population. *Population Monograph of Nepal Vol. I*, 341-373.
- Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics*, 9(1), 4-11.
- Skills Mismatch Survey In Selected Economic Sectors In Tanzania Mainland Analytical Report, 2021
- Sloane, P., Latreille, P., & O'Leary, N. (2013). *Modern labour economics*. Routledge.
- Smith, J., & Noble, H. (2014). Bias in research. *Evidence-based nursing*, 17(4), 100-101.
- SORENSEN, K., & MAS, J. M. (2015). A roadmap for the development of Labor Market Information Systems.
- Sorrentino, C., & May, J. (2002). US labor market performance in international perspective. *Monthly Lab. Rev.*, 125, 15.
- Spall, S. (1998). Peer debriefing in qualitative research: Emerging operational models. *Qualitative inquiry*, 4(2), 280-292.
- Sparreboom, T. (1999). *Improving labour market information in Southern Africa* (Vol. 10). International Labour Organisation.
- Sparreboom, T. (2001). An assessment of labour market information systems in southern Africa. *Africa Development*, 26(3), 149-181.
- Sparreboom, T., & Powell, M. (2009). *Labour market information and analysis for skills development* (No. 994340413402676). International Labour Organization.
- Stahl, N. A., & King, J. R. (2020). Expanding approaches for research: Understanding and using trustworthiness in qualitative research. *Journal of Developmental Education*, 44(1), 26-28.
- Starman, A. B. (2013). The case study as a type of qualitative research. *Journal of Contemporary Educational Studies/Sodobna Pedagogika*, 64(1).

- Staunton, T., & Karla, R. (2021). Labour market information and social justice: A critical examination. *International Journal for Educational and Vocational Guidance*, 21(3), 697-715. doi:<http://dx.doi.org/10.1007/s10775-021-09466-3>
- Stephens, R. G., Dunn, J. C., Hayes, B. K., & Kalish, M. L. (2020). A test of two processes: The effect of training on deductive and inductive reasoning. *Cognition*, 199, 104223.
- Sukamolson, S. (2007). Fundamentals of quantitative research. *Language Institute Chulalongkorn University*, 1(3), 1-20.
- Sundaram, K. (2009). Measurement of Employment and Unemployment in India: some issues. Department of Economics, Delhi School of Economics. Centre for Development Economics Working Paper, 174.
- Suparji, S., Nugroho, H. S. W., & Martiningsih, W. (2021). Tips for Distinguishing Nominal and Ordinal Scale Data. *Aloha International Journal of Multidisciplinary Advancement (AIJMU)*, 1(6), 133-135.
- Sürücü, L., & MASLAKÇI, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, 8(3), 2694-2726.
- Suwal, R., & Dahal, M. P. (2014). Economically active population: Dimensions and dynamics. *Population Monograph of Nepal*, 3, 1-40.
- Swart, L. A., Kramer, S., Ratele, K., & Seedat, M. (2019). Non-experimental research designs: Investigating the spatial distribution and social ecology of male homicide. *Research Methods in the Social Sciences*, 19, 20-35.
- Swere, R. M. A. (1980). Planning and organizing training in Tanzania. In Rural water supply in developing countries: proceedings of a workshop on training held in Zomba, Malawi, 5-12 Aug. 1980. IDRC, Ottawa, ON, CA.
- Sykes, A. O. (1993). An introduction to regression analysis.
- Taguchi, N. (2018). Description and explanation of pragmatic development: Quantitative, qualitative, and mixed methods research. *System*, 75, 23-32.
- Taherdoost, H. (2016). Sampling methods in research methodology; how to choose a sampling technique for research. *How to choose a sampling technique for research (April 10, 2016)*.
- Taherdoost, H. (2022). Different types of data analysis; data analysis methods and techniques in research projects. *International Journal of Academic Research in Management*, 9(1), 1-9.
- Taherdoost, H. (2022). Different types of data analysis; data analysis methods and techniques in research projects. *International Journal of Academic Research in Management*, 9(1), 1-9.
- Taheri, B., Porter, C., Valantasis-Kanellos, N., & König, C. (2015). Quantitative data gathering techniques. O’Gorman, K. & MacIntosh, R.(eds.), *Research Methods for Business and Management*.
- Tandari, M. C. (2004). The Tanzania development vision 2025. *Dear Partners, Friends & Interested Readers*, 63.
- Tanzania labour market risk report - Q4 2021. (2021). (). London: Fitch Solutions Group Limited. Retrieved from ProQuest One Academic; ProQuest One Business Retrieved from <https://www.proquest.com/reports/tanzania-labour-market-risk-report-q4-2021/docview/2573907548/se-2?accountid=188730>

- Tanzania must change ways of empowering the youth: Call. (2021, Jun 13). *The Citizen* Retrieved from <https://www.proquest.com/newspapers/tanzania-must-change-ways-empowering-youth-call/docview/2540355249/se-2?accountid=188730>
- Tavakoli, M., Mol, S. T., & Kismihók, G. (2020). Labour market information driven, personalized, OER recommendation system for lifelong learners. *arXiv preprint arXiv:2005.07465*.
- Taylor-Powell, E. (2003). Analyzing quantitative data. *Small town*, 303(1), 35-2.
- Temple, B., & Young, A. (2004). Qualitative research and translation dilemmas. *Qualitative research*, 4(2), 161-178.
- Terrell, S. R. (2012). Mixed-methods research methodologies. *Qualitative report*, 17(1), 254-280.
- The United Republic of Tanzania (URT), Ministry of Finance and Planning, Tanzania National Bureau of Statistics and President's Office - Finance and Planning, Office of the Chief Government Statistician, Zanzibar. (2022 December). *The 2022 Population and Housing Census: Administrative Units Population Distribution Report*. https://www.nbs.go.tz/uploads/statistics/documents/sw-1701704402-Administrative_units_Population_Distribution_Report_Tanzania_volume1a.pdf
- Theofanidis, D., & Fountouki, A. (2018). Limitations and delimitations in the research process. *Perioperative Nursing-Quarterly scientific, online official journal of GORNA*, 7(3 September-December 2018), 155-163.
- Theofanidis, D., & Fountouki, A. (2018). Limitations and delimitations in the research process. *Perioperative Nursing-Quarterly scientific, online official journal of GORNA*, 7(3 September-December 2018), 155-163.
- Thomas, B. (2001). The public employment service in a changing labour market. *The International Journal of Public Sector Management*, 14(6), 524-525. Retrieved from <https://www.proquest.com/scholarly-journals/public-employment-service-changing-labour-market/docview/234389938/se-2?accountid=188730>
- Thomas, J. (2017). Scholarly views on theory: Its nature, practical application, and relation to world view in business research. *International Journal of Business Management*, 12(9).
- Thomasma, D. C., Weisstub, D. N., & Kushner, T. K. (Eds.). (2000). *International Library of Ethics, Law, and the New Medicine*. Kluwer Academic Publishers.
- Thorpe, A. S. (2014). Doing the right thing or doing the thing right: Implications of participant withdrawal. *Organizational Research Methods*, 17(3), 255-277.
- Thurmond, V. A. (2001). The point of triangulation. *Journal of nursing scholarship*, 33(3), 253-258.
- Tinbergen, J. (1974). Substitution of graduate by other labour. *Kyklos: international review for social sciences*.
- Tong, A., & Dew, M. A. (2016). Qualitative research in transplantation: Ensuring relevance and rigor. *Transplantation*, 100(4), 710-712.
- Triangulation, D. S. (2014, September). The use of triangulation in qualitative research. In *Oncology nursing forum* (Vol. 41, No. 5, p. 545).
- Tsalikis, J., & Fritzsche, D. J. (2013). Business ethics: A literature review with a focus on marketing ethics. In *Citation Classics from the Journal of Business Ethics* (pp. 337-404). Springer, Dordrecht.

- van Hooft, E. A., Kammeyer-Mueller, J. D., Wanberg, C. R., Kanfer, R., & Basbug, G. (2021). Job search and employment success: A quantitative review and future research agenda. *Journal of Applied Psychology*, 106(5), 674.
- Van Oss, V., Van Avermaet, P., Struys, E., & Vantieghem, W. (2022). An empirical validation study of Spolsky's language policy model. *Current Issues in Language Planning*, 23(1), 77-95.
- Van Selm, M., & Jankowski, N. W. (2006). Conducting online surveys. *Quality and quantity*, 40(3), 435-456.
- Webster, F., & Rice, K. (2019). Conducting ethnography in primary care. *Family Practice*, 36(4), 523-525.
- Van Zyl, A., Turpin, M., & Matthee, M. (2020). How can critical thinking be used to assess the credibility of online information?. In *Responsible Design, Implementation and Use of Information and Communication Technology: 19th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2020, Skukuza, South Africa, April 6–8, 2020, Proceedings, Part II 19* (pp. 199-210). Springer International Publishing.
- Varpio, L., Paradis, E., Uijtdehaage, S., & Young, M. (2020). The distinctions between theory, theoretical framework, and conceptual framework. *Academic medicine*, 95(7), 989-994.
- Verhulst, B., & Neale, M. C. (2021). Best practices for binary and ordinal data analyses. *Behavior genetics*, 51(3), 204-214.
- Verkuyt, M., Hughes, M., Attack, L., McCulloch, T., Lapum, J. L., Romaniuk, D., & St-Amant, O. (2019). Comparison of self-debriefing alone or in combination with group debrief. *Clinical Simulation in Nursing*, 37, 32-39.
- Vosko, L. F., Zukewich, N., & Cranford, C. (2003). Precarious jobs: A new typology of employment. *Perspectives on labour and income*, 15(4).
- Voßemer, J., Gebel, M., Kadri Täht, Unt, M., Högberg, B., & Strandh, M. (2018). The effects of unemployment and insecure jobs on well-being and health: The moderating role of labor market policies. *Social Indicators Research*, 138(3), 1229-1257. doi:<http://dx.doi.org/10.1007/s11205-017-1697-y>
- Votinius, J. J., & Rönnmar, M. (2021). Internships and apprenticeships in Sweden, collective bargaining and social partner involvement. In *Internships, Employability and the Search for Decent Work Experience* (pp. 145-162). Edward Elgar Publishing.
- Wacker, J. G. (1998). A definition of theory: research guidelines for different theory-building research methods in operations management. *Journal of operations management*, 16(4), 361-385.
- Wacker, J. G. (2008). A CONCEPTUAL UNDERSTANDING OF REQUIREMENTS FOR THEORY-BUILDING RESEARCH: GUIDELINES FOR SCIENTIFIC THEORY BUILDING*. *Journal of Supply Chain Management*, 44(3), 5-15. Retrieved from <https://search.proquest.com/docview/235225194?accountid=188730>
- Walker, W. (2005). The strengths and weaknesses of research designs involving quantitative measures. *Journal of research in nursing*, 10(5), 571-582.
- Walsh, F. (1999). A multisector model of efficiency wages. *Journal of Labor Economics*, 17(2), 351-376.

- Webster, F., & Rice, K. (2019). Conducting ethnography in primary care. *Family Practice*, 36(4), 523-525.
- Weisburd, D., Wilson, D. B., Wooditch, A., & Britt, C. (2022). Multiple regression. In *Advanced Statistics in Criminology and Criminal Justice* (pp. 15-72). Springer, Cham.
- Whetten, D. A. (1989). What constitutes a theoretical contribution?. *Academy of management review*, 14(4), 490-495.
- White, D. E., Oelke, N. D., & Friesen, S. (2012). Management of a large qualitative data set: Establishing trustworthiness of the data. *International journal of qualitative methods*, 11(3), 244-258.
- Wieling, M., & Borghans, L. (2001). Discrepancies between supply and demand and adjustment processes in the labour market. *Labour*, 15(1), 33-56.
- Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of business venturing*, 20(1), 71-91.
- Williams, C. (2007). Research methods. *Journal of Business & Economics Research (JBERR)*, 5(3).
- Williams, C. C., & Lansky, M. A. (2013). Informal employment in developed and developing economies: Perspectives and policy responses. *International Labour Review*, 152(3-4), 355-380.
- Williams, R. A., & Quiroz, C. (2020). *Ordinal regression models*. SAGE Publications Limited.
- Willig, C. (2014). Interpretation and analysis. *The SAGE handbook of qualitative data analysis*, 136-149.
- Wilson, V. (2014). Research methods: triangulation. *Evidence based library and information practice*, 9(1), 74-75.
- Wolff, R. D., & Resnick, S. A. (2012). Contending economic theories: neoclassical, Keynesian, and Marxian. MIT Press.
- Woods, J. F., & O'Leary, C. J. (2006). Conceptual Framework for an Optimal Labour Market Information System.
- Woodward, B. (1999). Challenges to human subject protections in US medical research. *Jama*, 282(20), 1947-1952.
- Wunsch, C. (2005). Labour market policy in Germany: institutions, instruments and reforms since unification. *University of St. Gallen Economics Discussion Paper*, (2005-06).
- Xenikou, A., & Simosi, M. (2006). Organizational culture and transformational leadership as predictors of business unit performance. *Journal of Managerial Psychology*, 21(6), 566-579. doi:<http://dx.doi.org/10.1108/02683940610684409>
- Yavitz, B. (1973). The Labor Market: An Information System.
- Yavuz, H., & Utku, D. H. (2021). Parametric and non-parametric tests for the evaluation of interlaminar fracture toughness of polymer composites. *Journal of Reinforced Plastics and Composites*, 40(11-12), 450-462.
- Yelwa, M., David, O. O., & Awe, E. O. (2015). Analysis of the relationship between inflation, unemployment and economic growth in Nigeria: 1987-2012. *Applied economics and finance*, 2(3), 102-109.

- Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European journal of education*, 48(2), 311-325.
- Yip, C., Han, N. L. R., & Sng, B. L. (2016). Legal and ethical issues in research. *Indian Journal of Anaesthesia*, 60(9), 684.
- Younas, A., & Sundus, A. (2018). Experiences of and satisfaction with care provided by male nurses: A convergent mixed-method study of patients in medical surgical units. *Journal of advanced nursing*, 74(11), 2640-2653.
- Zalaghi, H., & Khazaei, M. (2016). The role of deductive and inductive reasoning in accounting research and standard setting. *Asian Journal of Finance & Accounting*, 8(1), 23-37.
- Zeng, Z., & Zio, E. (2017). A classification-based framework for trustworthiness assessment of quantitative risk analysis. *Safety Science*, 99, 215-226.
- Zito, P. (2011). Labour Market Information Systems in Ivory Coast, Morocco and Peru: Comparative Report. Turin, Italy. support or additional compensation. The university has hired tutors and teaching assistants to help with grading and tutorials, however, students have expressed concerns with the quality of assistants' work.
- Zong, J., Matias, J. N., & Chetty, M. (2018). Empirically Studying Research Ethics with Interface Designs for Debriefing Online Field Experiments.

APPENDICES

Appendix 1: Employers Questionnaire

SECTION B: DEMOGRAPHICS INFORMATION

1. B1: Are you a male or a female? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Female
- ☐ Male
- ☐ Prefer not to say
- ☐ Other

2. B2: What is your age in complete years? **WRITE YOUR AGE IN COMPLETE YEARS**

3. B3: How many years you have worked in this institution? (**WRITE COMPLETE YEARS, IF IS LESS THAN ONE YEAR WRITE "0"**).

4. B3: What is your current marital status? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Never Married
- ☐ Married
- ☐ Living Together
- ☐ Divorced
- ☐ Separated
- ☐ Widowed
- ☐ Not Stated

5. B4: What is your Nationality? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Tanzanian
- ☐ Kenyan
- ☐ Ugandan
- ☐ Burundian
- ☐ Rwandan
- ☐ The rest of Africa
- ☐ The rest of the world

6. B5: What is the highest level of formal education you have completed? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ PhD/Doctorate
- ☐ Masters Degree
- ☐ Bachelors/Post Graduate Diploma
- ☐ Diploma level
- ☐ Certificate level (TVET)
- ☐ Secondary-A Level
- ☐ Secondary-O Level
- ☐ Primary/ Other
- ☐ None

SECTION C: NATURE OF CURRENT OCCUPATION7. C1: What is your current main occupation / job title? **WRITE OCCUPATION FULLY OR AT LEAST IN TWO WORDS**

8. C2: Does your current job match your official education / training (certificate / degree)? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Yes
- ☐ No (other job than possessed qualification)
- ☐ No (lower level than possessed qualification)
- ☐ No (higher level than possessed qualification)
- ☐ Not applicable (no training)

9. C3: What is your employment status? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Own account worker
- ☐ Employer
- ☐ Employee
- ☐ Unpaid family worker

SECTION D: ESTABLISHMENT INFORMATION

10. D1: Who is the owner of this enterprise? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Central Government
- ☐ Local Government
- ☐ Parastatal Organization
- ☐ Cooperative or Registered partnership
- ☐ NGO, Religious Organization
- ☐ Political Party, Non-profit institution
- ☐ International organization or foreign embassy
- ☐ Private Business(non-farm)
- ☐ Own or family farm

11. D2: Name the main activity of the establishment which accounts for the major portion of gross output or turnover (eg the crop grown, article made or repaired, type of service provided etc). **WRITE THE MAIN ACTIVITY USING AT LEAST TWO WORDS**

12. D3: How many years this company has been in operation? **(WRITE IN COMPLETE YEARS, IF IS LESS THAN ONE YEAR WRITE "0")**

SECTION E: EMPLOYEE CHARACTERISTICS AND VACANT POSTS

13. E1.2: How many male are currently engaged in this establishment?

14. E1.2: How many female are currently engaged in this establishment?

15. E2.1: What skills / qualifications are in general lacking among your staff?
MULTIPLE ANSWERS ARE ACCEPTABLE.

Check all that apply.

- ☐ Managerial skills
- ☐ Technical skills
- ☐ Entrepreneurial skills
- ☐ Language skills
- ☐ Customer care
- ☐ Innovativeness / creativity
- ☐ IT skills
- ☐ Communication skills
- ☐ Other

16. E2.2.a: If you have hired graduates of TVET institutions, how satisfied are you with their performance? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Fully Satisfied
- ☐ Partially satisfied
- ☐ Little satisfied
- ☐ Not satisfied
- ☐ Not applicable (no such graduates hired)

17. E2.2.b: If you have hired graduates from higher learning institutions, how satisfied are you with their performance? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Fully Satisfied
- ☐ Partially satisfied
- ☐ Little satisfied
- ☐ Not satisfied
- ☐ Not applicable (no such graduates hired)

18. E2.3: Which of the following statements best describes skills of the employees in relation to what is needed? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ They have the required skills
- ☐ They have higher skills than required
- ☐ Their skills need to be further developed

19. E3.1: Please write the job title with more PERMANENT employees than other posts in your institution as of 30 June, 2022. **WRITE OCCUPATION FULLY OR AT LEAST IN TWO WORDS**

20. E3.2: Please indicate the Minimum Education Level Required for the job title with more PERMANENT employees than other posts stated at Questions E3.1. **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ PhD/Doctorate
- ☐ Masters Degree
- ☐ Bachelors/Post Graduate Diploma
- ☐ Diploma level
- ☐ Certificate level (TVET)
- ☐ Secondary-A Level
- ☐ Secondary-O Level
- ☐ Primary/ Other
- ☐ None

21. E3.3a: How many male employees stated at Questions E3.1. do not have the Minimum Education Level Required?

22. E3.3b: How many female employees stated at Questions E3.1. do not have the Minimum Education Level Required?

SECTION F: CURRENT JOB VACANCIES

23. F1.1: Please indicate the main job title with most PERMANENT Vacant Posts in your institution as of the 30 June, 2022. **WRITE OCCUPATION FULLY OR AT LEAST IN TWO WORDS**

24. F1.2: Please write the total number of VACANT POSTS FOR THE job title with MOST PERMANENT Vacant Posts in your institution as YOU stated at questions F1.1 as of the 30 June, 2022.

25. F1.3: Please indicate the Minimum Education Level Required for the main job title with most PERMANENT Vacant Posts in your institution stated at questions F1.1 as of the 30 June, 2022. **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Masters Degree
- ☐ Bachelors/Post Graduate Diploma
- ☐ Diploma level
- ☐ Certificate level (TVET)
- ☐ Secondary-A Level
- ☐ Secondary-O Level
- ☐ Primary/ Other
- ☐ None

26. F1.4: Please, write the minimum qualification or skill required for the main job title with most PERMANENT Vacant Posts in your institution as stated at questions F1.1 as of the 30 June, 2022. **WRITE IN FULLY OR AT LEAST IN TWO WORDS**

27. F1.5: Please, write number of permanent job vacant posts which have been vacant for six months or more in your institution.

28. F1.6: For posts which have been vacant for six months or more in your institution as stated at questions F1.5 above, please give reasons why.
MULTIPLE ANSWERS ARE ACCEPTED.

Check all that apply.

- ☐ Lack of qualification of applicants
- ☐ Budget constraints
- ☐ Internal bureaucracy
- ☐ Inadequate information to Job Seekers about the available Jobs
- ☐ Job Seekers are discouraged, they thought no work is available
- ☐ Job Seekers thought no jobs that match skills they possess
- ☐ Not applicable

SECTION G: FUTURE JOB VACANCIES AND MANPOWER PLANNING IN THE NEXT THREE YEARS, 2023 TO 2025

29. G1.1: Please indicate the main job title expected to have more vacant posts for the future employment (human resource forecast) in your institution for the next three years from 2023 to 2025. **WRITE OCCUPATION FULLY OR AT LEAST IN TWO WORDS**

30. G1.2: Please write total number of the main job title expected to have more PERMANENT Vacant Posts in your institution for the next three years from 2023 to 2025 as stated at questions G1.1 above.

31. G1.3: Please indicate the Minimum Education Level required for the main vacant post expected in your institution for the next three years from 2023 to 2025 as stated at questions G1.1 above. **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Masters Degree
- ☐ Bachelors/Post Graduate Diploma
- ☐ Diploma level
- ☐ Certificate level (TVET)
- ☐ Secondary-A Level
- ☐ Secondary-O Level
- ☐ Primary/ Other
- ☐ None

32. G1.4: Please, write the minimum qualification or skills required for the the main vacant post expected in your institution for the next three years from 2023 to 2025 as stated at questions G1.1 above. **WRITE IN FULLY OR AT LEAST IN TWO WORDS**

SECTION H: SOURCING FOR REQUIRED STAFF

33. H1: How do you source personnel to fill vacant posts in your Institution?
MULTIPLE ANSWERS ARE ALLOWED.

Check all that apply.

- ☐ Media advertisements
- ☐ Own webpage/ Internet
- ☐ Labour Market Information Systems (LMIS) / Employment Registration systems
- ☐ Job agents
- ☐ Friends/relatives
- ☐ Training institution
- ☐ Other(specify)

SECTION I: USE OF LABOUR MARKET INFORMATION SYSYEMS (LMIS)

34. I1: Have you ever used Labour Market Information System (LMIS)? **CHOOSE ONE OPTION.**

Mark only one oval.

☐ Yes

☐ No

35. I2: Please indicate your experience with LMIS. **MULTIPLE ANSWERS ARE ALLOWED.**

Check all that apply.

- ☐ Well coordinated
- ☐ Uncoordinated
- ☐ Incomplete Information
- ☐ Inadequate quality of available information
- ☐ Applicants don't match skills requirements
- ☐ Too complicated
- ☐ Too many applications
- ☐ Too many unqualified applications
- ☐ Too few applicants registered
- ☐ Is not properly working
- ☐ Not Applicable - FOR THOSE WHO HAVE NEVER USED LMIS

36. I3: In your Opinion, to what extent do you agree of the following Sentences?

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Labour Market Information Systems affects Manpower Planning	☐	☐	☐	☐	☐
Labour Market Information Systems affects unemployment rates	☐	☐	☐	☐	☐
There is an association between different social economic factors and performance of Labour Market Information Systems	☐	☐	☐	☐	☐

37. I4: What is your your Opinion on the following Sentence, **PLEASE SELECT ONE OPTION.**

Mark only one oval per row.

	Never	Rarely	Sometimes	Often	Always
To what extent Labour Market Information System affects manpower planning in Dar es Salaam.	☐	☐	☐	☐	☐

38. I5: What is your your Opinion on the following Sentence, **PLEASE SELECT ONE OPTION.**

Mark only one oval per row.

	Never	Rarely	Sometimes	Often	Always
To what extent Labour Market Information System affects levels of unemployment in Dar es Salaam.	☐	☐	☐	☐	☐

SECTION J: USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

39. J1: Has your institution introduced ICT use? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Yes
☐ No

40. J2: Please indicate how ICT is being used in your institution. **MULTIPLE ANSWERS ARE ALLOWED.**

Check all that apply.

- ☐ Jobs advertisement
- ☐ Human resource management
- ☐ Records management
- ☐ Production
- ☐ Marketing
- ☐ Communication
- ☐ Accounting/Finance/Planning/Budgeting
- ☐ Not Applicable

41. J3: What are the most important challenges with regard to the use of ICT?
MULTIPLE ANSWERS ARE ALLOWED.

Check all that apply.

- ☐ Lack of skilled employees
- ☐ Lack of skilled outside IT support
- ☐ Lack of skilled trainers
- ☐ Insufficient / unreliable connectivity
- ☐ Unreliable electricity
- ☐ Costs of equipment
- ☐ Availability of equipment
- ☐ Others
- ☐ No challenge

This content is neither created nor endorsed by Google.

Google Forms

Appendix 2**Training Institutions Questionnaire****SECTION B: DEMOGRAPHICS INFORMATION**

1. B1: Are you a male or a female? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Female
- ☐ Male
- ☐ Prefer not to say
- ☐ Other

2. B2: What is your age in complete years? **WRITE YOUR AGE IN COMPLETE YEARS**

3. B3: How many years you have worked in this institution? (**WRITE COMPLETE YEARS, IF IS LESS THAN ONE YEAR WRITE "0"**).

4. B3: What is your current marital status? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Never Married
- ☐ Married
- ☐ Living Together
- ☐ Divorced
- ☐ Separated
- ☐ Widowed
- ☐ Not Stated

5. B4: What is your Nationality? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Tanzanian
- ☐ Kenyan
- ☐ Ugandan
- ☐ Burundian
- ☐ Rwandan
- ☐ The rest of Africa
- ☐ The rest of the world

6. B5: What is the highest level of formal education you have completed? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ PhD/Doctorate
- ☐ Masters Degree
- ☐ Bachelors/Post Graduate Diploma
- ☐ Diploma level
- ☐ Certificate level (TVET)
- ☐ Secondary-A Level
- ☐ Secondary-O Level
- ☐ Primary/ Other
- ☐ None

SECTION C: NATURE OF CURRENT OCCUPATION

7. C1: What is your current main occupation / job title? **WRITE OCCUPATION FULLY OR AT LEAST IN TWO WORDS**

8. C2: Does your current job match your official education / training (certificate / degree)? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Yes
- ☐ No (other job than possessed qualification)
- ☐ No (lower level than possessed qualification)
- ☐ No (higher level than possessed qualification)
- ☐ Not applicable (no training)

9. C3: What is your employment status? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Own account worker
- ☐ Employer
- ☐ Employee
- ☐ Unpaid family worker

SECTION D: ESTABLISHMENT INFORMATION

10. D1: Who is the owner of this enterprise? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Central Government
- ☐ Local Government
- ☐ Parastatal Organization
- ☐ Cooperative or Registered partnership
- ☐ NGO, Religious Organization
- ☐ Political Party, Non-profit institution
- ☐ International organization or foreign embassy
- ☐ Private Business(non-farm)
- ☐ Own or family farm

11. D2: When was this training institution started? **IF EXACT YEAR IS NOT KNOWN, PROVIDE CAREFUL ESTIMATES.**

12. D3: What type of training institution is this? **CHOOSE AND WRITE ONE OPTION.**

Mark only one oval.

- ☐ Primary education
- ☐ Secondary education
- ☐ Vocational Education and Training (TVET)
- ☐ Tertiary non university
- ☐ University
- ☐ Other

13. D4: In your views, what has to be improved in the training and education in higher institutions and Technical and Vocational Education and Training (TVET) to increase employability of graduates? **MULTIPLE ANSWERS POSSIBLE.**

Check all that apply.

- ☐ Curriculum review with employers
- ☐ Curriculum review with national agency
- ☐ Curriculum review by council for higher education
- ☐ Tracer Studies
- ☐ Industrial attachment
- ☐ Labour market studies
- ☐ Technical skills
- ☐ Entrepreneurial skills
- ☐ IT skills
- ☐ Other

14. D5: How many years this company has been in operation? **(WRITE IN COMPLETE YEARS, IF IS LESS THAN ONE YEAR WRITE "0")**

SECTION E: EMPLOYEE CHARACTERISTICS

15. E1.2: How many male are currently engaged in this establishment?

16. E1.2: How many female are currently engaged in this establishment?

17. E2: Which of the following statements best describes skills of your employees in relation to what is needed? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ They have the required skills
- ☐ They have higher skills than required
- ☐ Their skills need to be further developed

SECTION F: RELEVANCE OF TRAINING PROGRAMMES

18. F1: Please indicate any obstacles that negatively affect the capacity utilization in your institution? **MULTIPLE ANSWERS ALLOWED.**

Check all that apply.

- ☐ Lack of clients/students
- ☐ Lack of teaching materials
- ☐ Physical facilities such as building
- ☐ Lack of qualified staff
- ☐ Financial/Budget constraints
- ☐ Lack of power/energy
- ☐ Other

19. F2: How long does it take for a graduate from this institution to get employment?
CHOOSE ONE OPTION.

Mark only one oval.

- ☐ Less than 6 months
- ☐ 6 – 12 months
- ☐ More than 12 month
- ☐ Don't know
- ☐ Not Applicable

20. F3: How do you ensure relevance of your training program to the labour market?
MULTIPLE ANSWERS ALLOWED.

Check all that apply.

- ☐ Curriculum review with employers
- ☐ Curriculum review with national agency
- ☐ Curriculum review by council for higher education
- ☐ Tracer Studies
- ☐ Industrial attachment
- ☐ Labour market studies
- ☐ Experience in profession
- ☐ Other

SECTION H: SOURCING FOR REQUIRED STAFF

21. H1: How do you source personnel to fill vacant posts in your Institution?
MULTIPLE ANSWERS ARE ALLOWED.

Check all that apply.

- ☐ Media advertisements
- ☐ Own webpage/ Internet
- ☐ Labour Market Information Systems (LMIS) / Employment Registration systems
- ☐ Job agents
- ☐ Friends/relatives
- ☐ Training institution
- ☐ Other(specify)

SECTION I: USE OF LABOUR MARKET INFORMATION SYSTEMS (LMIS)

22. I1: Have you ever used Labour Market Information System (LMIS)? **CHOOSE ONE OPTION.**

Mark only one oval.

☐ Yes

☐ No

23. I2: Please indicate your experience with LMIS. **MULTIPLE ANSWERS ARE ALLOWED.**

Check all that apply.

☐ Well coordinated

☐ Uncoordinated

☐ Incomplete Information

☐ Inadequate quality of available information

☐ Applicants don't match skills requirements

☐ Too complicated

☐ Too many applications

☐ Too many unqualified applications

☐ Too few applicants registered

☐ Is not properly working

☐ Not Applicable - FOR THOSE WHO HAVE NEVER USED LMIS

24. I3: In your Opinion, to what extent do you agree of the following Sentences?

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Labour Market Information Systems affects Manpower Planning	☐	☐	☐	☐	☐
Labour Market Information Systems affects unemployment rates	☐	☐	☐	☐	☐
There is an association between different social economic factors and performance of Labour Market Information Systems	☐	☐	☐	☐	☐

25. I4: What is your your Opinion on the following Sentence, **PLEASE SELECT ONE OPTION.**

Mark only one oval per row.

	Never	Rarely	Sometimes	Often	Always
To what extent Labour Market Information System affects manpower planning in Dar es Salaam.	☐	☐	☐	☐	☐

26. I5: What is your your Opinion on the following Sentence, **PLEASE SELECT ONE OPTION.**

Mark only one oval per row.

	Never	Rarely	Sometimes	Often	Always
To what extent Labour Market Information System affects levels of unemployment in Dar es Salaam.	☐	☐	☐	☐	☐

SECTION J: USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

27. J1: Has your institution introduced ICT use? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Yes
☐ No

28. J2: Please indicate how ICT is being used in your institution. **MULTIPLE ANSWERS ARE ALLOWED.**

Check all that apply.

- ☐ Jobs advertisement
- ☐ Human resource management
- ☐ Records management
- ☐ Teaching
- ☐ Marketing
- ☐ Communication
- ☐ Accounting/Finance/Planning/Budgeting
- ☐ Not Applicable

29. J3: What are the most important challenges with regard to the use of ICT?
MULTIPLE ANSWERS ARE ALLOWED.

Check all that apply.

- ☐ Lack of skilled employees
- ☐ Lack of skilled outside IT support
- ☐ Lack of skilled trainers
- ☐ Insufficient / unreliable connectivity
- ☐ Unreliable electricity
- ☐ Costs of equipment
- ☐ Availability of equipment
- ☐ Others
- ☐ No challenge

This content is neither created nor endorsed by Google.

Google Forms

Appendix 3

Employees Questionnaire

SECTION B: DEMOGRAPHICS INFORMATION

1. B1: Are you a male or a female? **CHOOSE ONE OPTION.**

Mark only one oval.

- ☐ Female
- ☐ Male
- ☐ Prefer not to say
- ☐ Other

2. B2: What is your age in complete years? **WRITE YOUR AGE IN COMPLETE YEARS**

3. B3: What is your current marital status? **READ THE OPTIONS AND WRITE ONE OPTION.**

Mark only one oval.

- ☐ Never Married
- ☐ Married
- ☐ Living Together
- ☐ Divorced
- ☐ Separated
- ☐ Widowed
- ☐ Not Stated

4. B4: What is your Nationality? **READ THE OPTIONS AND WRITE ONE OPTION.**

Mark only one oval.

- ☐ Tanzanian
- ☐ Kenyan
- ☐ Ugandan
- ☐ Burundian
- ☐ Rwandan
- ☐ The rest of Africa
- ☐ The rest of the world

5. B5: What is the highest level of formal education you have completed? **WRITE ONE OPTION.**

Mark only one oval.

- ☐ PhD/Doctorate
- ☐ Masters Degree
- ☐ Bachelors/Post Graduate Diploma
- ☐ Diploma level
- ☐ Certificate level (TVET)
- ☐ Secondary-A Level
- ☐ Secondary-O Level
- ☐ Primary/ Other
- ☐ None

6. B6: How many years you have been working in this institution? (**WRITE COMPLETE YEARS, IF IS LESS THAN ONE YEAR WRITE "0"**).

SECTION C: GENERAL KNOWLEDGE ABOUT THE USE OF LMIS

7. C1: Have you ever used Labour Market Information Systems? **WRITE ONE OPTION.**

Mark only one oval.

☐ Yes

☐ No

8. C2: How would you rate your experience on using Labour Market Information Systems? **WRITE ONE OPTION.**

Mark only one oval.

☐ Adequate

☐ Inadequate

☐ No experience

SECTION D: RESEARCH QUESTIONS

9. D1.1: What is your your Opinion on the following Sentence, **PLEASE SELECT ONE OPTION.**

Mark only one oval per row.

	Never	Rarely	Sometimes	Often	always
To what extent Labour Market Information System affects manpower planning in Dar es Salaam.	☐	☐	☐	☐	☐

10. D1.2: In your Opinion, to what extent do you agree of the following Sentences?

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Labour Market Information Systems affects Manpower Planning	☐	☐	☐	☐	☐
Labour Market Information Systems affects unemployment rates	☐	☐	☐	☐	☐
There is an association between different social economic factors and performance of Labour Market Information Systems	☐	☐	☐	☐	☐

11. D2: What is your your Opinion on the following Sentence, **PLEASE SELECT ONE OPTION.***Mark only one oval per row.*

	Never	Rarely	Sometimes	Often	Always
To what extent Labour Market Information System affects levels of unemployment in Dar es Salaam.	☐	☐	☐	☐	☐

12. D3: What are the factors affecting performance of the labour market information system in Dar es Salaam Region? **MENTION AT LEAST THREE FACTORS.**

13. D4: What are the main methods used by job seekers to search for jobs? **MENTION AT LEAST THREE METHODS.**

This content is neither created nor endorsed by Google.

Google Forms

Appendix 4**Unicaf University Research Ethics Committee Decision at Stages One****Student's Name:****Student's ID #:****Supervisor's Name:****Program of Study:****Offer ID /Group ID:****Dissertation Stage:****Research Project Title:****Comments:****Decision*:****Date:**

*Provisional approval provided at the Dissertation Stage 1, whereas the final approval is provided at the Dissertation stage 3. The student is allowed to proceed to data collection following the final approval.

Appendix 5**Unicaf University Research Ethics Committee Decision at Stage Three****Student's Name:****Student's ID #:****Supervisor's Name:****Program of Study:****Offer ID /Group ID:****Dissertation Stage:****Research Project Title:****Comments:****Decision*:****Date:**

*Provisional approval provided at the Dissertation Stage 1, whereas the final approval is provided at the Dissertation stage 3. The student is allowed to proceed to data collection following the final approval.

Appendix 6
Informed Consent Form**Part 1: Debriefing of Participants****Student's Name:****Student's E-mail Address:****Student ID #:****Supervisor's Name:****University Campus:****Program of Study:****Research Project Title:****Date:**

Provide a short description (purpose, aim and significance) of the research project, and explain why and how you have chosen this person to participate in this research (maximum 150 words).

The above named Student is committed in ensuring participant's voluntarily participation in the research project and guaranteeing there are no potential risks and/or harms to the participants.

Participants have the right to withdraw at any stage (prior or post the completion) of the research without any consequences and without providing any explanation. In these cases, data collected will be deleted.

All data and information collected will be coded and will not be accessible to anyone outside this research. Data described and included in dissemination activities will only refer to coded information ensuring beyond the bounds of possibility participant identification.

I, _____, ensure that all information stated above is true and that all conditions have been met.

Student's Signature: _____

Appendix 6
Informed Consent Form**Part 2: Certificate of Consent**

This section is mandatory and should to be signed by the participant(s)

Student's Name:

Student's E-mail Address:

Student ID #:

Supervisor's Name:

University Campus:

Program of Study:

Research Project Title:

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss about it. I have received satisfactory answers to all my questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I consent to the use of multimedia (e.g. audio recordings, video recordings) for the purposes of my participation to this study. I understand that my data will remain anonymous and confidential, unless stated otherwise. I consent voluntarily to be a participant in this study.

Participant's Print name:

Participant's Signature: _____

Date:

If the Participant is illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had an opportunity to ask questions. I confirm that the aforementioned individual has given consent freely.

Witness's Print name:

Witness's Signature: _____

Date: