



EVALUATING CRITICAL SUCCESS FACTORS ASSOCIATED WITH THE
MANAGEMENT OF TECHNICAL VOCATIONAL TRAINING INSTITUTES AND
CENTRES, JAMAICA

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Approval of the Thesis

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Abstract

EVALUATING CRITICAL SUCCESS FACTORS ASSOCIATED WITH THE
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This study intends to assess the critical success factors that contribute to the effective management of TVET institutions in Jamaica, giving a more thorough understanding of the main factors influencing TVET's success in establishing a sustainable framework. An explanatory mixed-methods approach was employed to achieve the research objectives. Data for this study was collected from 135 adjunct and full-time faculty using an online questionnaire survey through stratified random sampling. The population target was determined using a power analysis with a 95% confidence level and a 7% margin of error. One-on-one interviews were conducted with 13 management officers through purposive sampling who were directly engaged with daily operations within the TVET institutions. The study used Microsoft Excel-365 and the Statistical Package for the Social Sciences (SPSS 21.0) for data analysis. Pearson's correlation analyses were used to investigate the linear relationships between the different factors; to rank the factors the Relative Importance Index (*RII*) was used; and content analysis was employed to analyse the interview responses. Based on the findings, there was a significant relationship between the variables'

internal quality assurance; labour market responsiveness; student centredness; partnerships and collaboration; external environment and interferences; funding allocation; external quality assurance and the management of TVET institutions. Using the *RII*, the related factors were computed and rated, and the results were compared against the existing literature. The results showed that the most important factors were funding, labour market responsiveness and partnerships and collaboration. The high-ranking related factors are the availability of qualified staff, the quality of training and delivery, where both are related to internal quality assurance, and industry collaboration/employer engagement, which is related to partnerships and collaboration. The practical implication of the study is that a technical operational model be implemented for the management of TVET institutions, a leadership model for institution leaders, as well as a TVET national policy and practice framework for the TVET system. Additionally, it is recommended that the key elements to measure success across these institutions should be given quantifiable weights with clear targets. As such, this study is an important contribution to the body of knowledge on quality education and TVET in Jamaica.

Keywords: TVET, Critical Success Factors, Key Success Factors, Transformational Leadership, Sustainability

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.

AI Acknowledgment

Use of AI:

I acknowledge the use of Quillbot.com (<https://quillbot.com/grammar-check>) to check the grammar of chapters 1–5. These actions were completed between January – August 2024.

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Dedication

This study is a heartfelt tribute to the enduring memories of Pearline Barnes and Danny Brissett, my beloved late mother and brother. Their unwavering presence in my life has played an integral role in shaping the person I am today.

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List of Abbreviations

Abbreviation	Meaning
ARR	Attract Recruit Retain
AT	Apprenticeship Training
CARICOM	Caribbean Community and Common Market
CBET	Competency-Based Education and Training
CCCJ	Council of Community Colleges of Jamaica
CSF	Critical Success Factor
CTE	Career and Technical Education
CTI	Community Training Initiatives
CV	Coefficient of Variation
DVET	Dual Vocational Education and Training
ECC	The Early Childhood Commission
HEART NSTA Trust	Human Employment and Resource Training National Service Training Agency Trust
JTC	The Jamaica Teaching Council
J-TEC	Jamaica Tertiary Education Commission
KPI	Key Performance Indicators
KRA	Key Result Areas
KSF	Key Success Factor
N	Number
NCE	The National Council on Education
NCTVET	National Council on Technical and Vocational Education and Training
NDP	National Development Plan
NEI	National Education Inspectorate

NET	The National Education Trust
NGO	Non-Government Organisation
NQF-J	National Qualification Framework of Jamaica
OEC	Overseas Examination Council
OECD	Organisation for Economic Cooperation and Development
OPM	Office of the Prime Minister
PBL	Problem-Based Learning
Q	Question/s
RII	Relative Importance Index
RQ	Research Question
SDG	Sustainable Development Goals
SPSS	Statistical Package for the Social Sciences
Std. Dev.	Standard Deviation
SV	Strategic Variables
TOM	Technical Operating Model
TQM	Total Quality Management
TVE	Technical and Vocational Education
TVET	Technical and Vocational Education and Training
UCJ	The University Council of Jamaica
UREC	University Research Ethics Counsel
VET	Vocational Education and Training
VTDI	Vocational Training Development Institute

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CHAPTER 1: INTRODUCTION

1.1 Overview

Given the target of Vision 2030 by the Jamaican Government, in particular the National Outcome, to deliver world-class education and training, it is only appropriate that Technical and Vocational Education and Training (TVET) be delivered in the context of a harmonised framework. A challenge identified in this study is the absence of a harmonised operational template that governs the tertiary technical institutions, and the variations in the use of qualification standards developed from labour market demand surveys across the country are widespread. This has resulted in a lack of coherence in the quality of education and a lack of accountability for technical institutions. This must be addressed in order to establish a sustainable and quality TVET system in Jamaica. The result of this has formed a basis for this thesis, which evaluates the critical success factors associated with managing TVET institutions in Jamaica.

According to the Beyond Income, Beyond Averages, Beyond Today Human Development 2019 Report, there are several variables that contribute to the development of a society. Amidst the many variables, one that stands out is education. In parallel, the 2019 Global Competitiveness Report also shows that education and training are important factors that are significant to the leadership and growth of an economy. These reports echo a wider perception that education, and training, among others, are paramount to the advancement of any society. As a fundamental human right, education is one of the human capital indices that offers the solution for growth in all areas of human endeavor (Idjawe, 2020). This thrust is also in alignment with Jamaica's Vision 2030 towards developing a nation where people desire to live, work, raise families, and do business (Planning Institute of Jamaica, 2009a). It is commonly perceived that TVET is the vehicle that will

propel this goal to become a reality. As such, high-quality technical and vocational education and training are essential to improving both the economic standing of nations and individuals.

Similarly, in his report submitted to the then Prime Minister of Jamaica, Davis (2004) proposed that there should be a body or institution that governs the accountability for vocational and technical education. Previously, TVET in Jamaica was managed by the National Council on Technical and Vocational Education and Training (NCTVET), which is funded by the Human Employment and Resource Training National Service Training Agency (HEART NSTA Trust). The HEART NSTA Trust streamlines their programmes through either an institutional setting (vocational training centres, secondary schools, community centres, etc.) or work-based sites (plant or on the job training programmes). The HEART NSTA Trust, formerly known as the HEART Trust/NTA is Jamaica's leading facilitator and coordinator of technical, vocational education, training, and workforce development (National Education Strategic Plan: 2011-2020, 2012, p. 15). These programmes are normally driven by the findings of labour market surveys, where the demands are arguably aligned with current and future trends. This is considered critical for programmes to be deemed successful. This has resulted in the creation of a portal by the NSTA Trust, for areas where training is mostly needed.

TVET institutions are dependent upon their capacity to produce professionals capable of functioning in the world of work (Raihan, 2014). International experience has demonstrated that TVET funds are one way to bring disparate TVET stakeholders together to improve TVET quality (Bhattarai et al., 2021). This funding allocation is used to finance the cost of training, equipment, and salaries, and establish networks and partnerships between stakeholders. The HEART NSTA Trust and its' programmes are funded by a mandatory 3% payroll deduction on qualified private-sector firms, which is augmented by assistance from international partners. This therefore makes

such an investment in terms of financial support a critical element in ensuring that adequate funding is provided for the sustainability of TVET programmes (Hoeckel, 2008; Rasul et al., 2015; Hanni, 2019; Idjawe, 2020).

In addition, the viability of the programmes offered is due to the success stories of graduates or students who have gone through the TVET system. These stories serve to motivate and inspire other students to pursue TVET programmes. Furthermore, these stories also provide proof of the system's effectiveness and success. However, stakeholders have often expressed their dissatisfaction with poor market alignment and have called for greater accountability (Maclean & Wilson, 2009; Harvey, 2019; HEART/NSTA Trust, 2022, p. 27). Given their interests, it is crucial to note that the various stakeholders within TVET are also considered a key variable in the success of TVET institutions. The Auditor General of Jamaica in 2020 included an assessment of the Capacity of Skills Training Programme in their Strategic Assessment Plan due to the HEART NSTA Trust's contribution to enhancing access to skills training, particularly among unattached youths. The analysis found that, given the poor throughput rate, HEART was not optimising value for money despite extensive efforts (Ellis, 2020). A significant number of the challenges are thought to be attributed to the ineffective management and leadership within the TVET institutions.

To combat the management and leadership challenges within the public sector and in a bid to reform the human capacity challenges in said sector, in 1994 the Management Institute for National Development (MIND) was instituted. According to the Planning Institute of Jamaica report (2009b, p. 65), training in industry sectors such as finance, management, and vocational or technical fields is now being provided by a rising number of private institutions. Universities, teacher's colleges, community colleges, and other public and privately owned post-secondary

institutions and services are also offering educational and workforce development programmes. However, this is not without various challenges and issues of quality concerns which include fragmented training delivery and low certification across these institutions (Harvey, 2019; Ellis, 2020). It is also important to note that TVET institutions confront the difficulty of keeping up with the economy's constantly shifting skill demands. As a result, it is imperative that prospective graduates be taught the skills that employers are looking for since the majority of graduates rarely have the competencies that are needed to succeed in the workplace (Nanda, 2010, as cited in Choi, 2021).

In his address at the ground-breaking ceremony for the RIU Aquarelle Hotel in Trelawny on Wednesday, April 20, 2022, Prime Minister the Honourable Andrew Holness, indicated that Jamaica could be forced to import skilled workers as the country is facing a shortage of workers. He further cautioned that the government cannot allow the shortage of labour to harm the country's economic growth or the current development trend. Therefore, having strong leadership is essential for formulating strategies to bridge labour gaps, promote skill development, and foster a conducive environment for economic progress. Albeit the NCTVET serves as a regulating agency for the development of standards, curriculum design, accrediting training institutes and centres and standardising qualification frameworks, the training and delivery of vocational education programmes remains fragmented and segregated (Planning Institute of Jamaica, 2009, p. 66). There are numerous challenges that have contributed to the proper amalgamation of attempts to build a sustainable TVET system. In addition to not having enough qualified educators within the TVET system, there is also the challenge of inconsistency in the usage of endorsed industry standards and the lack of a coordinated regulatory framework among educational and training institutions offering TVET programmes (National Policy for TVET, 2014).

According to the National Policy for TVET (2014), there should be a new framework requirement to support TVET policy's implementation, which should be reviewed every five (5) years. This framework is to ensure that there is proper TVET integration within the respective institutions in accordance to established parameters for a prosperous and sustainable future. Speaking at the 2021 press launch for the 5th International Conference on TVET in the Caribbean on May 6, 2021, Dr. Marcia Rowe-Amonde, Senior Director of Standards, Curriculum and Learning Resources at the HEART NSTA Trust, indicated that a formal assessment of the policy needs to be done to further improve what currently obtains. The act of ensuring the quality of training is a very complicated task, and a variety of considerations regarding "best practice" are needed to avoid the dangers of curriculum development (Loose & Spöttl, 2015, p. 2). Although there are aspects of the National Policy for TVET that are still applicable in this current dispensation, there are stakeholders within the system who are not aware that a policy of that nature exists. This was confirmed through personal communication with officers within TVET institutions who are integral to the training of students.

The government is taking substantial measures to transform the educational system, with the release of 'The Reform of Education in Jamaica 2021 Report' on January 14, 2022. The Report, commissioned by the Most Honourable Prime Minister Andrew Holness and released by the Jamaica Education Transformation Commission (JETC), is a road map for the development of a comprehensive strategy intended to enhance student performance and educational output across the sector. The 342-page report includes 54 recommendations, supported by additional sub-recommendations that have been prioritised. The main recommendations include infrastructure and technology, funding, early childhood education, teaching curricula and teacher education, tertiary education, technical and vocational education, and training (TVET), and governance and

accountability (Patterson, 2021). In addition to the 11 recommendations made in relation to TVET, the report stressed the importance of TVET education in Jamaica (Patterson, 2021, p. 36). Echoing similar sentiments of the Taskforce on Educational Reform from 2004, the Education System Transformation Programme from 2010, and the National Education Strategic Plan from 2012, the 2021 Report offers a comprehensive approach to education reform and emphasises the significance of putting the suggestions into action as soon as possible. As such, this is an area of both national and practical concern. Despite these recommendations, there is yet to be a set of factors established for indicating the success of TVET institutions. Furthermore, this study will close a significant gap in the absence of an operational template that governs TVET institutions, regulating the implementation of qualification criteria established by labour market demand.

1.2 Statement of the Problem

In addition to the accredited TVET institutions, several Community Training Initiatives (CTIs) that appear to be standardised merely on paper are also subject to the absence of a uniform operational template. These CTIs, which are specially aimed at unattached youths, are by no means an accurate representation of what an accredited training institution ought to model. In addition to poor certification rates of only 54% within the course of five years starting in 2014 and low attendance, there was poor monitoring and evaluation by HEART (Ellis, 2020; Patterson, 2021). Results of this nature are attributed to fragmented governance.

The perspective of key stakeholders within the TVE landscape is paramount in identifying best practices and plugging the gaps in the lingering challenges (Harvey, 2019). Following personal discussions with several lead persons that are integral with the vocational training process, these sentiments are also echoed by assessors that assess candidates against various industry qualification standards. The issue of not having qualified and competent instructors within

the TVET system that understand industry requirements has also been a lingering concern, especially as it relates to internal quality assurance. This is seen where the Jamaican government, the Ministry of Education Youth and Information, continues to bemoan the shortage of science, technology, and mathematics instructors who are appropriately prepared and experienced and lament the intention to import foreign educators (Patterson, 2023; Simon, 2023; Smith; 2023). This mass exodus of teachers from Jamaica over the last three years has sent a wave of anxiety across the education sector. This therefore shows a breakdown of the governance and leadership within the institutions where they need to proactively engage in workforce planning and implement policies that support both labour supply and demand to sustain economic growth.

Furthermore, despite having the National Qualification Framework of Jamaica (NQF-J), which is a tool that classifies all qualifications in the country (Jamaica Tertiary Education Commission, 2015), which also helps students locate their credentials received and compare them with similar qualifications in other countries, there is no visible standardise structure across several training institutions that seems to deliver similar technical and vocational qualification plans. Additionally, signifying its importance, technical and vocational qualifications span all eight recognised levels on the NQF-J as opposed to all other qualifications. In a bid to meet the country's development needs through aligning education and technical training to Jamaica's growth agenda, more needs to be done in this regard.

While TVET is recognised as critical to sustainability, policy makers and practitioners may have different views as to what TVET for sustainability should look like. Roofe and Ferguson (2018) notes that although TVET is recognised as critical to sustainability and growth, policymakers and practitioners have varying viewpoints on what sustainability for TVET looks like. Additionally, evaluation criteria for success may be inconsistent due to the varying opinions

among stakeholders. At present, TVET research has mainly concentrated on examining whether TVET is applicable and or effective in poor nations, without sufficiently describing what mechanisms, functioning in what environment, contribute to effective TVET (Baraki & van Kemenade, 2013, p. 493). Further cited in Baraki and van Kemenade (2013) by Pawson and Tilley (1997, p. 72), they maintain that “when an evaluator informs that a programme is a success, they should demonstrate what it is about the programme that works for whom and under what conditions.” In contrast to academic institutions, where grades and graduation rates are utilised as indicators of success, TVET institutions frequently lack defined metrics to evaluate programme effectiveness and student achievement (Brown & Hisham, 2019).

The absence of an operational template for these institutions continues to question the output of these entities. This poses as a challenge and should be a strategic priority in harmonising the various TVET institutions. Mpanza et al. (2019) posit that there is a need for vocational institutions and colleges to establish appropriate operational practices, in ensuring that quality is maintained across these institutions. Previous research (Hashim et al., 2016) have identified factors such as technical and non-technical as being major contributors to the success of among TVET instructors as well as what constitutes educational quality in TVET (Renaud, 2009). Nevertheless, insufficient study has been conducted on what guarantees success in managing TVET institutions throughout the region, including Jamaica. Given the Jamaican Government’s mandate to reform the education sector through either occupational studies or workforce solutions, there is yet to be seen any tangible work in this regard. Consequently, this study aims to explore the critical success factors associated with managing TVET institutions in Jamaica to establish a sustainable framework.

1.3 Purpose of the Study, Research Aims, and Objectives

The purpose of this mixed-method study is to evaluate the critical success factors that contribute to the effective management of TVET institutions in Jamaica, providing a more comprehensive understanding of the key drivers of success in TVET, with the ultimate goal of formalising a sustainable framework. Despite the political focus and emphasis on TVET, the literature on TVET lacks consensus on critical success factors and the effectiveness of TVET in developing countries. Since Director/Principals, Institution Managers, Head of Programmes/Department, Admissions and Assessment Monitoring Officers, Programme Coordinators and Faculty are integral to the leadership and management of technical and vocational institutions, capturing the views of these TVET industry professionals on the critical success factors in governing these institutions is paramount. Therefore, this study aims to provide invaluable insights and recommendations that can contribute to the effective management of TVET institutions in a bid to create and formalise a sustainable framework for improving the management of these institutions in Jamaica. The following are the study's objectives:

1. To examine the relationship between partnerships and collaboration and the management of TVET institutions in Jamaica.
2. To examine the relationship between labour market responsiveness and the management of TVET institutions in Jamaica.
3. To examine the relationship between student centredness and the management of TVET institutions in Jamaica.
4. To examine the relationship between the external environment and interferences and the management of TVET institutions in Jamaica.

5. To examine the relationship between funding and the management of TVET institutions in Jamaica.
6. To examine the relationship between internal quality assurance and the management of TVET institutions in Jamaica.
7. To examine the relationship between external quality assurance and the management of TVET institutions in Jamaica.
8. To prioritise the critical success factors in managing technical vocational training institutions and ranking them in order of importance.
9. To survey technical vocational and educational professionals to capture their views on the importance of management and leadership as a critical success factor in governing TVET institutions.

1.4 Nature and Significance of the Study

1.4.1 Nature of Study

Given the complementary nature of quantitative and qualitative research, an explanatory mixed-methods approach was employed in this study, which yielded valuable results in capturing the respondent's opinion and exploring possible gaps between perceptions of the factors identified. Both qualitative and quantitative methods have the potential to produce fair and unbiased results, whether they are done separately or amalgamated. The study was done in two phases, where the sampling technique that was used in phase one was probability sampling, which is recommended for the quantitative data collection, and the qualitative data were collected in phase two using purposive sampling. Phase one of this study involved the administration of an online questionnaire survey, which was used to collect quantitative data. Phase two of this study consisted of in-depth,

one-on-one interviews, making use of methodologies commonly used in qualitative phenomenological studies and content analysis.

To ensure alignment between the data collected and the research questions and to achieve the study's objectives, the quantitative data collected were statistically analysed using descriptive statistics such as means, standard deviations, coefficient variance, and inferential statistics such as Pearson's Correlation and Relative Importance Index. The qualitative data on the other hand were analysed using the thematic approach.

1.4.2 Significance of the Study

This study's significance lies in its contribution to the body of knowledge on critical success factors, specifically in managing TVET institutions in Jamaica, thereby stimulating further research to offer insightful information to scholars and professionals. Through understanding and learning the set of factors that are thought to be highly significant in managing these institutions effectively, will allow educational leaders, such as central government policymakers, to be more efficient, effective, and well-informed in their development and restructuring of the TVET system in their target towards Vision 2030 in attaining socio-economic status. The key findings of this study could guide educational stakeholders such as institution leaders, managers, and faculty to understand the key factors contributing to the success of TVET institutions, leading to better decision-making, resource allocation, and overall improvement in the quality of education provided.

Empirical evidence suggests that partnerships between educational institutions and industry sectors lead to improved curriculum relevance and job placements for graduates (Harris, 2018). In this vein, the findings could help institution leaders foster and develop partnerships with stakeholders to ensure curriculum relevance and provide students with practical experiences.

Additionally, armed with the knowledge of the study's findings, institution leaders could advocate for increased funding from government and private sector sources, emphasising the impact of financial support on institutional resources and student success.

In the context of TVET in Jamaica, quality assurance has always been a contentious issue, whereas the findings of this study also highlight it as being critical in managing TVET institutions. Research highlights the positive impact of robust internal quality assurance mechanisms on educational outcomes (Huisman, 2016). Institutions that systematically evaluate and enhance their programmes are better positioned to deliver high-quality education and remain accredited (Kerney & Spalding, 2017). The findings of this study could assist institution managers in implementing robust internal and external quality assurance systems to enhance programme effectiveness and student experiences. The findings can also create a passage for institution managers to develop forums for dialogues with stakeholders such as community leaders, students, and employers to ensure that the institution remains relevant and responsive to their needs.

The results of this study have real-world applications in adopting student centred approaches, particularly in faculty incorporating student feedback into teaching methodologies and curriculum design to boost engagement and learning outcomes. Student centred educational approaches have been shown to improve student engagement and learning outcomes (Fitzgerald et al., 2020). Institutions can create a more effective educational atmosphere and increase completion and retention rates by prioritising students' needs and preferences (Thomas, 2017). On this wise, this study's findings and recommendations encourage faculty collaboration to share best practices in programme delivery and pedagogy, which can create an environment of camaraderie and support among faculty.

Furthermore, any form of improvement made within the TVET system and by extension the institutions will be beneficial to students when pursuing TVET programmes or working in specific fields. Also, to a lesser extent, the findings of the study could guide families and guardians to better understand the critical success factors contributing to the effectiveness of TVET institutions, which will ultimately alter their perception of TVET. This could guide families and guardians in making informed decisions in supporting and encouraging students to pursue TVET education.

This study provides a holistic framework for managing TVET institutions, encompassing institutional, managerial, and national levels, ensuring a sustainable and cohesive approach to TVET development. The recommended framework for TVET institutions aims to streamline operations, optimise resource utilisation, be responsive to industry needs and improve overall efficiency within the institutions. This will better lead to student outcomes and employability. Institution managers could benefit from the recommendations made for TVET managers to develop their leadership competencies by addressing the existing leadership practices and the leadership challenges. The national framework could guide central government policymakers in their attempt to meet the Sustainable Development Goals of eradication of poverty (Goal 1), education (Goal 4), decent work and economic growth (Goal 8), infrastructure and industry innovation (Goal 9), reduced inequality (Goal 10), and sustainable communities (Goal 11) and the national outcome, world-class education, and training (National Outcome 1), which is linked to national goal one, Jamaicans can realise their greatest potential by 2030.

The proposed frameworks are consistent with the thrust of not only the Jamaican government but also academia in posturing TVET as not only a ‘dirty job’ but a vehemently contended force that should not be ignored. To date, there is no evidence or published study

identifying and evaluating critical success factors related to the management and leadership of TVET institutions in Jamaica. Since this is the first study of its kind to examine critical success factors associated with TVET institution management and leadership in Jamaica, it is unique. In addition to having been the first of its kind to be done in Jamaica, the gathered data was from faculty and management officers who possess knowledge and expertise and are actively involved in managing these types of institutions.

1.5 Research Questions

In the realm of TVET, the effective management and leadership of the institutions play an imperative role in ensuring the quality and relevance of vocational education programmes. However, despite the significance of this aspect, there remains a gap in the understanding of the specific factors that contribute to the successful management and leadership of TVET institutions at higher educational levels. Additionally, there is the challenge in the absence of a harmonised operational template that governs the tertiary technical institutions, and the variations in the use of qualification standards across them in the country are widespread. Therefore, this study, sought to address this gap by exploring the following research questions:

Q 1. What is the relationship between partnerships and collaboration and the management of TVET institutions in Jamaica?

Q 2. What is the relationship between labour market responsiveness and the management of TVET institutions in Jamaica?

Q 3. What is the relationship between student centredness and the management of TVET institutions in Jamaica?

Q 4. What is the relationship between external environment and interferences and the management of TVET institutions in Jamaica?

Q 5. What is the relationship between funding and the management of TVET institutions in Jamaica?

Q 6. What is the relationship between internal quality assurance and the management of TVET institutions in Jamaica?

Q 7. What is the relationship between external quality assurance and the management of TVET institutions in Jamaica?

Q 8. Which factors are ranked as the most critical in managing technical vocational training institutions?

Q 9. What do TVE professionals believe about the role of management and leadership as critical factors in governing TVET institutions?

1.6 Chapter Summary

This chapter provided an overview of the background and context of TVET institutions in Jamaica. While the education sector is generally seen as a driver to boost socio-economic status, TVET is regarded as vital to sustainability, however, policymakers and practitioners may have diverse views about what TVET should look like for sustainability. The TVET sector plays a critical role in Jamaica's economic development, as outlined in the country's long-term National Development Plan (NDP), Vision 2030. However, the sector faces numerous challenges, including poor market alignment of programmes, inadequate funding, fragmented training, and delivery resulting in quality assurance concerns, poor throughput rates, and insufficient qualified educators, among others.

The chapter highlighted the significance of effective management and leadership in addressing these challenges and ensuring the long-term sustainability of TVET institutions. The research objectives were outlined, including examining the current state of TVET institutions,

identifying key challenges, and determining critical success factors associated with effective management. Key constructs were identified that are associated with the management of TVET institutions in Jamaica, including leadership and governance, partnerships and collaboration, labour market alignment of programmes, student centredness, external environment, and internal and external quality assurance measures. To establish a standardised operational framework for organisations and institutions that provide TVET, these constructs were examined in more detail in subsequent chapters, offering a comprehensive understanding of the critical success factors associated with TVET institutions in Jamaica. Ultimately, these insights can be used to create a more comprehensive TVET system in Jamaica.

CHAPTER 2: LITERATURE REVIEW

2.1 Overview

The aim of this study was to assess critical success factors influencing the efficient management of TVET institutions in Jamaica, providing a more comprehensive understanding of the key drivers of success in TVET. Additionally, the study aimed to capture the perception of TVET professionals, who are integral in the training, and administrative process, on the importance of management and leadership as a critical success factor in governing these institutions. The education sector is regarded as a vital component of an economy that propels a nation's growth strategy by equipping youths and adults for life as well as driving a country's growth agenda. In light of Jamaica Vision 2030, it is only natural that TVET is offered in the context of a harmonised framework.

An organisational approach was used to review previously conducted studies on the factors thought to be crucial to the management of vocational training institutions in Jamaica. The chapter explored how the principles of transformational leadership align with the key variables associated with evaluating the success of TVET institutions. The historical and current state of the Jamaican education industry, particularly the TVET sector, was also examined. Additionally, the chapter also provides an overview of the contribution of TVET to global sustainability as well as the issues and challenges in measuring success in TVET institutions. The chapter also examined how success is measured across TVET intuitions.

2.2 Theoretical Framework

In the context of managing TVET institutions, understanding the role of leadership in achieving success is crucial. One prominent framework that has gained significant attention in the field of leadership is the transformational leadership theory developed by MacGregor Burns in

1978, which underlies the theoretical framework of this study. Transformational leadership is a widely studied leadership framework that has been shown to have significant impact on organisational performance and success. In the context of managing TVET institutions, the tenets of transformational leadership offer a valuable theoretical framework for understanding and establishing critical success factors in educational management and leadership.

Transformational leadership is characterised by leaders who inspire and motivate their followers to achieve their full potential by articulating their compelling vision for the future and fostering a culture of innovation and continuous improvement (Bush, 2008; Kedir & Geleta, 2017). They stimulate and empower followers to both achieve extraordinary outcomes and, in the process, develop their leadership capacity (Bass & Riggio, 2010). In essence, it can be categorised as a powerful tool for change and continuous improvement. Bass and Avolio (1993) identified four key dimensions of transformational leadership: inspirational motivation, idealised influence, individualised consideration, and intellectual stimulation, aimed at transforming individuals, groups and organisations. Various authors have emphasised the importance of transformational leadership principles and their impact on organisational success. For instance, Bass (1985) emphasised the importance of inspiring motivation in transformational leadership, arguing that leaders who inspire and motivate their followers can have a substantial impact on organisational outcomes. Avolio and Yammarino (2002; 2013) expanded on the concept of idealised influence, stating that leaders who display integrity and ethical behaviour can increase trust and commitment inside their organisations.

Furthermore, Burns (1978) emphasised the role of intellectual stimulation in transformational leadership, arguing that leaders who foster creativity and innovation can propel organisations success through innovative concepts and techniques. Khalil and Sahibzadah (2016)

provided evidence that individualised consideration significantly influences employee job satisfaction and contributes to organisational success and well-being. Individualised concern, according to Renjith et al. (2015), is an aspect of transformational leadership that refers to the virtue of compassion, where the leader motivates and inspires others to achieve incredible results. Transformational leaders can develop a culture of continual improvement and empowerment, resulting in a dynamic and flexible organisational environment to improve business performance (Strukan et al., 2017). Wang et al., (2011) found that transformational leadership practices positively influence organisational success, citing factors such as increasing employee engagement, job satisfaction and performance outcomes. Leaders may generate a strong feeling of purpose and direction for their organisations by integrating transformational leadership tenets with organisational objectives, goals, and values. As a result, the tenets of transformational leadership theory, as highlighted by various authors, play an integral role in influencing organisational success by inspiring, empowering, and engaging followers; encouraging innovation and continuous improvement; and cultivating an organisational culture of excellence and achievement.

Numerous studies have empirically linked the correlation between transformational leadership and organisational success in various fields, including education. For instance, Smith (2020) conducted mixed-method research in the context of educational leadership and found that transformational leadership behaviours positively impact organisational success in higher educational settings. The study advocates that by inspiring, motivating, and engaging faculty and staff to excel, transformational leaders can potentially enhance the quality of education and overall institutional performance. Improved self-awareness and knowledge of the impact that transformational leadership has on policy development and execution on organisational culture and engagement are expected (Smith, 2020). Johnson et al. (2019) explored the influence of

transformational leadership on the success of vocational programmes using a mixed-methods approach. The researchers found that transformational leaders who exhibit charisma, provide individualised consideration, and stimulate intellectual growth among staff and trainees contribute significantly to the success and effectiveness of TVET initiatives. By fostering a culture of innovation, continuous improvement and collaboration, transformational leaders can enhance the quality and relevance of vocational programmes, thus positively impacting organisational success.

Nuel et al. (2021) conducted cross-sectional research on the relationship between transformational leadership dimensions and organisational success in tertiary education. The study found a clear empirical link between transformational leadership practices and organisational success, with transformational leaders showing higher levels of staff engagement, job satisfaction, and positive organisational outcomes. This translates and concludes that transformational leadership is a critical success factor in bringing about change within the employees and the institution. Concerning TVET institutions, this study assumes that these positive outcomes, which are also the institution's goals and objectives, can translate into providing high-quality training programmes, producing skilled and competent graduates, and satisfying labour market needs.

Leaders are required to define and communicate organisational direction, therefore, inspiring a shared vision is crucial (Snee & Hoeral, 2004). Through charisma and inspirational motivation, transformational leaders can rally support for strategic initiatives that enhance the quality of teaching and learning in TVET institutions, ensuring the programmes meet the needs of the labour market and maintain relevance. By providing individualised consideration to staff and stakeholders, transformational leaders can align the skills and expertise of qualified staff with the goals of the institution, promoting a culture of excellence and performance. As a result, faculty

and staff are motivated and inspired to strive for excellence, aiding the institution in providing high-quality training programmes and producing skilled and competent graduates.

Emotional intelligence is another key aspect of transformational leadership that can be applied to the management of TVET institutions. Exemplary leaders play a crucial role in motivating individuals and groups to achieve organisational goals. They act as role models and are often the most visible personalities inside the organisation (Kedir & Geleta, 2017). Leaders with high emotional intelligence can navigate complex relationships, manage conflicts, and promote effective communication and collaboration among stakeholders. This is crucial for ensuring regulatory compliance, sustainable funding for the institution, quality assurance and effective partnership building within the institution. By empowering staff and delegating authority, transformational leaders can promote a sense of ownership and commitment among employees, encouraging them to take initiative and contribute to the success of the institution. By emphasising a results-oriented focus on setting high performance standards, transformational leaders, drive improvements in resource allocation, governance, and programme quality, ensuring that TVET institutions remain competitive, relevant, and successful in meeting the demands of the modern workforce.

The theoretical framework of transformational leadership provides a valuable lens through which to analyse and improve critical success factors associated with managing TVET institutions. By integrating the principles of transformational leadership with key variables such as labour market responsiveness, quality of teaching and learning, adequate funding, availability of qualified staff, programme relevance, external environment and interferences (stakeholders), student centredness, partnerships and institutional governance, educational leaders can create a culture of excellence, innovation, and continuous improvement that drives success in the dynamic and

challenging field of TVET Management. Ultimately, this culture of excellence produces graduates who are equipped for jobs in the changing globalised world through high-quality programmes.

However, it is one that also has its own set of controversies, whereby some believe that it can be manipulative (Ghasabeh et al., 2015; Bush, 2008). Critics argue that transformational leadership theory overly emphasises on the role of charismatic and influential leaders, possibly to the detriment of other leadership styles and organisational elements (Northouse, 2018). Additionally, there have been concerns expressed regarding the possibility of manipulation, bias, favouritism, lack of transparency and exploitation of transformational leaders, particularly if their charisma is misused to advance their personal agendas at the expense of the organisational goals (Burns, 1978; Lussier & Achu, 2019). Bush and Sargsyan (2013) argue that government officials tend to employ the term ‘transformation’ to attain their own policy goals given its engaging nature. Yukl et al. (2012) also argue that transformational leadership can create a dependency on the leader’s vision and charisma, which may inhibit followers’ ability to develop their own decision-making and critical thinking skills.

Despite transformational leadership theory’s influence in leadership research, these criticisms and controversies highlight the need for balanced consideration and perspective on its potential drawbacks. Nevertheless, transformational leaders inspire and motivate followers by raising their awareness of the significance of the goals of the organisation and inspiring them to put the organisation or entity ahead of their self-interest (Marks & Printy, 2003, p. 375, as cited in Gumus et al., 2018). Arguably, they are considered visionaries as they see beyond the present state of the organisation by imagining new and endless possibilities. They are constantly challenging the status quo and pushing for radical change while inspiring employees to reach their potential.

Given the landscape and context of the educational sector in Jamaica, where rules, laws, and policies are discussed, debated, and voted on prior to their enactment, this also strengthens the choice of the transformational leadership framework for this study. Narrowing from the country's first long-term strategic development plan, Vision 2030, which is captured under the umbrella vision statement, "Jamaica, the place of choice to live, work, raise families, and do business," demonstrates relationship building and community fostering. This shows the direction of developing a country by making its people feel included in decision-making and given the power of choice through leaders who are committed to the vision. The long-term goal, as with transformational leadership, creates a sense of purpose and direction in guiding the people towards the country's success. The frame of reference for the culture incorporates a high emphasis on a democratic and inclusive society, where the fundamental rights and freedom of expression of the people are acknowledged and taken into consideration. Transformational leadership is a leadership model that is more aligned with the need for cultural change (Khan & Law, 2015). This has been proven by studies such as Peng et al.'s (2021) meta-analysis, which found that commitment to change, openness to change, and preparedness to change have a positive link with transformational leadership.

As documented in the country's long-term national development plan, Vision 2030, achieving the desired results requires strong and decisive leadership at all levels of society to champion the transformation to developed country status (Planning Institute of Jamaica, 2009a, p. 12). This therefore means that the plan reverberates at every level of society, to which all have a significant role in being champions of change and accountability. Moreover, this strategic vision provides the structural basis for the entire dissertation, which is directly proportionate to the research's aim and objectives.

In their study of collegial frameworks in developing faculty in higher education, Esterhazy et al. (2021) put forward that one's background and expertise in sociocultural theories and epistemology will undoubtedly shape the study's framework. Grant and Osanloo (2014) also agree with this view; however, the methodological choices, possible findings, and other alternatives must be considered within the process. Within this research, the transformational leadership framework does not only consider the socioeconomic locality but is also one that empowers the formulation of the questions and shows an integration of the problem of study, findings, implications, and recommendations post-data analysis.

2.3 Concepts of Critical Success Factors

This study adopts renowned theorists Christine Bullen and John F. Rockart's 1979 and 1981 concepts of critical success factors. They are characterised as the select few domains where satisfactory results will ensure successful performance (Trkman, 2010, p. 126; Marais et al., 2017, p. 2). In other words, they are considered as the limited areas, events, things, or variables that an organisation's managers and leaders utilise to achieve its goals. Albeit small in numbers, organisational performances are likely perceived to be dependent on these strategic elements to measure its' success. As a result, critical success factors can be viewed as a correlation between success and some of its causes. However, this study acknowledges that actual success factors would be more unswerving in comparison to perceived success factors which can be used to improve strategy formation. This view is what key success factors are about (Grunert & Ellegaard, 1992). Given that the purpose and goals of each industry vary considerably, each market and industry will have a unique set of critical success factors and thus, will be different (Choon-Chiang, 1998, p. 56; Marais et al., 2017, p. 2). Consequently, it would need to be applied contextually.

Critical success factors (CSF) can also be referred to as key success factors (KSF), key result areas (KRA), strategic variables (SV) or limited factors (Engelbrecht et al., 2014a, p. 239). In their research, Engelbrecht et al. (2014a, p. 239) further stated that these factors are normally greater than three but less than ten. The criteria for success used in previous studies vary considerably (Chittithaworn et al., 2011, p. 182). Organisational performance refers to the organisation's success in the market that may have different but acceptable outcomes, while success is not always explicitly stated, but generally is defined as the achievement of goals and objectives (Chittithaworn et al., 2011, p. 181).

Much like educational management and leadership, identifying and evaluating critical success factors is a concept that has spanned several disciplines for decades. The concept has been utilised in diverse ways within areas of project management, information technology, management information systems, business intelligence and processes. However, its use in the field of educational leadership is not that widespread. Although the name varies, critical success factors are usually anchored in the term key success factors, which originated in the management information systems field. The concept was then transferred to the field of business strategy research, where it was used in various ways, correlating to the various schools of thought found in that speciality (Grunert & Ellegaard, 1992). However, identifying critical success factors has evolved into an important concept in strategic management over time (Nieh & Pong, 2012). To keep things simple, this study will only look at three schools of thought in strategic management and how critical success factors are used as a concept throughout each. They are the design school, the planning school, and the school of shared experiences (Grunert & Ellegaard, 1992).

According to Grunert and Ellegaard (1992, p. 5), the design school believes that every business is distinct in every way and that each business must therefore find its remarkable match

with its environment. They went on to say that it is therefore impossible to make general statements about the causes of success, as well as the term key success factor if utilised at all, can only have meaning in the context of a specific business. As a result, the design school's basic philosophy is incompatible with the goal of establishing explicit common statements about the key success factors in an industry. Studies have shown that critical success factors related to business and entrepreneur characteristics have a significant effect on business success (Islam et al., 2011). These factors include demographics, personal traits, curiosity, and creativity among others (Reynolds et al., 2000; Obschonka et al., 2012; Zbierowski & Gojny-Zbierowska, 2022). The key success factor concept can be used to train business administrators and entrepreneurs but not to build a general knowledge base that can be communicated to that community. Similarly, administrators within TVET institutions stand to likewise benefit.

The planning school's goal is to create planning tools that will assist businesses in determining the best strategy. Its central premise is that by providing input that assists decision-makers in structuring their thoughts, interests and concerns, the quality of choice can be enhanced (Grunert & Ellegaard, 1992, p. 6). One possible example is encouraging decision-makers to reflect on their assumptions, expectations, and experiences about the causes of success – key success factors as a planning tool. Although the emphasis is on having a small number of success factors, by compelling the decision-maker to classify and concentrate on a limited number, a process of reasoning is initiated (Grunert & Ellegaard, 1992). While this has not been empirically demonstrated, due to its systematic nature, this may lead to improved strategy formation.

The shared experience school is based on the principle that by sharing business strategy experience, general, empirically based theoretical knowledge can be developed, which can then be used to guide business strategy selection. According to this school of thought, business success is

determined by leveraging the benefits of casual relationships as a market and marketing strategy, which exists as an objective truth and can be gradually revealed through research (Chittithaworn et al., 2011). In their study of factors affecting business success in Thailand and other related studies that guided their research, Chittithaworn et al. (2011) suggest that businesses should always invest in research and development, and innovation to increase their competitiveness. In the context of TVET institutions, research and development will arguably allow the institution to stay ahead of the curve by continuously improving its programme offerings, identifying market trends, and exploring new frontiers.

2.4 Critical Success Factors as a Strategic Planning Tool

While there are several intertwining definitions of strategic planning across literature, this study adopts Wolf and Floyd's (2017, p.5) definition. They defined strategic planning as a formalised recurring process that provides a structured approach to strategy formulation, application, and control. Its goal is to influence an organisation's strategic direction for a specific period, as well as to coordinate and combine purposeful and emerging critical decisions. While there are diverse underlying models of the strategic process, such as the synoptic planning theory and the Harvard policy model among many others, to stimulate theoretical context for this study, the goal-setting model, which is utilised to provide a structural framework for establishing objects and targeting organisations, will be explored.

A critical role for public managers is to set clear strategic goals which are directly connected to the measurement and improvement of organisational performance (Jung & Lee, 2013). The goal-setting theory was jointly developed by research pioneers Edwin Locke and Gary Latham in 1990, through the integration of hundreds of studies involving thousands of participants (Locke & Latham, 2019). According to the goal-setting theory, tangible goals, strategies, and plans

should be developed to comprehend what an organisation seeks to accomplish and how to achieve it. The theory suggests that organisations perform better as goals guarantee that resources and activities are oriented on tackling central issues and that employees and stakeholders understand the organisation's priorities (George et al., 2019, p. 812). When properly applied, the technique works consistently to improve an individual's and a team's performance, and by extension the organisation.

Most organisation's strategic planning processes are, in general, a hybrid of various models and approaches (Griggs, 2021, p. 22). Invariably, organisations have the capacity to mould their strategic practices into what is ideal for them in the end. The main objective of this study is to appraise the factors contributing to the success of TVET institutions management in Jamaica, which can be recommended as a sustainable development tool. Critical success factors are the primary areas that entities use to measure their success. As a planning tool, it is used as the main areas of priorities for the organisation which are aligned with the various stakeholders' values and beliefs. Strategic planning can provide a systematic, explanatory, and intentional approach to strategy formulation, as well as clarity within and beyond the organisation concerning what its priorities are (George et al., 2019, p. 816). The concept of goal-setting theory can be a useful planning tool for TVET institutions, aligning with various critical variables such as the quality of teaching and learning, student centredness, adequate funding, availability of qualified staff, partnerships, labour market demand, and programme quality and relevance that influence the success and effectiveness of these educational organisations. By considering and applying the principles of goal-setting theory to the key variables of this study, TVET institutions can enhance their strategic planning, improve outcomes, and better meet the needs of their stakeholders.

2.5 Jamaica Educational Sector Framework

As part of the Greater Antilles, Jamaica is the third-largest island and the fifth-largest of all the Caribbean islands (Jamaica, n.d.). Jamaica is located roughly 191 kilometres west of Hispaniola and 145 kilometres south of Cuba, with a surface area of approximately 10,990 square kilometres (4,240 square miles). Having a population density of 273 persons per square kilometre, Jamaica's estimated population between 2014 and 2019 was 2.73 million spread throughout its fourteen parishes (Statistical Institute of Jamaica, 2017). In 2015, the literacy rate among the population aged 15 years and older was a total of 88.1% (Jamaica, 2017). While the literacy rate among the population aged 15-24 years, was 96.3%. It is however the Government's aim since the publishing of the Vision 2030 Development Plan in 2009, that by 2030, more than 98% of the population who are 15 years and older be fully literate (Planning Institute of Jamaica, 2009a, p. xxv1). Suffice to say, there has been steady improvement towards this goal.

Table 2.1

Jamaica Literacy Rate

	Total	Male	Female
15-24 years	96.3	93.9	98.8 (2014)
15 years and older	88.1	83.4	92.7 (2014)
65 years and older	66.6	60.4	72 (2014)

Note. Adapted from Jamaica. (2017, April 12). UNESCO

UIS. <https://uis.unesco.org/en/country/jm>.

The Ministry of Education Youth and Information (MOEYI) is the government agency in charge of managing and administering public education in Jamaica (About the ministry – MOEY, n.d.). Through its prescribed legislative and strategic framework, policies, educational plans, programmes, and resources, it currently fulfills the responsibility of the Jamaican government to

ensure that all Jamaicans have access to high-quality education and training to maximise individual and national development. Formal education is managed by the government, either alone or in collaboration with churches and trusts. The Ministry's role is effectively carried out through the implementation and operation of a variety of functions mandated by its divisions, agencies, and administrative regions to ensure cohesiveness with national developmental goals (Morris, n.d.). Its bold philosophy, 'Every child can learn, every child must learn,' would have implied that Jamaica's educational policies had already taken into account the principles of transformational leadership, intercultural, and multicultural education. As a result, regardless of colour, class, or creed, every child, citizen or otherwise, must be given an equal opportunity to learn (Gordon, 2021).

As opined by Olseen (2004), it is imperative to recognise and comprehend that it is vital for policy's roots and deciding factors concerning social, cultural, political, and economic elements, to extend outside its national production setting. Educational policy paradigms are feasible and should encourage equity-driven school change, as well as initiatives to foster conditions that allow educational advances to take root, thrive, and bear fruit in students' lives (Anyon, 2005, p. 20). These are not normally developed in a vacuum but should draw on various levels of sophistication in society to shape their final output.

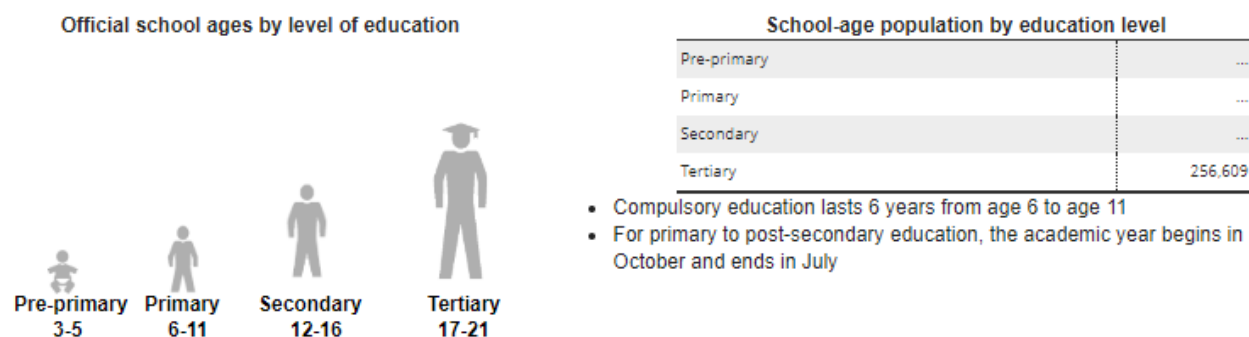
The educational legislative and regulatory framework of Jamaica has gone through a myriad of stages of development over the past few years. Despite the many changes, The Education Acts of 1965 and 1980 are the law that governs the sector and have helped to shape a dynamic educational system, that prepares literate and numerate students to achieve and explore their full potential while responding to national and global demands. The Education Acts of 1965 and 1980 introduced several key provisions that have had a lasting impact on the educational system. These

provisions include management and operation of Public Educational Institutions, Correspondence to the Ministry, Health, Safety, Use of School Premises, Records, Tertiary Institutions, and Board of Management to name a few (The Education Act: The Education Regulations, 1980). Although the act is antiquated and much revision is needed to fit twenty-first-century educational standards, the measures have been extremely important in the general administration of public educational institutions. However, it is insufficient to address the changing needs of a modern educational system, especially that of technical and vocational. Therefore, it is essential to revise and update the Act to reflect current educational standards.

According to the Education Act of 1980, the school system is divided into four levels, catering to both public and private institutions (Planning Institute of Jamaica, 2009a; MOEYL, n.d.).

Figure 2.1

Jamaica Education System



Note. From Jamaica. (2017, April 12). UNESCO UIS. <https://uis.unesco.org/en/country/jm>.

These levels are defined as early childhood (3-5 years), primary (6-11 years), secondary (12-17 years of age ***conditional 18-19**), and tertiary (17 onwards), in which the system not only focuses on structure but also management and performance. There are various related institutional frameworks that span across the school system, both in public and private institutions. Among the

major policies and laws that govern the sector, other portfolio agencies and bodies that are directly related to the governance of the education sector are as follows:

Table 2.2

Education Sector Portfolio Agencies

Portfolio agencies and bodies directly related to the governance of the education sector	
The National Council on Education (NCE) Act, 1993	The HEART NSTA Trust (National Training Agency)
The National Education Inspectorate (NEI)	The Jamaica Teaching Council (JTC)
The Early Childhood Commission (ECC)	The National Education Trust (NET)
Jamaica Tertiary Education Commission (J-TEC)	Jamaica Library Service (JLS)
The University Council of Jamaica (UCJ)	Council of Community Colleges of Jamaica (CCCCJ)

Note. Author's elaboration of the education sector's portfolio agencies.

A high-quality education system requires effective governance of public educational institutions. Therefore, School Boards are appointed and mandated to provide the necessary governance within the institutions, in establishing the culture and defining the respective standards. Evidence suggests that effective school boards can help their schools succeed. To accomplish this, school boards must clarify their roles and responsibilities and ensure consistency between their objectives and the experience and skills of board members (Pont et al., 2011, p. 11). In recognition of the important role that School Board has in ensuring effective leadership within these institutions, the National Council on Education handbook was developed to give a comprehensive overview of the legal, regulatory, and policy framework governing public educational institutions, that guides the boards in being effective in carrying out their administrative functions (Morris, n.d).

The policy framework for enrollment of a new school year begins September of one year and ends July the following. According to data from the Statistical Institute of Jamaica, the government accounts for 94.3% of gross enrollment at the primary level, 102% at the lower secondary level, and 111.8% at the upper s

econdary level. The majority of funding for education comes from the national budget, which is allocated by the Government of Jamaica (Planning Institute of Jamaica, 2009a). In terms of the proportion of the country's annual budget and gross domestic product (GDP) earmarked for this industry, Jamaica ranks among the top 20% of nations. The total recurrent and capital expenditure allocated to the Ministry of Education in 2016 was \$91,848,094 from an allocated amount of \$ 75,741,557 in 2011 (Jamaica, 2017). Nevertheless, based on the Jamaica 2021 Reform of Education report, within the tertiary sector, a number of issues have been identified. These issues range from equity and access concerns to funding concerns.

According to the Vision 2030 National Development Plan, expanding access to postsecondary education is the sector's primary objective. In committing to the United Nations transforming our world 2030 agenda for sustainable development, this goal is directly proportionate to Sustainable Development Goal 4.3 (SDG4.3). The goal states, *by 2030, to ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university* (Transforming our world: The 2030 agenda for sustainable development | Department of Economic and Social Affairs, n.d.). This goal is measured by the Gross Enrollment Ratio (%) (GER), which is the number of students enrolled in education at any given level irrespective of age, expressed as a percentage of the official school-age population corresponding to the same level of education (Jamaica Tertiary Education Commission, 2021).

In contrast to the base of 29% enrollment in 2005/06, the Vision 2030 Education Sector Strategic Plan sought a 33% boost in student enrollment by 2010. This incremental increase would have resulted in an enrollment rate of 38.67 % in 2010. In addition to the mentioned, with roughly 40,600 students enrolled in post-secondary institutions in 2009/2010, the National Education Strategic Plan also aimed for a targeted increase of 50% over the 2009 tertiary enrollment by 2016. Furthermore, the Ministry of Education, Youth, and Information (2017) announced that by 2030, it hopes to double the gross enrollment rate, which in 2017 stood at 28.5%. Even so, Jamaica has not been able to meet these targets and is not on track to do so. As can be gleaned from the data, these targets have not been met by Jamaica, and the country is not on track to do so.

When compared to other fellow Caribbean states between 2005-2014, such as Barbados and Guyana are 65.43% (2011) and 12.48% (2012), respectively, placing Jamaica's rate of 32% in the middle, Jamaica has not been maintaining a competitive gross enrollment ratio (Jamaica Tertiary Education Commission, 2021). This is lower than the global, Latin American and Caribbean, Upper Middle-Income Countries, and Caribbean Small States averages of 39%, 53%, 53%¹², and 33%, respectively. At just 27%, the enrollment rate is currently lower than both the major economies' enrollment rates and the Vision 2020 targets (Patterson, 2021, p. 237).

Table 2.3*Number of Tertiary and Other Institutions By Parish: 2009/10-2016-17*

Parish	2013	2014	2015	2016	2017	2018
Jamaica	17.0	17.0	17.0	17.0	17.0	20.0
Kingston	0.0	0.0	0.0	0.0	0.0	3.0
St. Andrew	7.0	7.0	7.0	7.0	7.0	7.0
St. Thomas	0.0	0.0	0.0	0.0	0.0	0.0
Portland	1.0	1.0	1.0	1.0	1.0	1.0
St. Mary	0.0	0.0	0.0	0.0	0.0	0.0
St. Ann	2.0	2.0	2.0	2.0	2.0	2.0
Trelawny	0.0	0.0	0.0	0.0	0.0	0.0
St. James	2.0	2.0	2.0	2.0	2.0	2.0
Hanover	0.0	0.0	0.0	0.0	0.0	0.0
Westmoreland	0.0	0.0	0.0	0.0	0.0	0.0
St. Elizabeth	1.0	1.0	1.0	1.0	1.0	1.0
Manchester	1.0	1.0	1.0	1.0	1.0	1.0
Clarendon	1.0	1.0	1.0	1.0	1.0	1.0
St. Catherine	2.0	2.0	2.0	2.0	2.0	2.0

Note. Adapted from Statistical Institute of Jamaica. (2017). *Education Statistics*.

https://statinja.gov.jm/Demo_SocialStats/Education.aspx.

As shown in Table 2.3, when compared to 2013, Jamaica saw an increase in the amount of tertiary and other institutions in 2018, from 17 to 20. This 17% increase came in the nation's capital Kingston, and largely in 2018. This improvement should have compensated for the increase in access to tertiary-level education over the proposed periods. As it relates to government expenditure on education, vocational education only accounted for a meagre 17.3% of the total allocation in 2019 (Dynamic TVET country profiles, 2022). Parishes such as St. Thomas, St. Mary,

Hanover, and Westmoreland are yet to have a tertiary institution. It, therefore, means that persons in those areas would have to gain access to higher-level education in neighbouring parishes. The data reinforces Morris's (2013, p. 2013) position to guarantee that an adequate number of students are available for enrollment and that solid retention and inclusion rates are achieved, TVET facilities should be established near populated areas. There were no other changes in the tertiary landscape concerning the number of institutions over the reporting period.

2.6 The Historical Context of Higher Education in Jamaica

Education in Jamaica progresses along a timeline framed by key historical events that influenced policies, structure, mandates, and organisation, as well as access (Thomas, 2020). The Jamaican higher education sector is comprised of a diverse, semi-autonomous, and self-sufficient set of institutions and programmes (The University Council of Jamaica, 2019). Since the country's independence in 1962, the sector has grown significantly, with a noticeable increase in local and international providers, as well as various modalities for learning and knowledge exchange. Looking at Jamaica's educational history through the lens of the island's colonial past is the best way to understand how it has shifted over time.

The previous education system and administration in Jamaica were modelled after the British system, and many changes in Jamaican education history can be viewed as reactions to events such as the abolition of slavery in 1834 and the country's independence in 1962 (Jamaica – History & background, n.d.). Before emancipation, only children of the wealthy white planter class received an education, which included tutoring at home followed by boarding school in England. After independence, education advancement was limited for a few non-whites, and it was only available to a select few who were regarded as brilliant children from poor families. The move furthered the goal of making black and brown Jamaicans accept their place in the social order

based on race and colour (History of Education in Jamaica, n.d.). There was a parallel system in place during the pre-independence era, from the 1900s to the 1950s, with brilliant and wealthy children attending traditional high schools. The only way in was to pay a fee or, in the case of a select few, receive a scholarship. Because they had no regard for local expertise, the British provided education, courses, textbooks, assessments, and other educational services.

Purcell (1999) and Sherlock and Bennett (1998) further described the reform as a diluted form of self-government administered in gradual doses to suit imperial purposes, following the 1943-1944 Plan for Post-Primary Education in Jamaica and the Kandel report that addressed the colony's educational, social, and economic conditions. The University of the West Indies (UWI) was established in Mona, Jamaica, in 1948 as part of the island's and the British Caribbean's push for self-sufficiency, as recommended by the Asquith Commission. Because Jamaica had been forced to import university graduates from the United Kingdom to serve as senior personnel in secondary schools, this was a significant step toward educational independence. The establishment of the Department of Education at the University of the Virgin Islands (UWI) in 1952 was a critical step toward the development of a completely "home-grown" educational system, and it marked the beginning of the sector's educational agenda, vision, and mission. The late Honourable Norman Manley, a national hero and possibly the most well-known leader of the People's National Party, and former Education Minister Burchell Whiteman were among the forerunners of these changes (Bourne & Owen-Wright, 2018).

2.6.1 The Historical Development and Transition of TVET in Jamaica

Advanced technical and vocational education are important components of Jamaica's tertiary education system, which predates many current academic/conventional education systems. The first sign of vocational education in the Caribbean dates back to the 19th century, when an

apprentice programme was established, in teaching individuals' crafts or trades by someone who was already engaged in it. Still governed by colonialism rule, payment for the instruction was made in the form of a set number of years of work returned to the said establishment or concern (Morris & Powell, 2013, p. 2). Kingston Technical High, established in 1896, was Jamaica's first technical school, and as such, introduced curricula that represented alternative educational directions to the traditional academic programmes of study in high schools.

Other developments in the region included the *Draft Plan for Educational Development in Trinidad and Tobago, 1968-1983*, and the establishment of the Vocational Training Development Institute (VTDI) in 1970. The VTDI was established as a joint venture between the International Labour Organisation (ILO), the United Nations Development Programme (UNDP), and the Government of Jamaica (McArdle, 2004; Vocational Training Development Institute, 2022). The goal was to address the dual issue of unemployment and unskilled labour in Jamaica and the rest of the English-speaking Caribbean. On January 1, 1976, the Jamaican government assumed full responsibility for the institution. The VTDI was transferred to many government ministries between 1972 and 1990, before being assigned to the HEART Trust/National Training Agency in 1992 as the tertiary arm of the agency (Vocational Training Development Institute, 2022). As of August 2023, the VTDI has been reassigned from HEART to the MOEY as a public higher education institution (Vocational Training Development Institute, n.d.). The institution's mandate is to train and develop the instructional competencies of TVET instructors, teachers, and trainers, as well as the technical skills and competencies of industry experts.

The *HEART Act of 1982* was tabled by former Jamaican Prime Minister, the Most Honourable Edward Seaga, in the House of Representatives. A coordinating function was intended for HEART, but training programmes were distributed among different government ministries

with different agendas, resulting in poor performance (McArdle, 2004, p. 168). Slow economic growth, a high proportion of the unskilled population, and rising rates of workforce migration have all had a significant impact on the country's TVET policy, which has now evolved into a model for the Caribbean and other developing countries worldwide and is embodied in the operation of the HEART Trust/NTA (*World TVET Database Jamaica*, 2012, p. 5). The HEART Trust/NTA is now the largest TVET provider in the Caribbean, offering a variety of technical and vocational programmes.

The Act aimed to reduce unemployment and provide vocational training across the island of Jamaica to meet the demand for solutions to the country's persistent underdevelopment problem (HEART TRUST/NTA, 2007). As previously indicated, the HEART Trust/NTA now falls under the Office of the Prime Minister (OPM) of Jamaica and is Jamaica's facilitating and coordinating body for technical, and vocational education, training, and workforce development. In addition to facilitating career development and employment services, they provide skills training in its institutions, as well as in the workplace, assessment, and certification to all working-age Jamaicans.

2.6.2 Technical Operating Model and National Qualification Framework for TVET in Jamaica

The Technical Operating Model (TOM) describes a system by which the HEART NSTA Trust and the National Council on Technical and Vocational Education and Training, (NCTVET), develop, implement, assess, and certify the outcomes of standard-based training programmes (HEART Trust/NTA, 2004). It describes the key areas identified by the HEART NTSA Trust and its industry partners, which required improvement and incremental changes, strategies and recommendations given the challenges to function effectively. With the passage of the 1982

HEART Act, it created an avenue for training and employment opportunities for youth. Employer contributions are essential to ensuring that Jamaica's workforce is dynamic, vibrant, and furnished with the technical competence and skill required to drive business productivity and competitiveness.

Through a 3% payroll levy, this Trust enabled Jamaica to operate an island-wide network of training programmes and institutions, as well as to establish an infrastructure of technical resources for planning and developing training programmes. During the 1980s, HEART established six academies with mixed records of success at linking young people to the labour market (HEART Trust/NTA, 2004; McArdle, 2004). The poor success continued to the early 1990s and was characterised by several reasons despite being aligned with the Caribbean Community and Common Market (CARICOM) Strategy for the Development of Technical and Vocational Education and Training. These include the support infrastructure for developing effective training programmes, and ensuring quality were noticeably less successful and slower to develop, public institutional employment training programmes had been of poor quality and poorly coordinated, and with a few exceptions, the outcomes in terms of graduate employment rates were not significantly positive (HEART Trust/NTA, 2004). Employer involvement in the system was low or non-existent, and training could ultimately be viewed as a social benefit instead of an economic mechanism designed to connect youths to employment.

Under various leadership, the HEART NSTA Trust has continually made commitments to becoming an industry and demand-driven organisation dedicated to providing training based on employer-established standards. The work of HEART NSTA Trust is supported by a complex administrative structure as well as a broader governance framework that includes the full range of stakeholders in the labour market as well as in the training and educational systems (Cowell &

Gregory, 2019). According to HEART Trust/NTA (2004) as part of their continuous improvement programme, in 2001 they re-examined the implementation of the standard-based model among other things. Striving for international best practices, TVET systems in countries such as New Zealand and Australia were studied, and those systems were successfully adopted and piloted in 2003.

Since its inception, the HEART NSTA Trust has however reshaped and restructured its mandate, now boasting 26 formal HEART TVET institutions and over 80 Community Training Inventions (CTI) programmes, numerous nationwide partnerships, and special projects in a wide range of industries (Our story – HEART/NSTA trust, 2020). To date, more than 613,000 individuals have been trained and over 254,000 certified by the NCTVET (HEART NSTA/Trust, 2022). Additionally, the viability of the offered programmes is due to the success stories of those who have gone through the TVET system. These success stories demonstrate the potential of the TVET system to create opportunities for individuals to gain the necessary skills and qualifications they need to pursue a successful career or entrepreneurial venture.


The National Qualifications Framework of Jamaica (NQF-J), however, is an instrument used in the classification of awards, developed, and implemented by the Jamaica Tertiary Education Commission (J-TEC). It allows for all qualifications, knowledge, and skills; enables cross-border recognition; recognises informal learning; and increases access to higher education. The NQF-J seeks to accomplish the following (National Qualifications Framework, 2018):


1. Combine the delivery of education and training into our unified framework.
2. Make it easier for students to enter the educational system and advance both vertically and horizontally within it.
3. Improve educational quality in Jamaica.

4. Increase access to education and employment opportunities for everyone.
5. Allow students to develop their full potential.

Figure 2.2

Alignment of the NQF-J with Education and Training Sector

Levels	Jamaican Tertiary Education Sectors					
	General Education	Technical & Vocational	Occupational Degrees	Tertiary Education	Lifelong Learning	
8		C/NVQ 8	Applied Doctorate	Doctoral Degree	Prior Learning Assessment and Recognition (PLAR)	
7		C/NVQ 7		Masters Degree		
6		C/NVQ 6	Occupational Masters	Post Graduate Certificate/ Diploma		
5		C/NVQ 5	Occupational Bachelors	Bachelors Degree		
4		C/NVQ 4	Occupational Associates	Associates Degree / Advanced Diploma		
3	Certificate (Upper Secondary)	C/NVQ 3		Diploma		
2	Certificate (Upper Secondary Leaving)	C/NVQ 2				
1	Certificate (Lower secondary)	C/NVQ 1				
	Access Point 2					
	Access Point 1					



Note. From *The national qualifications framework*. (2018, November 14). J-

TEC. <https://jtec.gov.jm/the-national-qualifications-framework/>.

Each qualification on the NQF-J illustrates what a student should know or be able to do. There is a consensus that students can be recognised in multiple contexts and that their skills and knowledge will be transferred across qualifications. The NQF-J recognises awards such as degrees, diplomas, and certificates (Jamaica Tertiary Education Commission, 2015). As seen in Figure 2.2, of all the qualifications within the NQF-J, the Caribbean/National Vocational Qualifications (C/NVQ) is in alignment with and spans all eight levels. This further strengthens the need for an

overarching framework that governs technical and vocational institutions within Jamaica, and possibly, by extension, the region.

2.7 Technical Vocational and Educational Context

Technical and vocational education and training (TVET), also known as Apprenticeship Training (AT), Vocational Education (VE), Vocational Education and Training (VET), Career and Technical Education (CTE), Dual Vocational Education and Training (DVET) and Technical Vocational Education (TVE), is an educational system or scheme that integrates knowledge, attitude, and skills training across occupational industries and fields. Although it is known by different names in various countries, essentially it all connotes the same thing. It aims to produce skilled workers in specialised professions (Abdullah et al., 2021, p. 80). TVET is a critical strategic approach to workforce development and global competitiveness that is underpinned by the constructivist learning theory. According to constructivist theory, meaningful learning happens when learners actively interpret and develop their experience internally (Abdullah & Ziden, 2013, p. 73). This theory's purpose is to promote problem-solving and intellectual development according to Jonassen (1999) cited in Abdullah and Ziden (2013, p. 75). Based on these values, Jonassen (1999) provides a summary of constructivist learning environments:

1. Learning motivated by an ill-defined or poorly organised problem (or topic, case, or project),
2. A challenge or learning goal “owned” by the student,
3. Experienced-based instruction that facilitates knowledge development (meaning-making),
and
4. Learning that is both active and authentic.

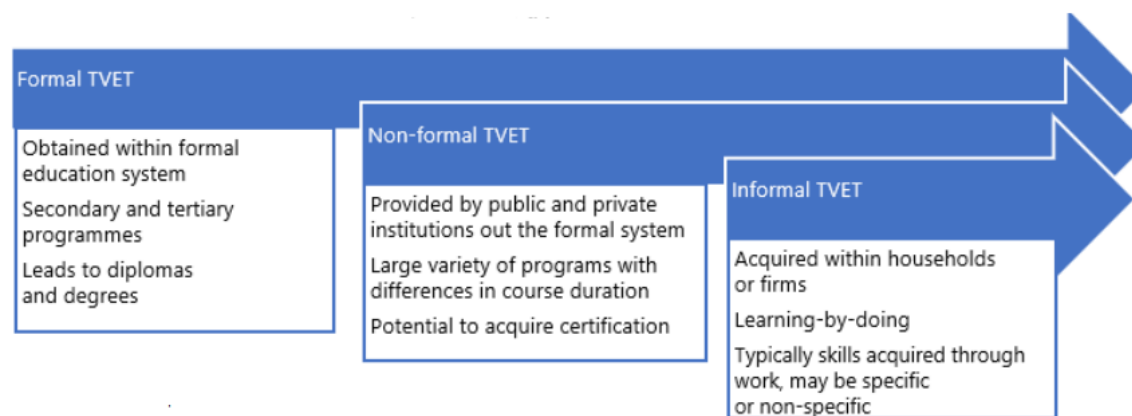
This theory is particularly ideal for use in TVET systems to develop 21st-century TVET students. Jonassen's constructivist learning environment model also cited in Abdullah and Ziden (2013) emphasises the importance of constructing knowledge through active learning, rather than passively receiving it. It emphasises the importance of learning through experimentation, exploration, and discovery. The model also emphasises the importance of reflection and critical thinking as an essential part of learning. This student centred approach encourages learners to be proactive in their learning, rather than simply taking what is presented (Okuta & Yayock, 2018; Siew et al., 2020).

According to the United Nations Organisation for Education, Science, and Culture (UNESCO), TVET is a value-added component of general education that integrates technology, sciences, practical skills, attitudes, understanding, and information about employment in various economic and social sectors. Many Organisations for Economic Cooperation and Development (OECD) countries have expressed strong policy interest in promoting structured work-based learning schemes (Kis, 2016). These include Scotland, the United Kingdom, France, Germany, the Netherlands, and Australia just to name a few. Traditionally, vocational education has been associated with educational provision geared toward occupational learning for jobs that are perceived to require only lower-level skills, commonly 'manual' rather than 'intellectual' skills (Moodie, 2002 as cited in Mazlan et al., 2015). This therefore means vocational education and training would not necessarily appear to be the first choice when it comes to education selection. Nevertheless, public expectations have shifted from a traditional and modernist worldview that consigned TVET to a more accommodating and equitable postmodernist perspective (Subran, 2013). It has also been demonstrated that TVET in developed countries can improve economic development, industrial expansion, and competitiveness (UNESCO, 2021, p. 1).

In addition to the mentioned, TVET can be used as an instrument for promoting environmentally sound, long-term development and a method of easing poverty among many others (Wahba, 2012, p. 3). Consequently, developed countries believe that TVET can help non-academically oriented individuals secure jobs as semi- or full-skilled workers in a specific career. It also provides persons with critical thinking skills as well as the practical skills needed to enter the job market (UNESCO, 2021, p. 1). Therefore, given the direction of the world of work, the initial perspective on TVET has changed significantly. TVET can be viewed as a life-long learning process that underpins the economy's social and economic well-being by serving as a driving force for the development of human capital.

Figure 2.3

TVET Modalities as A Life-Long Learning Continuum



Note. From Hanni, M. (2019). Financing of education and technical and vocational education and training (TVET) in Latin America and the Caribbean.

Formal TVET refers to technical and professional programmes offered within the formal education system that lead to degrees or other types of related certifications (Hanni, 2019, p. 11). Conversely, non-formal TVET refers to education and training provided outside of the formal educational system, where admission does not always require completion of formal education.

Unlike formal TVET, which usually results in a professional certification at the end of studies, non-formal programmes may improve skills and employability but do not always certify or accredit the education received.

Informal TVET, on the other hand, is primarily concerned with the acquisition of skills through practice (Hanni, 2019). This type of learning is common in the world of work, particularly in entry-level and low-skilled jobs such as practising or learning a trade where the knowledge required to complete tasks is not complicated. Albeit this type of TVET may appear challenging for some to quantify, learners can be assessed using on-the-job assessment instruments. While there is a myriad of factors that contribute to the type of TVET programmes offered, consideration also has to be given to the country's initial labour market situation (Nam, 2009). Applying the requisite analyses of the labour market is likely to contextualise a TVET system that creates a bridge in matching global trends within the skill sphere and informs national educational and employment policies with empirical foundations.

2.7.1 TVET Contributions to Global Sustainability

Vocational education is an inseparable part of societal development and contributes significantly to a country's economic value (Mack & White, 2019; Fiandra et al., 2021). The authors' argument offers a very positive narrative for TVET. Nevertheless, this interconnectedness can occur only when the proper and sufficient systems have been established. According to Zainuren (2020), as mentioned in Abdullah et al. (2021), vocational education is the most important factor in overcoming poverty, promoting peace, protecting the environment, enhancing quality of life, and attaining sustainable development. In this sense, TVET institutions must ensure that the outputs fulfil or exceed the ambitions of the National Educational Philosophy by producing

individuals with balance and prosperity capable of serving religion, race, and nation (Abdullah et al., 2021).

International Policy Agendas

On the international and national policy agendas, skill development and TVET are becoming increasingly important. For instance, in promoting TVET, UNESCO asserts that market-driven technical and vocational education is more effective in increasing employment and income for the underprivileged (Adams, 2011 cited in Baraki & van Kemenade, 2013). The United Nations 17 Sustainable Development Goals (SDG) also further promote vocational training and skills development across various SDGs targets, such as 1, 4, 8, 9, 10 and 11 (UNESCO, 2018; Transforming our world: The 2030 agenda for sustainable development | Department of Economic and Social Affairs, n.d.). These targets are related to poverty eradication, education, decent work and economic growth, infrastructure and industry innovation, reduced inequalities, and sustainable communities. Under Vision 2030, Jamaica has four national Goals that are mapped into 15 National Outcomes. The National Outcomes reflect the desired changes in development conditions and, when met, result in the achievement of the National Goals (Planning Institute of Jamaica, 2009a, p. xxv). Each outcome is linked to a particular goal, and together they form the road map for success and achievement under Vision 2030 Jamaica.

Figure 2.4*Jamaica National Outcomes Linked to Goals*

National Goals	National Outcomes
1 Jamaicans are empowered to achieve their fullest potential	1. A Healthy and Stable Population
	2. World-Class Education and Training
	3. Effective Social Protection
	4. Authentic and Transformational Culture
2 The Jamaican society is safe, cohesive and just	5. Security and Safety
	6. Effective Governance
3 Jamaica's economy is prosperous	7. A Stable Macroeconomy
	8. An Enabling Business Environment
	9. Strong Economic Infrastructure
	10. Energy Security and Efficiency
	11. A Technology-Enabled Society
	12. Internationally Competitive Industry Structures <ul style="list-style-type: none"> • Agriculture • Manufacturing • Mining and Quarrying • Construction • Creative Industries • Sport • Information and Communications Technology • Services • Tourism
4 Jamaica has a healthy natural environment	13. Sustainable Management and Use of Environmental and Natural Resources
	14. Hazard Risk Reduction and Adaptation to Climate Change
	15. Sustainable Urban and Rural Development

Note. From Planning Institute of Jamaica. (2009a). *Vision 2030 Jamaica: National development plan*.

Narrowing on National Goal number one and National Outcome number 2: World-Class Education and Training, it is the intention under Vision 2030 that Jamaica will have an education and training system that produces well-rounded and qualified individuals capable of functioning as creative and productive members of society while remaining competitive within a global context (Planning Institute of Jamaica, 2009a). This will be done by improving on the reform foundations

and process that have commenced throughout the education system at all levels, strengthening of the contributions made by the HEART NSTA Trust to the delivery and training of a society of lifelong learners, and improving the capacity to support the holistic development of a child. Additionally, opportunities will be provided for the education and training of the under-trained population, particularly unattached youths (Planning Institute of Jamaica, 2009a). For this to be a reality for Jamaica, in having an education system that reflects sustainability and growth, where graduates can make meaningful contributions to an innovative society, there must be a well-integrated TVET system. The utilisation of technology, skill development, and opportunities for career advancement must be prioritised in this system. It should also emphasise the importance of entrepreneurship, critical thinking, and innovation.

Undoubtedly, one of the most important keys to long-term development is TVET. Wahba (2012) puts forward that TVET in most developing countries is expected to play two crucial roles in their national sustainable development. The first role is to provide increased school leavers with training opportunities and career advancement opportunities, and the second role is to provide skilled labour that is required at all levels of the economy. Technical and Vocational Education and Training bridges the gap between education and the workplace, allowing young people and adults to realise their full potential (UNESCO, 2022). According to MacDonald et al. (2010), a comprehensive, up-to-date, and effective TVET programme is essential to a country's effort to meet the growing demand and need for skilled labour and technicians across a wide range of sectors. Essentially, it is needed for the following reasons, increase levels of education and training cooperation between employers in the public and private sectors, boost productivity, reduce poverty by engaging in extensive and productive activities, enhance trade capacity and continue to develop priority sectors such as energy and the environment (MacDonald et al., 2010, p. 1).

Though TVET has been used as a tool for sustainable development in several developing countries, its full potential has yet to be realised. Wahba (2012) agrees that although developing countries have a large percentage of skilled persons, TVET has remained on the periphery, and its significance has not been fully recognised. TVET programmes, not only enable a country to produce the highly skilled workers required to propel economic growth, development, and poverty abatement, but it is also a driving force for global sustainability.

Even though some countries have failed to understand and capitalise on its full potential, vocational education continues to play an important role in advancing global sustainability through numerous means. TVET programmes give people from diverse backgrounds the chance to pursue training and education that may result in sustainable livelihoods. TVET contributes to poverty reduction and sustainable development by fostering social equity and inclusion (International Labour Organization, 2018b). Through the incorporation of training in green skills and sustainable practices, TVET programmes have also sought to equip individuals with the skills and knowledge necessary to support environmentally friendly industries and practices (European Training Foundation, 2016). These practices have helped to reduce carbon emissions and promote sustainable use of resources. Additionally, in its support of the development of sustainable industries, it also focuses on filling the skills deficit in notable sectors such as environmental conservation, renewable energy, green technologies, and sustainable agriculture (UNESCO-UNEVOC, 2017).

Entrepreneurship and Technology Innovation

The potential of TVET extends beyond satisfying the demands of employers; it also fosters entrepreneurship and innovation through the promotion of sustainable technology solutions and technologies in a fast-evolving technology landscape. Through promoting problem-solving, the

culture of creativity, and the useful application of knowledge, TVET encourages entrepreneurship skills and innovation by creating start-ups, small businesses, and creative initiatives (OECD, 2017; UNESCO-UNEVOC, 2020). Technology innovation and management are common components of entrepreneurial training, enabling students to utilise technology in their business efficiently. With the rapid demands of emerging technologies, TVET programmes also have the potential to equip students with the requisite skills to match these demands. There has been a great deal of change in TVET in the past two decades, where there has been a shift from the industrial to the information era. To fulfil the demands of the information economy, Richardson and Herd, cited in Odondi et al. (2022), numerous developed and emerging countries are developing reform plans for technical and vocational education. Training in areas such as robotics, artificial intelligence (AI), and information technology allows TVET to prepare individuals for the digital economy (Odondi et al., 2022). In this regard, TVET institutions would need to continuously update their curriculum to keep abreast of advancements in technology.

Technology integration within these curricula reforms enhances students' digital literacy, equipping them to efficiently navigate and use digital tools effectively across multiple sectors. Reform is driven by its integration, which is particularly consistent with the constructivist, project-based approach to student learning goals. Studies highlight the necessity of curriculum revisions to ensure that graduates are prepared for the workplace and to incorporate new technology into TVET (UNESCO, 2020). According to Odondi et al. (2022), digital literacy is essential for modern workplaces, and TVET programmes give a strong emphasis on the competencies associated with software, digital tools, and platforms. To keep up with technological advancements, adapt to technological disruptions, and foster a culture of lifelong learning, TVET programmes are increasingly partnering with industries. TVET institutions can offer hands-on training and

internships that integrate cutting-edge technologies thanks to partnerships with technology corporations (International Labour Organization, 2018a). These partnerships aid in bridging the knowledge gap between industry demands for a technologically savvy workforce.

Sustainable Infrastructure Development Through Technology Integration

In addition to technology integration in the curriculum, TVET institutions have sought to add cutting-edge technology and software within their facilities as part of their sustainable development. Some successful TVET institutions include TAFE Queensland in Australia, Technical and Vocational Training Corporation in Saudi Arabia, Technical University of Kenya, Singapore Polytechnic, and the German Dual Vocational Technical initiatives (Müller et al., 2018; Smith, 2019; Jones & Wang, 2020; Ali & Rahman, 2021; Tan & Lim, 2022). Through studies, these institutions have excelled in areas like sustainable infrastructure development, energy-efficient systems, smart building technologies, and technology integration in facility management, contributing to their overall success in TVET education.

For instance, the research on smart building technologies at TAFE Queensland in Australia led to a substantial reduction in energy consumption and operational costs, ultimately enhancing the institution's sustainability practices (Smith, 2019). Jones and Wang (2020) found that the Technical University of Kenya experienced an improvement in facility monitoring and maintenance efficiency as a result of the integration of Internet of Things (IoT) devices, which in turn led to greater resource utilisation and enhanced service quality. Additionally, the German Dual Vocational Training programme's use of cutting-edge software systems optimised facility maintenance procedures, resulting in increased productivity and lower costs (Müller et al., 2018).

Research at the Saudi Arabian Technical and Vocational Training Corporation concentrated on putting energy-efficient technologies into place, which significantly reduced costs

and enhanced the institution's sustainability practices (Ali & Rahman, 2021). Tan and Lim (2022) conducted similar research at the Singapore Polytechnic post-secondary educational institution on the integration of smart building technology, which improved resource utilisation and operational efficiency. The findings of these studies demonstrated how integrating cutting-edge technology into facilities management improves TVET institution's overall success. Recommendations included staff training to guarantee efficient use of the introduced technology, routine maintenance of smart systems, and continual tracking of energy consumption. The integration of these sustainable systems forms part of their internal quality assurance controls.

In summary, TVET is essential to a nation's economic sustainability and viability since it emphasises employability, entrepreneurship, and skill development in line with global agendas and economic diversification. In promoting a culture of lifelong learning and continual development, TVET provides the workforce with the tools it needs to adjust to technological upheavals. With the swift progress in technology and digitalisation, TVET provides students with pertinent skills, through continuous curriculum development to satisfy industry requirements. By highlighting the value of learning new skills and working in conjunction with industries, TVET encourages digital literacy, assists people in staying relevant, and builds resilience against technological shifts.

2.7.2 TVET Verses Traditional Teaching and Learning

According to Patterson (2021), Jamaica has historically struggled with technical training for its youth, with prejudice against TVET compared to traditional academic programmes. There are several reasons to argue that vocational learning and education differ from traditional academic teaching and learning (Guthrie et al, 2009; Winch, 2013, Stone, 2024). Academic education has traditionally been used to refer to traditional programmes leading to degrees ranging from associate

to doctoral. Traditional education requires the students to passively receive preset answers given by the teacher (Okuta & Yayock, 2018). The teachers are the primary instruments by which knowledge is imparted, and these norms and behaviours are enforced. Advanced vocational or professional education, on the other hand, includes certificates, diplomas, and professional designations in fields like engineering, medicine, accounting, and project management (The University Council of Jamaica, 2019, p. 20-21). Vocational education not only focuses on Competency-Based Education and Training (CBET) methodology, which emphasises the application of practical skills, but it also deviates from teachers providing only content to learners. These routine skills and activities should be executed through showing competence and confidence (Winch, 2013, p. 90). This means that TVET is more hands-on or practical than knowledge-based, making it student centred. CBET, also known as problem-based learning (PBL), promotes the development of technical skills in students that should be directly proportionate to those required by industry.

In examining the main ingredients of a competency-based system, Stone (2024) compared the trends in traditional training and competency-based training.

Table 2.4

Comparing Trends in Traditional Training and Competency-Based Training

Traditional Training Approach	Competency-Based Training Approach
Success is meaning determined by the ability to pass examinations.	Success is mainly determined by what can be done as a result of training.
The curriculum is organised around content, subjects, and length of course.	The curriculum is structured into modules or units. Each unit represents an outcome or set of all comes.
Recognition of prior learning and experience are not emphasised.	Prior learning and experience are key.

Emphasis is placed on learning in the classroom.	Emphasises that learning takes place in many settings; not just the classroom.
Entry requirements and limited duration are highly considered.	Learning is mode-free, age-free and without restricted time as possible.
Learner differences are not usually given high consideration.	Provision is made for different learning styles by providing learners with a range of learning experiences, materials, and media.
The teacher is the expert in the learning in the learning experience.	Learners are led to take responsibility for their learning. The teacher is a facilitator of learning.
Training is focused on passing examinations.	Training is focused on the demonstration of competence.
The final examination is a demonstration of competence.	The learner has multiple opportunities to demonstrate competence. Often there is no final “one shot” examination.
Assessment is determined by the teacher.	Learner-lead readiness is emphasised for assessment.
The final examination is the main method of assessment.	There are various methods of assessment, for example, portfolio building and projects.
Assessment is often a surprise.	Assessment conditions are given at the beginning of each course.

Source. Stone, W. I. (2024). *Introduction to competency-based education and training.*

The comparison between competency-based learning and traditional teaching methods makes it abundantly evident that the former gives students a clearer sense of their goals (Stone, 2024). Competency is an expectation that is held in high regard. It is a measure of an individual's ability to perform a task or a job. As shown in Table 2.4, in traditional teaching methods, student engagement often relies heavily on passive learning and rote memorisation, which can lead to disengagement and arguably boredom. In contrast, competency-based approaches emphasise active learning, real-world application, and mastery of skills, which can significantly enhance student motivation and involvement. This personalised learning experience fosters a deeper connection to the material and a more meaningful educational journey.

Okolie et al., (2021) discovered that TVET can enable the integration of theory and practice, motivate learning, improve students' self-efficacy, allow students to construct learning on their own, enhance graduate competencies, and graduate employability in their study of the implementation of problem-based learning. Powell and McGrath (2019) investigated why students enrol in vocational colleges, dispelling the notion advanced by quantitative literature that VET is for learners from impoverished families and of marginalised social origin. Among their findings were that students chose TVE because it was "a lot more hands-on," "kept them on the right track," and "they liked working with their hands," among other things. According to the study's conclusion, the students' main argument is centred on learning how to contribute to their communities, families, and the larger society. Similarly, in Stone's (2015) study on exploring the experiences and impact of competency-based education, the students emphasised that motivation was a clear benefit of competency-based education. An analysis of these perspectives vehemently aligns vocational education with sustainable development beyond one's unique circumstances.

In consonance with Raihan's (2014) study on collaboration between TVET institutions, forming strong relationships to improve the employability skills of TVET students and graduates is beneficial. The skills required during training form an obvious intervention of what is required for learners to make meaningful and effective societal contributions due to the constant need for collaboration between institutions and industry. Undoubtedly, this poses a strong emphasis on partnerships.

These arguments propose a broader discourse on effective learning that is not limited to mundane teaching methods or curriculum-based principles but is more focused on the student's development and acceptance of responsibility for their learning. It depicts students creating their own meaning for what they have learned while choosing a path that is compatible with their socio-

economic circumstances. These characteristics are also related to learners' accountability. While there is no doubt that the characteristics of an effective learner are those who actively engage in class, collaborate with other students and teams, and exhibit confidence, there needs to be a commonality of characteristics among TVET instructors and leaders of the system which would also dictate their effectiveness.

Challenges in CBET

Although CBET focuses on ensuring that learners acquire specific skills and knowledge to meet industry standards, there are several controversies and challenges related to CBET. One common challenge is the need for robust assessment methods to accurately measure student's competencies. Additionally, ensuring that competence taught aligns closely with industry alignments can be a challenge in CBET programmes. According to Brown and Miller (2020, p. 88), the two main issues facing educators are putting into practice efficient assessment methods and keeping competency-based training programmes relevant to the industry. Other challenges include ensuring consistent assessments of competencies, aligning curriculum with industry needs, and providing adequate support for students. Educators and TVET institutions can implement various strategies to overcome these challenges in CBET.

To address these challenges, TVET institutions and educators can implement rubrics for assessing competencies, collaborate with industry partners to update curriculum, and offer personalised support to learners based on their needs (Johnson & Smith, 2022; Brown & Davis, 2023; Garcia & Lee, 2024). Another approach is to utilise authentic assessments that mirror real-world tasks to accurately evaluate student's competencies. Additionally, maintaining strong ties and working closely with industry partners can guarantee that the curriculum stays current. Engaging employers in the curriculum design process and regular feedback sessions can enhance

the relevance and quality of competency-based training programmes (White & Lee, 2018, p. 42). This collaboration helps to bridge the gap between academic training and practical application, enhancing employability.

Another common challenge is the need for continuous professional development to keep up with evolving teaching methods and technologies. Professional development is essential to ensure that teachers stay up to date with the latest trends and techniques. Where this is absent, educators will not be able to provide the necessary scaffolding for the students. According to Johnson and Smith (2021) and Smith and Brown (2023), educators can overcome this challenge by engaging in ongoing training programmes and workshops to improve their skills and stay current with educational trends. Quality training programmes can be accessed by educators through various avenues, such as professional organisations, universities, online platforms, seminars, and educational conferences, to stay ahead of the curve and remain effective in their roles. These resources offer a range of courses and certifications to help educators enhance their skills and knowledge in the field of TVET. By actively seeking out these opportunities, educators can stay up to date with the latest teaching methods and trends.

2.7.2.1 TVET Governance and Legislative Framework

TVET governance is a growing concern for countries around the world as they seek to improve the effectiveness of their vocational education and training systems to satisfy rising social and economic demands. According to Renold and Caves (2017, p. iv), the first step toward establishing a strong TVET system is good governance, which is a key principle for efficiency, effectiveness, and equity. In their research on constitutional reform and its impact on TVET governance in Nepal, the authors recommend acts, policies, and frameworks that not only strengthen but improve existing TVET systems. These recommendations are in line with

international standards, as well as provide adequate resources and support for the implementation of these reforms.

The International Labour Organisation (2010) as cited in Salleh and Sulaiman (2020, p. 2964), TVET governance, management, teacher training, and partnerships among others need to be significantly reconsidered to establish and manage existing TVET systems with greater impact. This will possibly result in effective interventions and governance that enable measures that will always act in the system's best interest. Moreover, strong TVET systems improve individuals' opportunities and abilities while also benefiting national human resource development and skills (Caves & Renold, 2018, p. 2). Caves and Renold used four broad criteria for a strong TVET system.

1. Permeability refers to access and opportunity throughout the TVET system.
2. Quality in TVET which refers to programme accountability to national standards, monitoring and evaluation to ensure standards are met, and accreditation or certification to allow graduates to demonstrate their skills to prospective employers.
3. Good governance is required for efficient and effective TVET processes, as well as for the existence of a TVET system.
4. Employers are involved in the design, implementation, and updating of the TVET curriculum alongside education system actors (Caves & Renold, 2018, p. 3).

Shaping TVET Relevance Through Policies

National-level policies play a critical role in shaping the direction and focus of TVET programmes. To promote employability and competitiveness, for example, the European Union's Education and Training (EUET) 2020 policy emphasises the significance of boosting the relevance of education and training (European Commission, 2019). Based on legislation such as the

Vocational Education and Training Act (FET Act), countries such as Germany have developed robust dual education systems that integrate classroom learning with on-the-job training in companies (OECD, 2020). Vocational education and training are deeply embedded and highly esteemed in German society. The system adapts to the shifting demands of the labour market and offers credentials in a broad range of professions. Germany's internationally renowned VET system offers dual programmes in over 300 trades (OECD, 2020). Their legislation is similar to that in countries such as Australia and New Zealand, where Jamaica models its TVET systems.

These policies provide the framework within which TVET institutions operate, influencing aspects such as curriculum design, funding allocation, and quality assurance mechanisms. By setting standards and priorities, national policies guide the development of TVET programmes to align with the country's economic needs, labour market demands, and social goals. Additionally, policies can impact the assessment methods used in TVET institutions, ensuring that the evaluation processes are valid, reliable, and consistent to measure the success and effectiveness of those programmes. In order to ensure that everyone who is seeking the same qualification has the same standards and criteria using a national assessment framework that is standardised (OECD, 2011). This will ensure that the qualifications are meaningful and transferable across different contexts.

Influencing TVET Programmes Through Legislation

Legislation has a significant impact on TVET programmes by providing a legal framework that governs various aspects of these programmes. The Carl D. Perkins Career and Technical Education Act, for example, influences the quality and calibre of TVET offerings in the United States, by giving states financial support for high-quality career technical education programmes that equip students for success in high-demand careers (U.S. Department of Education, n.d.). This

legislation promotes the development of partnerships and collaboration between employers and educational institutions in order to guarantee that curricula are current and pertinent.

Additionally, to provide uniformity and transparency in the recognition of skills and competencies obtained through TVET programmes, the European Qualifications Framework (EQF) establishes a mutual reference system to compare qualifications across different European countries, (European Commission, 2020). This makes it easier for individuals to move between countries and find jobs that require the same qualifications. Moreover, it also makes it easier for employers to compare the qualifications of job applicants from different European countries and educational institutions to understand the skills and qualifications of students. These frameworks help align TVET programmes with national and international standards, enhancing relevance, quality, and recognition in the labour market.

Challenges in Policy Implementation

Although legislation and policies are crucial in determining the relevance of TVET programmes, putting them into practice effectively can be challenging. Limited funding and resources, inadequate teacher training, and insufficient industry engagement are common barriers that hinder the successful delivery of high-quality TVET programmes (Rauner & Raffe, 2013; UNESCO-UNEVOC, 2016a). Additionally, policymakers face difficulties in keeping TVET programmes relevant and responsive to industry expectations given the rapid advances in technology and the shifting demands of the labour market. In addition, another challenge in policy implementation for TVET is ensuring effective management to oversee the execution of policies at the institutional level. This entails coordinating various stakeholders, organising resources, and monitoring progress to ensure that policies are implemented efficiently and effectively to achieve the desired outcomes in TVET programmes.

TVET institutions can benefit greatly from political endorsement and involvement in a number of areas, including finance and policy support. Getting political backing is frequently essential to getting funds and resources as it guarantees that institutions can afford to modernise their facilities and equipment to match industry standards while simultaneously improving quality of instruction (Rauner & Raffe, 2013). By obtaining political endorsements and government interventions, TVET programmes can also gain legitimacy and credibility. According to Field's (2012) study, students, and parents who usually lean towards academic paths are more likely to adopt vocational pathways when vocational training is acknowledged and supported at the government level. Furthermore, government support can inspire efforts meant to give marginalised populations more access to TVET. This has been supported by research by Billett (2011), who emphasised how inclusivity-promoting policies can increase social equality by giving underprivileged groups the chance to improve their employability and acquire vocational skills. This further underscores the importance of government interventions and their need to create and implement policies that promote vocational training. Their involvement and endorsement can play a transformative role in TVET's success within institutions. The information provided emphasised how crucial it is to have a strong governmental push to link TVET with more general social and economic goals.

Until there are policies specifically developed to address the respective issues, these concerns will not necessarily change. When data is absent from the policy development process, the implementation of the policies may be seen as unreliable, suggesting a high degree of bias. Effectively gathering and evaluating pertinent data can be challenging, particularly for institutions with limited funding and the ability to carry out in-depth evaluations (Agboola, 2014). Policymaking using data is a method of problem-solving that relies extensively on data. In order

to guarantee that policies are effective and successful as well as acceptable and feasible to implement policy action needs to be grounded in reliable and substantial evidence (UNESCO, 2013). Studies have shown that the quality, relevance, and impact of TVET programmes can be improved by integrating evidence-based approaches in policy formulation and implementation (Kroger & Levin, 2018). When a large amount of evidence is available, the difficulty lies in making sure that the evidence applied to policymaking is relevant to current policy issues.

Jamaica's Tertiary Legislative Framework

The rich history of local democracy and the diversity of circumstances that exist in Jamaica have not always made the establishment of a decentralised system to handle local concerns in the education sector favourable. The tertiary landscape in Jamaica currently has several pieces of legislation that govern the education sector and by extension the TVET system.

The Education Act (EA), 1980.

The Council of Community Colleges Jamaica (CCCJ) Act (amended in 2021 to compensate the Council for measures it has made in the course of awarding and withdrawing degrees since its inception in 2001).

The University Council of Jamaica (UCJ) Act of 1987, is the national tertiary education quality assurance agency for Jamaica.

The Jamaica Tertiary Education Commission (J-TEC) was established in 2012 as recommended by the 2004 Task Force Report to serve as the tertiary education sector's supervisory authority.

The National Council on Technical and Vocational Education and Training (NCTVET) was established in 1994, under the auspices of the amended *Human Employment and Resource Training (HEART) Act*, 1992.

In order to oversee the higher education sector in Jamaica, the Cabinet has adopted a concept paper aimed at developing a national higher education policy framework. As a result of the approval of the concept paper, Jamaica will develop a National Higher Education Policy, which will streamline the higher education sector to work cohesively and efficiently toward the achievement of Vision 2030 (Work advanced to develop higher education policy framework, 2023). More recently, a new governance framework, and institutional arrangements, have been developed specifically towards the TVET division. Established under the modified Human Employment and Resource Training (HEART) 1992 Act, the NCTVET functioned within that larger training institution prior to its operations being separated and transferred to the MOEY. Prior to these modifications, the entity oversaw the creation of occupational standards, developing assessments, accrediting programmes, certifying trainees, and awarding diplomas and certificates to individuals who proved proficiency and competency in various vocational fields (Patterson, 2021, p. 233). Its mission was to create and promote a certification system that was relevant, responsive, and effective.

A Cabinet Submission was completed, allowing for the transfer of several NCTVET functions to the UCJ, HEART Trust, and Overseas Examination Council (OEC). Referencing communication made from the Ministry of Education and Youth via letter referenced as PS/V2 dated May 5, 2022, the transfer, and reassignments of functions of the National Council on Technical and Vocational Education and Training (NCTVET) are approved as follows:

The Cabinet approved the transfer of the following functions from the NCTVET to the UCJ

- i. External quality assurance
- ii. Registration, approval, and accreditation of TVET institutions and programmes
- iii. Amendments to the UCJ to give effects to i. and ii. above.

The transfer also necessitates

- i. Amendments to the UCJ Act for the body to
 - register, approve and accredit TVET institutions; and
 - recognise (i.e., in the case of Levels 1 and 2) and accredit (i.e., in the case of Level 3 and above) TVET programmes in a formal education setting such as schools, colleges and other higher education and training institutions.
- ii. A review of the organisational structure of the UCJ to determine the capacity needs to effectively implement the new functions.
- iii. A space audit to determine the capacity needs as per findings of the organisational review.

In addition to the above, the Cabinet through a Memorandum of Understanding (MOU) also approved the transfer of statutory responsibility for administering examination functions to the OEC from the NCTVET. These changes resulted in the removal of the conflicting role previously held by the NCTVET in acting as both a certifying and quality assurance agency. However, since the pronouncement, there have been conflicts between the strategic direction and implementation. These are not limited to several demonstration and strike actions by staff of the NCTVET due to the failure of the Ministry of Education to address contract issues and other related human resource matters as well as the reclassification exercise in finalising the transition of the institution (NCTVET and VTDI staff strike over wage issues, 2022; NCTVET and VTDI workers serve 72-hour strike notice, 2022).

Educators, administrators, and students among other stakeholders often resist the implementation of new policies. TVET reforms can be hampered by entrenched beliefs about educational values that are prevalent in academic institutions. This was indicated in a study conducted by Volkmann and Stöckmann (2013). The study revealed that many faculty members

in academic institutions have an archaic view of the value of vocational training, and this can lead to resistance to reform. While there are potential benefits to reform, resistance at times can also be caused by the disconnect between educational providers and the government's understanding of TVET institutions' operations.

Patterson (2021) opined that Jamaica's TVET system lacks concise articulation of the government's responsibilities in terms of programme funding as well as an overarching philosophy that governs the sector. This philosophy would not only distinguish the sector and address interrelated and overlapping legislations but also delineate the relevant stakeholders' roles and responsibilities for the purpose of accountability. While support from the government can significantly contribute to TVET's success, the above shows that it can be countered with arguments that meddling from the government by implementing policies related to TVET that are not well thought out, can provide a number of difficulties that could reduce initiatives' efficacy.

Clear articulation of the governments' vision and responsibility is crucial for effective governance and policy implementation. It provides a framework for transparent decision-making, ensures proper allocation of resources, and allows for effective monitoring and evaluation. Empirical studies have shown that leaders who communicate a clear vision in TVET institutions are more likely to achieve positive outcomes (Bass & Riggio, 2010). Additionally, research in the field of education has demonstrated that personalised leadership approaches lead to enhanced student outcomes and engagement in TVET programmes (Leithwood & Jantzi, 2008). Moreover, there is empirical evidence that suggests that leaders who exhibit inspirational motivation in the TVET sector can enhance student and faculty engagement, leading to better programme outcomes (Bass, 1999). Without concise articulation that addresses overlapping legislation and explicitly

defines the roles and obligations of stakeholder accountability, there is a risk of inefficiency, ambiguity, confusion, and a lack of clear direction for the sector.

2.8 Stakeholders Within TVET Institutions

The TVET sector consists of several professional bodies and stakeholders that have varying views, roles, and responsibilities within TVET. Winch (2013) puts forward that the government is not omnipotent; it cannot change people's perceptions on its own. Where there are suggested or intended reforms of TVET structures, they should accompany methods that are well-established for disseminating information, which can do a lot to start changing entrenched perceptions about the value of TVET, especially if the information truly reflects significant change (Winch, 2013, p. 113). Students, parents, families, communities, service providers, public sector, private sector/non-governmental organisations (NGOs), investors, and policymakers all have a shared interest in the system one way or the other.

Government and Policy Makers

The role of the government as the central authority is to ultimately bridge any existing divide within its jurisdiction in organising and supporting social and economic development (Seddon & Billett, 2004, p. 35). The legal structure, strategic direction, and overarching vision of TVET are mostly determined by governments and policymakers. It is their responsibility to ensure that quality education and training are available to all its citizens (Idjawa, 2020). According to Bhattarai et al. (2021), they are in charge of creating and implementing policies, assigning funds, and making certain that TVET programmes meet quality standards. The authors further highlighted that while there are several approaches taken globally to carrying out TVET funding, these approaches vary according to the resources available to the government and their national context.

Employers, Industry and TVET Institutions/Providers

Employers play an important role and have a vested interest in creating a productive workforce by leveraging existing TVET infrastructures (Alagaraja et al., 2014). Employers and industry stakeholders are crucial TVET partners because they give opportunities for work-based learning, offer feedback on curriculum relevance, and guarantee that graduates have the skills needed in the job market. Their involvement facilitates the communication between industry demands and educational programmes (Hussain et al., 2021). As for TVET institutions, or providers, they provide the necessary training to equip individuals with practical skills and knowledge for specific occupations or industry (McGrath et al., 2019). By providing the necessary training, the institutions aim to bridge the gap between education and the current and future needs of the labour market.

Students

The main players in TVET are students and learners, who are responsible for taking an active role in their own learning and development. This involves acquiring knowledge and skills and using them in practical situations applicable to their chosen fields. TVET programmes are successful because of their dedication and participation (European Training Foundation, 2020). Contributing to the overall success of the institution, TVET students are encouraged to think critically, innovatively, and to apply their learning in real-world scenarios.

Quality Assurance and Accreditation Bodies

A vital role in maintaining standards and encouraging continuous improvement in TVET is performed by quality assurance accreditation bodies. These entities, who are independent of the institutions, are responsible for guaranteeing the relevance and quality of TVET programmes through assessment, monitoring, and accreditation procedures (UNESCO-UNIVOC, 2019). They

also provide regulatory guidance and support to TVET providers to improve their practice. Additionally, they provide the technical expertise to help countries develop and implement effective TVET policies in keeping with international practice.

Parents and Communities

The roles and responsibilities of parents and communities in TVET are significant contributors to the success and relevance of vocational education programmes. They play a pivotal role by providing insights and supporting students in making informed career decisions and opportunities related to TVET programmes (OECD, 2017). By highlighting the importance of vocational education and the possibility of successful employment opportunities in technical fields, parents, and communities may inspire and encourage students to actively participate in TVET programmes. Their support can have a favourable impact on retention and engagement among students (UNESCO-UNEVOC, 2018). Additionally, they can endorse the value of technical skills and practical training, by advocating for the importance of TVET programmes within educational systems. Their advocacy for TVET recognition will help to improve the status and relevance of TVET (International Labour Organization, 2010). Moreover, parents and communities can leverage their networks and connections within industry sectors and foster a supportive home environment that values vocational education (UNESCO-UNEVOC, 2016b; European Training Foundation, 2020).

Relationships and the strength of stakeholder connections are critical for long-term economic development. From a VET policy standpoint, social partnerships among stakeholders are seen as having the potential to offer advice on, or even take on, the organisation involved in supportive education and training provision for young people (Seddon & Billett, 2004). This assertion is echoed in the work of Ainsworth and Hinton (2019), who argue that effective

collaboration between educational institutions, industry, and community stakeholders is crucial for aligning training programmes with labour market needs, thus enhancing the employability of graduates. Further, this perspective is reiterated by Hurley et al. (2020), who highlight that multi-stakeholder partnerships can create a comprehensive support system that addresses various barriers to education and training thus fostering a more inclusive and effective learning environment for young people. Partnerships make a difference by identifying, acknowledging, and addressing local needs, as well as developing local capacity for roles that support learning. Therefore, for greater effectiveness, making or adjusting educational policies without any form of involvement from these key players would not be prudent.

The National Policy for Technical Vocational Education and Training (2014) lists the following key stakeholders as being actively associated with its policy formation and planning process, Ministry of Education (Public Sector/Government), HEART Trust NTA (Jamaica's national training agency for TVET), Jamaica Teaching Council (maintaining professional standards in teaching, and the professional status of teachers), National Education Inspectorate (monitoring, inspecting, evaluating and reporting on the standards and quality of education in the school system) and other partner agencies, which include those responsible for workforce development. The policy indicates that one of the key success factors in its successful implementation is that the key activities, roles, and responsibilities of each partner or group should be defined with a clear description (National Policy for Technical Vocational Education and Training, 2014). Having a clear description of each partner or group will enhance efficiency and collaboration within the sector by streamlining processes and reducing misalignment of roles and the risk of miscommunication.

Every stakeholder group within TVET is crucial to the success and effectiveness of VET programmes. Their resources, expertise, and input are fundamental to empowering individuals to pursue successful careers across a range of industries. However, of the many stakeholders within the sector, this study will only take into consideration those directly engaged in and knowledgeable about the management of vocational training institutions in Jamaica. The insights from these stakeholders within the TVET institutions will give the study deep and rich insights into the critical success factors in managing these institutions. Chamadia and Shahid's (2018) study of TVET improvement in Pakistan revealed that the identified success factor that could help the TVET sector thrive is a strong coalition among all stakeholders, including the government, private sector, and employers' federation. Understanding what constitutes value to stakeholders in TVET, would create a greater appreciation of the factors considered to be a critical success of the institutions.

2.8.1 Characteristics of The TVET Educator

Teachers are the backbone of education and training systems in both academic or general education and technical and vocational education and training (Paryono, 2015). Given that TVET emphasises individual mastery, skills, and competencies, TVET lecturers/educators must ensure that students are efficiently mastering the skills and knowledge (Dahri et al., 2018). As a result, for learning to be effective, the teaching action must be complementary. Therefore, what makes a teacher effective in CBET? A reasonable expectation of a TVET educator is that they can demonstrate a high level of competency in his or her discipline. As emphasised by Stone (2024), the success of any TVET programme is dependent upon the instructor's preparedness for competency-based teaching. He argues that if instructors are not prepared, the competency-based approach is at risk of being poorly supported because of the deficiencies in preparing the students

for the learning process. Afterall, the calibre of instruction determines how successful TVET programmes are.

Chin (2012) argues that TVET educators must be exposed to their industries or fields while studying their teacher training or preparation programme. Their comprehension of the competencies and expertise needed by their sector will improve as a result. This will also help them to develop a better understanding of the potential of their graduates. Finally, it will help them to better inform the design of the curriculum and instruction in TVET programmes. Khemarin (2012) and Hashim et al. (2017) also agree and believe that the capacity development for TVET teachers needs continuous development, matching with existing and future needs which in turn will contribute to the socio-economic development of their country. Collaboration with other ministries and departments should be emphasised and strengthened to exchange training content and bridge the gap between TVET lecturers and market needs (Hassan et al., 2012). The effectiveness of TVET policy measures may be limited if instructors are not given enough opportunities for professional development, as this could result in subpar instruction (Billett, 2011). To improve the quality of technical graduates, TVET institution educators' knowledge must be updated on a regular basis.

As part of the programme evaluation mechanism of Jamaica's National TVET Policy, the management, and administration of TVET institutions have the responsibility to improve and upskill the knowledge of their managers and teachers. This is to ensure that staff have the necessary knowledge and skills to effectively carry out the objectives of the TVET policy and to enhance business continuity. This will also help to ensure that the quality of the programme and training are improved and that the needs of the students are adequately met. Still, there are arguments for teachers who lack the requisite competencies but are asked to facilitate lessons in areas that are

not their expertise (Small, 2023). This has resulted in efficiencies that have caused courses to take longer than their allotted time to be completed. Smith's (2023) article further claims that this leads to a lack of adequate instruction and that students are not getting the quality education they deserve, as this is shown when they enter the industry. This can lead to burnout among the teachers, as they are expected to cover topics that they are not qualified to teach.

Knowledge-sharing activities among TVET educators could greatly enhance TVET educators' current knowledge levels and provide them with up-to-date industrial information (Hashim et al., 2017, p. 12). What can be deduced from these arguments, is that with such industrial exposure, or having real work experience, TVET educators will not only know the subject knowledge, but they will be better able to teach and share that subject and better able to construct related curriculums. However, there is no doubt that most countries continue to struggle with a lack of both quality and quantity of TVET instructors (Paryono, 2015, p. 2).

Ismail et al.'s (2018) study on the development of TVET educator competencies for quality education concluded that there are three main components of the development process for a TVET educator. The three main components namely are teaching, learning, and training; personal traits and professionalism; and skills technical and innovation. The primary objective of developing these competencies is to ensure that competent TVET educators develop graduates who can meet industry and professional body requirements. The authors contend that in order for technical and vocational education to become relevant to industry and to continuously improve, TVET providers, communities, industries, and the government must work together, which continues to be a central theme.

Kibet et al. (2019), Alharbi and Alkathiri (2018), Ngugi and Wambugu (2018), and Kefeni, Aigbavboa, and Thwala (2019) all highlight the importance of qualified staff availability in

influencing TVET quality. These studies found that qualified instructors are essential for ensuring that TVET programmes are successful. This is because qualified and competent instructors/educators can ensure that the curriculum is up-to-date, and the delivery is tailored to the needs of the local economy. Furthermore, they have the ability to provide the requisite guidance and support to the students.

Countries listed as having these specific challenges and issues in Paryono (2015) study of preparing TVET teachers and instructors in Asian member countries include Brunei, Cambodia, Indonesia, Lao People's Democratic Republic (PDR) and Malaysia. This professional's contextual perspective is that, as subject matter experts, they should be able to show learners 'how to' through demonstration or 'hands-on' rather than deliver content.

2.8.2 Higher Educational Institutions Managers'/Administrators'/Leader's Role

With innumerable opposing viewpoints and an unavoidable lack of consensus on the discipline of educational leadership and management, debates have centred on whether educational leadership is a discipline within itself or a subcategory of management studies (Bush, 2007, p. 391; Amanchukwu et al., 2015; Bush, 2020). Irrespective of one's point of view, competent leadership, management, and administration are thought to be essential for a successful educational institution, where a good balance ought to exist between the three. Depending on the country, the terms school leadership, school management, and school administration are frequently used interchangeably (Pont et al., 2011). Even though the three concepts overlap, some literature emphasises them differently. Dimmock (1999) however distinguishes among school leadership, management, and administration while acknowledging that school leaders' responsibilities frequently overlap all three. He argues that school leadership involves setting the school's vision, defining its mission, and establishing its overall direction through guidelines.

This view aligns with Bush and Glover (2016), who argue that effective school leaders must navigate between managerial duties and the visionary aspects of leadership, adapting their roles to meet the evolving educational landscape. Their framework emphasises the importance of emotional intelligence and adaptive leadership in addressing management and leadership responsibilities. This is further supported by Robinson et al. (2021), who emphasise that school leaders must not only articulate a vision but also ensure that it is embraced by staff and stakeholders, fostering a collaborative environment where shared goals can be achieved.

Effective school leadership is critical to improving the efficiency and equity of schooling because it serves as the primary link between the classroom, the individual school, and the education system (Pont et al., 2011, p. 16). Imperative to this balance is managing the various roles as institutional leaders, notwithstanding navigating the various challenges. Whether they are managing student performance and results, coaching, or motivating, the strategies implemented must inspire, demonstrate trust, and create vision whilst still maximising the student's potential. They should diversify their organisational methods of leadership and style of communication such as implementing initiatives to help employees comprehend the organisation's vision, mission, and objectives (Mohamad & Omar, 2014, p. 27). For greater effectiveness in leadership, it is dependent upon factors such as strategic direction, decision-making, fostering a positive work culture, promoting innovation, and empowering team members. School leaders are now tasked with the same leadership roles as private-sector managers and executives in an ever-shifting era of accountability and performance. Among these responsibilities are managing people, controlling finances, defining strategic goals, and interacting with external factors such as parents, unions, community engagement groups, and political constituents (Onorato, 2013).

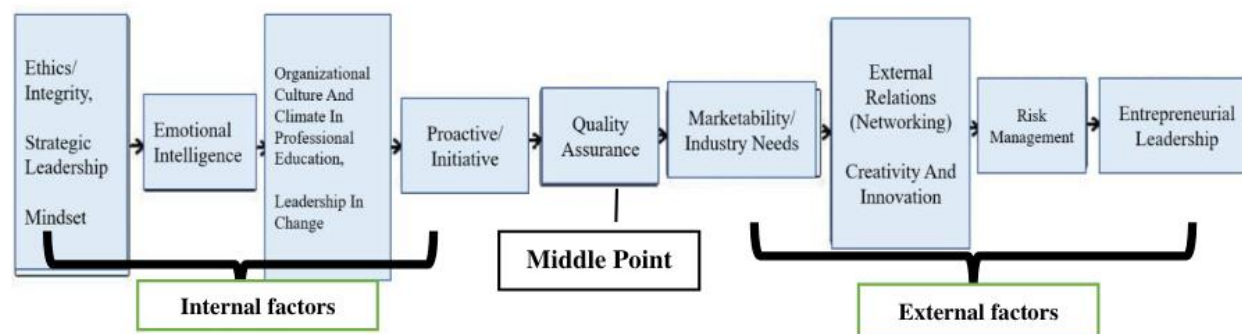
Pont et al. (2011) assert that policymakers and practitioners must ensure that the roles and responsibilities associated with improved learning outcomes are at the heart of effective school leadership. Their research identifies four core areas of responsibility for school leaders to focus on in order to improve student/learning outcomes.

1. *Supporting, evaluating, and developing teacher quality*: School leaders must be able to adapt the teaching programme to local needs, encourage teacher teamwork, and participate in teacher monitoring, evaluation, and professional development. As education evolves and students are expected to be prepared for an ever-changing world, continuous professional development is becoming increasingly important (OECD, 2019).
2. *Goal setting, assessment, and accountability*: Policymakers must ensure that school leaders have the authority to set strategic direction while also maximising their capacity to develop educational plans and goals and monitor progress using data to optimise training.
3. *Strategic financial and human resource management*: Policymakers can improve school leadership teams' financial management skills by providing training, instituting the role of a financial manager within the leadership team, or providing financial support and services to schools. Furthermore, school leaders should be able to influence induction and orientation decisions to improve the match between candidates and the needs of their school.
4. *Collaboration with other schools*: This new dimension of leadership must be recognised as a distinct role for school leaders. It can benefit entire school systems rather than just a single school's students. However, school leaders must develop their skills to become involved in issues that extend beyond the boundaries of their school (Pont et al., 2011, p.

10). It is not the expectation that leaders will readily have the knowledge and the skills but be open to learning and growth (bin Ismail & Yasin, 2020, p. 36).

Without a doubt, there is an urgent need to improve school leadership, not just at higher education levels, but in all aspects of society. In higher education, effective leadership involves identifying windows of opportunity and taking calculated actions to guide the institution (Sirat et al., 2012, as cited in Ahmad, 2015, p. 1472; bin Ismail & Yasin, 2020, p. 31). They should be visionaries who are able to lead by example, regardless of whether they are identified as administrators, managers, or leaders.

Abdullah et al., (2021) developed a TVET leadership model among leaders in TVET institutions in Malaysia. Both quantitative and qualitative data were collected in three cycles: needs analysis, design and development, and evaluation. Forty-five experts participated in the study: 6 experts in the assessment phase, 25 in the design and development phase, and 14 in the needs analysis phase. The acquired data was examined utilising thematic approaches. The results were successfully used to construct the TVET leadership model, consisting of 13 elements. The 13 elements were considered predictors of effective leadership in TVET.

Figure 2.5*Relationship of TVET Leadership Elements*

Note. Abdullah, J. B., Nor, Z. H. M., Abd Hamid, A. H., Harun, N. H., Koswara, E. M. D., Stapa, M. A., Norabeerah, S. M., & Ahmad, A. S. W. (2021). Development of TVET leadership model among leaders in TVET institutions. *Leadership*, 3(11), 77-92.

As shown in Figure 2.5, quality assurance is a balanced factor that takes into account both internal and external factors, according to the study's experts. Emotional intelligence, mindset, strategic leadership, ethics/integrity, leadership change, organisational culture and climate in professional education and proactive/initiative are all factors that influence external factors like marketability/industry needs, creativity and innovation, external relations (networking), entrepreneurial leadership and risk management.

2.9 Educational Management and Leadership Models

Given that organisations and institutions require educational leaders who can foster a creative environment conducive to active learning, researchers and scholars still find the topic intriguing. The field of educational leadership and management is pluralistic, with many opposing viewpoints and an unavoidable lack of agreement on the discipline's precise nature (Bush, 2007, p. 391; Bush, 2020). In their review of theoretical leadership, to perceive how leadership is

conceptualised, as well as reviewing empirical literature to see if and how research evidence supports these concepts, Bush and Glover (2014) research revealed that leadership models change but frequently serve to reflect and inform changes in school leadership practice. The debate has centred on whether educational leadership is a distinct field or merely a subset of management studies.

The rise in the importance of school leadership has been accompanied by the development of theory, with new models emerging and established approaches being redefined and expanded (Bush & Glover, 2014). Several authors have chosen to present management and leadership theories in separate categories or clusters, but their models, emphasis on specific approaches, and terminology used to describe them differ. Professor, researcher, and publisher Tony Bush who is prolific in the field of leadership and management development in education, classified theories of educational management into six major models: formal, collegial, political, subjective, ambiguity and cultural. These management models are further extended and structured using nine leadership models. Important to note, that the vast amount of literature within educational management, has generated several other competing and alternative models (Bush, 2008, p. 10). The following is a summary of commonly used theories in the discipline of educational management and leadership where modern theories are tailored from those previously mentioned.

Table 2.5*Typology of Management and Leadership Models*

Management model	Leadership model
Formal	Managerial
Collegial	Participative
	Transformational
	Interpersonal
Political	Transactional
Subjective	Postmodern
Ambiguity	Contingency
Cultural	Moral
	Instructional

Note. Adapted from *Leadership and management development in education*, by Bush, T., 2008, p.10).

Formal or Managerial Leadership Model

According to Bush (2007), formal or management leadership is frequently linked to maintaining established hierarchical structures and regulations that preserve stability, effectiveness, and order inside an organisation. It is thought to be necessary to maintain discipline and accountability in educational institutions. Several research streams have emphasised the importance of formal leadership in shaping group interactions and establishing a well-defined, predictable working environment (Oedzes et al., 2019, p. 313). For instance, they have argued that formal leaders should provide direction, specify working procedures, and assign clear responsibilities to group members. In parallel, the pendulum of managerial leadership assumes that leaders' primary attention should be on functions, tasks, and behaviours and that if these activities

are performed successfully, the job of others in the organisation will be made easier (Bush, 2007, p. 395; Bush, 2020).

However, it is worth noting that this form of leadership lacks the concept of vision, which is included in most leadership models. Managerial leadership is more concerned with successfully managing current operations than with envisioning a brighter future for an institution (Bush & Sargsyan, 2013). Due to its high level of bureaucracy, this type of leadership can also limit creativity and innovation, as it is often stifling new ideas and approaches. Nevertheless, according to functional theories of leadership such as McGrath (1962) and Morgeson et al. (2010), organising activities can also be performed by individuals or groups who take on an informal leadership role without having any formal leadership authority.

Collegial, Transformational or Participative Leadership Model

Consistent with the collegial model is transformational leadership, which is that it assumes that leaders and employees share common values and interests. Relationship theories, also known as transformational theories, are concerned with the bonds that develop between leaders and followers (Amanchukwu et al., 2015, p. 8). Jean Brown (1991), as cited in Onorato (2013), highlights that transformational leadership signifies leadership for change while fostering a positive school culture. This type of leadership assumes that the commitments and capacities of organisational members should be the core focus of leadership (Bush, 2007; Bush 2020). Common among these three models is the development of relationships between the leader and the followers to create positive change, which is effective in creating an atmosphere of trust and collaboration. These models emphasise the importance of having mutual respect, a clear vision and goal for the organisation, as well as open communication and feedback.

Moral and Ethical Leadership Model

Despite the fact that the ethical leadership field is still in its infancy, it is clear that ethical leadership has numerous benefits for followers (Stouten et al., 2012, p. 2). The hallmarks of moral and ethical leadership include honesty, openness, and decision-making grounded in values. According to Ehrich et al. (2015), this approach is thought to be essential for encouraging moral behaviour, social responsibility, and trust in educational environments. By fostering a sense of ethical conduct and accountability, this approach helps to build strong and respectful relationships.

Mayer et al., (2012) referred to Browns et al. (2005) conceptualisation and key building blocks of ethical leadership as being an ethical example and treating people fairly. The first two blocks are reflected in the moral person component of ethical leadership, in which ethical leaders exhibit desirable characteristics such as fairness and trustworthiness. The other is captured by the moral manager component, in which ethical leaders promote normative behaviour and discourage unethical practices through ethical communication (Mayer et al., 2012, p. 151). This means that ethical leaders not only set a good example but also actively promote ethical behaviour by setting clear expectations and enforcing them. In order to encourage ethical behaviour, they should also make sure that there are repercussions for unethical behaviour. This is also agreed upon by several other authors (Tumasjan et al., 2011; Bello, 2012; Steinbauer et al., 2014). Mayer et al. (2012) and Ehrich et al. (2015) research revealed that employees are less likely to engage in unethical behaviour and have relationship conflicts with coworkers when a leader models desired ethical behaviour.

Subjective or Postmodern Leadership Model

Postmodern leadership is a relatively new model with no established definition (Bush, 2008). Postmodernists contend that there are no universal truths and that many things are irrational (Nicholson & Maniates, 2016, p. 3). By putting an emphasis on unique perspectives, interpretations, and narratives, subjective or postmodern leadership undermines established ideas about what constitutes effective leadership. According to Muraru and Patrascu (2017), this paradigm is thought to provide a more inclusive and varied approach to leadership that appreciates a variety of voices and opinions in educational management. The model provides few hints about how leaders are expected to behave, with a view on leadership identities not being a fixed trait. Scholars have identified several key characteristics of postmodernism:

1. Language does not reflect reality.
2. Reality does not exist; there are multiple realities.
3. Any situation is open to multiple interpretations.
4. Situations must be understood at the local level with particular attention to diversity.

Others have however argued that the framework is not all that bad and challenges us to reconsider how our biases influence scientific research (Jensen et al., 2018, p. 170). Compared to other theoretical constructs, they argue that the model is one that has untapped potential and should not be discarded given that it does not fit the ideals one may seek and need.

Political or Transactional Leadership

In order to accomplish organisational objectives, political or transactional leadership models emphasise the use of power, negotiation, and resource allocation. Albeit transactional leadership has its uses, it is frequently criticised for its short-term orientation and dependence on

circumstances rather than long-term planning (Borgmann et al., 2016). According to Miller and Miller (2001, p. 182), as postulated in Bush (2007, p. 398), transactional leadership is characterised by interactions with teachers that are built on the exchange of a valuable resource. Administrator-teacher engagement is typically episodic, brief, and limited to the exchange transaction. For members of an organisation, the exchange is methodological and is well-established using a political approach. The engagement is only construed by a process of exchange that might appear beneficial to both parties, however, the fundamental drawback of such a system is that it does not engage employees beyond the transaction's immediate benefits.

Ambiguity or Contingency Leadership Model

Also considered as a situational theory of leadership, contingency leadership best describes the leader's interaction based on the nature of a given situation. It proposes that rather than a charismatic leader with a large following, effective leadership necessitates a reasonable comprehension of the issue and an appropriate reaction (McCleskey, 2014). The leaders who employ this model adjust their strategies according to the situational factors, embracing responsiveness and flexibility to navigate the changing environment. The theoretical framework of this leadership style would be considered to be the most effective of the others presented, as contingent is drawn from a wide collection of leadership techniques. However, Bush and Glover (2014) noted the limitation of contingent leadership's practical, adaptive nature in the absence of a "big picture" perspective. As a result, they deduce that contingent leadership, in addition to a focus on leadership for learning, is required to promote successful schooling (Bush & Glover, 2014).

These various educational management and leadership models offer a unique perspective into the ways in which leadership can be exercised within educational institutions, considering the

numerous values, approaches, and priorities that shape and influence the organisational culture and efficacy of schools. Each model has its strengths and weaknesses, and no single model can claim to be the best. What they do is provide a scaffold on how to manage the institutions. Therefore, it is imperative for school administrators to understand the different models and choose the one that is best suited to their context. In choosing the management or leadership model that best fits the institution's context, it is imperative that there be documented evidence through strategic planning or an alternative to aid the institution in meeting its goals and objectives.

2.10 Strategic Planning and Implementation in TVET Institutions

Prior to putting any strategic plans or frameworks into action, TVET institutions must engage in strategic planning. Its importance in any organisation cannot be overstated. This is because strategic planning enables the institution to establish clear goals, prioritise tasks, allocate resources efficiently, and align its initiatives with its vision and mission. The majority of managers have observed that by clearly articulating their institution's mission, they have greater capability to provide leadership and attention to its operations (Ndzoyiya, 2019, p. 31). In a study analysing and evaluating strategic planning and implementation in technical vocational education and training colleges in South Africa, Ndzoyiya (2019) draws the conclusion that there appears to be a substantial disparity in TVET institutions' use of strategic planning, specifically. As a result, this scenario usually affects the colleges' attempts to meet their aims and objectives for development, ultimately impacting the institution's success. The study also concluded that stakeholders' experiences, enablers, and inhibitors as well as monitoring and intervention have a significant and positive effect on the successful implementation of strategic planning. The study recommended the following which might be useful to TVET institutions:

1. It would be beneficial to provide each stakeholder communication brief prior to starting a strategic planning process. Stakeholder participants should be given access to a training programme and strategic planning and its advantages.
2. It helps to have specific goals and a road map for reaching them to guarantee that an action plan can be carried out. All staff members should be aware of the action plan, not only those in upper management or those in charge of carrying it out.
3. It would be beneficial for TVET institutions to include an element of active community participation in their strategic planning process.
4. Electronic tools should be incorporated within the planning exercise to reduce paper consumption.

Another significant study carried out at the Technical and Vocational Training Corporation in Saudi Arabia highlighted the value of strategic planning in strengthening institutional effectiveness while implementing it for success. Alqahtani and Alzahrani's (2018) study emphasised the significance of strategic planning in coordinating the institution's goals with industry demands, enhancing programme quality, and guaranteeing sustainable growth. The research recommended that TVET institutions should prioritise resource allocation based on strategic objectives and include all stakeholders in their strategic planning process. Tan and Lim's (2017) study at Singapore Polytechnic emphasises how strategic planning may improve operational effectiveness, maximise facility utilisation, and foster a positive learning environment. Their study's main focus was on how strategic planning functions in TVET institution's facilities management. According to the research, TVET institutions should incorporate facility management in their strategic planning procedures, use technology for facility management, and place maintenance as a top priority in order to properly support teaching and learning.

In a study by Smith et al., (2020) exploring the effect of strategic planning on student outcomes and employability in an Australian vocational training institution, it was emphasised that strategic planning guided the institution in aligning its curriculum with industry standards. Additionally, the student skills were enhanced, thus improving the job placement rates. The study's recommendation stressed the significance of ongoing strategic initiatives and monitoring and assessment in order to guarantee efficacy. In a 2019 study, Chen and Wang examined how strategic planning promoted entrepreneurship and innovation in a Taiwanese technical institution. The findings indicated that the implementation of strategic planning aided in the creation of entrepreneurial programmes, cultivated industry partnerships, and stimulated an innovative culture throughout the institution. The study's recommendations included the necessity for TVET institutions to fund innovative initiatives and establish cultures that promote entrepreneurship.

Lessons from these studies and others clearly indicate that strategic planning is a critical feature in enhancing the effectiveness of TVET institutions. TVET institutions should invest the necessary resources in developing comprehensive and well-structured plans that will help them achieve their goals. The plan should be regularly reviewed and updated to ensure that it is still relevant and effective to avoid stagnation and ensure long-term success.

2.11 Performance Management and Institutional Operational Plans

Performance management and institutional operational plans can enhance the efficiency of organisations and institutions in several ways, to the extent that these entities can attribute their operating strategies and success to their use. When implemented properly, these components give structure, ensure alignment with industry requirements, encourage accountability, illuminate inefficiencies in processes, and improve institutional outcomes. Strategies of performance management also assist TVET institutions in setting precise quantifiable goals and objectives.

Locke and Latham's (2002) goal-setting theory posits that performance improves with defined and difficult goals. Institutions can facilitate coordinated efforts towards institutional, departmental, and individual objectives by giving faculty and staff guidance and clarity of expectations through operational plans.

A strong performance management framework encourages accountability and task performance among staff and faculty. Williams and Hurd's (2011) study unequivocally shows that clearly defined expectations and regular performance evaluations are instrumental in enabling individuals to take ownership of their roles, ultimately leading to improved performance and outcomes in TVET settings. Paterson et al. (2024) argues that the performance of TVET lecturers must be placed within high priority. This is against the backdrop that their performance is critical to any occupational group, as they are charged with developing young people with technical and vocational skills. They, however, extend their argument that lecturer's performance should be viewed and measured from a national perspective, as their roles contribute to the national and economic growth of a country.

Operational plans and performance management systems also play a central role in the allocation of resources. Through the execution of effective performance evaluations, administrators can identify skill gaps and allocate resources for professional development and training. This ultimately enhances institutional capacity and operational effectiveness, as stated in a study by Jackson (2011). This improved capacity allows organisations to make well-informed choices and maximise their impact. It also allows them to respond more effectively to changing conditions. Additionally, both components also facilitate a culture of continuous improvement. Systematic evaluation and feedback mechanisms according to Fullan (2007), allow institutions to

refine processes and practices based on outcomes and stakeholder input. This leads to continuously improving educational standards in TVET.

Additionally, operational plans that take industry changes and labour market demands into account support the continuation of TVET curricula's relevance and ability to successfully educate students for the workforce. Choudaha and Chang (2012) assert that matching educational programmes to industry demands greatly improves students' chances of finding work and helps institutions to succeed. In essence, performance management and institutional operational plans are crucial for helping TVET institutions achieve success. By implementing these plans, TVET institutions can streamline processes, maximise resources, improve accountability, and encourage continuous improvement resulting in increased efficacy and efficiency.

2.12 Issues and Challenges Measuring Success in TVET Institutions

While there is no denying that TVET plays a pivotal role in preparing individuals with the skills and knowledge required for the workforce, measuring the success and effectiveness of TVET programmes can be challenging and multifaceted due to the wide range of skills that are taught and the evolving demands of the different industries. The TVET industry/sector in Jamaica, like those in many other countries, faces numerous challenges. The affecting issues of the twenty-first-century overlap while many educational institutions struggle to survive (Ahmad, 2015, p. 1472). Some of these issues and challenges make it difficult to properly qualify the institutions as successes. Therefore, institutions must navigate these challenges in order to survive and thrive. These common challenges are not limited to inadequate match between available training programmes and labour market demands; instructor shortages; diversity; inadequate funding that is unable to support labour force training; fragmented delivery and development of training programmes; and partnerships with the private sector, trade unions, and other segments of society

that are weak and ineffective (*World TVET Database Jamaica*, 2012, p. 11). These issues are also extended to staff motivation, stakeholder expectations, job satisfaction, and resistance to change (Ahmad, 2015, p. 1472). The empirical evidence of Sa-Nguanmanasak & Khampirat's (2019) study on comparing employability skills of technical and vocational education students of Thailand and Malaysia also emphasises the necessity to take into account regional disparities when measuring success in TVET.

According to the Planning Institute of Jamaica (2009a), there is also the absence of a cultural lifelong learning system, where the citizens need to adopt a culture of seeing learning as a lifelong pursuit. Tracking the career progression of graduates is essential to TVET's long-term success. Brockmann and Rauner (2006) agree that measuring success entirely on instantaneous outcomes, for instance, job placement rates may overlook long-term impacts such as career advancement, entrepreneurial opportunities, or business success for graduates. This notion is echoed in the work of Chen (2015), who argues that successful educational outcomes should also consider graduates' career progression and overall lifetime earnings. By assessing both short-term and long-term impacts, academic institutions can comprehensively evaluate their effectiveness. The Planning Institute of Jamaica argues that although new businesses create many job opportunities and drive economic growth, the education system falls short in cultivating an entrepreneurial culture.

The notion that educational systems fail to adequately promote entrepreneurial skills is supported by Kourilsky and Walstad (2020), who argue that many educational institutions do not integrate entrepreneurial education into their curricula, thereby missing opportunities to cultivate innovation and business development skills among students. Their research emphasises the necessity for systematic changes within the education system to foster an entrepreneurial mindset from an early age. Supporting this perspective, Volery and Mueller (2018), point out that despite

the increasing recognition of entrepreneurship's role in economic development, educational systems often prioritise traditional academic skills over entrepreneurial competencies. They advocate for a comprehensive education approach that fosters creativity, critical thinking, and problem-solving abilities, which are essential for entrepreneurship.

The need for reform in the educational system to effectively support entrepreneurship is echoed by Kauffman Foundation (2016), stating that innovative educational practices must be implemented to create an entrepreneurial culture. This includes experiential learning opportunities, mentorship programmes, and integrating entrepreneurship into various subjects to encourage a more hands-on approach to learning about business and innovation. While entrepreneurship education can greatly increase students' intent to pursue entrepreneurial professions, many educational institutions lack the necessary structures and resources to provide such programmes successfully, according to a study by Nabi et al. (2017). The authors emphasise that encouraging an entrepreneurial spirit in students through education may result in more jobs and economic expansion. These authors argue that long-term outcomes should also be considered when measuring the success of an educational programme, as these factors can have a more significant impact on the graduate's future. On the other hand, the difficulty in monitoring individual professional journeys after completing TVET programmes may be a challenge.

Jamaica has a significant need for TVET education, yet many do not understand it. The country, which possesses an abundance of TVET institutions, programmes, and initiatives, has not yet been able to address and capitalise on the severe lack of skilled workers in the nation (Patterson, 2021, p. 260). According to statistics between 2014 and 2018, 61% of the labour force did not have any formal skills, apprenticeships, on-the-job training, or a professional or vocational qualification (Patterson, 2021). The report indicates that this can be attributed to TVE training not being aligned

with the private sector's requirements, with employers claiming graduates of TVE lack general skills and are unable to acquire them. While there may be several factors that contribute to the lack of general skills in TVE graduates, one of the reasons is that the curriculum of TVE programmes often focuses on technical skills, neglecting the development of work-related skills. Additionally, there is a lack of collaboration between the private sector and TVET institutions, resulting in a disconnect between the skills taught and the skills demanded by the industry. Harvey (2019) argues that TVET programmes should be updated regularly to keep up with the changing demands of the industry and avoid mismatches between the skills taught and the essential ones that employers are looking for. Where this is not done, there will be a disconnect.

The issues presented vary by country, but they are all challenges, with limited resources and expertise to address the issues and challenges. For example, Mack and White's (2019) study on the challenges that affect TVET in Trinidad and Tobago (T&T) revealed that stigma, attrition, and quality teaching were key problems affecting the system. Another prime issue is that technical vocational education and training in many countries remains confined to the role of a mere supplier of skilled labour to industry, rendering it unable to effectively respond to the needs of sustainable development strategies (Majumdar, 2009). They fail to recognise elements of critical thinking, creativity, innovation, problem-solving, and other broader sets of skills that are associated with TVET, which are contributing factors to economic diversification. Albeit the fundamental measures will vary across different countries, a critical factor in moving TVET forward is that these issues necessitate the right and adequate leadership that understands the dimensions of sustainable development and the sector's transformational needs. TVET professionals must be enlisted to reorientate the TVET curriculum toward sustainability while adhering to the principles of Reduce, Reuse, Renew, Recycle, Repair, and Rethink (Majumdar, 2009. P. 3). As a result, the

TVET system needed is one that is aware of and deeply immersed in the concept and challenges of sustainable development in order to apply it in the world of work.

Stigmatisation and Negative Connotation

It is widely acknowledged that developing or redeveloping a market-relevant and responsive TVET system is not an exact rocket science. Different countries have historically articulated quite distinct TVET systems, particularly those with a strong industry base and infrastructure (MacDonald et al., 2010). Supporting this assertion, Tuck (2016) presents a comparative analysis of vocational education systems across Europe and Asia, emphasising how local economies shape the structure and effectiveness of TVET programmes. The author finds that while Asia and Europe have similar approaches to VET, there are some key differences. For example, in Asia, TVET is perceived as a way to provide skills to young people, while in Europe, it is primarily focused on preparing workers for the labour market. However, the success of both vocational education systems is highly dependent on the local economy and its demand for skilled workers.

In other countries, TVET is distinct from the formal school education system and is frequently viewed as a deficit system that leads to fewer job opportunities and lower income (MacDonald et al., 2010). Traditionally, it has been regarded as a less appealing educational option when compared to higher education (Winch, 2013; Ahmad, 2015; Bhatta, 2021). While the degree of unattractiveness varies greatly across countries and cultures, it is remarkably widespread. Participants in Mitchell's (2015) study on transforming communities through vocational training and entrepreneurship acknowledge that they only attend their vocational centre as "a last chance." The participants also revealed that they are no longer valued as contributing members of their

families and communities. They believe that through vocational training, they could gain the skills necessary to find meaningful employment.

Zhi and Atan's (2021) study on factors influencing students' attitudes towards TVET and determining the relationship between factors and attitudes towards TVET cited high mean ranges of 4.83 to 4.9 on parents influencing students' attitudes towards TVET. Parents reacting negatively to the students studying TVET had the highest mean range (4.89) of all the other elements analysed. Arguably, these perceptions can discourage students from pursuing TVET, which may result in low self-esteem and reduced motivation, which may impact academic performance. The other factor that was found to have high mean values was peer influence (4.87).

Wahba (2012) and Ibrahim and Mat Nashir (2022) also agree that TVET education is frequently regarded as secondary to academic education, and changing the mindsets of students, parents, the community, and other stakeholders is rather challenging. These stakeholders have a negative perception of TVET and see it as a course for those who have failed in society. Most parents want their children to become doctors, engineers, or lawyers because they believe these occupations provide better job opportunities (Teixeira et al., 2016 as cited in Ibrahim & Mat Nashir, 2022; Wahba, 2012). This belief is predicated on the idea that these professions offer greater security and stability than types of employment. Moreover, these professions are also seen as a means of achieving social mobility and as being more prestigious.

One of the severe consequences of TVET stigma in Ghana and other African countries is that many parents and guardians discourage their children and dependents from pursuing TVET programmes (Mack & White, 2019). Confirming this is Mahuyu et al., (2020) study which revealed that most parents have a prejudicial perception and attitude towards TVET in Zimbabwe. The findings from their survey also revealed that most parents viewed TVET as an avenue for

dropouts and those from a lower economic status background. The belief that TVET is inferior to academic education appears to seem to be a common perception. According to a study by Karmel et al. (2017, p. 12), there are still unfavourable opinions regarding the status and quality of TVET programmes, which makes it difficult for people to recognise and enrol in them. This highlights the importance addressing these misconceptions to promote the value and importance of TVET. Similarly, reference is also made to both the 2004 Taskforce on Educational Reform and the Reform of Education in Jamaica 2021 report as they assert that this belief is a significant impediment to improving TVET social status. These misconceptions continue to lead to the stigmatisation of TVET programmes and students.

Improving the availability, access, and quality of TVET is crucial for making it a mainstream education option alongside tertiary education. Safeguarding the quality of TVET institutions is a significant challenge, particularly for stakeholders, as TVET is still perceived as an alternative route to education (Nadzri & Hashim, 2014). Nevertheless, there are notable examples of TVET programmes that have overcome negative perceptions and thrived. One notable example is the German Dual Vocational Education and Training system, where they combine classroom learning with practical training in companies, leading to highly skilled employable graduates and low youth employment rates. Their TVET system has successfully addressed negative perceptions and achieved remarkable outcomes through strong partnerships with the industry. Through integrating theoretical learning with practical industry experience establishing strong partnerships between educational institutions and industry stakeholders has been a key factor in their success (Pilz & Behr, 2018; Boffo et al., 2019). The collaborations emphasise the importance of innovation and the relevance of the programmes that combat misconceptions.

The Swiss Vocational Education and Training system is indeed another remarkable example of successful TVET programmes. Their vocational training system can be attributed to several key factors. Similar to the German model, combining classroom instruction with on-the-job training, leads to high-quality skills development and strong industry relevance. Switzerland's VET system is well-known for its strong connections to industry and its graduates' high employability (Schneider & Ingram, 2018, p. 45). Additionally, the system emphasises practical, hands-on training that equips students with real-world skills, making them highly sought-after by employers. Moreover, the prestige associated with vocational education in Switzerland and the clear pathways to further education or employment contribute to the system's success, overcoming stigma.

Demand and Supply/Poor Labour Market Alignment

The structural imbalance caused by the mismatch of professional skills of technical institution graduates with labour market requirements is a major weakness across the region. Vocational and technical programmes are typically driven by labour market survey findings, with demands aligned to current and future trends. The need to increase employment opportunities and social mobility among the workforce through improved employability is especially pressing in countries where a full school education followed by university may not lead to employment (MacDonald et al., 2010). Therefore, TVE institutions rely on their graduates' ability to function in the workplace (Raihan, 2014).

Any training programme designed by TVE institutions should incorporate the needs of the learner as well as satisfy the demands of the wider society. Euler (2013) as cited in Loose and Spöttl (2015, P. 5) agrees that training programmes need to satisfy the needs of the individual student, the needs of the private sector and the needs of society holistically. As articulated by

Wahba (2012) in a similar fashion, special consideration should be given to training programmes that promote equal opportunities, allowing all to gain access to the labour market.

The primary motivation for any TVET strategy is to improve labour market efficiency to accelerate economic growth by transforming TVET to meet industry demand. Nevertheless, this is not always the case. The findings of Ibrahim and Mat Nashir's (2022) study on demand-supply mismatch in TVET academic programmes, revealed that demand-supply mismatch can be classified into three categories, namely: i) the mismatch between industry demand and TVET programme supply; ii) the mismatch between student demand and TVET programme supply; and iii) the mismatch between institution readiness and TVET programme supply. The study also revealed that for graduate employability, the relationship between TVET institutions and other stakeholders is critical. Both the industry and TVET institutions need to cohesively strengthen their partnerships and collaboration models for greater alignment. Great emphasis should be placed on the demand for global growth. The government, however, may contribute significantly to this regard, through developing and reforming policies. They can spearhead reforms that increase TVET curricula's efficacy and relevance.

High Attrition and Low Throughput Rates

TVET institutions worldwide face numerous challenges that jeopardise the effectiveness of the training and education system. One of the most pressing issues confronting Caribbean education systems is the issue of school dropouts (Kallon, 2004). Many stakeholders in Mack and White's (2019) study on challenges affecting TVET in Trinidad and Tobago, mentioned attrition and trainee quality as two major issues. Interestingly, other research on the education system in Jamaica and the Caribbean has indicated that boys are uniquely susceptible to dropping out of school and engaging in a variety of unhealthy social behaviours (Reddick, 2018). Reddick's study

underscores the need for targeted interventions that address the unique challenges faced by male students in educational environments, particularly in Caribbean contexts.

The challenges surrounding school dropouts vary and are not fixed to a single variable. This has put a major damper on measuring success in TVET institutions due to low throughput and certification rates. Some students do not graduate because of academic issues in their study programmes, while others choose to leave before finishing their studies due to community-based violence, family problems or parental decisions (Sabtu et al., 2016, p. 198; Michell, 2015, p. 201). According to Kallon's (2004) research, one of the reasons students drop out of school or exit prematurely is frustration and a lack of self-esteem. This assertion regarding student dropout due to frustration and low self-esteem finds resonance in the work of Kember (2016), who notes that emotional and psychological factors significantly influence student's decisions to persist or disengage from their studies. This highlights the necessity for institutions to foster supportive environments that promote resilience among learners. Knowledge of this issue has inspired researchers such as Pierre (2014) to further investigate the factors that contribute to attrition in TVET to make appropriate recommendations to increase student retention in TVET programmes. Their analysis shows that personal, financial, social, and institutional factors were major contributors to student attrition in TVET.

Attrition cases have a significant negative impact on institutions success as well as overall negative effects. These include financial losses because of unpaid enrollment, disruption of organisational management, exhausted operating expenses, squandered profits, unprotected business liabilities, and a negative image of the institution (O'Keefe, 2013 as cited in Sabtu et al., 2016). These findings revealed that the contributing factors for students dropping out of TVET institution programmes varied. Nevertheless, irrespective of those reasons, high student attrition

rates have emerged as a critical concern in education, prompting many scholars to investigate the causes and consequences of TVET institutions.

Given the HEART NSTA Trust's role in improving access to skills training, particularly among unattached youths, the Auditor General of Jamaica included an audit of the Capacity of Skills Training Programme in their Strategic Audit Plan. The objective of the audit was to determine whether HEART and the Country received value from the money spent on skills training programmes. In their 2020 Performance Audit of the Trust, it was stated that the Trust was not optimising value for money given the low throughput rate (Ellis, 2020). The report concluded that, despite significant efforts, HEART only achieved a certification rate of 45% relative to enrollment in skills training programmes from 2014-15 to 2018-19, implying that it did not obtain optimal value from \$30.5 billion in training expenditure. One can also conclude that this underscores operational deficiencies that need to be addressed in order to improve the institutions' effectiveness.

Admitting that their actual performance has been disappointing for the most recent past with rates of 47%, 42% and 53% for the 2018-19, 2019-20 and 2020-21 periods respectively (HEART/NSTA Trust, 2022, p. 27), they have asserted that many trainees learn the skills but struggle to understand the underlying knowledge, which slows their certification rate. Low certification and throughput rates have harmed the Trust's reputation, and the question of optimising value and making a meaningful positive impact on the Jamaican economy has arisen in the minds of stakeholders (HEART/NSTA Trust, 2022, p. 27). The Trust, however, has since been actively exploring ways to address the issue and is exploring several strategies.

TVET is essential for equipping individuals with the requisite skills needed for the workforce, but because of the diverse views of stakeholders, the evolving demands of the various

industries, along other issues and concerns, gauging its success can be difficult. The TVET sector in Jamaica confronts many obstacles, such as the lack of funding, fragmented delivery, diversity, low throughput rates, poor alignment between training programmes and labour market demands, and unstable partnerships. Without addressing these obstacles through empirical evidence, the TVET sector in Jamaica will continue to lack the accuracy of success measurements.

2.13 Measuring Success Across TVET Institutions

Recognising that each country and economic situation is unique, this study aims to identify, define, and apply what can be considered the fundamental principles of an effective TVET system within institutions. TVET is intended to provide a population with the requisite knowledge and skills necessary to successfully secure and retain employment (UNESCO, 2021). With this understanding, a quest is necessary for success in managing and delivering this educational system. In Winch's (2013) study on the attractiveness of TVET, he reviewed several pieces of literature by earlier advocates of mass education. He deduced in his findings that neither of the authors paid much attention to vocational education as they believed that a good general education provided a solid foundation for citizenship, even if it was not always required for employment. This exclusion is a remnant that some developed countries have struggled to overcome in their TVET development, with varying degrees of success (Winch, 2013, p. 94). To the best of this researcher's knowledge, there is minimal research done in Jamaica on TVET institutions to establish it being a success against a set of specific criteria and standards.

To date, TVET research has primarily focused on whether TVET is relevant and/or effective in developing countries, without adequately indicating what mechanisms, working in what context, lead to effective TVET (Baraki & van Kemenade, 2013, p. 493). As further cited in Baraki and van Kemenade (2013) by Pawson and Tilley (1997, p. 72) they maintain that "when an

evaluator informs that a programme is a success, he or she should demonstrate what it is about the programme that works for whom and under what conditions.” In essence, a realistic approach in evaluations is paramount in trumpeting success. Nonetheless, previous TVET research in the region has been limited in this direction. Taking this into account, for this research, the critical success factors associated with managing a TVET institution are the primary indicators or conditions that are used as measures throughout the institution to achieve its goals.

As previously indicated in this chapter, critical success factors (CSF) which can also be referred to as key success factors (KSF) or key performance indicators (KPIs) across TVET institutions may change over time. This is because they are situational assessments grounded on the state of the market or sector conditions, economic analysis, or governmental mandates. KPIs are “an analysis, summarisation, and selection of factors that are critical to the successful operation of organisations or departments,” according to the definition of Wu and Chen (2012) as cited in Hadebe and Khumalo, 2018, p. 85). The success of TVET institutions can be defined as their ability to deliver quality education and training that meets the requirements of the industry, effectively equipping students with the skills and knowledge required for gainful employment and a life of sustainability. As a result, they are quantifiable performance measures that organisations use to assess success, school performance, and school position in terms of effectiveness (Hadebe & Khumalo, 2018). Based on their individual perceptions of how success should be measured, stakeholders may view the success of a vocational institution differently. Whatever criteria researchers consider to be more important, the unavoidable criteria of ensuring the programmes are in line with current and future labour market parameters remains.

Kibet et al., (2019) conducted a study that used the Relative Importance Index (*RII*) to determine the relative importance of critical success factors in Technical and Vocational Education

and Training (TVET). The study sought to identify critical success factors influencing TVET quality in Kenya. Data was gathered by the researchers using a survey questionnaire from TVET stakeholders and then analyzed the data using the *RII* method. In employing the *RII* to prioritise the critical success factors, the study discovered that “quality of teaching and learning” was the most important factor, followed by “adequate funding” and “availability of qualified staff” (Kibet et al., 2019).

Alharbi and Alkathiri (2018) discovered similar results in their study. The goal of the study was to pinpoint the critical success factor affecting TVET quality in Saudi Arabia. To determine the relative importance of critical success factors, the researchers used a survey questionnaire to gather data from TVET stakeholders as well as *RII*. As per the study, “quality of teaching and learning” was the most important factor, followed by “availability of qualified staff” and “adequate funding” (Alharbi & Alkathiri, 2018). Likewise, Ngugi and Wambugu (2018) sought to identify the critical success factors that influence the quality of TVET in Kenya. The results of their study revealed that “quality of teaching and learning” was the most important factor, followed by “adequate funding” and “availability of qualified staff”.

An additional study was conducted by Kefeni et al., (2019) to determine the critical success factors influencing TVET sustainability in South Africa. Data was gathered by the researchers using a survey questionnaire from TVET stakeholders and then used the *RII* method to analyse the data. Using the *RII* to evaluate the critical success factors in order of importance, the study concluded that “adequate funding” was the most important factor, followed by “quality of teaching and learning” and “availability of qualified staff” (Kefeni et al., 2019).

In order to ascertain the critical success factors that influence the quality of TVET in Pakistan, the *RII* method was again used by Ali et al. (2019) to identify those factors and found

that “quality of teaching and learning” was the most important factor, followed by “availability of qualified staff” and “adequate funding”. Mwamwenda’s (2018) study of the critical success factors influencing TVET sustainability in Tanzania also found that “adequate funding” was the most important factor, followed by “quality of teaching and learning” and “availability of qualified staff.” Research was done by Tadesse and Tadesse (2019) to determine the critical success factors affecting the quality of TVET in Ethiopia. The order of their study results was similar to that of Ali et al. (2019) and Alharbi and Alkathiri (2018), with “quality of teaching and learning” being the most important factor, followed by “availability of qualified staff” and “adequate funding.” These studies unequivocally demonstrate that the “quality of teaching and learning” stands as the paramount factor, which is related to TVET institutions internal quality assurance mechanisms. This factor unquestionably has a significant impact on student’s academic achievement as well as their TVET success.

Akhuemonkhan and Raimi (2014) study on the impact of quality assurance in TVET in Nigeria revealed that policymakers need to focus on areas such as quality assurance, funding, programme relevance, and access/participation for TVET to be impactful. The study adopted a quantitative approach, where several hypotheses were formulated for empirical testing and verification. The recommendations were geared towards improving the TVET system in Nigeria.

Idjawe (2020) study highlighted several critical issues that impede the quality of learning outcomes in TVET in Nigeria. The quality and learning outcomes are hindered by a number of factors, including inadequate funding for technical and vocational education, leadership issues, ineffective management and inadequate teaching facilities, and ineffective use of resources. The study concluded that the government must address these issues in order to improve the quality of technical education and learning, resulting in the success of the institutions.

A successful TVET system, according to the World Bank, should have four key features: alignment with labour market demand, programme quality and relevance, effective delivery, and efficient management (Betcherman et al., 2018). Labour market alignment requires TVET institutions to offer programmes that complement the skills and knowledge required by employers, giving graduates a better chance of finding work. Programme quality and relevance refer to the effective creation and execution of courses, such as the use of modern educational techniques and the integration of industry standards and practices (World Bank, 2014). Effective delivery requires students to have access to exceptional instructional material and infrastructure, as well as to be taught by qualified and competent instructors who employ methods that are student-centred (Bolívar & Martínez-Garrido, 2018). Lastly, efficient management entails effective resource utilisation and establishing transparent governance, responsibility, and accountability mechanisms (OECD, 2014).

MacDonald et al., (2010) investigated and established principles and strategies of a successful TVET programme at the Management and Training Corporation (MTC) in Utah, United States of America (USA). MTC's research division, the MTC Institute, is dedicated to promoting innovations and exemplary practices, as well as projecting trends relevant to professional development and corrections (MacDonald et al., 2010). Their international reach in education and vocational expertise extends into countries such as Sudan, Iraq, Mongolia, Jordan, and Palestine. In their study, it outlines the six most important principles that underpin a successful TVET system. The principles are labour market relevance (meeting the needs and expectations of employers); quality of delivery; access for trainees; standardisation; inclusion of soft skills; and securing an uninterrupted funding source (MacDonald et al., 2010).

Jamaica's National Policy for TVET addressed several critical factors that would be considered a success in the implementation of said policy across all departments and institutions involved in the delivery of TVET. These include the formation of partnerships, marketing and promotion, the use of labour market research, human resource development, resource allocation, regulatory compliance, career guidance, and work-based programmes (National Policy for Technical Vocational Education and Training, 2014, p. 38).

Following an interview with an Acting Senior Director within the HEART NSTA Trust, at the time of this research, it was revealed that since providing training to the nation's workforce, there is yet to be a documented list of factors that can be contributed to the success of a vocational institution or centre. Nevertheless, the interviewee asserted that the vocational institutions within the Trust all contribute to the organisation's Corporate Operational Plan, which is measured by KPIs or strategic objectives which change over time. Having over 34 years of experience with the 40-year existence of the country's national training agency, the interviewee listed programme market relevance, quality assurance measures, institutional governance/leadership, the employability of the students, financial support and budget management, and partnerships as a few dominant supporting key performance indicators (Anonymous, personal communication, November 4, 2022).

Programme Relevance to The Labour Market

Recognising the prospects of work-based learning programmes as a productivity driver necessitates careful planning and implementation. A reliable labour market information, gleaned from the needs of employers for a country, particularly in prioritised trades and occupational areas, must be the foundation of an effective education and training system for any country (Morris, 2013). Morris (2013, p. 128) further underscores that a responsive TVET system should include

methodologies and processes in collecting labour market information from employers that are in alignment with the changes in technology and new skills required. For instance, a programme that is excessively long for a given skill may not be enticing to learners and may waste public resources, but a programme that is too short might very well fail to pique employer interests. It is essential that students have access to TVET programmes as well as access from TVET programmes to higher education programmes to ensure their competitiveness, rather than simply serving as a dead-end route (Nam, 2009; Fitzgerald et al., 2020). This will ensure that they are equipped with the necessary skills and knowledge to pursue higher education and employment.

Makworo et al.'s (2013) study on linking TVET institutions and industry in Kenya, indicates that linking TVET institutions and industries would lead to the provision of relevant practical skills for industrialisation. Their study revealed that most of the linkages found within the institutions were those related to industrial attachment programmes for students. Their study used a survey research design and included 340 respondents: 140 were students, 150 industrial training coordinators and 50 TVET providers. The linkages scrutinised were staff exchange, research collaboration, student attachment, instructor industrial experience, and equipment sharing. From an industry perspective, 74.6% had student attachment linkages, and the TVET providers had 100% student attachment linkages. While these results are admirable and these linkages are considered critical, it can be argued that the other areas for linkages with the labour market need to be strengthened.

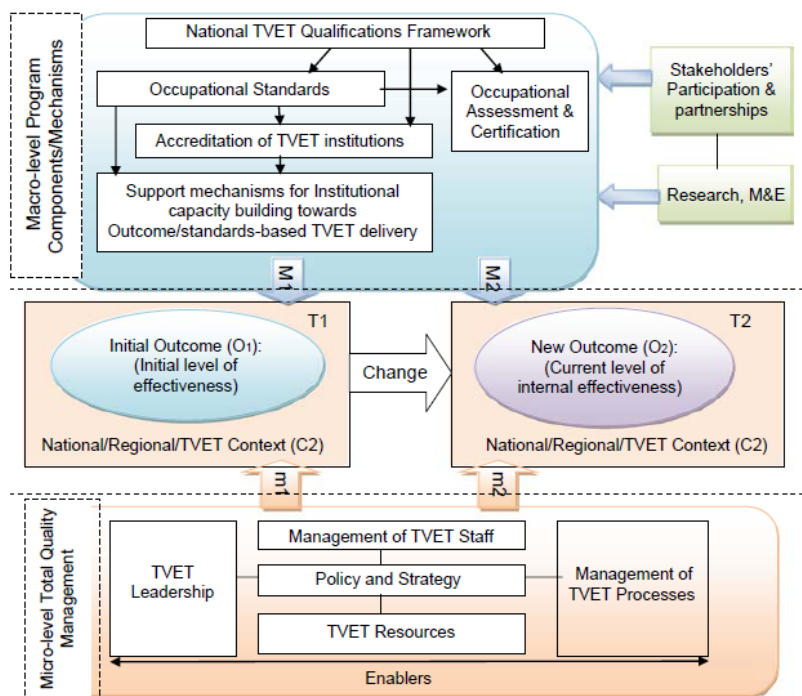
As demand for postsecondary and tertiary education has grown in most countries, along with the various shifts within the labour market, there has been increased pressure for diversification of the types and modes of provision at these levels (Winch, 2013). These have included developing skills through vocational training for a wide range of occupations that did not

previously exist or for which there was no higher-level qualification (Winch, 2013, p. 68). Youth in many countries face a difficult labour market, with disproportionately high youth unemployment rates, and a continuation of fixed-term or informal employment. The youth unemployment rate in the OECD area (ages 15 to 24) rose to 11.3% in January 2022, up from 11.2% in December (OECD Unemployment Rates, 2022). In combating this challenge, countries such as England and the United Kingdom have expanded their apprenticeship programmes (Winch, 2013, p. 68; Kis, 2016, p. 8).

When compared to 2010-11, England doubled their government spending on apprenticeship programmes in 2019-20, while in 2015, the United States announced the award of 175 million USD in expanding their apprenticeship programme (Kis, 2016, p. 8). Greinert (2009) research suggests that it is imperative for vocational education policies to be in line with labour market expectations in order to guarantee that graduates possess the skills required by employers. Winch (2013) agreed that investment in TVET should always be considered a critical component of labour force planning, as well as the emphasis on skills for growth, has led proponents of human capital theory to propose various policy solutions. The central claim of this theory is that investing in human capital development initiatives such as technical vocational education and training increases the competency and skills that a country requires for economic growth and development (Idjawe, 2020). Law (2010) argues in Winch (2013) in his account of the development of TVET in Singapore, that the ability to align policy shifts in TVET with economic development has been a significant factor in Singapore's economic success. With these expansions, they have ensured that their VET schemes are aligned to current and future labour market demands, while actively engaging the business community. Employers are more likely to invest in TVET if there is a positive economic return, which is consistent and aligns with their business strategy.

Internal and External Quality Assurance

Baraki and van Kemenade's (2013) study of the effectiveness of TVET shows that total quality management (TQM) is regarded as one of the most important drivers of TVET quality success. Instead of using an experimental research design, the study utilised a realistic approach to evaluation. They emphasised that TQM using this realistic evaluation approach can facilitate the process for a thorough evaluation of TQM at the TVET institution level. There may be a national policy (macro mechanism), but the difference between success and failure is made at the organisational level (micro/institution-level), where TQM can provide the conditions for TVET to thrive (Baraki & van Kemenade, 2013). The conceptual framework is further depicted and explained in Figure 2.6, which was adopted by the authors. The internal mechanisms (internal quality assurance) for quality management are assumed to be associated with TVET leadership; management of TVET staff; policy and strategy; TVET resources; and management of TVET processes. The quality of training and delivery, availability of qualified staff, course, and programme evaluations, established student outcomes, and having a business continuity plan are also indicators of the wider internal mechanisms for quality management.

Figure 2.6*The Conceptual Framework of TQM in TVET*

Note. From Baraki, A. H., & van Kemenade, E. (2013). Effectiveness of technical and vocational education and training (TVET): Insights from Ethiopia's reform. *The TQM Journal*.

As for the external mechanisms (external quality assurance) they are conceptualised as being related to the accreditation of TVET institutions; stakeholders' participation and partnerships occupational/industry standards; occupational assessment and certification; regulatory/support mechanisms for institutional capacity building toward outcome or standards-based TVET delivery; TVET research, monitoring and evaluation (Baraki & van Kemenade, 2013). Loose and Spöttl (2015) argue that "excellence" cannot be dropped into educational institutions as it must be built from within institutions, with a participatory approach to vocational and curriculum development. They further put forward that securing the quality of training is a very complex process that necessitates careful consideration of "best practices." This can be interpreted as meaning that the

success of training programmes is often determined by the quality of the trainers, the quality of the training, and the quality of the training materials and associated resources.

Akhuemonkhan and Raimi's (2014) study on the impact of quality assurance in TVET in Nigeria found that there is a significant relationship between TVET and quality assurance in institutions. The authors recommend that robust mechanisms for quality assurance are put in place to monitor and control the training quality and implement uniform standards, processes, and teacher training certifications. Their study used a quantitative research design that included 150 respondents from a TVET institution using the purposive sampling technique. The study's results further underscore the need for quality assurance measures to act as objective evaluations for enhancing quality.

Standardisation and Quality Assurance Systems

The targeted outcomes of a technical programme within vocational institutions may vary. Despite those intended targets, there must be total quality measure (TQM) systems in place that address sustainable quality improvements. While quality may be defined in literature from varying perspectives, the concept of quality in education is multi-faceted. There is no standard definition for quality in TVET, as there is in all aspects of production and service delivery (Rasul et al., 2015, p. 81). Paradoxically, the term "quality" in higher education is somewhat ambiguous and highly contextual, with definitions that span from the attainment of intended outcomes to direct financial implications (Nadzir & Hashim, 2014, p. 176). In understanding quality in higher education, Harvey (2006) explored the connection between quality and standards. He argued in his article that though related, quality and standards are distinct and not the same. Quality refers to a process of transformation, whereas standards refer to levels of measurable outcome or having fixed criteria (Harvey, 2006). This perspective is further reinforced by Sadler (2013). Sadler argues that while

standards can provide benchmarks for performance, the concept of quality transcends mere compliance to these benchmarks and involves continuous improvement and transformation within educational practices. Quality is fluid and ever-changing, and in the context of higher education, it is fundamentally about growth and improvement. In essence, quality is concerned with how things are done, whereas standards are used to assess targeted outcomes.

Morris (2013) argues that because of the expansion of the global marketplace and the need to provide training of comparable standards to those obtained in the developed world, quality assurance in TVET is a prominent area in the Caribbean. He however puts forward strongly that quality assurance in TVET is not well understood by stakeholders in the region, and as such, this critical aspect needs to be revisited. Loose and Spöttl (2015) however settles that quality education and training are becoming national priorities around the world. Quality assurance efforts should bear fruit enough to meet the needs of both trainees and the labour market. To safeguard quality assurance efforts, government must take immediate steps that allow TVET institutions to be effectively funded (Rasul et al., 2015). Sahu et al. (2013) study on critical success factors for sustainable improvement in technical education excellence revealed that there are quality improvement initiatives that are most comprehensive and have the greatest potential to address technical institute quality issues.

Loose and Spöttl (2015) argued that quality training programmes can be subdivided into fourteen main principles. These principles range from establishing a clear mission for each training institution to emphasising the significance of the notion of the “skilled worker” and alternating training between theory in the classroom and practical training sessions to the establishment of paramount standards as a reference for the type of training provided as well as a reliable orientation toward the needs of employers (Loose & Spöttl, 2015. P. 1). They also emphasised that strong

public and political support should be directed specifically at vocational training and technical education, rather than education in general. In exchange, young people can be encouraged to pursue training. Albeit both standards and quality can be regarded as two sides of the same coin, the criteria for evaluating academic standards should be within established internal (institutional) and external (national) quality parameters. Although this is arguably accurate, leadership, as defined by literature, is important to overall quality management and one of the critical success criteria for maintaining continuous improvement in any business.

Institutional Governance/Leadership

Studies have proposed various success factors in managing TVET within institutions, but having competent leadership is one factor that appears in most of them. According to Pont et al. (2011), effective leadership, management, and administration are required for successful schools. While the focus of their report is on leadership, they conclude that the term can also be applied to managerial and administrative tasks. However, Robertson and Frick's (2018) study on the conflicting priorities of leadership and management in TVET institutions suggests that the lines between leadership and management have become blurred in vocational education. Their study incorporated focus-group interviews with 61 leaders from South African TVET institutions, followed by 15 semi-structured individual interviews. The respondents believed that management and leadership roles are closely related and might overlap but being a manager does not necessarily mean you are a leader. From their perspective, management is concerned with the institution's business and its many functions. They argue that leaders of TVET colleges need to develop extensive sector knowledge of teaching and learning to keep up to date with developments and trends in order to make the right decisions and steer the institution in the right direction. This

effective leadership perspective is supported by Baraki and van Kemenade (2013) conceptual framework of TQM at the micro-level, where TQM is anchored within the institution's leadership.

Leadership within the institutions is responsible for the management of TVET processes, staff, policy, strategy, and resources. A TVET administrator has responsibilities not only for the institution's leadership, but also for the external environment and climate change, the level of professionalism and morality of lecturers, student performance and achievements, and the success of TVET institutions (Mohamad & Omar, 2014, p. 29). Additionally, academic leadership should have a great appreciation for technological advances that allows them to set goals, initiate initiatives, communicate, support, organise, coach, evaluate, manage, provide information, and model behaviour while implementing changes within an organisation (bin Ismail & Yasin, 2020, p. 31).

Leaders in TVET should practice different leadership styles in order to be flexible (Abdullah et al., 2021). These include leading with integrity, digital leadership, innovative leadership, turnaround leadership, futuristic leadership, sustainable leadership, resonant leadership, instructional leadership, distributed leadership, TVET leadership, transformational leadership, and situational leadership, among others. By employing these various leadership styles, team leaders can better respond to the needs of their respective contexts.

Fiandra et al. (2021), however, discussed the characteristics of leadership in vocational education as well as the difficulties in implementing leadership policies in said educational system. When viewed through the lens of TVET's leadership philosophy in education, their research revealed that transformational leadership appears most frequently and is at the top of the list. Transformational leadership is frequently regarded as a strong driver for an organisation in order to survive threats and crises (Kim et al., 2021 as cited in Fiandra et al., 2021). This type of

leadership is strongly influenced by persons who are committed to their members being the core focus of their organisation. Not only does transformational leadership entail moralising individual followers, but also fosters mutual trust and an ethical climate in organisations (Engelbrecht et al., 2014b, p. 2).

Keedir and Geleta (2017) argue that the absence of transformational leadership practices in TVET institutions is conducive to negatively affecting the institutions' performance. Thus, this type of leadership is linked to the success of the institution. However, support must be given to capacitate the leadership to ensure the successful implementation of change. Badenhorst and Radile (2018) hypothesise that ineffective and fragmented leadership, as well as poor management practices, are to blame for the TVET system's fragmentation in South Africa. Their research concluded that to improve organisational performance, leaders must use distributed instructional leadership in vocational colleges. Their study utilised a qualitative research approach, mainly inductive, to capture the participant's perceptions of the poor leadership and management practices within TVET institutions in South Africa. Given the agility of the TVET landscape, the leaders who govern these institutions must be able to effect change. Additionally, as part of the leadership process, leaders must be open to feedback and criticism from a variety of evaluation mechanisms to effect change. Competent and effective leadership in TVET institutions can be counted enormously as an essential element of the institution's success.

Partnerships and Collaboration

One of the critical success factors of a TVET programme in preparing highly skilled workers for the industry is effective private-public partnerships (PPPs) and coordination within ministries (Choi, 2021, p. 43). In some countries around the world, PPPs have become an important tool for implementing TVET programmes (Woldetsadik & Lumadi, 2015). In their study

on the partnership of Technical Vocational Education and Training colleges and industries in Addis Ababa, Woldetsadik and Lumadi (2015) suggested that necessary conditions should include a clear understanding of PPP and its purpose, equitable outcomes expected from each partner, and the need for implementation in accordance with the agreement reached. Wahba's (2012) discussion on TVET challenges and priorities in developing countries argues that more partnerships across different sectors of industry need to be established in a bid for greater impact to be felt.

Studies have however shown that there are difficulties faced by TVET institution managers when handling partnerships and collaboration. Mohamad et al.'s (2013) study on institution directors' barriers to managing TVET institutions-industry partnerships identified managerial skills and common barriers as the two main obstacles to the collaboration between TVET institutions and industries. The study utilised a quantitative approach and surveyed a total of 53 TVET institution directors and 30 representatives from the industry. The data was analysed using item measures and person measures. Technical, human, and conceptual skills were the three categories used to categorise managerial skill barriers. These are considered to be internal factors. While the common obstacles to institutional-industry partnerships are external, which are governance issues, funding and financial issues, management issues in collaboration, and industry-institution culture issues (Mohamad et al., 2013).

The implementation of dual vocational education systems presents a challenge between schools and companies according to research by Boffo et al. (2019). The study highlights that maintaining effective collaboration through sufficient communication channels, aligning curricula with industry needs, and mutual trust between schools and companies aid in overcoming the key challenges. Furthermore, addressing logistical challenges, including the coordination of schedules and resource allocation is crucial in ensuring smooth and effective collaboration. This emphasises

the importance of fostering and sustaining these partnerships to ensure the success and relevance of TVET programmes. Implementing an industry-driven TVET framework, as shown by Kim and Lee (2017), strengthened success indicators because graduates were more prepared to satisfy the requirements of the industry. Additionally, the industry was able to benefit from the increased productivity of the graduates. The significance of industry partnership and collaboration as a success metric is emphasised in this connection.

According to Kayere et. Al.'s (2019) study on the engagement between TVET institutions and industry to enhance skills development in Kenya, industry and training institutions need to form partnerships, as well as industry should be more involved in the training and curricula development process. This has a significant impact on the employee's technical and life skills. The study utilised a structured survey and purposive sampling to capture perceptions through quantitative data from 71 industry respondents with diverse personnel sizes and operating in 31 countries. Industry's participation in the training and curriculum development process is crucial for the insurance that the skills being taught are relevant and up to date with the industry demands. By actively engaging with TVET institutions, industry professionals can provide valuable insights and expertise, helping to bridge the gap between theoretical knowledge and practical application. The idea that collaboration between TVET institutions is essential to improving the quality, feasibility, and impact of TVET programmes is supported by empirical data. Institutions can address industry needs, capitalise on their strengths, and promote innovations in vocational education and training by collaborating.

As indicated by Oviawe et al., (2017), TVET institutions and industry partners need to work together to close the skills gap. Their study examined the best practices to bridge the skill gap between TVET schools and the workplace to satisfy the labour demands of the twenty-first-

century workplace. The best practices proposed by the study were shared resources and funding; curriculum development and transformation of instruction; instructional facilities; social and academic support; skill development and entrepreneurship; along with the combination of political will. Similarly, Akoojee and McGrath (2015) concurs that encouraging curriculum development that is in line with industry demands is one significant way that collaboration amongst TVET institutions can promote success. According to the authors, cooperative efforts can result in the development of programmes that are industry-relevant while providing graduates with the abilities and information that employees value. Effective collaboration between TVET institutions can result in shared resources, knowledge, and best practices, which can ultimately raise the calibre of instruction and training given (Akoojee & McGrath, 2015).

Dwumfour-Asare and Typographical Society (2017) also agree that institutions can maximise their operations and provide students with a greater selection of top-notch programmes by combining their resources and skills. This collaborative initiative can address resource constraints and enhance TVET programme's cost-effectiveness. Furthermore, collaboration within TVET institutions can also foster innovation and knowledge exchange. As suggested by Tlala and Ntshoe (2018), collaborations between institutions can promote a culture of exchanging best practices, working collaboratively on research initiatives, and using cutting-edge instructional strategies. This is advantageous to students as well as improving vocational education and training generally. The notion that cooperation across TVET institutions is essential to improving the calibre, applicability, and efficacy of TVET programmes is supported by empirical evidence. By joining forces, institutions can satisfy industry needs, capitalise on their uniqueness, and promote innovative thinking.

Collaboration and leadership are key to shaping the future of work and productivity. Leadership is needed to provide structure to ensure that ideas and visions are shared and implemented in a way that is beneficial to all stakeholders involved. In his remarks on the Vision 2030 development plan for Jamaica, former prime minister, The Honourable Bruce Golding, indicated that the victory and success of the plan hinges on sustainable public-private partnerships, and these dialogues are central (Planning Institute of Jamaica, 2009a). The plan further outlines those opportunities for such partnerships and looks at cohesive and collaborative efforts of the government, the opposition, the private sector, academia, faith-based organisations, trade unions and other civil bodies. Together, they are elements that are essential for creating an efficient and productive labour force. This would suggest that public-private partnerships will play an integral role, where all sectors in society are bridged and partnerships and collaboration will be a critical factor in measuring success.

Partnerships should also play an integral role in decision-making related to TVET for the system to appear more appealing. Governments, being that they are at the nucleus, should work in complex and sometimes contradictory ways to ensure the partnerships are supported. Given that these types of partnerships ultimately rest on policy endorsement by the government, their role is to ensure that the decisions made are culturally sensitive and supported by the communities and other civil society to which they represent (Seddon & Billett, 2004). OECD (2011) recommends that governments should take the lead in implementing such decision-making procedures, which is best accomplished by establishing long-term structures that include employers and other nongovernmental organisations such as trade unions and local bodies.

Jamaica's TVET policy holds the view that a key success factor in the implementation of the activities within the said policy is that the collaboration with all the relevant sectors resides

with the Ministry of Education under the leadership of the government (National Policy for Technical Vocational Education and Training, 2014, p. 43). According to Winch (2013), there are two critical decision-making elements for VET, the government, and employers. By leveraging their collective expertise, the challenges presented within the sector, and by extension, the institutions can be addressed with opportunities that create more efficient processes. It is rather difficult to make good decisions without the full engagement of each and their extended collaboration.

Student Centredness

There is growing evidence that school leaders/managers/administrators can help boost student learning by altering the settings and context in which teaching, and learning take place (Pont et al., 2011). Heck and Hallinger's (2014) study on modelling the longitudinal effects of school leadership on teaching and learning revealed that the effectiveness of the school's instructional environment served as a mediator between the effects of leadership on student learning. The findings of their study also revealed that school leaders can enhance student outcomes by creating an environment where instructor's effectiveness levels are more consistently high. Employing a cross-classification approach to quantitative modelling, and a multilevel longitudinal data set sourced from 60 schools, the study's findings also showed that the classroom-related pathways examined in the study had an impact on the measures of student success and accomplishment.

Learning in the 21st century encourages students to be active participants. It enables them to explore different pathways and discover their abilities. It also stimulates critical and creative thinking, as well as the application of information in the real world. This student centred approach embodies the TVET philosophy. The traditional, or teacher centred, approach places emphasis on

teachers and what they teach, whereas the student centred approach focuses on students and the knowledge they require (Okuta & Yayock, 2018). Several studies such as Raihan (2014), Hashim (2016), Mohamad (2017), Powell and McGrath (2019), Siew et al. (2020), Okolie et al. (2021), Hashim (2024), and many more have revealed that student centred approaches such as problem-based learning have a direct link to student performance outcomes, graduates' profiles, improved intellectual levels, and employability skills.

Siew et al.'s (2020) study on bridging classroom and society for TVET sustainable development concluded that problem-based projects in the classroom are a dynamic approach to real-life problem-solving when combined with societal-based projects. Their study utilised a Reach-Out Project: (R'Project) transformative delivery method, which was identified and implemented within their teaching and learning programme. Okolie et al.'s (2021) study on improving graduate outcomes in TVET systems of Nigerian higher education concluded that problem-based learning has positive implications for quality TVET graduate outcomes, in that it motivates learning and improves students' self-efficacy. Using a qualitative approach where 55 participants were interviewed through a semi-structured interview approach, the study further revealed that there are possible major challenges to the effective implementation of problem-based learning. These include the inadequacy of teaching and learning facilities; the recruitment of unqualified, and incompetent TVET educators; dishonesty in the education sector; and difficulties in identifying real-life problems, among others.

In the context of managing TVET institutions, student centredness refers to designing programmes and services that prioritise the needs, preferences, and goals of students. The approach emphasises tailoring and integrating essential job skills and equitable access into the curriculum and educational framework while ensuring equal opportunities for all students. Many institutions

are moving towards student centred approaches as a solution to producing graduates with the requisite critical and creative problem-solving skills preferred by most employers in the industry (Mohamad, 2017). In addition to project-based learning where the students tackle real-world problems and work in teams, and the flipped classroom, TVET institutions rely heavily on student support services to help them succeed since they increase student retention, provide mental health support, boost academic achievement, and prepare graduates for the workforce.

Academic advising, counselling, and mentorship are examples of support services that are essential in assisting students in navigating their educational journeys. Research pioneers such as Tinto (1993), who have researched student retention extensively and have developed different models that examine student retention, have concluded that strong support systems significantly increase retention rates by addressing academic and social integration challenges. Scholars such as Sperling and Tucker (1997), who have conducted substantial research in this area, have determined that student support services are essential for student success in TVET institutions. This is because they provide academic, personal, and career support to students, thereby improving retention rates and academic achievement. These services include financial aid assistance, counselling, career guidance, tutoring, and disability services (Sperling & Tucker, 1997). Research by Allen and Smith (2014) supports these studies by showing a link between improved student retention rates and academic achievement in TVET institutions.

Academic and non-academic support are the two primary categories into which student support may be divided. The goal of academic support is to help students improve their cognitive and learning abilities and entails evaluating student's learning progress by providing them with feedback and non-academic emotional and administrative assistance, providing comprehensive aid for a well-rounded experience (Mangwende and Nhlanhla, 2023). Student support services have

also been known to contribute to success by providing academic tutoring and mentoring. Research by Johnson et al. (2018) has shown that personalised academic support can significantly impact student learning outcomes in TVET programmes. Similarly, it has been demonstrated that learning resources, study techniques workshops and tutoring improve student performance. A meta-analysis by Ritter et al. (2009) reveals that academic support services can lead to improved grades and educational outcomes, helping students to apply theoretical knowledge in practical settings prevalent in TVET education. Additionally, career counselling and guidance services play a focal role in supporting students in TVET institutions. These services involve job placement assistance, internships, and resume writing workshops, all of which prepare students for the workforce. Career support is directly correlated with employment rates and graduate satisfaction, according to research by Hughes and Karp (2004). Studies by Brown and Lee (2016) have highlighted the importance of career guidance in helping students make informed decisions about their career aspirations. These authors have argued for the criticality of career support. This information is considered vital for TVET institutions, which desire to prepare students for employment.

In an educational setting, it serves as essential to address mental health. Mental health issues are common among students, and teachers should be equipped to provide support. These issues can affect a student's ability to learn and have implications on their overall academic performance. For this, the provision of non-academic student support services is essential for managing these health concerns and supporting student success. Moreover, mental health and wellness support services are significant to the overall well-being of students in TVET institutions. Research by Reetz et al. (2018) and Eisenberg et al. (2009) emphasises the importance of mental health services provided by student support centres in promoting student well-being and academic success. According to their study, psychological distress can significantly impact academic

performance and retention. Mental health counselling is one of the student support services that help students manage stress, anxiety, and other mental health challenges and enhance their general well-being, which improves academic performance (Reetz et al., 2018; Eisenberg et al., 2009). Reetz et al. (2018) study reveals that student support services enhance mental health, academic success, and overall educational journey by providing appropriate care and interventions. Gallenger (2013) and Adams et al.'s (2019) study also agree that by addressing mental health concerns, these services contribute to creating and promoting a supportive environment that fosters student success.

Thriving TVET institutions depend on essential student support services for success. By offering individualised tutoring and mentoring, students can receive the help they need to succeed academically, and through career coaching services, TVET institutions can assist students in aligning their skills and interests with suitable career opportunities. Student support services that address mental health concerns are also vital in supporting student success by promoting well-being, providing psychological support, and facilitating access to mental health resources. Through addressing mental health needs, these services contribute to creating a supportive and conducive environment for students to thrive academically. Student support if properly managed, might greatly boost educational achievement and open more prospects. However, student support falls under the accountability of the institution, and TVET leaders need to be accountable for these support services.

Badenhorst and Radile (2018), found that when leadership and lines of accountability are unclear, decision-making is hampered, which contributes to institutional instability. This situation potentially has a negative impact on student performance by neglecting the essential tasks of

teaching and learning that strive to improve performance. This could lead to a decrease in the academic performance of students which significantly affects their employability.

Undoubtedly, employers in the labour market look for a variety of skills in graduate applicants, a lot of which are common to a variety of career fields. These skills are at times referred to as employability skills, soft skills, or job-related skills. Employability skills are defined as the abilities considered necessary not only to obtain employment but also to advance within an enterprise to maximise one's potential and successfully contribute to the organisation's strategic initiatives (Aida et al., 2015; Kenayathulla et al., 2019). Employability is the most important skill to have, aside from technical knowledge in the twenty-first century, to compete for and keep a job in the industrial global market (Ismail & Mohammed, 2015). Communication, teamwork, leadership, initiative, problem-solving, flexibility, and enthusiasm are frequently mentioned (Zaharim et al., 2009; Ismail & Mohammed, 2015). Albeit technical skills are important, these set of skills and characteristics are likely to lead to an individual gaining, retaining, excelling in employment, and obtaining new employment.

There has been an increase in the demand for soft skills within the global space, for skills such as punctuality, etiquette, teamwork, and productivity among many others (Morris, 2013). Ismail and Mohammed (2015) put forward that there are three categories of employability skills namely across the globe based on literature. They are categorised as follows, Generic, Core Skills, and Personal Attributes. Generic skills are those that are non-technical and involve competencies that span across occupations. These are not limited to Problem-Solving and Adaptability, Self-awareness, Communication, Professionalism, Teamwork, Leadership, Goal Setting Initiative and Enterprise Skills (Ismail & Mohammed, 2015, p. 75). On the other hand, Core Skills are those competencies, knowledge and principles that are directly related to the area of discipline whilst

Personal Attributes are positive attitudes and characteristics of an individual that are used to obtain, keep, and thrive in employment.

ADB (2007a) cited in Winch (2013) that employers were pleased with graduates' technical knowledge, but they wanted to see more emphasis placed on soft skills such as problem-solving, communication, and work ethics. The information was garnered through a tracer study of TVET graduates in Malaysia. Nonetheless, the fluid development of these skills is at times strengthened through the alliance between TVET institutions and the industry. This collaboration demonstrates the connections between concepts learned and the practical aspects needed on the job. Adequate collaboration between TVET institutions and industries would result in the provision of relevant practical skills for industrialisation (Raihan, 2014). The collaboration improves the knowledge and skills of TVET students, as well as their employability (Raihan, 2014, p. 50). To create a TVET system that is responsive to the labour market, it is only prudent that student employability is aligned to industry requirements and local needs which is a collaborative effort. Technical and Vocational Institutions, and established, and emerging economies need to recognise that a greater network among themselves is also likely needed to measure success.

For a long time, equal opportunity in TVET education has been emphasised; however, the reality is that this is not the case in all countries. TVET institutions often cater to a varied student population with specific needs. Enhancing educational access for adult learners, first-generation college students, and under-represented backgrounds can promote equity. Specific support, based on the findings of Perkins and Neumayer (2013), can increase these groups' successes and accessibility. Equitable access may connote a variety of things depending on the industry or sector, however, in higher education, it simply implies that every student should receive the same opportunities as any other student. This is clearly expressed in the United Nations Sustainable

Development Goal 4.3 (SDG 4.3) as; *by 2030, ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university.*

Regardless of their school or educational pathway, the goal for every student is to achieve equitable access to quality education (Patterson, 2021, p. 33). Morris's (2013, p. 129) study concurs that enrollment processes for students must be made simple and easy for them to gain access to high-quality TVET. Steps towards accomplishing this are not predicated on equal distribution of resources but based on matching the needs of an individual or a society.

Recognising gender dynamics in educational transitions can assist policymakers target policies that promote equitable education access as well as its quality and labour-market outcomes. According to the OECD (2021), the ending of secondary education is a critical stage in young students' educational journeys, and it influences their post-secondary choices. This is where programme orientation is important as it aims to have students familiarise themselves with the various post-secondary offerings to make meaningful connections. Women make up 46% of upper-secondary vocational graduates on average in OECD countries, compared to 55% of general graduates (OECD, 2021). This increase in the proportion of women among upper secondary first-time graduates and new entrants to tertiary education is particularly in countries where gender influences programme orientation.

For instance, the countries with the greatest increase in the proportion of women between these two groups are also those with a higher proportion of women in upper secondary general programmes than in vocational programmes (OECD, 2021). One can argue from the information presented; that programme orientation plays a major role in equitable access to vocational programmes due to gender differences favouring males. According to Dahal's (2020) analysis of unequal access to TVET programmes in Nepal, urban-centric training, private TVET institutions,

and entry criteria to enrol in TVET have reduced access to TVET for many, limiting the benefits to youth living in easily accessible areas. While TVET is considered for the less fortunate or those marginalised by their social origin in many countries, unequal access to TVET is the reverse in the Nepali society. Referencing information presented in 2.6 by the Patterson (2021) report, Jamaica has its fair share of challenges in accessing tertiary education. There is a lower likelihood of tertiary education attendance among males, students from rural locations, and students from economically and socially disadvantaged backgrounds.

According to the Jamaica Public Bodies Estimates of Revenue and Expenditure for the year ending March 2024, the HEART NSTA Trust plans to enrol 128,255 trainees in its programmes, with 53,969 of them earning certification in the fiscal year 2023–2024. The document indicates that enhancing services for youth at risk would be one of HEART Trust’s focus areas and that initiatives would be put into place to increase the delivery modalities and quantity of access points or institutions. In his 2023/2024 Budget Debate contribution on March 16, 2023, Prime Minister, the Most Honorable Andrew Holness announced effective April 1, Jamaicans will no longer be required to pay tuition or administrative fees for HEART-NSTA Trust programmes up to level four (associate degree).

The government’s mandate to expand the supply of trained labour for industry is consistent with this fee waiver. Following the announcement of the Prime Minister, Managing Director of the HEART NSTA Trust Dr Taneisha Ingleton pointed out that the removal of the fees will have an expected increase in enrollment numbers (Hutchinson, 2023). She added that the organisation should experience an increase of between 30 and 50 percent from the 117,000-enrollment objective set for the 2023–2024 academic year because of the anticipated rise in enrollment numbers. Many could argue that this is an effective move that will give all Jamaicans, regardless of economic

circumstance, access to vocational training. However, others may counter with the alleged argument and growing concern about the shortage of qualified teachers within the TVET institutions (Small, 2023). Despite the proposal's apparent boldness, implementing policies can be significantly hampered by the public's opinion of TVET. Field (2012) found that unfavourable perceptions of vocational education frequently result in poor investment and enrollment in these programmes, undercutting the success of public policies created to support them. Another argument that can be proposed is that the focus on increased enrollment may lead to overcrowding and a decrease in the quality of education. Additionally, it could lead to a larger financial burden on taxpayers.

Financial Support and Continuous Funding

Accessible and inclusive quality education to promote lifelong learning is a critical prerequisite for achieving the Sustainable Development Goals. The role of vocational education in this process is critical, especially as the global and regional economies change dramatically. Studies have consistently shown that TVET institutions are reliant on public funding (Mohamad et al., 2023, Hanni, 2019). Additionally, they have also shown that investments made in human capital by the government, businesses, and households have a significant effect on economic performance as well as social and individual well-being (Hanni, 2019, p. 7). Wahba (2012) postulates that above all, governments and the private sector in various developing countries should recognise that TVET is an investment, not a cost, with significant long-term benefits such as improved worker well-being, increased productivity, international competitiveness, and economic growth. To realise these benefits, however, governments, households, private businesses, and employers will need to make significant investments in TVET financing (Hoeckel, 2008; Rasul et al., 2015; Hanni, 2019; Bhattarai et al., 2021; Patterson, 2021). Unlike costs, which

are typically anticipated upfront, the benefits that outweigh costs in TVET may emerge at different points in time. Likewise, to general education, TVET is a costly undertaking which should have established a financing framework.

In their findings of barriers to industry and TVET institution collaboration/relationships, Mohamad et al., (2023) found that funding and financial issues, and management issues were barriers when managing TVET institutions. The person value measure was used to measure the constructs, both of which returned mean values of -0.98, which is considered a high indicator. According to the authors, the bulk of TVET institutional and corporate collaborations involve expenses such as facility sharing and research financing. These finance initiatives are used to augment new technologies that are used within TVET.

In Bhattarai et al.'s (2021) study on TVET funds in Nepal, they argue that the experience other countries have in managing TVET funds can be used as a lesson for the need to establish fund mechanisms and make them more sustainable. Their study incorporated a desk review of the international practices of countries such as Australia, India, Bangladesh, and Sri Lanka in implementing the TVET fund. This was followed by interviewing several TVET experts with years of experience working in the TVET sector who are knowledgeable about TVET funding. The study concluded that the establishment of the intended TVET fund mechanism in Nepal would be strongly supported by the creation of a distinct TVET body that administers funds as well as an independent mechanism for quality assurance and accreditation.

In the review of initial financing for education and TVET in Latin America and the Caribbean, Hanni (2019) justified public sector intervention in TVET financing as well as outlined various funding VET frameworks across several countries within the region where the variations are similar and case-specific. The use of payroll tax instruments for TVET is widespread in the

region, with employers generally being the entity that pays the tax at rates ranging from 0.5% to 3.0%. For instance, Barbados, Colombia, Costa Rica and Honduras contribute 0.5%, 2.0%, 1.5% and 1.0% respectively. Another such funding model of TVET is each month, qualified employers contribute 3% of total monthly emoluments paid to employees to the Heart Trust Fund, where sustained compliance is not merely an investment in their future business success, but also helps continue providing training and job opportunities for thousands of Jamaicans (Contributions – HEART/NSTA trust, 2020). Grants and incentives are also used within this funding model to encourage innovation and problem-solving.

Usher (2016) however argues that governments are always faced with a decision between access and excellence, and whether resources should be distributed more widely to enhance access and build capacity, or should they be concentrated on a few institutions in order to render them more world-class. Usher (2016) came to the startling conclusion that, despite funding being a crucial component, universities' success is not dependent only on it after reviewing funding data from 91 of the top 100 universities worldwide, including world-class institutions spread across several countries. However, it is also evident that having money makes many other obstacles in higher education far less difficult. Choosing access over excellence implies that resources will be spread more broadly, potentially allowing a larger number of individuals to benefit from educational opportunities. This can lead to a more educated population overall and help to reduce inequality. However, it might also mean that no single institution can reach the highest levels of global competitiveness due to diluted funding.

On the other hand, building world-class institutions which is synonymous with quality can attract top-tier faculty and researchers, fostering innovation and cutting-edge discoveries. These institutions often become hubs for global talent, driving economic growth and international

collaboration. Additionally, they can enhance a country's reputation on the global stage, leading to increased investment opportunities. This, however, warrants a discourse on policy challenges and whether funding should be allocated more to enrollment growth or balancing revenue growth.

While the funding model may pose challenges, exploring diverse sources such as PPP, grants, and sponsorships can help secure the necessary resources needed to manage the institution. Ying (2022) reviewed several cases that involve building organisations that are financially self-sufficient to give them greater degrees of freedom in designing and implementing transformative initiatives. In the case of the Mona School of Business Management (MSBM), several transformative initiatives were employed. These include the development of new industry-related programmes, funding of projects through the private sector, which strengthened their financial self-sufficiency, the development of policy documents that guided those relations, and consulting services, among others. In this case, Ying also noted that accreditation initiatives and international institutional relations strengthened the MSBM's financial viability and model for self-sufficiency (Ying, 2022, p. 282).

According to the announcement made by Jamaica's Prime Minister, the Most Hon. Andrew Holness, in Parliament on Thursday, March 16, 2023, the HEART NSTA/Trust can expect a \$58.7 million fall in institutional income (Hutchinson, 2023). Holness added that this is a step toward the policy goal of the Trust, which is to expand the number of Jamaica's trained labour force. He further stated that there are roughly 739,000 Jamaicans who are not employed, of whom about 150,000 are unattached youths who are not actively looking for work. However, Dr Taneisha Ingleton, Managing Director of the HEART NSTA Trust asserted that the entity is able to absorb those costs with no challenge at this time (Hutchinson, 2023). Given the aforementioned, one can assume the funding model used is sufficient to support the TVET system in Jamaica.

In the context that TVET is not only a key investment in human capital but also a means by which individuals can transition to decent work, this presents a strong rationale for greater investments in TVET (Hanni, 2019; Idjawe, 2020). The justification outlined within the social rationale of Hanni's (2019, p. 13) review was that TVET is established on key principles enshrined in the SDGs, such as promoting decent and productive employment, reducing inequality, and combating poverty. Individuals are given the skills they need to navigate the rapidly changing world of work through education and TVET. This is especially important for unemployed workers who have been displaced from traditional industries, as well as for populations who are less likely to be employed. There was also a strong case for the economic rationale for TVET given by Hanni (2019). That is, TVET is a fierce determinant in the returns to the private and macro-economic sectors, and investment in TVET by both the private and public sectors should be viewed as achieving key societal goals as well as long- and short-term economic benefits.

2.14 Chapter Summary

A concept cannot be fully researched unless the extent to which previous researchers have discovered the topic is established. As a result, any successful and effective research is founded on previously discovered knowledge about the topic under study (Hadebe & Khumalo, 2018). Therefore, the literature reviewed within this study formulated a baseline for shaping and defining the research in giving it a rich context. It entails a thorough examination and investigation of all types of literature, including books, international journals, theses, conference proceedings, and other academic publications. However, based on the literature, there is a research gap in managing TVET institutions in Jamaica, specifically regarding critical success factors.

There is no such thing as a perfect leadership or management style, just as there is no such thing as a perfect or correct dissertation theory. Regardless of the framework chosen, it must be

woven into the dissertation's research problem, purpose statement, research questions, and importance (Grant & Osanloo, 2014; Amanchukwu et al., 2015). The theoretical framework for this study is undergirded by the transformational leadership theory, which is about inspiring and motivating team members to reach common goals through charisma, intellectual stimulation, individualised consideration, and idealised influence. It is about leaders driving positive change and transformation by sharing a vision and empowering their team. Additionally, considering the landscape and context of Jamaica's dynamic education system and culture, it is theorised that the transformational leadership framework is thought to be the best fit for this research. Using the tenets of transformational leadership theory, the critical success factors related to TVET institution management can be analysed and improved.

Considering the Jamaican government's mission to reform the education sector through occupational studies or workforce solutions, a realistic means of measuring success is likely required. When an evaluator declares a programme a success, he or she should explain what the programme works for whom and under what circumstances (Pawson & Tilley, 1997 as cited in Baraki & van Kemenade, 2013). While TVET is acknowledged to be critical to sustainability (Fiandra et al., 2021), policymakers and practitioners may have differing perspectives on what TVET for sustainability should entail. Even though other factors contributes to the socio-economic advancement of a country, vocational education is an important factor in the economic development and social stability in all countries. This assumes that the success of vocational education in producing dependable workers is the most important component of the strategy for developing human resources and providing society with the knowledge and skills needed by industry (Fiandra et al., 2021). If this is likely true, then it is only fair that a sustainable

contextualised framework be developed in measuring the critical success factors in managing these TVET institutions, that produce these individuals that are deployed in a nation's workforce.

The goal-setting model, a methodical approach to strategic planning, is examined in this study as a vital instrument for public managers. The goal-setting theory developed by Edwin Locke and Gary Latham in 1990, suggests that organisations perform better when they have clear strategic goals and priorities. This theory suggests that when implemented correctly, it can improve individual and team performance, ultimately benefitting the organisation. The study aims to evaluate the factors contributing to the success of TVET institutions in Jamaica, recommending it as a sustainable development tool. Critical success factors are the primary areas used to measure success, strategic planning provides a systematic, explanatory, and intentional approach to strategy formulation. By applying goal-setting theory to key variables, TVET institutions can enhance their strategic planning, improve outcomes, and better meet stakeholders' needs.

The TVET sector is made up of a diverse set of stakeholders and professional bodies, each with its own set of perspectives, roles, and responsibilities. It is believed that a good TVET framework is likely to be jeopardised if learners and employers have a negative experience (Winch, 2013). No amount of image-making can save a failing TVET system. Whether the sector failed based on empirical evidence or perceptions of key players, improving the attractiveness of TVET can be a challenging task (Winch, 2013). Given TVET's global reach, the system is of interest to not only the private sector or non-government organisations, investors, and policymakers, but also at the local level of parents, families, and communities. Being as it may, where there are reforms, the necessary consultations should be done with the various interest groups in aligning the factors that contribute to its attractiveness and effectiveness. Therefore, the government has a

responsibility to educate employers about the potential benefits of investing in TVET and participating in these programmes (Seddon & Billett, 2004; Winch 2013).

Not only do they have this responsibility, but along with other stakeholders, they can do a lot to show young people and their parents the benefits of a high-quality TVET system (Winch, 2013; Mat Nashir, 2022). Long-term socio-economic development relies on relationships and the strength of stakeholder connections. However, more collaborations between industries must be formed for a greater impact to be felt (Wahba, 2012). This could include forging partnerships between businesses to share resources and knowledge or between governments to create an enabling environment for innovation. It could also involve collaboration between academia and industry to develop new solutions. Suffice it to say, that the literature review has shown that strong alliances among stakeholders are a critical variable to help the sector flourish (Chamadia & Shahid, 2018). An approach that one should consider in streamlining such a cohesive framework, is a leadership approach that is predicated on understanding and appreciating the various inputs to effect the necessary changes. Additionally, the government can also play their part in encouraging such collaborations through policy initiatives.

For countries looking to enhance their vocational education and training systems in order to satisfy expanding social and economic needs, TVET governance is becoming an increasingly important issue. Good governance is a key principle for efficiency, effectiveness, and equity. Studies have recommended acts, policies, and frameworks that strengthen and improve existing TVET systems, in line with international standards. The International Labour Organisation (2010) emphasises the need for reconsideration of TVET governance, management, teacher training, and partnerships to establish and manage existing TVET systems with greater impact. As a result of

TVET systems that are strong, individuals have greater opportunities and abilities, while national human resource development skills are improved.

The relevance of TVET is significantly shaped by national policies, which influence curriculum design, funding distribution, and quality assurance mechanisms. These policies guide the development of TVET programmes to align with the country's economic needs, labour market demands, and social goals. Additionally, these policies guarantee that certifications are valid and transferrable in many contexts by using standardised assessment techniques.

The literature has shown that legislation has a major impact on TVET programmes by offering a legal framework that regulates different parts of these programmes. For example, the Carl D. Perkins Career and Technical Education Act in the United States supports high-quality career technical education programmes, promoting partnerships between employers and educational institutions. Also notably, the recognition of skills and abilities acquired through TVET programmes is uniform and transparent per the European Qualifications Framework (EQF), which facilitates international mobility and makes it easier for people to locate jobs that demand the same credentials.

However, effectively putting into effect these legislations into practice can be challenging because of a lack of finance, subpar teacher training, and insufficient industry engagement. Additionally, due to the quickening pace of technological advancement and the fluctuating demands of the labour market, policy makers also find it challenging to maintain TVET programmes' relevance and responsiveness to industry expectations. Moreover, maintaining efficient management to supervise the implementation of policies at the institutional level presents additional difficulty in the implementation of TVET regulations. The literature also underscores that there are benefits to gain from political endorsement and government interventions, especially

in the areas of finance, and policy support. Their support can help TVET programmes and institutions become more reputable and legitimate.

If governments want to develop an economy that relies on technical and vocational abilities, TVET could be an appealing option. A successful and effective TVET system is a critical pillar of a prosperous economy (Morris, 2013). Undoubtedly, TVET is an important and expanding sector in Caribbean countries such as Jamaica, Trinidad and Tobago, Barbados, and Belize, among many others (Hanni, 2019; Mack & White, 2019). However, the lack of a standardised approach to data collection on critical success factors in managing TVET institutions limits comparability. Effective policymaking and implementation in this regard will rely heavily on data. Henceforth, this study aims to plug this huge gap. Notably, critical success factors in managing TVET institutions in Jamaica had not previously been tested, making the study an important contribution. Therefore, based on the extensive literature presented, the most predominant frequently occurring and important factors influencing the success of TVET institutions were identified, aligned to the local context, selected, and categorised for additional examination in this research.

Because TVET covers a wide range of skills and the demands of different sectors constantly shift, it can be challenging to measure its success and effectiveness even though it equips students with the knowledge and abilities they need to enter the workforce. Similar to many other nations, Jamaica's TVET sector faces a number of difficulties. Some of these challenges include but are not limited to insufficient funding, diversity, shortage of instructors and fragmented delivery also make it challenging to accurately categorise the institutions as successful. This also makes it difficult to compare the performance of different institutions. In addition, the lack of a comprehensive evaluation system makes it difficult to measure the quality and effectiveness of education provided.

In order to quantify success, clearly outlined performance indicators have to be established. For this study, eight constructs were selected for further investigation: external environment and interferences, institutional governance/leadership (management of TVET institutions), labour market (responsiveness), funding allocation, partnerships and collaboration, student centredness, and internal and external quality assurance. To identify the relevant constructs, the researcher thoroughly studied the literature, including previous studies on the management and effective leadership of TVET institutions that led to their success. In addition to consulting with TVET practitioners and consultants to refine the constructs, both the local and regional contexts of TVET were also considered in the review. Of the constructs identified across the varying literature reviewed, institutional governance and leadership appear to be the most recurring. The literature stresses that in order to steer organisations towards their strategic goals and maintain operational efficiency, effective leadership is essential. Partnerships and collaboration were then followed as the most recurring within the literature. Quality assurance mechanisms, which are a balanced factor that encompasses both internal and external factors and the labour market, are then followed by the other recurring factors related to the success of TVET institutions. This is followed by factors related to the quality of delivery, which is intrinsically connected to internal quality assurance, then financing and funding support. Student employability, student support services and equitable access for the people who will be employed in the world of work after being exposed to vocational training, which are related to student centredness, are close to being the least recurring across the literature. The least recurring across the literature were, however, political backing, community involvement and regulatory bodies which are all considered as external environment and interferences.

CHAPTER 3: RESEARCH METHOD

3.1 Overview

Key stakeholders' perspectives within the Technical Vocational and Education landscape are critical in identifying best practices and filling gaps in the lingering challenges (Harvey, 2019). Not only does their perspective shed light on understanding challenges and formulating solutions, but also maximises creating common core values. These core values are not restricted to an educational context but impact economic, social, environmental, and political borders. Loose and Spöttl (2015, p. 1) opined, that quality education and training are becoming national priorities globally, and the high level of investment in human resource development is being met with an extraordinary spurt in expectations of what training and education must achieve. But for Jamaica, to meet the country's modern socio-economic needs and a highly efficient workforce through aligning education and technical training, more needs to be done in this regard. The absence of a framework to ensure that there is proper TVET integration within the respective institutions is a national concern that has significant implications, especially the target of Vision 2030 by the Jamaican Government. It is only prudent that a context be created for sustainability. Therefore, this mixed-method study aims to evaluate the critical success factors that contribute to the effective management of TVET institutions in Jamaica, offering a more thorough comprehension of the main factors influencing TVET success, ultimately creating a suitable sustainable framework aimed at improving the management of these institutions.

This chapter describes the methodology used during the study. Considering this, the study's areas and the rationale for selecting them are explained. This chapter also includes explanations of the research design and approach, the population sample, sampling procedures, and data collection methodology and instruments used during data collection. There are also explanations on how the

instruments were validated and how the data was collected and analysed to evaluate critical success factors in managing vocational training institutes in Jamaica. Researchers purposefully strategise their overall research design and research methods in a bid to collect data applicable to their research problem (Leedy & Ormond, 2015, p. 23).

Different designs, approaches, and methods are made appropriate depending on the research questions. The conceptual structure within which the research is conducted, as outlined in 3.2 Research Approach and Design, includes the collection and analysis of data relevant to the research. The appropriateness of the methods and design is substantiated, with plausible reasons as to the purpose of the respective selections. It is important to note that although HEART NSTA Trust is mentioned throughout this study, it is not the intention to review the entity and its programmes. The continuous reference of the entity is owing to its role as the primary provider of TVET in Jamaica. Therefore, the study's findings and implications are not directly related to the entity's operations.

A systematic approach was used in selecting the population and sample of the research study. The sample frame and description of the population are presented in 3.3 Population and Sample of the Research Study. The development process of the instruments used for data collection for the study is detailed in 3.4 Materials/Instrumentation of Research Tools. Also critical to this study is the operational definition of the variables. This is detailed in 3.5 Operational Definition of Variables along with the Reliability and Validity of Instruments, Study Procedures and Ethical Assurances in 3.6, 3.7 and 3.8, respectively. A detailed description of the methodology and statistical analysis used in the study's achievement is provided in section 3.9 Data Collection and Analysis, which ensures that the data collected align with the research questions.

3.2 Research Approach and Design

An explanatory mixed-methods design was used in this study to comprehensively assess the critical success factors related to TVET institution management in Jamaica. The design involved the amalgamation of quantitative and qualitative data collection and analysis methods. The quantitative phase involved the collection of numerical data using an online questionnaire survey, while the qualitative phase involved in-depth one-on-one interviews to gather rich contextual insights. By combining these two approaches, the researcher aimed to provide a more comprehensive understanding of the critical success factors and their impact on the management of TVET institution.

Research's primary goal is to either confirm or contribute new information to the body of knowledge already known about a subject, or to provide light on an area that was previously unknown. The methodology of science is used to gain knowledge, which is based on sensory experience obtained by way of experiments or comparative analysis (Walliman, 2021). Research employing scientific methods can be categorised as the art of scientific exploration, whereby answers to queries are discovered (Kothari, 2017). However, for research to be meaningful, the researcher must comprehend the principles involved in its design. In an empirical research project, the study design is a crucial and detailed plan for data collection (Bhattacharjee, 2012, p. 35). The plan outlines the strategy to respond to the research questions and defines the overall approach for gathering and analysing data.

Utilising a range of data collection techniques is good for enhancing a study's validity and to develop an effective research strategy. The rationale driving this strategy is to ensure that the acquired data is not only valid but also aimed at answering the objectives posed as questions. Sometimes, combining qualitative and quantitative data can provide unique insights into a complex

social phenomenon that would not be possible with either type of data alone; thus, mixed-mode designs that incorporate qualitative and quantitative data are frequently highly desirable (Bhattacharjee, 2012, p. 35). Johnson et al. (2007) concurred that research using multiple methods in fields of social, and behavioural or human sciences began with researchers and methodologists who figured qualitative and quantitative perspectives and methods were beneficial in addressing research questions. The method chosen ought to also fit the research problem best, rather than vice versa. For this study, the researcher fully adopts and employs this approach based on his epistemological and ontological stance.

Irrespective of the research design the researcher should try to gather quantitative and qualitative data via a variety of techniques such as questionnaires, observations, documents, interviews, or secondary data (Bhattacharjee, 2012, p. 41). Albeit both qualitative and quantitative research are complementary principles with distinct applications, they are better represented in a unified structure rather than separately. This research boasts a thorough examination and analysis of the factors that are critical for business continuity in a TVET institution by using complementary data collection methods. As such, the composition of the research questions posed throughout this study as well as how the data was gathered and analysed have navigated the research design of being explanatory. To provide explanations or elaborate on the quantitative results, qualitative data collection is needed, which justifies the use of an explanatory method (Subedi, 2016). For this study, it is against the background that the research attempts to respond to the questions that will provide informed recommendations that can be useful in managing TVET institutions. These recommendations are arguable enough to be infused into a technical educational framework to advance Jamaica's growth agenda through TVET. As a result,

a combination of qualitative and quantitative methods was applied to obtain participants' perceptions of the critical success factors in managing TVET institutions.

Several other factors influenced the decision to conduct mixed-method research rather than only a quantitative or qualitative approach. It is critical to ensure that the study can withstand scrutiny in terms of consistency and accuracy, regardless of the methodology used, as is the case with this study. Reliability and validity are two terms commonly used in the field of research to refer to consistency and accuracy, respectively. Employing only one methodology would fail to adequately address the aforementioned issues, would not produce favourable results, and would likewise restrict the research's potential. Because of the quantitative nature, the information gathered from the sample analysed on the critical success factors can be statistically represented and rigorously manipulated. This method tends to be objective since the information compiled may be repeated numerically and the data produced can be used to make generalisations. However, quantitative research does not take into consideration the whole range of possibly influencing variables that could be crucial to comprehending how experiences shape one another, how different situations appear comparable or distinct, or how perceptions and views are restricted and facilitated (Richard, 2013, p. 55).

Conversely, the qualitative approach is much more focused on gathering perceptions concerning issues and topics. It entails examining characteristics or qualities that cannot be completely reduced to numerical values (Leedy & Ormond, 2015, p. 24). These outcomes are more descriptive than predictive. Qualitative data, whether gathered through focus groups, individual interviews, observations, or immersion within a context, offers an understanding of extremely particular individuals and environments that, although relevant outside of those particular contexts and individuals, their generalisability is constrained (Richard, 2013, p. 54). Overcoming this

limitation, however, is the value of learning about something in-depth and in its entirety. In this instance, the respondents would give their lived experience richly, in managing TVET institutions' critical success factors. This in turn is likely to give a greater scholarly appreciation for the topic under study.

Both the weaknesses and strengths of each method can be compensated for by the other, and both have significant potential that should not be overlooked. Not only will this mixed-method study encourage good scholarly interaction, broaden existing knowledge, evaluate, and explore quantitative data with qualitative findings, but it will also allow for improved comprehension and complementing of the quantitative data, as well as strengthen the overall findings of the study. The benefit to gain stands and echo that of the triangulation advantages positioned by Jick (1979) cited in Johnson et al., (2007, p. 125).

1. It enables researchers to be more certain of their findings.
2. It encourages the development of novel data collection methods.
3. It may result in thicker, more detailed data.
4. It has the potential to lead to the synthesis or integration of theories.
5. It has the potential to reveal inconsistencies.
6. Because of its breadth, it may serve as a litmus test for multiple theories.

Following comprehensive consultations with expert academics and researchers, an explanatory mixed-method approach using an online questionnaire survey for quantitative data collection complemented by a focus group consensus technique for qualitative data collection was determined to be the most appropriate fit for the research objectives and goal. Despite the best intentions, survey questions may be misleading, ambiguous, or yield uninterpretable or otherwise useless responses (Leedy & Ormond, 2015, p. 166). Therefore, prior to the systematic data

collection process, and to ensure that the questions were clear and would effectively solicit the desired information, they were pilot tested on numerous occasions by a few randomly selected volunteers. The quantitative responses were interpreted using a Likert-type scale, while the in-depth responses from the open-ended questions in the qualitative instrument were analysed using content analyses. The development and implementation of these data collection instruments will be further detailed in 3.4.

3.3 Population and Sampling Strategy

When the target population cannot be determined or the population is unable to participate in a study, sampling is used to collect data that is thought to be representative of the population being studied (Stratton, 2021). Before making generalised assertions regarding a population, the sample size must accurately reflect the studied population. Two distinct sampling techniques were employed to collect the data due to the mixed-method design of this study, which evaluates critical success factors associated with managing TVET institutions and prioritises them in accordance with their importance. The sample margin of error was carefully considered when selecting the representative sample from the population.

Stratified random sampling was employed in phase one to ensure that the different faculty groups within the TVET institutions were adequately represented in the sample, which is advised to collect quantitative data. Stratified random sampling is the most suitable approach given the diversity of institutions and the faculty type. In this probability sampling, the sample is selected at random from the entire population. In other words, the sample is chosen so that every member of the population has an equal chance of being chosen (Leedy & Ormrod, 2015). The results of this study's probability sample are indicative of the general population. This indicates that the research sample has similar traits that are directly or roughly proportionate to the entire population. Thus,

these participants have similar traits in that they are in charge of supervising and evaluating trainees' performance in their areas of specialisation as instructors or lecturers, as well as carrying out related administrative tasks.

Purposive sampling was used as the sampling approach in phase two to gather the qualitative data, and participants were directly asked to willingly engage in the interview session. Invitees to the study were chosen based on their availability, product knowledge, and institutional management experience with TVET systems. The deliberate selection of a sample with the goal of providing rich information about the phenomenon being studied, given its distinctive traits, is known as purposive sampling (Leedy & Ormrod, 2015, p. 183). However, Leedy and Ormond (2015, p. 183) put forward that a justification for why the participants were chosen for the sample should be provided. The chosen participants were completely capable of offering a variety of perspectives. These perspectives were used as a consensus in the prioritisation process since the thoughts and perceptions of these specialists were also utilised to arrange the success factors in order of significance. 3.3.2 Qualitative Sampling Method further details how this non-probability sampling technique was used.

3.3.1 Quantitative Sampling Method

The first phase of this study used stratified random sampling as a sampling method to gather the quantitative data. This method involves dividing the population into distinct strata based on relevant characteristics, such as the TVET institutions and faculty type. The public and private sectors have both seen a sharp rise in the number of TVET providers and delivery modalities (National Policy for Technical Vocational Education and Training, 2014). However, as previously indicated in Chapters 1 and 2, under the Office of the Prime Minister (OPM) of Jamaica the HEART NSTA Trust is Jamaica's facilitating and coordinating body for technical, vocational

education, training, and workforce development. Since April 1, 2023, the training organisation, which is supported by a 3% tax on employers' gross salary, has waived all tuition and administrative expenses for its programmes up to level 4 (associate degree). Prime Minister the Most Honorable Andrew Holness announced during his 2023/2024 budget debate presentation in Parliament on Thursday, March 16, 2023. Based on this announcement, the entity will be expecting a \$58.7 million reduction in institutional income (Hutchinson, 2023). Given the high level of responsibility and political and public interest, it is advisable to assume that the sample is drawn from the TVET training agency population of the country.

At the point of this study, there were 1,582 people employed by the HEART NSTA Trust. Of that figure, there are approximately 724 people, which represents 45.7%, who fall into the category of instructors or lecturers. However, these positions are occupied by both adjunct faculty and full-time with the majority being part-time. The number of instructors or lecturers that may be employed or assigned to an institution depends on the institution's size as well as its programme and skill offerings. Therefore, given the foregoing, one can argue that this averages approximately 28 instructors or lecturers across each of the 26 HEART NSTA Trust locations. Conversely, such an argument can be dispelled with the alleged shortage of teachers at the institutions, due to high turnover rates (Small, 2023). This is purported to be the doing of major inefficiencies within its administration. The organisation has currently designated this group of workers as a strategic position. Therefore, the population target for this study is 724, which is categorised as faculty, either adjunct or full-time, across the 26 HEART NSTA Trust locations. Applying a 95% confidence level and a 7% margin of error, the sample target for the study was 155 participants. Table 3.1 provides more details on the power analysis that was done to calculate the sample size, ensuring that each stratum is represented in the sample.

This group has a large impact on how well trainees are prepared within TVET institutions for competency certification, facilitating employment and performance in their field of employment. Additionally, instructors and lecturers must adapt their instruction to the educational demands, aptitudes, and accomplishments of each trainee. They are also required to review training programmes offered by the institution. This involves recording and reporting training data and evaluating the feedback received from students about the training programme following the organisation's and institution's standard operating procedures.

The formula used to calculate the number of participants needed, with confidence levels of 95% and a 7% margin of error, is as follows:

$$\text{Sample Size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N} \right)}$$

Where:

Z-score = z \ Margin of error = e \ Population size = N \ Population portion = p
e is a percentage, expressed as a decimal (for example, 5% = 0.05).

Table 3.1

The Sample Size of the Surveyed Group

Group	Confidence level	Confidence Interval (Margin of error)	Population Target	Calculated Sample
Instructors/Lecturers	95%	7%	724	155

Source. Author's elaboration of the power analysis used to calculate the required sample size.

3.3.2 Qualitative Sampling Method

Phase 2 of this study used purposive sampling as the sampling method to select the sample used for the qualitative data. To proceed with the study's second phase, 20 volunteers were selected by the researcher from the category defined as management officers who are directly engaged with the daily operations within the TVET institutions. These management officers were deliberately chosen from a total population of 20 individuals from five TVET institutions, with an average of three to four officers per site, ensuring representation from each TVET location. These management officers all form part of the governance framework, which is responsible for the strategic and operational activities promoting the institution's fulfilling its values, vision, and mission. Having also been selected for this study due to their extensive experience and intimate knowledge of the training, delivery, and administrative process in governing TVET institutions in Jamaica, these officers are employed by the HEART NSTA Trust, across five distinct categories. Not only do they have the knowledge and experience in the administrative process in managing these institutions, but they can also speak on the research's purpose and aim.

In addition to overseeing the educational, financial, and administrative operations of the TVET Institute, the Director/Principal is accountable for effective leadership in the implementation of strategic and operational objectives and policies. The Institution Manager, who reports to the Director/Principal, develops, leads, directs, and coordinates the training programmes for workforce development, employer and employee assessments, and job placement programme, and provides support for the training-based enterprise. The development, implementation, and maintenance of systems to improve operational efficacy in the training and assessment process are within the purview of the Head of Programmes. They oversee making sure there is a reliable, certified pool of qualified personnel to meet market demands. The Programme

Coordinator oversees the faculty that fall under his or her purview and directs and coordinates programmes and short interventions across training sites and training modalities. Reporting indirectly to the Institution Manager, the Admissions and Assessment Monitoring Officer is in charge of overseeing the administrative tasks associated with assessment for certification and ensuring at all times the integrity of the assessment and certification processes, as well as the accuracy, confidentiality, and quality of data.

The participants' professional expertise, background, and familiarity with the topic under investigation are crucial factors in the selection process and criteria for ensuring validity. The advantages of using this technique specifically for this study are that, in comparison to comparable sampling techniques, it is both time and financially efficient. It is also versatile enough to be tailored to increase the effectiveness of the survey, and it can yield a lot of information from the data to be collected. The researcher is aware of the potential drawbacks of using this sampling technique, such as selection and sampling bias, which may also give rise to the claim that the population that the sample was taken from is underrepresented. Therefore, the researcher used the following questions as a moral compass in employing the indicated approach to preserve the integrity of the research and for accountability purposes:

1. Have the selected individuals met the set criteria?
2. Is there a potential conflict of interest in the participants' selection?
3. What advantages will those who consented to the study receive?

3.4 Materials/Instrumentation of Research Tools

This study utilised two instruments to strengthen its validity as previously detailed in section 3.2 Research Approach and Design. To significantly enhance the reliability and content validity of both instruments used, pilot questionnaires were administered with experienced TVET

professionals outside of the study's population target prior to their distribution. The piloted survey additionally served to determine how long it would take to complete each questionnaire, remove ambiguous and duplicated items, and new ones, ensuring that the items reflected the local context. The preliminary literature review provided the basis for refining the instruments to ensure their quality significantly influenced the quality of information collected and the study's conclusions.

3.4.1 Electronic Survey

A sample of the electronic survey is provided in Appendices C. It was instrumental to ensure that the survey had a debriefing section as it allowed the participants to grasp the study's purpose, and any potential risk or benefits associated with participating. This transparency helped to build trust between the researcher and the participants. A consent section was equally important on the instrument because it ensured that the participants were aware of what they were consenting to, and they are giving their voluntary, informed consent to take part in the study. Section 3.7 Ethical Assurances provides further details regarding the research ethics governing these inclusions.

The survey also included several demographic questions. A demographic section was important because it allowed the researcher to understand the participant's characteristics. This information was used to analyse the results of the study and to determine if the results are generalisable to other populations. Additionally, demographic information was used to identify potential confounding variables that may need to be controlled during the data analysis. The instrument consists of 39 items across eight main categories that were measured utilising a Likert-type 5-point scale along with one item pertaining to effective leadership styles in managing TVET institutions.

3.4.2 Interview Instrument

As with the electronic survey, the interview tool was similarly instrumented. A sample of the interview instrument is provided in Appendix D. As part of the instrument, there was a consent section that ensured participants understood what they were consenting to. The demographic portion of the instrument consisted of five questions pertaining to the participant's gender, age, level of qualification, role as a management officer, and years of experience. Tables 3.2, 3.3, and 3.4, show how the 11 items on the interview instrument are aligned with each of the research questions in this study.

3.5 Operational Definition of Variables

The goal of this mixed-methods study is to identify and prioritise the critical success factors in managing TVET institutions in Jamaica. The study used an ordinal/Likert scale to quantify the independent variables, after identifying their indicators/parameters. The independent variables identified in this study are pursuant to the theories and models presented in the literature review. The independent variables are partnerships and collaboration, labour market relevance, student centredness, external environment and interferences, funding, internal quality assurance, and external quality assurance. The dependent variable is identified as the management of TVET institutions. These variables are organised and assessed utilising a 5-point Likert-type relative importance scale, where 1 represents the least important and five represents extremely important. The relative importance values range from 0 to 1, with the latter being recognised as the highest. The scales are 1 – Low importance, 2 – Slightly important, 3 – Moderately important, 4 – Very important, and 5 – Extremely important. Participants indicated their degree of agreement with the criteria's relevant assertions contributing to effective governance and leadership in TVET

institution's success. By doing so, the participants were able to offer insightful explanations of the necessary elements for a TVET institution to succeed.

The developed electronic questionnaire is structured into five sections; Section 1 is on the research brief, Section 2 is on the certificate of consent, Section 3 is on respondents' demographic information, Section 4 is on leadership styles, and Section 5 is comprised of 39 measurement items or statements categorised across their related constructs. The developed interview instrument is structured into four sections; Section 1 is on the research brief, Section 2 is on the certificate of consent, Section 3 is on respondents' demographic information, and Section 4 comprises 11 items related to the nine research questions.

This study adopts Pont et al.'s (2011) concept of school leadership. The authors argue that efficient management, leadership, and administration are necessary for successful schools. The authors emphasise that it is unlikely for one to thrive without the other because the terms leadership, management, and administration are so tightly interwoven. The ability to successfully plan, organise, lead, and control all aspects of the institution to ensure the institution provides high-quality TVET programmes, produces skilled and competent graduates, and meets labour market needs is referred to as effective institutional management. This includes creating and communicating a clear vision, efficient resource allocation, strong leadership practices, motivation of staff, responsive decision-making process, proactive stakeholder engagement, and continuous improvement in satisfying the demands of the community at large, industry partners and the needs of the students. In a nutshell, these can be encapsulated within the key dimensions of intellectual stimulation, individualised consideration, inspirational motivation, and idealised influence. The concept of institutional success can be measured using a variety of indicators, including student enrollment and retention rates, completion rates, graduate employability, quality of training

programmes, and stakeholder satisfaction levels (industry, graduates, employers, etc.) (Khalid, 2018; Stirling, 2016).

The process of prioritising and determining which critical success factors (CSFs) are most influential on the success of Technical and Vocational Education and Training (TVET) institutions through effective management in order of relative importance is known as the ranking of CSFs. Typically, this is accomplished through a combination of knowledge from experts, analysis of data, and feedback from stakeholder groups (Brečić & Šimić, 2020). These factors can vary depending on the type of institution, its size, location as well as and the demographics of the students. The operational definition for CSFs in managing TVET institutions given by Luu and Nguyen (2020) is the identification and prioritisation of those factors that are critical to the successful achievement of the institution's goals. Azmi et al. (2020) identified several CSFs that were ranked in order of importance by Malaysian TVET institutions. These included teaching and learning quality, curriculum relevance to industry needs, resource and facility availability, employer engagement, and student support services. Similar, Liu et al. (2020) identified and prioritised CSFs for TVET institutions in China, including government support, market demand, industry partnership, teaching quality, and student placement rate.

In general, ranking CSFs in order of importance can assist TVET institutions in focusing their resources on the variables that most significantly affect their success, as well as developing strategy formations to address any areas of weakness. This can eventually lead to better outcomes for TVET institution leaders, students, increased performance of institutions, and higher satisfaction among stakeholders.

3.6 Reliability and Validity of Instruments

Developing valid and reliable measurement items is essential to producing more informed results in any research. Reliability refers to the stability and consistency of an evaluation tool's outcome (Leedy & Ormond, 2015). To ensure accuracy, the items should be carefully constructed, tested, and validated. The item should be administered in a consistent manner and according to a standard protocol. Finally, the items should be tested to confirm that the findings are reliable and valid. Prior to conducting the survey, the two data collection instruments were pilot tested on numerous occasions to improve the content validity and reliability of the items to detect deficiencies in design, remove misleading and unclear items, instrumentation and provide proxy data for the probability selection of sample. A pilot survey serves as a rehearsal and a critical replica of the primary survey (Kothari, 2017), providing an invaluable opportunity to fine-tune and perfect the research methodologies and procedures before the main survey is conducted. The piloted instruments were conducted with experienced TVET professionals outside the study's target population who provided feedback on the relevance and effectiveness of the instruments before distribution. The instrument's wording and inconsistencies were corrected before conducting the survey and interviews. Additionally, to better fit the local context, several of the items were removed and combined.

The extent to which a measure's score represents the variable and construct intended to be measured is referred to as validity (Walliman, 2021). The measurements' face validity was ensured through consultations with TVET professionals, and policymakers in the TVET educational sector. Following the feedback and comments received, the instruments were amended. To guarantee a high level of construct validity, the constructs of interest in the study were measured using items adopted from previous studies in the literature review and existing frameworks.

3.7 Study Procedures and Ethical Assurances

Provided that this research involved human participants, the researcher recognises that authorisation must be granted by an advisor or an approval committee that believes the research is feasible. Therefore, prior to administering the instruments and the collection of data, this study received the requisite approval from the UNICAF University Research Ethics Committee (UREC). The researcher also recognises that the correct procedures and ethical assurances must be maintained as they can impact the researcher and the institutions conducting and facilitating the research. As put forward by Resnik and Shamoo (2017), unethical research practices lead to negative publicity and can damage the reputation of the researcher and institution. Conversely, ethical research practices increase the credibility and reputation of the researcher and the institution. As a result, the researcher also received waiver letters, consent of approval and cooperation via email from the participating institutions.

3.7.1 Electronic Survey Procedures

Approximately 155 questionnaires were emailed between May 21, 2023, and July 4, 2023, along with a debriefing cover letter attached to the front elucidating the rationale of the study being conducted. The letter outlined to the participants that their participation in the study was voluntary and assured that there were no harm or potential risks involved. They were also guaranteed anonymity as well and advised that they could withdraw at any phase (prior to or post the completion) of the research without any repercussions and without offering any justification. In these instances, the collected data were erased.

Participants were then asked to navigate to the next section titled, Certificate of Consent, where it outlined the terms and conditions under which the study will be conducted. Prior to being able to access the items on the questionnaire via a clickable hyperlink, participants had to give

consent by selecting the option, I agree to give consent to proceed, along with the date. Where consent was not given, the participant had the option to exit the questionnaire or by selecting the option, Clear form. After completing the consent form section, participants navigated to input their demographic information. As soon as this was complete, participants were now able to access the questionnaire items, and upon completion, they would select either submit or clear form.

Participants were re-emailed, called via telephone, and messaged during the data collection period to achieve a high response rate. The researcher also visited the WorldSkills National & Junior Skills Competition held at the National Arena in Kingston, May 31 – June 2, 2023, to collect data from eligible participants. In order to guarantee that the data collected was meaningful and the study was effective, the researcher needed to be agile.

3.7.2 Interview Procedures

Prior to making any generalisations, to understand the perspectives on particular significant issues that can have consequences, it is imperative to gather the views of experts, specialists, and relevant parties. Although it is argued that questionnaire surveys are sufficient for collecting data for analytical and descriptive surveys to discover opinions, facts, and perspectives about what is happening, they also have limitations. Individual experts' perceptions are understandable; therefore, seeking consensus from these experts, ideally from a panel of experts, would be logical. It was recommended that the subsequent set of information be gathered from management officers using a consensus-forming technique. Twenty participants would be invited to voluntarily participate in the group session through verbal communication and phone calls. Following this, each participant would have received an official invitation by e-mail to the group consensus session in a cover letter. The dates for these two rounds of moderated sessions would be decided by the researcher and the participants.

However, while collecting data with the second instrument, the researcher encountered several difficulties. This included the hesitancy and reluctance of candidates identified as possible participants for this study. This can be deduced to participants having individual and institution appraisals between May – June, trainee assessments were being facilitated between June – July and several potential participants' positions being made redundant between July – August causing a bit of unrest. There were also others who agreed to participate in the consensus-forming exercise, however, they were not able to due to challenges in agreeing on an amicable time.

Consequently, in a bid to maintain the integrity of the study as well as guarantee that the objectives and goals of the research are still aligned, the researcher consulted with their immediate research supervisor, proactively refined the approach, and collected the data using one-on-one interview sessions. The instrument did not require any changes. One-on-one interviews, according to Creswell (2014), are a common method of data collection in qualitative research and can be used to gather in-depth information, and allow for more personalised and detailed responses about an issue or subject. Furthermore, one-on-one interviews have the advantage of being more adaptable and flexible than group discussions because they can be executed at a time and location that is most convenient for the participant (Creswell, 2014). The interviews were scheduled with each participant at times convenient for both the participant and the researcher.

Prior to their interview, all participants were given a list of interview questions as well as a consent form. Preceding each interview, the researcher asked the participants whether they had any inquiries about the interview questions and explained the anonymity of their responses. In order to build trust and reassure them that their involvement was valued and ethically managed through discussions, the researcher again briefed the participants on the scope and purpose of the research. Once the participants were satisfied with the questions and explanations, they would be

asked to sign the consent forms before beginning the interview process. Nevertheless, the data collection process through the one-on-one interviews was laborious, however, it yielded favourable results. Each interview lasted for approximately 15 minutes. This was done between the months of May – July 2023. The researcher had to visit the site locations of the participants to conduct the interviews and collect the data; two interviews were done via telephone. Given the unexpected atmospheric challenges and the circumstances presented, the researcher had to demonstrate flexibility within the procedure and adapt to the constraints yet ensuring that the research was indeed effective and produced meaningful results.

The researcher conducted 13 interviews for the study. After each interview, participants were reminded that they could contact the researcher at any time and request that their responses and comments be removed from the study. The interviews were transcribed electronically using Otter, whilst the researcher took notes. The researcher converted these notes and texts to Microsoft Word, which was then uploaded to Microsoft Excel for analysis.

3.8 Ethical Assurances

When human subjects are involved in research, ethical issues may arise. Human safety, moral, and ethical standards have been violated far too often in studies. For successful research, researchers must follow the various established standards and ethical principles that govern the discipline. By doing this, it speaks to a greater sense of responsibility for doing good for others and society as a whole.

For this study, where the researcher evaluated the critical success factors related to the management of TVET institutions with reference to Jamaica, the approval given by UREC and the participating institutions was contingent upon several key ethical considerations. These include being transparent about the research methods and procedures, prioritisation of the respect, integrity

and dignity of the participants, full consent to be obtained from the participants prior to the study, full protection of the privacy of the research participants, and ensuring open and honest communication with all parties concerned to reduce any potential harm or risk to the institution and the research participants. The researcher makes no mistake in being cognisant that any deviation from the expressed purpose of the research would result in an automatic rescinding of the approval. Since there was no human experiment involved in the study, no health risks, psychological or physiological, medical records, blood sampling, or any other related concerns, a Ministry of Health and Wellness approval, a chief or local medical officer, or any other related ministry or agency approval did not need to be obtained.

Researchers have a moral obligation to all stakeholders involved in the research process, not just the participants (APA, 2017). This researcher understands that acting ethically entails doing the right thing at all times, not just when it is convenient. This includes being aware of potential conflicts of interest and ensuring that the research is carried out in a fair, respectful, and socially responsible manner. Almost all ethical issues discovered in research, according to Leedy and Ormrod (2015), fall into one of four categories: safeguarding against harm, voluntary and informed participation, privacy rights (participants or organisation), and honesty with colleagues. In addition to the aforementioned, the researcher of this study extends ethics in objectivity, honesty, competence, integrity, legality, confidentiality, respect for intellectual property, avoidance of data fabrication, social responsibility, non-discrimination, and responsible publication of data.

To guide this researcher with respect to upholding ethical principles throughout this research and maintaining academic integrity, the following ethical defensible checklist in Appendices E has been adopted and modified from (Leedy & Ormrod, 2015). As previously stated,

pilot questionnaires were conducted with experienced TVET professionals prior to their administration to refine the items gleaned from the preliminary literature review to strengthen the content validity and reliability of the instruments. The piloted survey was also used to determine how long it would take to complete each questionnaire. The five ethical principles that governed and formed the basis of this research are outlined below.

Debriefing – Considering that some questions or items on the questionnaire may be perceived as sensitive, debriefing is recommended to clear up any perceived misunderstanding. As such, a cover letter outlining the study's purpose, how the participants were selected, and guaranteeing anonymity was also sent via email with the questionnaires. The letter informed the participants that their participation in the study was entirely voluntary and that there would be no potential risks or harms. The debriefing also informed them that they have the right to withdraw at any point during the research without consequence or explanation. The researcher included their contact information in the letter in the event the respondents had any perceived misconceptions or questions.

Informed Consent – The legal definition of consent, is when one person agrees to act voluntarily and willfully in the interest of another. In simple terms, it is an act of agreement that is not influenced by fraud, duress, threat, or error. In advance of conducting this research, the researcher obtained permission from potential participants. For the electronic survey, rather than asking for a signature, which can be used as a unique identifier, participants had to give consent by selecting the option, I agree to give consent to proceed, along with the date, before they could access the items on the questionnaire via a clickable hyperlink. Where they did not consent, the option was available to clear the form, or they could simply desist from completing same. For the

interviews, the participant-signed consent forms were not attached to or linked in any way to their responses.

Protection of Participants – This researcher vehemently understands that they have a moral obligation to protect their participants from harm and respecting human dignity. Participants should not be subjected to any form of physical or psychological harm as a result of the research, whether before, during, or after the study. As previously stated and cannot be overemphasised, ethics should be the foundation of research, which includes the researcher removing anything associated with the participant's identity. Taking this into account, in phase two of this study, which consists of in-depth interviews with the participants, a post-coding system was used to further safeguard the participants and ensure anonymity in their responses.

Deception – Because the nature of the study is clear, no form of deception was used in its contents. When the study has concluded, the data and results will be shared with the participants. Additionally, participants were given the opportunity to ask questions, and feedback was provided.

Confidentiality and Anonymity – Although the participants received a hyperlink in their email to complete the questionnaires, no information that could be used to identify the participants, such as their names, email addresses, or home addresses, was stored. All data collected from this study is stored on a 2 terabyte Toshiba external hard drive, only accessible by the principal researcher. To safeguard participant identification beyond the scope of possibility, data reported and utilised in the dissemination activities were only referred to as coded information.

An ethical researcher should be capable of constantly questioning what they do, and this researcher is no exception. Where there is a lack of expertise, and possible doubts, especially in avoiding ethical dilemmas, advisory and ethical committees must be consulted to guide the research from proposal to implementation as with this study.

3.9 Data Analysis

The aim of this study guided the methodologies used throughout this research, as well as the data collection and analysis process. Considering the diversity of TVET institutions, it is impractical to identify and confirm every possible factor influencing their success, but rather to evaluate key stakeholders' perspectives on key success factors associated with TVET institution management. Evaluating the factors alone will not determine the success of the institution because they merely serve as a barometer of the institution's performance. The data collected allowed for the correlation, ranking, and prioritisation of the critical success factors for managing TVET institutions in order of importance.

To accomplish this, modern technology in the form of Google Online Surveys was used, whereby the questionnaire was designed and distributed electronically. The survey, according to the faculty perspectives on how these factors influence the management of TVET institutions in Jamaica, then ranked according to their importance, was able to provide the required quantitative data on the factors associated with TVET institutions' performance. The interview process was then carried out with the management officers to collect qualitative data.

To ensure alignment between the data collected and the research questions, the following section provides a more detailed insight into the methodologies that were used to achieve the study's objectives. This section discusses the types of data that were collected, the statistical analysis, coding methods, and the software used. Table 3.1 shows the themes under which each research question was analysed for ease of reporting and discussion.

Table 3.1*Research Questions and Their Analysis Themes*

Research questions	Main analysis themes
Research questions 1-7	Relationship between critical success factors and the management of TVET institutions in Jamaica
Research question 8	Ranking the most critical factors in managing TVET institutions
Research question 9	The views of TVE professionals on the significance of management and leadership as a critical success factor in governing TVET institutions

Note. Author's elaboration of the research questions and their analysis themes.

3.9.1 Quantitative Analysis

Correlational Analysis

Pearson's correlation analyses were used to investigate the linear relationships between the critical success factors and the management of TVET institutions and to identify any significant correlations. In addition to understanding how different factors relate to each other, such as strength and direction, the analysis provided an understanding of which factors are most strongly associated with the management of TVET institutions. The analysis sought to respond to how the independent variables (partnerships and collaboration, labour market responsiveness, student centredness, external environment and influences, funding, internal quality assurance and external quality assurance, relate to the dependent variable (management of TVET institutions).

Pearson's correlation value ranges from -1 to 1. Correlation close to 1 indicates a strong positive relationship, while a correlation close to -1 indicates a strong negative relationship. A correlation around 0 suggests no linear relationship. Accordingly, Pearson correlation values ranging between +/-0.50 and +/-1 ($r = 0.50$ to 1.0) suggest a strong correlation and would be

considered high. Values between ± 0.30 and ± 0.49 ($r = 0.3$ or 0.49) indicate a moderate correlation. Values below ± 0.2 ($r = 0.29$) are considered a weak correlation. To determine if there were any significant differences between the Full-Time and Adjunct groups, the Mean analysis was done. This was done in conjunction with the Standard Deviation (Std. Dev.) to measure the amount of variation or dispersion in the data. To add further rigour to the study, an analysis was done to determine the relationship between the related factors which provided insights into how the factors influence each other.

Relative Importance and Central Tendencies

According to the respondent's perception (full-time and adjunct faculty), the Relative Importance Index (*RII*) ranked the criticality of each factor. The *RII* is an established statistical measure used in regression models to assess the relative importance of predictor variables in explaining variation in an outcome variable. It aids in determining which predictor variables have a greater influence on the outcome variable than others. In this case, which critical success factors has a greater influence or impact on the success of TVET institutions in Jamaica than others. The use of relative importance weights as supplements to multiple regression is valuable since they provide information that can be difficult to obtain from the indices produced by multiple regression.

The *RII* five (5) point scale was employed for each element, with values ranging from 1 (low importance) to 5 (extremely important). The respondents' respective weights for each factor on the scale are as follows;

'1' is "low importance",

'2' is slightly important,

'3' is moderately important,

‘4’ is very important and

‘5’ is “extremely important”

The *RII* value ranges from 0 to 1, with the *RII* value closest to 1 indicating that the factor has the greatest influence/importance on the successful management of TVET institutes in Jamaica.

It is important to note that the *RII* is only one method of determining the importance of different variables, and it should be used in conjunction with other statistical methods to make more accurate predictions. It should also be used within the specific context of the regression model and the variables under consideration. As a result, in evaluating the Relative Importance Index, additional statistical data such as the Mean Score (MS), Coefficient of Variation (CV), and Standard Deviation (Std. Deviation) of the responses were presented. The mean was utilised in conjunction with descriptive statistics and frequency analysis, to represent the average responses for each factor.

In order to determine how far a group’s responses, differ from the average (mean or expected value), the Standard Deviation (Std. Deviation) was used. If the standard deviation is low, it indicates that most of the numbers are close to the average, whereas a high standard deviation indicates that the numbers are more spread out. The Coefficient of Variation (CV) was calculated by dividing the population Standard Deviation (Std. Deviation) by the population mean (ratio of the Std. Deviation to the mean) and multiplying by 100 to get a percentage. The data variability was measured by CV, which compared the mean data in each sample with the mean data in the population.

Frequencies and Percentages

Through the administration of the online questionnaire, the most frequent responses via numbers and percentages were used to identify the leadership styles that are perceived to be the most effective factor in governing TVET institutions in Jamaica.

3.9.2 Qualitative Analysis

Post-Coding and Content Analysis

As a means of further shaping the responses, such as the respondents' feelings, suggestions, and opinions, content analyses were used for Instrument 2. Table 3.2, 3.3 and 3.4 further elaborates on how the interview items were analysed qualitatively on Instrument 2, where the researcher analysed the responses received from each item using a post-coding coding scheme along with content analysis. After the data were collected by the researcher, they were immediately coded to identify patterns and themes. A cross-check was also conducted between Instrument 2 and Instrument 1 responses, as part of the analyses of the data. As a result, the researcher also became the primary instrument for reviewing the detailed explanations of the participants' perspectives. Although rigorous, this is a common approach where the researcher analyses the responses of participants in-depth to gain a deeper understanding of their experiences and perspectives. This researcher recognises the importance of maintaining a rigorous and systematic approach to data analysis, employing established methods and procedures to ensure the validity and reliability of their findings. Therefore, Taguette and Microsoft Excel-365 were further used to analyse the data collected from the participants.

Table 3.2 further elaborates on how interview items 1-4 were analysed qualitatively on Instrument 2, where the researcher analysed the responses received from each item using a post-

coding coding scheme along with content analysis. Items 1-4 were analysed under the main theme, 'Relationship between critical success factors and the management of TVET institutions in Jamaica'. After collecting the responses, the researcher coded the data to identify patterns and themes in the data. Not only were patterns and themes identified, but the researcher was able to easily compare different responses and identify similarities. The coding also allowed the researcher to maintain the rigor and transparency of the research process.

Table 3.2

Interview Items (1, 2 3 & 4)

Theme: Relationship between critical success factors and the management of TVET institutions in Jamaica		
Interview items	Data Collected	Method of Analysis
1. How would you best describe the successful management and coordination of a TVET institution in Jamaica?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).
2. Would vocational training institutions' planning, management, and administrative coordination be easier in the event critical success factors are established?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).
3. What are the critical factors that you believe are applicable with the management and coordination of TVET institutions in Jamaica?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).
4. Do you believe that having continuous financial support affects the management and coordination of a TVET institution in Jamaica?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).

Note. Author's elaboration of the method of data collection and analysis for interview items 1-4.

Table 3.3 and 3.4 further elaborates on how interview items 5-7 and 8-11 were analysed qualitatively on Instrument 2, where the researcher analysed the responses received from each item using a post-coding coding scheme along with content analysis. Items 5-7 were analysed under the main theme, 'Ranking the most critical factors in managing TVET institutions'. Items 8-11 were

analysed under the main theme, ‘The views of TVE professionals on the significance of management and leadership as a critical success factor in governing TVET institutions’. The researcher coded the data after collecting the responses to identify patterns and themes. In analyzing the data, the researcher also compared and cross-checked the responses received from Instrument 2, with that of the responses from Instrument 1. This allowed for improved comprehension and complementing of the quantitative data, as well as strengthen the overall findings of the study. It also stands to verify the accuracy of the findings, identify patterns and discrepancies in the data, and reduce the risks of perceived biases or errors. The researcher also gained a more complete and nuanced understanding of the subject matter under investigation by integrating different types of data analyses and perspectives into a coherent picture.

Table 3.3

Interview Items (5, 6 & 7)

Theme: Ranking the most critical factors in managing TVET institutions		
Interview items	Data Collected	Method of Analysis
5. What benefits there are to gain in identifying and ranking the critical success factors according to importance?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).
6. How would you evaluate the factors that you have indicated that are applicable to the management and coordination of TVET institutions?	Ordinal data	Frequencies Descriptive summary of responses (Content Analyses).
7. How would you rank the evaluated success factors that are most critical in order of importance in managing TVET institutions in Jamaica?	Ordinal data	Frequencies Responses are summarised descriptively (Content Analyses).

Note: Author’s elaboration of the data collection and analysis method for interview items 5-7.

Table 3.4*Interview Items (8, 9, 10 & 11)*

Theme: The views of TVE professionals on the significance of management and leadership as a critical success factor in governing TVET institutions			
Interview items		Data Collected	Method of Analysis
8.	To what extent do you believe management and leadership is a critical success factor in governing TVET institutions?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).
9.	What should be the management focus in governing TVET institutions?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).
10.	From your experience, which leadership style/theory is conducive to the management of TVET institutions?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).
11.	Why do you believe the given leadership style/theory is conducive to the management of TVET institutions?	Non-numerical data such as opinions, perceptions, and experiences.	Responses are summarised descriptively (Content Analyses).

Note: Author's elaboration on the method of data collection and analysis for interview items 8-11.

An amalgamation of statistical tests and content analysis was used throughout the course of the data collection and analysis process. SPSS 21.0, Microsoft Excel-365, and other statistical tools were used to analyse the data collected from the surveys and interviews.

3.10 Chapter Summary

As put forward by Harvey (2019) it is crucial to identify best practices and fill lingering gaps in the Technical Vocational and Education landscape through the perspectives of key stakeholders. Through these perspectives, it is essential to create strategies to promote quality technical and vocational education. As a result, these perspectives must be harnessed and translated using various investigative methodologies and analyses.

A complementary data collection method was used to examine the factors that are critical to business continuity in a TVET institution. Participants' perceptions of the critical success factors in managing TVET institutions were elicited using quantitative and qualitative methods. The decision to conduct mixed-method research rather than only a quantitative or qualitative research was influenced by several factors, including the desire to ensure that the study would stand up to scrutiny in terms of consistency and accuracy. Statistics and rigorous manipulation make quantitative research objective. Nevertheless, it does not consider all possible factors. Conversely qualitative research focuses on capturing perceptions and is descriptive rather than predictive and gives a deeper understanding of the study's topic. It is intended that this mixed-method study will provide a platform for good scholarly interaction, expand existing knowledge, and lead to the synthesis or integration of theories, among others.

It was determined that an online questionnaire survey for quantitative data collection, supplemented by one-on-one interviews with selected individuals for qualitative data collection, was the best fit for the research objectives and questions following extensive consultation. There were two distinct sampling techniques used. Probability sampling was used in phase one of this study to select a sample from the entire population. Given that these participants had similar characteristics, this sample was representative of the general population, with a margin of error of seven percent and a confidence interval of 95%. In phase two, purposive sampling was used to collect the qualitative data, where the participants were asked directly to participate in the interview session.

The data collection instruments were meticulously designed to ensure content validity and reliability. Along with the other sections on the instruments, the demographic section was critical

due to how it allowed the researcher to gain a better understanding of the participants' characteristics.

The goal of this study, as stated repeatedly throughout, is to identify and prioritise the key variables that contribute to success in managing TVET institutions in Jamaica. Therefore, it was imperative that the operational definition of variables be clear to minimise ambiguity. This is to ensure that everyone understands and interprets the variables in the same manner. This reduces confusion and improves the reliability and validity of the analysis. The given operational definitions also allowed this researcher to assess the participant's perceptions of the importance of various factors in achieving success.

The procedures and ethical assurances followed within this study ensured that the research was conducted in a systematic and ethical manner. This includes ensuring that all necessary approvals were obtained prior to administering the instruments and collecting data. It is equally important to stress that it helped to maintain the integrity and credibility of the study, protect the rights and well-being of the participants, and uphold the ethical standards in research. As opined by Resnik and Shamoo (2017), questionable research practices generate controversy and can harm the researcher's and the institution's reputation. On the other hand, ethical research practices, increase the researcher's and the institution's credibility and reputation. This also helps to increase trust in the research process and the legitimacy of the findings.

As part of the data collection and analysis process, a combination of statistical tests and content analysis was employed. Several statistical tools were used to analyse the data collected from the surveys and interviews, including SPSS 21.0, Microsoft Excel-365, and Taguette. As part of the analysis, the researcher also compared and cross-checked the responses from Instruments one and two.

CHAPTER 4: FINDINGS

4.1 Overview

The goal of this mixed-methods study, as stated repeatedly throughout, is to evaluate the critical success factors in managing vocational training institutes in Jamaica. To this end, the data collected and analysed in this study provide evidence of which factors contribute most significantly to the success of vocational training institutes. Arguably, the findings of this study not only suggest which factors should be prioritised in managing vocational training institutes in Jamaica but also provide practical insights on how best to utilise the identified success factors. This can be done through efficient resource allocation, effective planning and implementation of strategies, and close monitoring of outcomes. Additionally, the study provides a basis for further research in this area.

This chapter describes the key findings, supported by evidence from the data analysis. The chapter also aims to provide a comprehensive overview of the data collected, the statistical analysis conducted, and the interpretation of the findings. The correlations shed light on the variables or factors that are believed to be significantly related through meticulous examination of the data. The correlations were presented clearly and concisely, allowing the readers to easily understand the implications of the results. The findings were then discussed in the context of existing literature on the subject, providing a full picture of the results. In this study, the extensive analysis of the data is intended to contribute to the body of knowledge and provide valuable insights into the factors that are considered critical to the success of TVET institutions in Jamaica.

4.2 Trustworthiness of Data

In an effort to create and formalise a sustainable framework, the study intends to explore the key factors that contribute to the effective management of TVET institutions and prioritise them based on their importance. As a result, a mixed methodology research approach was deemed most appropriate and applied. First, a survey questionnaire was administered online to faculty members considered to be Full-time or Adjunct lecturers/instructors to gather quantitative data. The survey included critical success factors in managing TVET institutions, derived from the literature review and the pilot survey findings. Participants were asked to rate the importance of each factor on a Likert scale.

To gather qualitative information, interviews were conducted with other stakeholders classified as management officers involved in the administrative and management operations of TVET institutions. These interviews helped to gain insight into the experiences, perspectives, and challenges in managing TVET institutions.

Once the data was collected, a thematic analysis was performed on the interview transcripts to identify recurring themes and patterns related to critical success factors and then coded. In addition, the survey data was statistically analysed to determine each factor's average rating and ranking. Prior to drawing any valid and meaningful conclusions from the data gathered, the researcher employed additional rigorous research methods to ensure all biases and errors were removed guaranteeing data integrity. The findings from the thematic analysis and statistical analysis were then compared and synthesised to draw conclusions about the overall success factors. The results of the analysis were then used to create a set of actionable recommendations.

When evaluating data trustworthiness in studies, it is important to consider potential weaknesses in data collection and analysis. These weaknesses can include biases, limited sample

sizes, or flawed research methodologies. The researcher is fully cognisant of these limitations and acknowledges there should be a balanced interpretation of the data.

In being transparent, the researcher recognises potential weaknesses in data interpretation and validity that could arise from self-report biases, where participants may provide socially desirable responses or overestimate their own contributions. Additionally, the sample size of participants may be limited, which could affect the generalisability of the findings. To mitigate these weaknesses, the researcher employed rigorous data analysis techniques, such as triangulation, to ensure multiple perspectives are considered. They also used established frameworks and theories within the literature to guide the interpretation of the data, enhancing the validity and reliability of the study's findings. While analysing the data, the researcher worked as objectively as possible. The researcher was careful not to overstate the findings of the study and instead focused on the implications of the results. To avoid subjective selective use of data, only data that could be supported by the research data were assigned value. Finally, given that this is the first study of its kind in Jamaica, the findings are open to being verified and replicated by other researchers.

4.3 Reliability and Validity of Data

Arguably, the findings of this study can be used to inform decision-making processes for educators, administrators, and policymakers to effectively develop and manage these training institutions. However, reliability and validity of the data must be considered as both are critical in determining the appropriateness, meaningfulness, and utility of the research study. To test the reliability and validity of the data in this study, the researcher employed several strategies.

The researcher tested reliability by administering the same survey and interview to a subset of participants at different points. This helped to determine if the results were consistent and stable

across repeated administrations. The researcher then compared the responses from these two tests. These responses were consistent with the original study, which indicates good reliability. These responses can be found in Appendices F, G, and H.

For validity, the researcher assessed content validity by ensuring that the measurement instruments captured all relevant aspects of the construct being studied. They employed construct validity by comparing the results of the measurement instruments with other established measures conceptual and theoretical frameworks related to critical success factors in managing TVET institutions. For example, the researcher developed the survey with items that assess different dimensions of key factors, such as labour market, management, quality assurance, industry partnerships, student centredness, and funding. The survey was then administered to a diverse sample of stakeholders and the responses were analysed. The survey results showed the five most important success factors that are considered necessary for TVET institutions to succeed. The findings within the interviews were compared and triangulated, in some instances, with existing literature, the electronic survey and expert opinions on critical success factors in TVET institution management. These are discussed in greater detail in the results.

Observational data and document analysis corroborated the findings and provided a more comprehensive understanding of the research phenomenon. Additionally, member checking was conducted with a subset of research participants to ensure that the findings accurately reflected their experiences and perspectives. This strategy helped to increase the credibility and trustworthiness of the findings.

By employing these reliability and validity testing methods, the researcher ensured the robustness and credibility of the data in their study. This empowered them to be confident that the

results of the study were accurate and could be trusted. It also enabled them to draw strong implications, recommendations, and conclusions from the data.

4.4 Results and Analysis

To assess the suitability of the respondents for the study, their background information was solicited from the first section of the questionnaire. An analysis of the respondents' demographic profile was conducted using descriptive statistics and frequency analysis.

4.4.1 Demographic Results

Instrument 1 – Quantitative Data

In total, 155 questionnaires were emailed between May 21, 2023, and July 4, 2023. As of midnight, the response rate was 89.6%. However, only 87% ($n = 135$) of the responses were usable due to partial completion of the questionnaire. However, considering previous studies, this figure is still regarded as high.

Table 4.1*Instrument 1 Demographic Statistics*

Demographic Statistics		
Demographic Category	Frequencies	Valid Percent
Gender		
Male	63	46.7%
Female	72	53.3%
Age		
18-30	8	5.9%
31-50	104	77%
50 & over	23	17%
Highest level of qualification		
Vocational Skills Certificate	1	0.7%
Associate Degree / Diploma	9	6.7%
Bachelors	49	36.3%
Masters	58	43.0%
Post Graduate (Dip/Cert.)	10	40.0%
PhD / EdD.	8	5.9%
Category		
Full-time faculty	56	41.5%
Adjunct faculty	79	58.5%
Years of experience		
0 – 5 years	44	32.6%
6 – 10 years	27	20.0%
11 – 15 years	32	23.7%
16 – 30 years	32	23.7%
<i>n = 135</i>		

Note. Instrument 1 – quantitative data demographic statistics.

As shown in table 4.1, approximately fifty-three-point three percent ($n = 72$) of the participants identified as female, whilst 46.7% ($n = 63$) identified as male. The predominant age range for the participants was between ages 41-45 with 33.3% (45), followed by 31-35 with a percent of 19.3% ($n = 26$). The age range of 36-40 with 13.3% ($n = 18$) was next in line. The others

were 46-50, with 11.1% ($n = 15$), 51-55 with 7.5%, (10), 26-30 with 5.9% ($n = 8$), 56-60 and 61-65 both with 4.4% ($n = 6$). Only one respondent (0.7%) reported being 66 and over.

Table 4.1 illustrates that the highest level of qualification among the respondents was a master's degree (43.0%, $n = 58$), and only one (0.7%) reporting to have at least a vocational skills certificate as their highest qualification. Thirty-six-point-three percent ($n = 49$) reported having a bachelor's degree, 40% ($n = 10$) reported having a postgraduate diploma/certificate, and 5.9% ($n = 8$) reported having a doctoral degree.

Fifty-eight-point-five percent ($n = 79$) of the respondents were from the category of adjunct faculty while the remaining 41.5% ($n = 56$) came from the full-time faculty. Having 0 – 5 years' experience was reported as being the highest years of experience acquired, with 32.6% ($n = 44$). Of the others remaining, 23.7% ($n = 32$), acquired 11 – 15 years, 20% ($n = 27$), acquired 6 – 10 years, 14.1% ($n = 19$) acquired 16 – 20 years, then 5.2% ($n = 7$), 4.4% ($n = 6$) acquired 26 – 30 years and 21 – 25 years, respectively. This questionnaire data revealed that the instructors/teachers are highly qualified with the majority being employed part-time (adjunct faculty).

Instrument 2 – Qualitative Data

In addition to the methodologies employed in this study, the researcher contacted a total of twenty individuals at random from the category of management officers who are directly involved with the day-to-day operations of TVET institutions. Eventually, 65% of the total contacts made by the researcher were responded to. The researcher conducted 13 interviews for qualitative data to capture respondents' lived experience with the critical success associated with TVET institution management.

Table 4.2*Instrument 2 Demographic Statistics*

Demographic Statistics		
Demographic Category	Frequencies	Valid Percent
Gender		
Male	3	23.1%
Female	10	76.9%
Age		
18-30	0	0.0%
31-50	6	46.2%
51& over	7	53.8%
Highest level of qualification		
Associate Degree / Diploma	0	0.0%
Bachelors	1	7.7%
Masters	5	38.5%
Post Graduate (Dip/Cert.)	4	30.8%
PhD / EdD.	3	23.1%
Category		
Director/Principal	2	15.4%
Institution Manager / Administrative Manager	5	38.5%
Head of School / Programme / Department	1	7.7%
Programme Coordinator	2	15.4%
Admission and Assessment Monitoring Officer	3	23.1%
Years of experience		
0 – 5 years	10	77.0%
6 – 10 years	0	0.0%
11 – 15 years	3	23.0%
16 – 30 years	0	0.0%
<i>n</i> = 13		

Note. Instrument 2 – qualitative data demographic statistics.

As shown in table 4.2, approximately seventy-six-point nine percent ($n = 10$) of the participants identified as female, whilst 23.1% ($n = 3$) identified as male. A total of 23.1% ($n = 3$) of the respondents were between the ages of 51 and 55, while 15.4% ($n = 2$) were between the ages of 36-40, 46-50, 56-60, and 66 and over. Thirty-eight-point five percent ($n = 5$) had a master's

degree, with 30.8% ($n = 4$) reporting having a post-graduate diploma/certificate as their highest qualification. Twenty-three percent of the respondents ($n = 3$) reported having a doctoral degree, while one, (7.7%) indicated they only had a bachelor's degree.

As shown in Table 4.2, the data from the survey revealed that 38.5% ($n = 5$) of the respondents are institution/administrative managers and 23.1% ($n = 3$) are categorised as admission and assessment monitoring officers. Director/principal and programme coordinators made up 15.4% ($n = 2$), whilst the remaining 7% ($n = 1$), were heads of school/programme/department. For the participants that reported their years of experience, almost half (46.2%, $n = 6$) had 0 – 2 years. The others reported 3 – 5 years, 30.8% ($n = 4$), and 11 – 15 years, 23.1% ($n = 3$).

4.4.2 Quantitative Analysis

Relationship Between the Critical Factors That Are Most Applicable to the Management of TVET Institutions in Jamaica

The relationship between the critical factors and the management of TVET institutions is examined in this part of the study. Pearson's correlation coefficients were conducted to determine whether there are any significant correlations between the factors that were identified as primarily relevant to the management and coordination of TVET institutions in Jamaica. Additionally, this provided insight into how different factors influence each other, such as strength and direction, as well as which factors are most strongly associated with TVET institution's management.

What Is the Relationship Between Partnerships and Collaboration and the Management of TVET Institutions in Jamaica?

Table 4.3

Summary Table Showing the Relationship Between Partnerships and Collaboration and Management of TVET Institutions

Variable	N	Mean	Std. Dev.	R	Sig	P
Management of TVET institutions	135	31.91	2.48	.452**	.000	Significant p<0.01
Partnerships and Collaboration	135	9.21	1.02			

Note. ** p < 0.01 level (2-tailed); *p < 0.05 level (2-tailed)

Based on the Pearson correlation coefficient in Table 4.3 ($r = .452$, p -value <.001), it suggests a moderately positive relationship between the variable's partnerships and collaboration and the management of TVET institutions. This therefore means that partnerships and collaboration influence the management of TVET institutions.

What is the relationship between labour market responsiveness and the management of TVET institutions in Jamaica?

Table 4.4

Summary Table Showing the Relationship Between Labour Market Responsiveness and Management of TVET Institutions

Variable	N	Mean	Std. Dev.	R	Sig	P
Management of TVET institutions	135	31.91	2.48	.555**	.000	Significant p<0.01
Labour Market Responsiveness	135	9.37	0.90			

Note. ** p < 0.01 level (2-tailed); *p < 0.05 level (2-tailed)

Table 4.4 shows that labour market responsiveness and the management of TVET institutions were both strongly significant ($r = .555$, p -value <.001). This therefore means that labour market responsiveness influences the management of TVET institutions.

What is the relationship between student centredness and the management of TVET institutions in Jamaica?

Table 4.5

Summary Table Showing the Relationship Between Student Centredness and Management of TVET Institutions

Variable	N	Mean	Std. Dev.	R	Sig	P
Management of TVET institutions	135	31.91	2.48	.538**	.000	Significant p<0.01
Student Centredness	135	21.51	2.33			

Note. ** p < 0.01 level (2-tailed); *p < 0.05 level (2-tailed)

Table 4.5 shows that student centredness and the management of TVET institutions have a high significance ($r = .538$, p -value < .001). This therefore means that student centredness influences the management of TVET institutions.

What is the relationship between external environment and interferences and the management of TVET institutions in Jamaica?

Table 4.6

Summary Table Showing the Relationship Between External Environment and Interferences and Management of TVET Institutions

Variable	N	Mean	Std. Dev.	R	Sig	P
Management of TVET institutions	135	31.91	2.48	.473**	.000	Significant p<0.01
External Environment and Interferences (Stakeholders)	135	20.163	2.98			

Note. ** p < 0.01 level (2-tailed); *p < 0.05 level (2-tailed)

The findings in Table 4.6 show that there were moderately positive relationships between the external environment and interferences, and the management of TVET institutions ($r = .473$, p -value < .001). This therefore means that external environment and interferences influences the management of TVET institutions.

What is the relationship between funding and the management of TVET institutions in Jamaica?

Table 4.7

Summary Table Showing the Relationship Between Funding and Management of TVET Institutions

Variable	N	Mean	Std. Dev.	R	Sig	P
Management of TVET institutions	135	31.91	2.48	.411**	.000	Significant p<0.01
Funding	135	9.40	0.91			

Note. ** p < 0.01 level (2-tailed); *p < 0.05 level (2-tailed)

Table 4.7 shows that the correlation between funding and the management of TVET institutions indicates a moderately positive relationship ($r = .411$, p -value < .001).

What is the relationship between internal quality assurance and the management of TVET institutions in Jamaica?

Table 4.8

Summary Table Showing the Relationship Internal Quality Assurance and Management of TVET Institutions

Variable	N	Mean	Std. Dev.	R	Sig	P
Management of TVET institutions	135	31.91	2.48	.731**	.000	Significant p<0.01
Internal Quality Assurance	135	50.52	4.25			

Note. ** p < 0.01 level (2-tailed); *p < 0.05 level (2-tailed)

Table 4.8 above shows that internal quality assurance and the management of TVET institutions have a significant relationship ($r = .731$, p -value < .001). This therefore means that internal quality assurance influences the management of TVET institutions.

What is the relationship between external quality assurance and the management of TVET institutions in Jamaica?

Table 4.9

Summary Table Showing the Relationship Between External Quality Assurance and Management of TVET Institutions

Variable	N	Mean	Std. Dev.	R	Sig	P
Management of TVET institutions	135	31.91	2.48	.481**	.000	Significant p<0.01
External Quality Assurance	135	22.48	2.24			

Note. ** $p < 0.01$ level (2-tailed); * $p < 0.05$ level (2-tailed)

Table 4.9 above shows that there is a significant relationship between external quality assurance and the management of TVET institutions ($r = .481$, p -value $< .001$). This therefore means that external quality assurance influences the management of TVET institutions.

Ranking the most critical factors in managing TVET institutions

This part of the study ranked the critical factors in TVET institution management according to their value using both descriptive and non-parametric statistical methods. An analysis was conducted to determine which set of factors, as perceived by adjunct faculty and full-time faculty, have the highest rating when it comes to managing TVET institutions in Jamaica. Table 4.4 shows the means, standard deviations (Std. Dev.), and coefficients of variation (CV) for each group using SPSS 21.0. To rank the data, the Relative Importance Index (*RII*) was applied without favouring any particular group of respondents. These results provide an indication of the overall ranking of the factors that have been identified as having a positive impact on the successful management of TVET institutions in Jamaica.

Table 4.10

Overall Descriptive and Non-Parametric Statistics

Overall Descriptive and Non-Parametric Statistics						
Variables/Factors Measured	N	RII	Mean	Std. Dev.	CV	Rank
Funding	135	0.941	9.40	0.91	11%	1
Labour Market Responsiveness/ Relevance	135	0.939	9.37	0.90	12%	2
Partnerships and Collaboration	135	0.921	9.21	1.02	13%	3
Internal Quality Assurance	135	0.919	50.52	4.25	12%	4
External Quality Assurance	135	0.903	22.48	2.24	14%	5
Student Centredness	135	0.861	21.51	2.33	17%	6
External Environment and Interferences (Stakeholders)	135	0.821	20.16	2.98	23%	7

Note. Overall descriptive statistics that are impartial towards any given respondent group.

Table 4.10 shows that the mean value results indicate that the evaluated factors have a medium to high influence on the success of TVET institution management in Jamaica (\bar{x} =9.21-50.52). The findings in the table also revealed some variation in the responses of adjunct and full-time faculty to the variables associated with TVET institution management in Jamaica. The mean range of 9.21-50.52 and the standard deviation range of 0.90–2.98 suggest that most responses are within 0.90 to 2.98 units from the mean. As the survey participants respond to perception questionnaires, the coefficient of variation varies, ranging from 11% to 23%, highlighting different degrees of variability in the responses compared to the mean. This is a result of their varying educational backgrounds and expertise. The diverse standard deviation and coefficient of variance ranges observed across the 39 related factors (Appendices K) shed light on the varying levels of variability and spread in the data, providing a comprehensive understanding of the study's findings.

Table 4.10 shows that, as perceived by the overall population, funding had an overall high *RII* value of 0.941 (\bar{x} =9.40, SD =0.91), thus being ranked as the most critical success factor in the management of TVET institutions. The respondents also perceived labour market responsiveness as a critical factor in the management of TVET institutions (\bar{x} =9.37, SD =0.90). Thus, labour market responsiveness, having an overall *RII* value of 0.939, is ranked the second most important factor associated with the management of TVET institutions. Table 4.10 also illustrates partnerships, and collaboration was perceived to be critical to the management of TVET institutions (\bar{x} =9.21, SD =1.02). Therefore, partnerships and collaboration, having an overall *RII* value of 0.921 is ranked the third most important factor associated with the management of TVET institutions.

The respondents also perceived internal quality assurance as a critical success factor in managing TVET institutions (\bar{x} =50.52, SD =4.25). As a result, internal quality assurance, with an overall *RII* value of 0.919 is ranked as the fourth most important factor in TVET institution management. The respondents also perceived external quality assurance as a critical success factor in managing TVET institutions (\bar{x} =22.48, SD =22.48). As a result, external quality assurance is ranked as the fifth most important factor in TVET institution management with an overall *RII* value of 0.903. The respondents also perceived student centredness as a critical success factor in managing TVET institutions (\bar{x} =21.51, SD =2.33). Therefore, with an overall *RII* value of 0.861, student centredness is ranked as the sixth most important factor in TVET institution management. The respondents also perceived external environment and interferences as a critical success factor in managing TVET institutions (\bar{x} =20.16, SD =2.98). As a result, external quality assurance is ranked as the seventh and the least most important factor in TVET institution management with an overall *RII* value of 0.821.

After examining the overall data in Table 4.10, it is clear that the top five factors, based on their Relative Importance Index ranking, indicate the most significant factors are funding, labour market responsiveness, partnerships and collaboration, internal quality assurance, and external quality assurance. While the bottom two factors are completed with student centredness and external environment and interferences. These are further discussed in the evaluation of the findings. For a deeper comprehension of the questionnaire analysis results, the perceptions of the groups were isolated and further examined to enhance the academic rigour and credibility of the study and to also enhance the discussion. The analysis of the results was done to identify similarities and differences in the opinions of the two groups. The findings were then compared and contrasted to identify any trends and patterns.

Table 4.11

Top Related Critical Success Factors for Each Group

Related Variables/Factors	Full-time Faculty		Adjunct Faculty	
	RII	Rank	RII	Rank
Availability of qualified staff	0.980	1	0.957	2
Quality of training and delivery	0.972	2	0.968	1
Industry collaboration/employer engagement	0.967	3	0.943	3
Teacher/instructor technical skills and background are industry grounded	0.954	8	0.943	4
Benchmarking programmes and skills against industry, government, regional, and international standards	0.957	4	0.932	7

Note. The order in which each group perceives the most important related factors.

It can be observed from Table 4.11 that the Full-time group regarded the availability of qualified staff as the most significant factor, with an *RII* value of 0.980. The Adjunct Faculty group ranked it second, with a *RII* value of 0.957. Quality of training and delivery achieved an *RII* value of 0.968 where the Adjunct Faculty group ranked it first, and second by the Full-time group with

an *RII* value of 0.972. With *RII* ratings of 0.967 and 0.943, respectively the Full-time and Adjunct Faculty groups consistently ranked third for industry collaboration/employer engagement. These high-rated factors are associated with internal quality assurance, and partnerships and collaboration. The above analysis indicates that these related factors were highly important to both groups. Teacher/instructor technical skills and background are industry grounded was ranked fourth by the adjunct (*RII* value 0.943) and eight by the full-time (*RII* value 0.954). Benchmarking programmes and skills against industry, government, regional, and international standards also ranked fourth by the full-time faculty (*RII* value 0.957) and seventh by the adjunct (*RII* value 0.932). Both factors are related to internal quality assurance and labour market responsiveness, respectively.

The Most Effective Leadership Style for Managing TVET Institutions

Participants were asked to indicate which leadership style they believe is most effective in managing TVET institutions. As part of the survey, participants had the option of selecting more than one response. The results showed that the majority of the participants, which accounted for 83.7% ($n = 113$), believed that a transformational leadership style was the most effective in managing TVET institutions. However, some participants also indicated that there are other leadership styles that could be effective in certain situations. The results are further summarised in Table 4.12. The assumption of this selection is further detailed in the evaluation of the findings.

Table 4.12*Leadership Style Believed to be Most Effective in Managing TVET Institutions*

Most Effective Leadership Styles		
Leadership Styles	Frequencies	Valid Percent
Managerial	19	14.1%
Transformational	113	83.7%
Transactional	7	5.2%
Contingency	13	9.6%
Postmodern	10	7.4%
Moral	4	3.0%
Participative	1	0.7%
Interpersonal	1	0.7%
<i>N</i> = 135		

Note. Leadership style perceived to be most effective according to respondents.

As shown in Table 4.12, fourteen-point-one percent ($n = 19$) of the respondents believed that managerial leadership is most effective, while 9.6% ($n = 13$) also believed that a contingency approach is most effective. Following this, 7.4% ($n = 10$) selected postmodern, 5.2% ($n = 7$) selected transactional, and 3% ($n = 4$) selected moral. The final selection was participative and interpersonal, both with 0.7% ($n = 1$).

4.4.3 Qualitative Analysis

Relationship Between Critical Success Factors and The Management of TVET Institutions in Jamaica

During the interview, the researcher asked specific questions that pertain to the critical factors that are most pertinent to the management of TVET institutions in Jamaica. In addition to content analysis, a post-coding coding method was used to analyse the 13 participants' qualitative

responses on Instrument 2. Table 4.13 further elaborates on how the responses from each item are coded for ease of data analysis. The frequency is also mentioned, given the commonalities in the responses.

Table 4.13

Participants' Response to Interview Items 1-4

Respondent Number	Interview Question 1 Code Numbers	Interview Question 2 Code Numbers	Interview Question 3 Code Numbers	Interview Question 4 Code Numbers
1	C1, C2, C3	C1	F1, F2, F3, F4	C1
2	C4	C1	F3, F4	C1
3	C5, C6	C1	F1, F2, F3, F4, F5	C1
4	C3, C6	C1	F2, F3, F4, F5, F6, F7	C1
5	C3, C7	C1	F5, F8	C1
6	C8, C9	C1	F1, F8, F9, F11, F12, F13	C1
7	C4, C10, C11	C1	F1, F3, F4, F7, F8, F9, F10	C1
8	C12, C13, C14	C1	F2, F4, F7, F10	C1
9	C12, C13, C14	C1	F2, F4, F7, F10	C1
10	C12, C13, C14	C1	F2, F4, F7, F10	C1
11	C12, C13, C14	C1	F2, F4, F7, F10	C1
12	C12, C13, C14	C1	F2, F4, F7, F10	C1
13	C12, C13, C14	C1	F2, F4, F7, F10	C1

Responses for interview question 1 (Narrative responses coded)

C1 – Shared Values and Vision of Staff and Trainees
 C2 – Clear Policies
 C3 – Governance Framework
 C4 – Strong Leadership
 C5 – Enhancing Student Success and Retention
 C6 – Efficient Resource Monitoring and Allocation
 C7 – Building Pathways to Students Success
 C8 – A Solid Performance Management System
 C9 – Collaborative Efforts for Sustainable Development
 C10 – Developing Strategic Plans that Prioritise Fairness and Inclusivity
 C11 – Establishing Industry Partnerships
 C12 – Creating A Positive Learning Environment
 C13 – Teachers Are Well Trained and Supported
 C14 – Providing Students with Hands-on Experience

Responses for interview question 2 (Narrative responses coded)

C1 – Yes

Responses for interview question 3 (Narrative responses coded)

F1 – Adequate Funding
 F2 – Partnerships
 F3 – Effective Leadership
 F4 – Availability of Qualified Staff
 F5 – Well Defined Budget
 F6 – Student Retention
 F7 – Labour Market Alignment of Programmes and skills
 F8 – Strategic and Succession Planning
 F9 – Performance Management System
 F10 – Commitment to Providing High Quality Education and Training
 F11 – Transparency and Accountability System
 F12 – Student Advisement System
 F13 – Assessment & Feedback System

Responses for interview question 4 (Narrative responses coded)

C1 – Agree

Note. Summary of qualitative interview items 1 – 4 responses.

Successful Management and Coordination of a TVET Institution in Jamaica

Participants were asked to best describe the successful management and coordination of a TVET institution in Jamaica. After conducting the interviews with 13 participants, several common themes were identified in their responses. Examining the above data from Table 4.13, the results show that there are three core responses given by respondents that best describe the successful management and coordination of a TVET institution in Jamaica. Creating a positive learning environment (C12), having well-trained and supported teachers (C13), and providing students with hands-on experience (C14) were described as successful TVET institution management and coordination by the majority of respondents, which accounted for six. This is followed by three participants indicating that having a governance framework (C3) best describes the successful management and coordination of a TVET institution. Two participants indicated that having strong leadership (C4) and efficient resource monitoring and allocation (C6) also best describes the institution's administration and coordination. Other responses given were, there

should be shared values and vision of staff and trainees (C1), clear policies (C2), enhancing students' success and retention (C5), collaborative efforts for sustainability (C9) and establishing industry partnerships (C11).

Establishing Critical Success Factors Could Potentially Simplify The Planning, Management, and Coordination, and Vocational Institutions

Participants were asked if vocational training institutions' planning, management, and administrative coordination be easier in the event critical success factors are established. As seen in Table 4.13, participants unanimously agreed (CI) that establishing critical success factors would make vocational training institutions' planning, management, and administrative coordination easier. Respondents one and three, on the other hand, also emphasised that, while they are good to be established, critical success factors differ for each institution. They further suggested that these success factors should be tailored to the needs of each institution, students, and the community. This view is argued on the premise that a one-size-fits-all approach to policy implementation will not work as each institution and its serving constituent have different needs. The participants also suggested that there should be a regular feedback mechanism established to ensure the effectiveness of the factors on vocational training institutions.

Critical Factors That Are Applicable to the Management and Coordination of TVET Institutions in Jamaica

The researcher asked the participants what the critical factors were that they believed were applicable to the management and coordination of TVET institutions in Jamaica. In this regard, the analysis of Table 4.13 reveals that there are several critical factors that are thought to be applicable. Eleven participants believe the most applicable factor is the availability of qualified staff (F4), while eight believe the most applicable factor is partnerships (F2) and labour market

alignment of programmes and skills (F7). From the perception of the respondents, some also suggested that commitment to providing high-quality education and training (F10) is a key factor. The findings suggest that there are not many significant differences in perception among the respondents. Other responses include adequate funding (F1), effective leadership (F2), well-defined budget (F5), student retention (F6), strategic and succession planning (F8), performance management system (F9), commitment to providing high-quality education and training (F10), transparency and accountability systems (F11), student advisement system (F12) and an assessment and feedback system (F13).

It is crucial to note that three respondents had similar follow-up responses. In explaining their belief in the availability of qualified staff, partnerships, and labour market alignment of programmes as being applicable to the management and coordination of TVET programmes, respondents four, eight and ten indicated that there is a need to ensure industry relevance and continuous improvement in TVET. They further expounded that with qualified staff such as instructors and assessors, TVET institutions can provide high-quality training, and with partnerships, this can enhance the programme effectiveness through collaboration. Respondent eight explained “when the programmes are aligned with the labour market, the institution is successful in supplying students that matches industry demands.” Additionally, an important observation in the responses from respondents five and eight was that in order for strategic and succession planning to be effective, there should be the involvement of staff in the development and implementation of such plans and not only the leadership of the institutions.

Continuous Financial Support and Effective Management and Coordination of a TVET Institutions

Table 4.13 further reinforces the participants' belief that having continuous financial support affects the institution's management. It is worth noting that they emphasise "TVET is very expensive" in their responses.

Ranking The Most Critical Factors in Managing TVET Institutions

During the interview, the researcher asked pertinent questions, to determine which factors should be prioritised in the management of TVET institutions. In addition to content analysis, a post-coding coding method was used to analyse the 13 participants' qualitative responses to Instrument 2. The coding scheme for the responses is further explained in Table 4.14 to facilitate data analysis. Given the similarity in the responses, the frequency is also mentioned.

Table 4.14

Participants' Response to Interview Items 5-7

Respondent Number	Interview Question 5 Code Numbers
1	C1, C2
2	C1, C3
3	C3
4	C3
5	C3
6	C3, C4
7	C3, C5, C6
8	C5, C7, C8
9	C5, C7, C8
10	C5, C7, C8
11	C5, C7, C8
12	C5, C7, C8
13	C5, C7, C8

Responses for interview question 5 (Narrative responses coded)

C1 – Continuous and Increased Funding for Programmes/Specific Areas

C2 – Increased Level of Interest from Key Stakeholders

- C3 – Increased Focus on Key/Priority Areas
 C4 – Make it Easier for Good Governance
 C5 – The Institution is Better Positioned to Make Informed Decisions
 C6 – Information and Data Available Especially for Sustainability
 C7 – Prioritisation of Resources
 C8 – Effective and Efficient Planning (Strategic Planning)

Interview Question 6 Code Numbers Evaluated		Interview Question 7 Code Numbers Ranked
Success Factor	Frequency	Rank
F1	4	5
F2	10	2
F3	4	5
F4	11	1
F5	5	5
F6	7	7
F7	8	3
F8	3	6
F9	1	7
F10	7	4
F11	1	7
F12	1	7
F13	1	7

Responses for interview questions 6 & 7 (Narrative responses coded)

- F1 – Adequate Funding
 F2 – Partnerships
 F3 – Effective Leadership
 F4 – Availability of Qualified Staff
 F5 – Well Defined Budget
 F6 – Student Retention
 F7 – Labour Market Alignment of Programmes and skills
 F8 – Strategic and Succession Planning
 F9 – Performance Management System
 F10 – Commitment to Providing High Quality Education and Training
 F11 – Transparency and Accountability System
 F12 – Student Advisement System
 F13 – Assessment & Feedback System
-

Note. Summary of qualitative interview items 5 – 7 responses.

Benefits to Gain from Identifying and Ranking the Critical Success Factors According to Their Importance

In the interviews, the participants were asked what benefits there are to gain from determining and prioritising the critical success factors based on their importance. The ability of the institution to better make informed decisions (C5), maximising/prioritising resources (C7), and effective and efficient planning (C8) emerged as the leading themes given by the respondents, according to Table 4.14. Another leading theme that emerged from the analysis was an increased focus on key/priority areas (C3). The participants perceived this as particularly beneficial, as they believe it allows the institution to focus its attention on the areas that can maximise outcomes, making sure that the institution is making the most of its resources. Other responses include continuous and increased funding for programmes (C1), increased level of interest from key stakeholders (C2), making it easier for good governance (C4), and information and data available especially for sustainability (C6).

Evaluating the Factors that Apply to the Management and Coordination of TVET Institutions

The participants were asked to evaluate the factors that they identified as relevant to the management and coordination of TVET institutions in Jamaica. Table 4.14 displays the frequency distribution of the factors that respondents evaluated as being critical. F4 (availability of qualified staff) was regarded as extremely important by eleven of the thirteen management officers polled. F2 (partnerships) and F7 (labour market alignment of programmes and skills) were deemed very important by ten and eight respondents, respectively.

Ranking the Evaluated Success Factors that are Most Critical in Order of Importance in Managing TVET Institutions in Jamaica

The respondents were tasked with ranking the variables that would contribute to the success of the institutions in order of significance considering their personal experiences in addition to evaluating these criteria. The data in Table 4.14 shows that the responses were congruent to the related factors ranked on the questionnaire survey, with F4 (availability of qualified staff), F2 (partnerships), and F7 (labour market alignment of programmes and skills) ranking first, second, and third, respectively.

The Views of TVE Professionals on The Significance of Management and Leadership as A Critical Success Factor in Governing TVET Institutions

This section of the study contains an analysis of the responses to the questions asked by the researcher to capture the participant's views on the importance of management and leadership in governing TVET intuitions. In addition to content analysis, a post-coding coding method was used to analyse the 13 participants' qualitative responses on Instrument 2. The coding scheme for the responses is further explained in Table 4.15 to facilitate data analysis.

Table 4.15

Participants' Response to Interview Items 8-11

Respondent Number	Interview Question 8 Code Numbers	Interview Question 9 Code Numbers	Interview Question 10 Code Numbers	Interview Question 11 Code Numbers
1	C1, C2	C1	L1	C1
2	C3, C4	C1, C2	L2	C2
3	C3, C4	C3, C4	L2	C2
4	C3	C3, C4, C6	L3	C3
5	C4	C3, C6, C7	L2	C2
6	C3	C2	L2	C2
7	C5	C3, C4	L2	C2
8	C6	C5	L2	C2
9	C6	C5	L1	C1
10	C6	C3, C5	L3	C3
11	C7	C5	L4	C4
12	C6	C5	L2	C2, C5
13	C6	C5	L2	C2, C5

Responses for interview question 8 (Narrative responses coded)

C1 – Responsive Leadership
 C2 – Visionaries
 C3 – The Extent to Which Leaders Who Are Capable to Provide Guidance
 C4 – Make Informed Decisions
 C5 – It is The Foundation of a Successful Institution
 C6 – A Key Driver of Success in Any Organisation
 C7 – Should Be Able to Motivate Their Staff and Student

Responses for interview question 10 (Narrative responses coded)

L1 – Situational Leadership
 L2 – Transformational Leadership
 L3 – Servant Leadership
 L4 – Authentic Leadership

Responses for interview question 9 (Narrative responses coded)

C1 – Training and Certification
 C2 – Staff Motivation and Welfare
 C3 – Producing Competent and Confident Graduates
 C4 – Maximising the Employment Rate for the Local and Global Economy
 C5 – Business Continuity and Sustainability
 C6 – Aligning Programmes and Skills to the Labour Market
 C7 – Student Tracking

Responses for interview question 11 (Narrative responses coded)

C1 – Matching Their Style to The Situation
 C2 – Flexible and Adapt to The Changing Times / Creating A Vision and A Culture
 C3 – Should be Able to Lead by Example
 C4 – Should be Authentic
 C5 – Guiding (Motivating) Employees Toward Achieving Specific Goals

Note. Summary of qualitative interview items 8 – 11 responses.

The Extent to Which Management and Leadership are Critical Success Factors in

Governing TVET Institutions

Participants were asked to what extent they believe management and leadership are critical success factors in governing TVET institutions. It can be observed from Table 4.15 that some of the respondents believed that management and leadership is a key driver of success in any organisation (C6). It is not only a key driver of success, but four of the participants believe it should be to the extent that leaders are capable of providing guidance (C3). The interview results also show that management and leadership are critical success factors, as they are supposed to be visionaries (C2), it helps to make informed decisions (C4), should be able to motivate their staff (C7), be responsive (C1), and it is the foundation of a successful institution (C5).

Management's Focus in Governing TVET Institutions

Participants were asked what the management focus should be in governing TVET institutions. As shown in Table 4.15, various responses were given as to what should be the focus of management in governing these institutions. However, most respondents suggest that the focus should be on business continuity and sustainability (C5). There were others who believed that the priority should be on producing competent and confident graduates (C3) and maximising the employment rate for the local and global economy (C4). There were those who suggested that the focus should be on training and certification (C1) and staff motivation and welfare (C2), while others believed that management's focus should be on aligning programmes and skills to the labour market (C6) and student tracking (C7). Respondent Four put forward strongly that, irrespective of the focus, the leadership of the institution should demonstrate that they understand what TVET is. This is due to the fact that they have seen, and experienced leaders articulate vocational education but do not demonstrate that they understand what it takes based on the action or inaction taken. Their lack of regard and understanding of the basics of competency-based education is demonstrated in their decision-making and policy development.

The Leadership Style/Theory Most Conducive to the Management of a TVET Institution

From their experience, participants were asked to describe which leadership style/theory is most conducive to managing a TVET institution. Each participant had the option of mentioning more than one style/theory during the interview. Table 4.15 shows that the majority of respondents indicated transformational leadership (L2) is more conducive. This is followed by a few indications that there are advantages in the application of situational leadership (L1), and servant leadership (L3) styles and theories. Given their personal experience, only one respondent indicated that an authentic leadership style (L4) would be conducive.

To get an appreciation of the leadership style/theory chosen by the respondents, the researcher probed further to ascertain the reason for their choice of style. According to Table 4.15, respondents believe that the transformational leadership style is best suited to managing TVET institutions since it allows for flexibility and can adapt to changing times, creating a vision and a culture (C2). Respondents twelve and thirteen both believe that transformational leadership is beneficial because “they can guide (motivate) employees towards achieving specific goals” (C5). According to respondents three and ten, their chosen leadership style which is a servant leader (L3), is conducive as they should be able to lead by example (C3). Respondents one and nine said that their chosen leadership style, a situational leader (L1), was conducive, as they should be able to match their style to the situation (C1). Respondent One chose authentic leadership (L4) and responded that the leader should be authentic (C4).

4.5 Discussion of Findings

The purpose of this section is to provide a brief and all-encompassing overview of the research findings and their meanings throughout the study as they relate to the literature review and the study’s theoretical framework. Additionally, the section also discusses instances where there were unexpected or contradictory results. Under this section, the findings are categorised and discussed under three broad themes: (1) the relationship between critical success factors and the management of TVET institutions in Jamaica (2) ranking the most critical factors in managing TVET institutions, and (3) the views of TVE professionals on the significance of management and leadership as a critical success factor in governing TVET institutions.

Relationship Between Critical Success Factors and the Management of TVET Institutions in Jamaica

Using Pearson's correlation coefficients, the researcher examined the influence of strength, and relationship between the factors to ascertain those most applicable to TVET institution management in Jamaica. The strong positive correlation meant that as one variable increases, the other variable also tends to increase. The implication is that there is a consistent and predictable relationship between the two variables. From the analysis of the data in Table 4.3, there was a moderate positive correlation between partnerships and collaboration and the management of TVET institutions ($r = .452$, $p\text{-value} < .001$). This therefore means that collaborating with external partners can positively influence the management and leadership practices within TVET institutions. This is in line with the studies of Mohamad et al. (2023), who assessed TVET institution leaders' barriers in managing TVET institutions and industry partnerships. The study offered insights into how TVET leaders perceive institution-industry partnerships. It concluded that if TVET institutions are to produce a quality workforce to fulfil the nation's demand, impediments to institution-industry collaborations for TVET programmes must be addressed.

Additionally, through partnership, the programmes and skills offered can be benchmarked against industry and international standards, which influences the quality of training and delivery. This is in keeping with the studies in the literature that undoubtedly put a strong emphasis on collaboration and partnerships (Wahba, 2012; Raihan, 2014; Woldetsadik & Lumadi, 2015; Choi, 2021). These studies showed that collaboration is essential to ensuring successful outcomes and can enhance decision-making processes and overall institutional performance. This type of partnership can bring diverse perspectives, resources, and expertise that enhance the overall effectiveness of management and leadership. By emphasising the benefits of cooperation and cultivating a common vision among institutions and community organisations, inspirational leaders can rally support from partners through the lens of transformational leadership. Therefore,

the findings emphasise the importance of collaboration with external partners and stakeholders in management and leadership decisions.

The analysis in Table 4.4 shows that labour market responsiveness and the management of TVET institutions demonstrated high significance ($r = .555$, $p\text{-value} < .001$). This therefore means that labour market responsiveness influences the institution's management. It also implies that institutions that adopt their programmes to meet the demands of the labour market are likely to have more effective management and leadership structures. Consistent with the conclusions of Abdullah et al.'s (2021) study on a leadership model of TVET among leaders, the authors agree that TVET leaders must have expertise and knowledge in elements related to their leadership. This experience enables effective planning and delivering adequate training to their faculty, ensuring that they are qualified, resulting in graduates or students with technical capabilities that are marketable. Additionally, by recognising and harnessing the unique strengths of each faculty and staff member, transformational leaders can implement impactful professional development programmes. These programmes will not only enhance skills but also ensure alignment with the dynamic demands of the labor market, ultimately benefiting both individuals and the institution. Smith (2020) backs up this claim by arguing that transformational leaders have the ability to improve educational quality and overall institutional performance by inspiring, motivating, and involving faculty members and staff to achieve excellence.

It can be seen from Table 4.5 that there is a significant relationship between student centredness and the management of TVET institutions ($r = .538$, $p\text{-value} < .001$). This therefore means that institutions that focus on student needs in their decision-making process tend to significantly have more effective management and leadership practices. In their investigation into TVET institutions' subpar performance, Badenhorst and Radile (2018) hypothesise that ineffective

and fragmented leadership, as well as poor management practices, are to blame for the fragmentation of the TVET system in South Africa. This has resulted in poor student performances in TVET institutions; and where management practices are poor, they fail to offer appropriate guidance to teaching faculty and students. When student centred approaches are prioritised, this can lead to better decision-making and overall institutional success. Personalised learning approaches provide students with the opportunity to develop their skills and knowledge at their own pace and in line with their individual goals (Siew et al., 2020; Okolie et al., 2021). As supported by literature, students who receive individualised consideration also benefit from increased employability and improved alignment with their career goals because of personalised learning approaches.

From the analysis of the data in Table 4.6, there was a moderately positive correlation between the external environment and interferences, and TVET institution management ($r = .473$, $p\text{-value} < .001$). This therefore implies that the external environment and interferences influence the management of TVET institutions and decision-making. These findings are consistent with the Abdullah et al. (2021) model, i.e., the relationship with external parties and the ability to collaborate with industry and the community necessitate TVET leaders with effective communication and intrapersonal and interpersonal skills, which are the most important factors that contribute to the success of a negotiation. Effective collaboration and idealised influence are crucial in shaping the industry and economy (Bass & Riggio, 2010). Successful negotiations with external parties cultivate trust and credibility (Dirks & Ferrin, 2002), foster open communication and mutual understanding (Kedir & Geleta, 2017), and pave the way for a unified vision and common objectives (Yukl et al., 2012). Understanding and managing external influences or parties, such as parents, families and guardians' interests, community engagement groups, regulatory bodies, and

other stakeholders, should be strategic and systematic. This suggests that when there are more community engagement opportunities, it is likely to generate greater interest and involvement from parents, families, and wider society on TVET.

When compared to higher education, TVET has traditionally been regarded as a less appealing educational option. According to Wahba (2012) and Ibrahim and Mat Nashir (2022), changing the mindsets of students, parents, the community, and other stakeholders is difficult in this regard. They have a negative attitude towards TVET and see it as a course for those who are failing in society. This is also confirmed by the findings of Zhi and Atan's (2021), study which reveals that parents' negative reactions to TVET influence students' attitudes towards TVET. This provides a good opportunity for TVET institutions to capitalise on this knowledge, by emphasising the valuable skills and knowledge gained from participating in various programme or course offerings. The conclusion of the above finding can also suggest that transformational leaders managing TVET institutions can encourage critical thinking and innovative problem solving, enabling institutions to navigate external challenges like policy changes and economic shifts effectively.

Along with other challenges, it is also the perception that family and parental decisions contribute to students completing vocational studies. Some students fail to graduate due to academic issues in their study programmes, whereas others leave prior to completing their studies due to community-based violence, family issues or parental decisions (Sabtu et al., 2016, p. 198; Mitchell, 2015, p. 201). According to the findings of Sabtu et al. (2016), more community engagement opportunities are likely to increase parental, family, and guardian engagement and enthusiasm in TVET. This could lead to improved relationships between the institutions and the community.

The findings in Table 4.7 revealed that there was a significant relationship between funding and the management of TVET institutions, indicating a moderately positive relationship ($r = .411$, $p\text{-value} < .001$). This means that as funding increases, it influences and increases TVET institution's management. This also implies that financial resources play a pivotal role in shaping the governance and leadership, practices, and decisions of TVET institutions. This is consistent with the conclusions of Hanni's (2019) study on educational and vocational training financing. For example, in presenting the theoretical framework for TVET financing, they argue that a lack of coordination between education and TVET finance policies can result in an inefficient allocation of resources. Mohamad et al.'s (2023) analysis of barriers to collaboration between industry and institution highlights that funding and finance have a major effect on managing TVET institutions, which hinders their success. As such, the transformational leadership theory does effectively guide the management of TVET institutions by advocating for transparency in funding allocation. Leaders can foster a shared vision that inspires stakeholder commitment and accountability by embracing idealised influence, inspirational motivation, and intellectual stimulation. This approach not only enhances trust but also ensures that resources are directed toward impactful initiatives that benefit learners and the community as a whole.

The practicability of the high significance between TVET internal quality assurance and the management of TVET institutions ($r = .731$, $p\text{-value} < .001$) in Table 4.8 was anticipated. This result indicates that maintaining internal quality assurance standards can positively impact management and leadership effectiveness. This is in alignment with the findings of Abdullah et al.'s (2021) leadership model among leaders at TVET institutions. According to these authors, for a TVET leader, ethics and integrity are paramount, that is, they must be internally consistent in terms of their own quality, i.e., trust honesty, and the ability to perform their duties in accordance

with positive values practised in managing TVET institutions. This also suggests that considering the business continuity aspect is important for the success and effectiveness of the institution. According to Fiandra et al., (2021), while TVET is recognised as essential for sustainability and different stakeholders may have varied views of its success (Roofe & Ferguson, 2018), policymakers and practitioners must ensure that institutional sustainability is ingrained in their success strategies, policies, and plans. The findings are also in keeping with studies from Baraki and van Kemenade (2013) study of the effectiveness of TVET. They concluded that internal quality management systems are linked to TVET leadership, management of TVET staff, policy, and strategy, TVET resources, and process management.

It can be seen from Table 4.9 that there is a significant relationship between external quality assurance and the management of TVET institutions ($r = .481$, $p\text{-value} < .001$). This means that external quality assurance mechanisms influence management practices. This is harmonious with the findings from different studies (Ronald & Caves, 2017; Abdullah et al., 2021). The findings and recommendations of Ronald and Caves (2017), discovered and proposed acts, policies, regulatory bodies, and frameworks to reinforce and improve existing TVET systems. These recommendations include creating a more comprehensive approach to TVET, providing better access to resources and infrastructure, and investing in training and development. Additionally, they suggest creating a stronger focus on quality assurance and student learning outcomes through leadership.

Abdullah et al., (2021) concluded from their findings that TVET leaders should be able to think broadly, connect with the external environment, and understand what constitutes quality from a broader perspective in their interactions with industry and other organisations. According to these authors, leaders in TVET institutions must always be sensitive and forward-thinking,

especially when it comes to delivering training areas in the institutions. TVET leaders should be able to explore and consider interpretations from past experiences and align them with and anticipate future expectations (Abdullah et al., 2021). This can be translated to mean that when leaders are knowledgeable of the wider TVET ecosystems, it can positively influence their decision-making and practices. Meeting external quality standards can enhance institutional credibility and performance. This includes but is not limited to meeting accreditation requirements from approved accreditation bodies. Based on the theoretical framework of this study, it can be clinched from this finding, that TVET leaders exemplifying high ethical standards, and attitudes can set benchmarks for external quality assurance practices, building trust with accreditation bodies and stakeholders.

The responses given by the respondents to interview items 1-4 in Table 4.13 show significant congruency with the established relationships between the critical factors and the management of TVET institutions and further elaborate on the quantitative results. Such congruency indicates a strong alignment between participants' responses and the study's framework. The varying descriptions given by the respondents in the in-depth interviews as they relate to best describing the successful management and coordination of a TVET institution in Jamaica were quite understandable. This is against the background where it is believed that success may be viewed differently as postulated throughout the literature (Roofe & Ferguson, 2018; Fiandra et al., 2021). Nevertheless, the respondent's experience indicates that the successful management of a TVET institution in Jamaica requires a comprehensive approach, involving all stakeholders, including the government, private sector, and the community at large driven by strong leadership. It requires creating a positive learning environment, having well-trained and supported teachers, and providing students with hands-on experience using competency-based

strategies. Dahri et al. (2018) recommend that TVET lecturers and educators must ensure that their students are mastering the skills and knowledge efficiently. The paramount objective of Competency Based Training (CBET) is to attain and enhance distinct skills and knowledge.

Furthermore, successful management and coordination of a TVET institution necessitates labour-market-aligned programmes, establishing industry partnerships, careful planning, resources, dedication, and a strong focus on providing quality education and training to all students. Additionally, the institution should have adequate funding and resources to support its operations. It should also be established and governed by a strong management team. To maximise the potential of TVET institutions integrating a successful strategic and succession plan, they need to incorporate the views of wider staff members. This is a position that has been supported in studies by Alqahtani and Alzahrani (2018) and Ndzoyiya (2019). This will ensure the plan considers the interest and views of all stakeholders and is most effective.

The respondents elaborated on their belief that a solid performance management system in a TVET institution essentially ensures that the institution is running smoothly and efficiently as shown in Table 4.13. Their explanation is alignment with several pieces of literature such as Locke and Latham (2002), Fullan (2007), and Williams and Hurd (2011). A solid performance management system involves setting clear goals and objectives, monitoring progress, providing feedback, and making necessary adjustments to improve performance. By implementing such an effective system, a TVET institution can enhance overall effectiveness, quality of education, and graduate outcomes, as per the responses. It was further expanded that a performance management system, is similar to a well-thought-out plan that guide the institution towards success and excellence in vocational education and training.

The response that developing a strategic plan that prioritises fairness and inclusivity also best describes the successful management and coordination of TVET institutions draws a parallel with studies of Alqahtani and Alzahrani (2018), and Tan and Lim (2017). These studies highlight how strategic planning can improve facility utilisation, boost operational efficiency, and create a supportive learning environment. In the context of successful management of TVET institutions, it can provide a platform for long-term planning, allowing institutions to plan for the future and make solid decisions. The respondents explained that developing a strategic plan gives further accountability for TVET institution managers to effectively align the independent variables established in this study, inclusive of their vision, with the overall success of the institution.

Finally, student retention and advisement systems should also be considered as given by the respondents. Explaining from their own experience, when an institution focuses on student retention, it means that they are committed to keeping students engaged, motivated, and supported throughout their studies. By providing effective advisement services, the institution ensures that students receive guidance, counselling, and support to help them succeed both academically and professionally. Heck and Hallinger's (2014) study, which found that the quality of the school's learning environment acted as a mediator between the impacts of leadership on student learning, lends credence to this. Additionally, it was also demonstrated by their study that the pathways connected to the classroom affected the metrics used to assess the achievement and performance of the students. The responses are also supported by Kallon (2004) and Pierrer (2014), as one of the reasons students drop out of school or exit prematurely is frustration and a lack of self-esteem. Holding the view that a student retention and advisement system is crucial to the institution's success, helps in identifying and addressing factors that may reduce student attrition, and ensuring that students receive the support needed to succeed and complete their education.

The unanimous agreement that establishing critical success factors would make vocational training institutions' planning, management, and administrative coordination easier can be arguably deduced to the recognition of the need for clear goals, effective resource allocation, and improved alignment efforts. As indicated by Chittithaworn et al., (2011, p. 181), success may not always be explicitly stated, but generally is defined as the achievement of goals and objectives. It is important to note that the narrative responses given for the items that sought to ascertain the factors that the respondents thought applied to the management and coordination of TVET institutions in Jamaica are analogous to those factors measured quantitatively.

Analysis of the responses also supports the literature, with the belief albeit expensive, that having continuous financial support affects the management of TVET institutions. TVET has always been viewed as an investment rather than a cost, with significant long-term benefits being realised over a number of years (Wahba, 2012). However, to reap these benefits, governments, households, private businesses, and employers must make significant investments in TVET financing (Hoeckel, 2008; Rasul et al., 2015; Hanni, 2019; Patterson, 2021).

In the study, the qualitative responses to items 1-4 shed light on the literature and the quantitative data regarding critical success factors applicable to TVET institution management in Jamaica. A deeper understanding of how factors such as supportive leadership, labour market responsiveness, student centred approaches, external environments and interferences, partnerships and collaborations, funding, and both internal and external quality assurance mechanisms play a pivotal role in the effective management of TVET institutions was made possible by the qualitative insights. By delving into the qualitative aspects, the study was able to explain the quantitative findings more comprehensively, showcasing the interconnectedness, between effective

management and leadership practices and their impact on the overall success of TVET institutions in Jamaica.

Ranking the Most Critical Factors in Managing TVET Institutions

Table 4.10 displays the perceptions of the study's respondents, ranking funding as the highest critical success factor with an *RII* value of 0.941. This indicates that the overall population perceives that funding is essential to the proper functioning of TVET institutions. These findings are consistent with studies that have used *RII* to rank adequate funding as a top-tier critical success factor (Alharbi & Alkathiri, 2018; Mwamwenda, 2018; Ali et al., 2019; Kefeni et al., 2019; Tadesse & Tadesse, 2019). These findings are also consistent with previous studies that also emphasised the importance of adequate funding for TVET institutions to enhance the quality of practical training and ensure students are equipped with industry-relevant competencies (e.g. Hoeckel, 2008; Wahba, 2012; Rasul et al., 2015; Hanni, 2019; Patterson, 2021; Mohamad et al., 2023). This is likely due to the fact that TVET is seen as pivotal for driving economic development and performance where continuous funding is required. As per the literature, continuous financial support is essential to sustain the quality of education and training provided, ensuring that students are adequately prepared with the necessary skills demanded by the industry for economic growth. Inspiring leaders have the power to motivate stakeholders to invest financially. By sharing and communicating a captivating vision, they can attract funding philanthropic, industry and from government sources.

Table 4.10 displays the perceptions of the study's respondents, ranking labour market responsiveness/relevance as the second-highest critical success factor with an *RII* value of 0.937. This is consistent with Makworo et al.'s (2013) study, i.e., the linkages between TVET institutions and industries are essential and should be a prime concern. They argue that TVET institution

managers and providers are to be sensitive to the importance of these linkages and responsiveness to the needs of the industries. When labour market responsiveness/relevance is ranked as a high factor, the challenges between demand and supply mismatch have the possibility of reducing. Reducing the challenges between demand and supply mismatch can lead to a more balanced efficient labour market (Loose & Spöttl, 2015; Kayere et al., 2019; Ibrahim & Mat Nashgir, 2022). This in turn will allow graduates to properly function in the workplace, enhancing overall economic stability and productivity.

Table 4.10 displays the respondents' ranking of partnerships and collaboration as the third highest critical success factor with a *RII* value of 0.921. These results are comparable to the arguments of Kayere et. Al. (2019) study. That is, there is a critical need for partnerships and collaboration between training institutions and industry to guarantee that TVET curricula are relevant and linked to job competencies.

Table 4.10 displays the perceptions of the study's respondents, ranking internal quality assurance as the fourth highest critical success factor with a *RII* value of 0.919. This high ranking indicates that internal quality assurance plays a significant role in the success of TVET institutions and has strong correlations to overall performance and outcomes. Empirical studies done on Nigeria on the impact of quality assurance in TVET indicated that 40.6% of respondents felt and agree that the essence of quality assurance in most institution is to strengthen training outcomes and deliverables (Akhuemonkhan & Raimi, 2014).

Additionally, 4.10 also displays the perceptions of the study's respondents, ranking external quality assurance as the fifth highest critical success factor with a 0.903 *RII* value. The study conducted by Baraki and van Kemenade (2013) revealed that the key components that is required by outcome-based TVET, are components from the macro-level. This therefore means

that external quality assurance mechanisms must be considered in high regard. These components include TVET qualifications framework, occupational/industry standards, accreditation of TVET institutions, regulatory mechanisms for standard-based TVET delivery, partnering with stakeholders, monitoring and evaluation and research.

The findings revealed that student centredness and external environment and interferences (stakeholders) leaned towards the lowest-ranked factors throughout the study with *RII* ranges of 0.861 and 0.821, respectively. Appendix K further shows how low the related factors were ranked the least important among the 39 factors considered in the study. Although they are regarded as important elements, the results can be argued that the external environment and interferences (stakeholders) and students are not being adequately engaged or involved in the decision-making process as it relates to managing TVET institutions. The findings can also indicate that these factors are not as influential on the institution's success as those that have a very high ranking.

As per Appendices K, the results of the research showed that the factors with the lowest rankings throughout were the external environment and interferences (stakeholders). Community engagement groups were ranked 37th with an *RII* value of 0.793, the interest of parents, families, and guardians was ranked 38th with an *RII* value of 0.764, and political involvement/endorsement was ranked 39th with an *RII* value of 0.748. This indicates that this set of factors was ranked the least important among the 39 related factors considered in the study. As per the literature, undervaluing these factors could lead to a lack of support and cooperation from key stakeholders. Which can hinder the successful implementation of TVET initiatives. Additionally, it may result in decreased governmental support and reduced family participation, ultimately affecting the overall effectiveness and sustainability of initiatives.

These poor rankings, based on respondents' perceptions, are not consistent with the literature and should not be overlooked. Through empirical evidence, each stakeholder within TVET brings their own unique role to the TVET sector, contributing to its success irrespective of how minuscule their role might be perceived. Rauner and Raffe (2013) study concludes that political support is often critical in securing funding and resources for TVET programmes. As to Field's (2012) research, parents and students who typically follow academic routes are more inclined to choose vocational ones when the government supports and encourages vocational training. Studies by Mitchell (2015), Mack and White (2019), Karmel et al. (2017), and Zhi and Atan (2021) reveal that parents, families, and communities, among others, perception, and attitudes towards TVET are critical factors for TVET being a viable education option. From the results, one can only assume that the respondents do not share the view that TVET institutions are in dire need of political endorsement and government meddling, nor do they need community engagement or parent-family interactions. However, proposing an argument against the respondents' experience in the absence of empirical data would be overstating the results, and counterproductive to the gathered data, which is not the intention of this study.

According to research, it is critical to consider different perspectives and opinions because they can provide valuable insights. Especially since the VET system includes a diverse set of stakeholders and professional bodies with varying perspectives and responsibilities within TVET. While the respondents in the study may have ranked these factors which are related to parents and family's interest, community engagement, and political involvement/endorsement as low, that does not necessarily mean that those perspectives should be disregarded. It could be beneficial to gather more input and explore why these factors were ranked lower, as it may uncover additional insights and potential areas for improvement.

As perceived by the respondents of this study, as shown in Table 4.11, the availability of qualified staff had the highest overall ranking (full-time faculty, $RII = 0.980$ and adjunct faculty $RII = 0.968$) and is considered as the most important related factor. From the findings, this was followed by quality of training and delivery (full-time faculty, $RII = 0.972$ and adjunct faculty $RII = 0.957$) and industry collaboration/employer engagement (full-time faculty, $RII = 0.967$ and adjunct faculty $RII = 0.943$). It is critical to recognise that the quality of training and delivery is inextricably linked to the quality of teaching and learning. These findings are consistent with the relationship between transformational leadership and organisational success, where the transformational leader positively influences employee work engagement by raising followers to higher levels of potential, developing their skills, enhancing the quality of education, and positively influencing organisational outcomes. The findings of the questionnaire survey conducted in phase one are comparable to the findings of the literature review conducted in Chapter Two, with continuous financing (adequate financial support) being ranked as a very high factor. Given the findings, one can assume that the current funding model used is adequate to support the TVET system in Jamaica compared to the funding challenges faced by other countries. However, the findings in the cases reviewed by Ying (2022) reveal that there is a great degree of freedom for financially self-sufficient organisations. This is because financially self-sufficient organisations are able to make decisions that best suit their own needs and context without considering external influences.

According to Winch (2013, p. 94), some developed countries have struggled to overcome their TVET development challenges with varying degrees of success. However, based on the literature review, three critical success factors were consistently ranked as the most important or influential in TVET quality or sustainability in studies conducted across several countries. These

countries include Kenya, Saudi Arabia, South Africa, Tanzania, Ethiopia, and the United States of America, among others. These factors included adequate funding, the availability of qualified staff, and the quality of teaching and learning (Alharbi & Alkathiri, 2018; Mwamwenda, 2018; Ngugi & Wambugu, 2018; Ali et al., 2019; Kefeni et al., 2019; Kibet et al., 2019; Tadesse & Tadesse, 2019).

When the results of the in-depth interviews were compared to the results of the questionnaire survey and the literature review in Chapter Two, it was revealed that the availability of qualified staff is the most consistent factor that is ranked amongst those that are perceived to be critical. The availability of qualified staff plays a pivotal role in ensuring internal quality assurance within TVET institutions. By having skilled and knowledgeable personnel, institution managers and leaders can uphold high standards of education and training, ultimately enhancing the quality of programmes and services offered. This is consistent with the findings of other studies, which have also shown that qualified staff are essential for the successful implementation of TVET programmes and systems (Hassan et al., 2012; Paryono, 2015; Alharbi & Alkathiri, 2018; Stone 2024). In addition, qualified staff are important to provide guidance and support to learners (Kibet et al., 2019). Furthermore, qualified staff are also vital in the assessment of student performance and in the development of curricula and training materials.

This consistency highlights the importance of having qualified staff in TVET institutions, as they are the main driving force behind the success of the institutions. Furthermore, it also shows the importance of providing adequate training and support for staff to keep them up-to-date and qualified. This is essential for ensuring that the institution by way of the leader can provide quality education (teaching/training) to its students.

Table 4.11 shows teacher/instructor technical skills and background are industry grounded which is a related factor to internal quality assurance being ranked as number four within the adjunct faculty group with a ranking of $RII = 0.943$ and ranked as number eight within the full-time faculty group with an RII value of 0.954. Based on this finding, it would be perceived that the technical skills and industry background of teachers/instructors are more important within the adjunct faculty group than the full-time faculty group. Furthermore, this suggests that adjunct faculty may be more likely to possess these skills and backgrounds than full-time faculty as adjunct faculty are mostly within the industry and teach part-time. TVET educators should be exposed to their industries or fields while studying their teacher training/preparation programmes, according to Chin (2012), as this will help them better understand the skills and knowledge needed by the industry.

The benefits of determining and ranking the critical success factors in accordance with their importance as reported by respondents align with the planning school concept. The goal of the planning school is to develop planning tools that will help businesses determine the best strategy. By ranking the factors, the planning school helps businesses identify the most important ones to focus on (Grunert & Ellegaard, 1992). This helps businesses make the most effective decisions and ensure that their strategies are in line with their goals. Additionally, the ranking process can help to identify potential risks and opportunities. The consistency between the findings and the framework for this study provides strong support for the theoretical underpinnings of the research. It also shows that the concepts and relationships that were proposed in the framework are reflected in the data collected. This alignment further reinforces the validity of the theoretical framework and strengthens the overall credibility of the study.

The Views of TVE Professionals on the Significance of Management and Leadership as a Critical Success Factor in Governing TVET Institutions

Results gleaned from Table 4.9 revealed that most participants (83.7%, $n = 113$) believed that a transformational leadership style was the most effective in managing TVET institutions. From the data, it can be assumed that this leadership style was selected due to its emphasis on the importance of setting goals and objectives, idealised influence, individualised consideration, intellectual stimulation, motivating staff, and providing guidance and support. Additionally, the findings from the study revealed that the respondents believe that management and leadership are key drivers of success in governing TVET institutions. Their responses would reveal that it is not only a key driver, but that its significance should be such that leadership is at the core of the institution's success and should be visionaries who have the ability to influence meaningful change. The findings from the questionnaire survey, in-depth interviews, and theoretical framework consistently pointed towards a common theme: transformational leadership as being the most effective in managing TVET institutions.

The literature material reviewed suggested that management and leadership are critical components of any organisation. Without effective management and leadership, an organisation cannot achieve its objectives (Bush & Glover, 2014). Management and leadership are essential for motivating employees, setting goals, and ensuring that resources are allocated appropriately. The terms school leadership, school management, and school administration are frequently used interchangeably depending on the country (Pont et al., 2011). Despite the fact that the three concepts overlap, some literature emphasises them in different ways. Management is essential for ensuring that the goals and objectives of the organisation are met while leadership is needed to

motivate and inspire employees. In essence, both are essential ingredients for any organisation to succeed.

This convergence of results across multiple methods strengthens the findings' validity and reliability, implying a strong relationship between the factors scrutinised and transformational leadership. This alignment also provides robust evidence and support for the presence and importance of transformational leadership in the context of managing TVET institutions in Jamaica. It can also be argued that this alignment suggests that transformational leadership is an effective way for TVET institutions in Jamaica to improve performance, as it has been shown to have a positive impact on a range of outcomes, such as improved student outcomes and an increase in institutional efficiency. From the results, one can conclude that transformational leadership is an important factor in the success of TVET institutions in Jamaica.

4.6 Chapter Summary

This chapter presents key findings from data analysis from the questionnaire survey and in-depth interviews and offers a comprehensive overview using statistical analysis and interpretation. The extensive analysis was aimed at contributing to the body of knowledge and providing insights into the factors considered to be critical for TVET institutions' success in Jamaica. An explanatory mixed-methodology research approach was used, including a survey administered online to faculty members to gather quantitative data and interviews with management officers to gather qualitative data. Thematic analysis was performed on interview transcripts and identified recurrent themes and patterns related to critical success factors. Following this, the data was then coded. The survey data was statistically analysed to determine the average rating and ranking of each factor. To create practical recommendations, the findings were compared and synthesised.

The study identified potential weaknesses in gathering and analysing the data, such as biases, limited sample size and insufficient research methodology. To address these concerns, rigorous data analysis methodologies, well-established frameworks, and objective analysis were utilised. They helped to confirm the findings and in the process strengthened the overall credibility of the research. Additionally, given that this is the first study of its kind in Jamaica, the findings are subject to verification and replication by other researchers. Any possible biases or errors can be identified and rectified by having other researchers replicate the study. This process with further contribute to the development of a more solid body of data for future research and policymaking.

The researcher test-re-test reliability by administering the same survey and interview to a subset of participants, indicating good reliability. In some instances, the findings from both instruments were compared and triangulated with existing literature and expert opinions on critical success factors in TVET institution management.

Pearson's correlation coefficient analysis was utilised to measure the relationships between the factors as well as identify those considered most significant to the management of TVET institutions in Jamaica. Following an extensive review, several factors were found to be statistically correlated and to have a strong positive relationship. The study found a strong positive correlation between partnerships and collaboration, labour market responsiveness, student centredness, external environment and interferences, internal quality assurance, external quality assurance and the management of TVET institutions. These correlations indicate a direct connection and a consistent relationship between the established independent variables and the dependent variable, TVET institution management, suggesting that changes in one variable are associated with changes in the other variable in a similar direction.

Analysis of the coded interview transcripts revealed that the majority of the participants described successful TVET institution management and coordination as creating a positive learning environment. Access to sufficient resources, modern facilities, a curriculum that is up-to-date with industry demands, and a staff that is supportive, approachable, and competent all contribute to this positive learning environment. The respondents all unanimously agreed that establishing critical success factors would simplify planning, management, and administrative coordination in vocational training institutions. They advised that these factors should be tailored according to the needs of each institution, students, and community, and suggested regular feedback systems should be established.

Regarding the factors that are ranked as the most critical in managing TVET institutions, based on their Relative Importance Index (*RII*), the top five factors are funding, labour market responsiveness, partnerships and collaboration, internal quality assurance, and external quality assurance. The respondent's perception to the bottom two factors were completed with external environment and interferences and student centredness. Research indicates that views towards TVET, parental support, and political support are crucial elements in ensuring its sustainability. However, according to the respondents although these variables are important, the operations of the TVET institution do not require community involvement, parent-family interactions, or government interactions. Additionally, the perceptions were carefully isolated and subjected to further rigorous examination to enhance the academic rigor and credibility of the study. Availability of qualified staff was ranked as number one by the full-time faculty group, and quality of training and delivery was ranked as the number one factor for the adjunct faculty group.

The findings from the in-depth interviews were compared to the results of the questionnaire survey and the literature review. This revealed that the findings align with previous studies

indicating the importance of qualified staff in educational settings. Additional data analysis techniques and statistical methods were employed to ensure credibility and validity of the findings. The study reveals that respondents consider management and leadership essential to the success of TVET institutions, with visionaries driving significant change and serving as the institution's backbone. Although the literature argues that TVET leaders should be flexible and that there are a variety of styles that should be practiced, it was also found that the results from the questionnaire survey, in-depth interviews, and theoretical framework all pointed to the same theme: transformational leadership being the most effective in managing TVET institutions.

Not only do these findings offer invaluable insights on the critical success factors associated with managing vocational training institutions, but they also significantly contribute to the existing body of knowledge. The guiding principles employed throughout this research and the results offer practical implications and recommendations for academic researchers, TVET practitioners, and policymakers, among other stakeholders that form the TVET system. To further understand the critical success factors in managing TVET institutions, it is also imperative that additional studies be undertaken. Lastly, this research serves as a springboard towards improving technical education in Jamaica. The results of the study will be further discussed in Chapter Five.

CHAPTER 5: IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS

5.1 Overview

Numerous obstacles have made it difficult to effectively integrate efforts to create a TVET system that is sustainable. Given the target of Vision 2030 by the Jamaican Government, in particular to the National Outcome, to deliver world-class education and training, it is only appropriate that TVET be delivered in the context of a harmonised framework. The challenge here is the absence of a harmonised operational template that governs the tertiary technical institutions, and the variations in the use of qualification standards across them in the country are widespread. This lack of harmonisation has resulted in a lack of uniformity and consistency in the delivery of TVET in Jamaica. This lack of standardisation has also hindered the ability of the government to effectively monitor and measure the success of TVET in the country.

TVET in Jamaica faces numerous challenges, including a severe shortage of qualified instructors, poor market alignment, quality concerns, and fragmented training delivery. Furthermore, endorsed industry standards are not consistently used, and educational and training institutions offering TVET programmes lack a coordinated regulatory framework. These challenges were identified as critical issues in both the National Policy for TVET in 2014 and the 2021 Reform of Education in Jamaica Report. To address these issues, urgent action must be taken.

It is imperative to note that despite the growing political emphasis on TVET, the existing literature on the subject lacks a consensus view on the critical success factors and effectiveness of TVET in developing countries. To bridge this gap, a rigorous mixed-methods study has been conducted to thoroughly evaluate the critical success factors involved in managing technical vocational training institutions in Jamaica. The purpose of this study was to evaluate the critical success factors that contribute to the effective management of TVET institutions in Jamaica,

providing a more comprehensive understanding of the significant drivers of success in TVET, and ultimately creating a sustainable framework.

To increase the validity of any study and design an effective strategy, a range of data collection techniques should be used. Consequently, this study utilised both quantitative and qualitative research methods due to their complementary nature. Using a single approach would have limited the research's potential, yielded unsatisfactory results, and failed to sufficiently address the aforementioned issues. Triangulation was also made possible by using both approaches, which also accounted for the validity and reliability of the study. The quantitative methods provided generalisable results, while the qualitative methods allowed for more in-depth exploration and analysis.

The data collected from the sample was assessed on the critical success factors due to its quantitative nature, which allowed it to be statistically represented and routinely manipulated. This allowed broad conclusions to be drawn, given the objectivity of the method. Regrettably, it fell short of considering all potentially influential factors that are crucial to comprehending how experiences are formed, how diverse situations are comparable or distinct, and how perceptions and views are restricted or facilitated. Qualitative methods were employed to address the limitations of this approach, with an emphasis on obtaining perspectives and firsthand accounts related to the issue and topic under discussion.

5.2 Research Limitations

In order to assess the critical success factors related to the management of TVET institutions and centres in Jamaica, this dissertation examined and took into account the perspectives of instructors/lecturers, director/principals, institution managers, heads of programmes/departments, admissions and assessment monitoring officers, and programme

coordinators. Based on the data gathered, conclusions were drawn regarding TVET institutions in Jamaica and the critical success factors associated with their management. Nonetheless, several limitations were identified during the course of the study's main phases.

It is important to understand that the TVET ecosystem is made up of numerous professional associations and stakeholders who are crucial to the administration of the TVET institutions. Presenting the study's findings from the standpoint of all parties involved in the TVET ecosystem would be challenging because, despite the large number of stakeholders, this study only considered the perspectives of faculty (instructors/lecturers), and institution management officers. The study's literature had to be expanded because there was little local and regional access to data and literature on TVET institutions' established success.

Among the candidates identified as potential study participants, there was hesitation and resistance. Despite the researcher's guarantee of anonymity, the respondents were concerned that their responses might be identified. The study was done during a time of unrest within the TVET landscape, which included industrial strike action, and potential participants' positions were made redundant. Obtaining information from management personnel involved in TVET institution management was another challenge. The poor response rate was a result of management officers' lack of assistance and reluctance to provide specific details about their achievements and success in managing TVET institutions. Others had also consented to take part in the exercise of creating a consensus, but they were unable to do so because of difficulties in reaching a mutually agreeable time. Requests for meetings and interviews were met with either a persistent lack of attendance or frequent diversion of the researcher. As a result, one-on-one interviews had to be used to optimise the data collection strategy.

The data collection period had to be extended due to the low response rate. Phase 2 participants were chosen for the study based on their availability and desire to participate, using a purposive sample technique. The selection bias in the sampling process could result in an underrepresentation of the population in the sample. A 65% response rate was seen among all the contacts the researcher made in preparation for the in-depth interview, as detailed in this study's Chapter Four. The researcher consequently posed the following queries:

1. For what reason did the 65% consent to take part in the research?
2. What prevented the remaining 35% from taking part?
3. Did this 35% of respondents not believe the survey's intentions, or were they just too busy?
4. Did the 65% participate out of self-satisfying needs or out of kindness?

As a result, the capacity to extrapolate from the sample results of the intended population is undermined. Since there are no prior research findings or available data to compare the conclusions with, this study is the first to analyse the critical success factors linked to the management of TVET institutions in Jamaica.

In addition to the ethical considerations that were made throughout the investigation, this chapter further provides an interpretation of the results by making logical deductions within the parameters of the data. It also offers explanations and clarifies how possible limitations might have impacted how the results were interpreted. The study's contribution to the body of knowledge currently accessible on the subject and its implications for practice are examined in relation to the literature review. Additionally, this chapter also provides suggestions for further research.

5.3 Implications

The TVET system is one that is considered highly effective in providing practical skills and vocational training for career development. Based on the study conducted, it was found that the TVET system not only equips individuals with practical skills but also contributes to the overall economic growth and social development of a country. In this study, the research was guided by several key questions. These questions aimed to frame the study, define its objectives, and guide the collection and analysis of data. They also ensured that the aforementioned issues were adequately explored and addressed meaningfully. Under this section, the implications are categorised and discussed under three broad themes: (1) the relationship between critical success factors and the management of TVET institutions in Jamaica (2) ranking the most critical factors in managing TVET institutions, and (3) the views of TVE professionals on the significance of management and leadership as a critical success factor in governing TVET institutions.

Relationship Between Critical Success Factors and the Management of TVET Institutions in Jamaica

The study revealed that several factors were statistically applicable to the management of TVET institutions that correlated. The interconnectedness between these factors has numerous implications, and given the appropriate context, they are arguably worth considering. When utilised in their proper contexts and aligned with the principles of the transformational leadership theory, these implications can position institutions for success. As per the conclusion of Habede and Khumalo (2018), heads of educational institutions need to critically identify key indicators of success that accurately measure school performance, and from these, a performance scorecard check could then be developed to monitor performance over some time. This would allow for

timely interventions to be made to improve the performance of the institution. It would also help to better understand the institution's strengths and weaknesses.

Partnership and Collaboration and the Management of TVET Institutions

It is rather daunting to make good decisions without the participation of all parties that are involved in a partnership. The strong positive correlation between partnerships/collaboration with the management of TVET institutions implies that developing relationships with external partners can improve the decision-making process at TVET institutions. Partnerships and collaboration allow stakeholders to bring different expertise and experiences to the table, which can help institutions make better decisions as they have access to a wider range of perspectives (Mohamad et al., 2023). They can also help highlight potential difficulties and solutions that the institution may not have considered. This also signifies network expansion, where the institution's leadership capacity can be strengthened, enhance the institution's reputation, and visibility, and create opportunities for further growth. This collaborative approach enables institutions to gather feedback and facilitate work-integrated learning opportunities for students and faculty/staff, such as internships and work furloughs.

Collaborating with external partners can stimulate innovation and creativity within TVET institutions. Partnerships with industry, government agencies, and other TVET institutions can facilitate the exchange of best practices, resources and ideas that drive innovation in teaching, research, and overall institutional development. This correlation suggests that building strong partnerships is essential for promoting a culture of innovation and continuous improvement in TVET institutions, which can enhance the quality and relevance of training programmes. Effective management and leadership within these partnerships ensure accountability, and strategic direction resulting in better training outcomes for students.

It is crucial to remember that correlation does not imply causation, therefore, additional quantitative and qualitative study is required to better understand the reasons causing this link and to investigate the potential consequences in greater depth.

Labour Market Responsiveness and Governance/Leadership of TVET in Higher Institutions

Benchmarking programmes and skills against industry, government, regional, and international standards are paramount for a successful TVET programme. Specifically, TVET aims to produce skilled workers in specialised professions (Abdullah et al., 2021). Therefore, the strong positive correlation indicates that TVET institutions with effective governance/leadership are more attuned to the demands of the labour market. This alignment suggests that leaders are proactive in understanding industry needs, trends and requirements and they adjust the institution's programmes and curricula accordingly to meet these demands. Hanni (2019) argues that TVET is more than just an investment in human capital; it is a means of transitioning individuals into decent work. Holding to this view, TVET institution leaders are better able to align their offerings to the industry.

Institutions that exhibit labour market responsiveness through their management practices are likely to offer programmes that are relevant and up-to-date. This correlation implies that TVET institution managers prioritise staying current with industry developments, collaborating with employers, and integrating real-world skills and knowledge into teaching/training and delivery. This in turn allows for the better usage of qualification standards developed from labour demand surveys. As cited by Loose and Spöttl (2015), the occupational standards that serve as the foundation for training should be prioritised as both programme results and reference points for employers' anticipated demand. As a result, graduates are better equipped for the labour market, increasing the chance of employability among TVET graduates. This extends beyond simply being

employed to having a better probability of getting profitable employment and thriving in their chosen careers. By ensuring that programmes are aligned with industry needs, leaders facilitate the acquisition of skills and competencies that are in demand by employers, which contributes positively to the overall economic development of Jamaica and the region.

Student Centredness and the Management of TVET Institutions

The factors mentioned in the study's findings reflect a student-centric approach to TVET institution management. Respondents prioritise creating a positive learning environment and focus on providing students with meaningful experiences. This is analogous to the constructivist learning theory presented in the literature, which emphasises that a constructivist learning environment generates 21st-century TVET students (Abdullah & Ziden, 2013). Additionally, it also coincides with Jonassen's constructivist learning environment model. This model suggests that learners should be actively engaged in the learning process and that teachers should provide guidance and assistance when needed. The teacher's role is to create an environment that encourages exploration and experimentation. This implies a recognition of the importance of addressing students' diverse needs, interests, and aspirations. Such an approach can contribute to better student engagement, retention, and success. Additionally, it emphasises the value of having a sense of belonging in raising academic enthusiasm and engagement, which can help TVET students succeed.

Leadership that prioritises student centredness is likely to result in higher levels of satisfaction among their students. Through a transformational leadership mindset, institutions that tailor their programmes, services, and support mechanisms to meet the individual needs and preferences of students create a positive experience that enhances satisfaction and engagement. The positive correlation also implies that management and leadership practices focused on student centredness lead to personalised learning experiences. Institutions that value individuality,

diversity, and inclusivity in their approach to education or services can create tailored learning pathways, support systems, and resources that cater to the unique needs of each student. Additionally, it creates an environment that fosters learning, growth, and satisfaction, leading to improved educational outcomes.

The leadership in TVET institutions plays a crucial role in impacting the institution's broader community and its constituency through student centred approaches. By showing interest and prioritising the needs and goals of students, leaders support the wider community's social, economic, and cultural development, creating a ripple effect of positive change and progress. By aligning leadership approaches with the needs and goals of students, institutions can build inclusive, engaging, and effective learning environments that promote the success and well-being of all stakeholders.

For this study, the strength and direction of the association between the factors are measured, but not the causality. Keeping this in mind, the researcher recommends more qualitative and quantitative research to better understand the reasons for this association and to analyse the potential repercussions in greater depth.

External Environment and Interferences and the Management of TVET Institutions.

Ying (2022) argues that there is much value, in a transformational leader, in partaking in environmental scanning for educational institutions. He argues that this should be done at different levels and should be used in community relationships. When community engagement is high, parents, families, and guardians become valuable stakeholders in the education system. Their input and involvement can contribute to the improvement of school policies, programmes, and resources. Moreover, this can help to alter their perception of the negative stigma associated with TVET. When compared to higher education, TVET has always been seen as a less desirable educational

option (Winch, 2013). The literature also reveals that, although the degree of unattractiveness varies widely among countries and cultures, it is surprisingly common. However, the study's findings imply that parents' interest in being engaged with the school promotes a collaborative environment that seeks continuous improvement for the benefit of all students.

A strong positive correlation suggests that when the external environment such as the communities are actively engaged by TVET institutions, parents, families, and guardians tend to show greater interest in their children's education. This can lead to increased support for students both academically and emotionally. According to UNESCO-UNEVOC (2016), vocational education can be valued and respected in the home and community when parents and communities foster a supportive environment. When families are engaged, they are more likely to provide resources, assistance, and encouragement to help their children succeed. According to the literature, the difficulties associated with school dropouts vary and are not linked to a particular variable. However, Sabtu et al. (2016) identified not having family or parental support as one of the challenges that leads to premature exit from vocational programmes.

The literature corroborates that there are prejudicial perceptions of TVET that hinders its recognition and potential of being the vehicle to drive community and economic development. Mitchell's (2015) study revealed that this perception is also extended to some students who are engaged in TVET programmes as they are no longer valued as contributing members of their families and communities. Community engagement can foster collaboration and open lines of communication between schools and families. This positive correlation implies that when communities are involved, parents, families, and guardians are more interested in participating in school-related activities, attending parent-teacher conferences, and engaging in meaningful conversations about their children's/ward's progress. This shared involvement promotes a

comprehensive support system for the students. Additionally, it suggests that initiatives aimed at promoting community engagement can have a ripple effect, positively influencing the overall educational experience and outcomes for the students. This can in turn reduce attrition and increase student completion and certification.

The correlation between the external environment and the management of TVET institutions may increase the likelihood of TVET institutions receiving funding and resources. Government agencies, philanthropic organisations, and other funding entities often prioritise institutions with accredited programmes when allocating resources. This can help TVET institutions enhance their infrastructure, faculty development, and educational resources. Studies indicate that investing in human capital improves economic performance and well-being for individuals and society (Hanni, 2019; Idjawe, 2020). This is because investing in people enables them to acquire the knowledge, skills, and other competencies necessary to participate in the modern economy. Additionally, investing in human capital can lead to increased economic growth, improved health, increased productivity, and improved quality of life.

It is important to remember that correlation does not establish causation; therefore, the researcher recommends undertaking further qualitative and quantitative research to better understand the factors driving this correlation and to explore the potential implications in more depth.

Funding and the Management of TVET Institutions

A strong positive correlation between funding and TVET institution management implies that financial resources play a significant role in shaping the decision-making process within TVET institutions. The correlation suggests that adequate funding can empower leaders to make strategic decisions that align with the institution's goals and objectives, leading to effective

governance practices. Effective management in TVET institutions is closely tied to how financial resources are allocated and managed. Institutions with strong leadership are likely to allocate funds strategically, invest in key areas, and ensure that resources are used efficiently to support the institution's mission and vision. Adequate finance and effective leadership can foster innovation and facilitate institutional growth (Mohamad et al., 2023; Hanni, 2019). Leaders who have access to sufficient funding can introduce innovative programmes, improve infrastructure, and drive continuous improvement within the institution. This correlation suggests a strong financial foundation is essential for promoting innovation and sustainable growth in TVET institutions.

The positive correlation implies that financial stability and effective governance go hand in hand with ensuring compliance with regulations and accountability to stakeholders. Institutions with sound financial practices are more likely to adhere to legal requirements, maintain transparency in financial matters, and be accountable for their decisions and actions. This correlation underscores the importance of financial integrity in promoting good governance /leadership in TVET institutions.

Internal Quality Assurance and the Management of TVET Institutions

In keeping with Baraki and van Kemenade's (2013) conceptual framework of TQM, quality management and assurance are grounded within the institution's leadership. The strong positive correlation suggests that leaders with a high level of knowledge about TVET systems are more likely to implement internal quality assurance mechanisms such as business continuity and institutional sustainability plans, internal policies, course/programme evaluations, and staff support and development.

The strong positive correlation suggests that institutions with a business continuity plan are more likely to have comprehensive policies and strategies in place for internal quality assurance.

In line with goal-setting theory, in order to comprehend its mission and goals, an organisation needs define tangible goals, strategies, and plans. This implies that these organisations are proactive in identifying and managing potential risks, as well as developing and implementing appropriate measures to ensure quality. By identifying and assessing potential risks, that could impact the achievement of the goals set in the business continuity plan, this will in turn help in developing strategies to mitigate those risks and ensure the plan's success. This also extends in ensuring the continuity of operations even in challenging times.

The correlation also indicates that TVET institutions with a business continuity plan are more likely to align their objectives with internal quality assurance. By having a comprehensive plan in place, these institutions can make sure that their objectives remain on track and that they are able to provide quality education and training to their students and meets the need of employers. Quality assurance at the organisational level (micro/institution-level) provide the conditions for TVET to thrive (Baraki & van Kemenade, 2013). This implies that the focus on maintaining business continuity goes hand-in-hand with ensuring quality across different areas of their operations. While not limited to policies and strategies, the conceptual framework of TQM at the institution level, as pontificated by Baraki and van Kemenade (2013), also extends to TVET staff, resources, and the management of TVET processes, among others.

Having both a business continuity plan and internal quality assurance measures entwined suggests that institutions are investing in resilience and sustainability. A correlation implies that those institutions are likely to be better prepared to respond to unforeseen events, adapt to changing circumstances, and recover more effectively from disruptions or crises. This enhances their overall resilience and ability to sustain operations. This includes ensuring the availability of systems, personnel, and essential resources.

The foundation for enhanced resilience within TVET institutions also extends to promoting equity and empowerment, which aligns with SDG 4 (Quality Education). Sustainable Development Goal 4 aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Empowering individuals through education and skills development enables them to adapt to challenges, overcome barriers, and contribute to the resilience of the institution and the broader community.

Organisations with both a business continuity plan and policies and strategies as an internal quality assurance measure tend to have efficient and effective processes and protocols in place. This suggests that they have standardised procedures, clear guidelines, and adequate monitoring frameworks, which can lead to improved performance and achievement of organisational goals. Pont et al. (2011) stress the importance of goal setting, where institution leaders can define strategic direction while also maximising their capacity to develop educational objectives and goals for greater efficiency and accountability.

As maintained throughout the literature, a high-quality education system necessitates the effective governance of educational institutions. Having policies and strategies as an internal quality assurance measure is often crucial for meeting regulatory requirements in various industries. The positive correlation suggests that organisations with a business continuity plan are better positioned to ensure compliance with relevant regulations and standards.

These implications reflect the importance of having a business continuity plan and implementing robust internal quality assurance measures. By having both in place, organisations can mitigate risks, ensure operational stability, improve process efficiency, and strive for excellence in delivering products or services. However, it is crucial to acknowledge that correlation should not be interpreted as causation.

Effective evaluation mechanisms for TVET courses and programmes are paramount to the credibility of the institution and play a significant role in informing leaders' understanding of the TVET system. This implies a focus on ensuring and maintaining the quality of education and training provided within TVET. As a result, leaders can use the feedback obtained through evaluations to identify areas for improvement, make informed decisions, and implement necessary changes to enhance the quality of education and training as promulgated throughout the literature. Feedback for improvement should not be limited to external sources but also the institutions' reflections on their own practices. The positive correlation implies that leaders with a strong knowledge of TVET systems are more likely to rely on data and evidence from course/programme evaluations when making decisions. This suggests a commitment to evidence-based decision-making, which can lead to more informed and effective policies, practices, and resource allocations. Schools need effective leaders who can make evidence-based decisions, provide instructional leadership, and encourage teachers to participate in school decisions (OECD, 2015). Decisions will tend to be objective in a bid to reduce or avoid biases and personal decisions that might cloud judgement and provide strong foundations for accountability and transparency.

The literature demonstrates that the secret to organisation's success is transparent and innovative leadership. The positive correlation implies that transformative leaders with a deeper understanding of TVET systems are more likely to prioritise accountability and transparency in the evaluation of courses and programmes. This suggests a commitment to ensuring that stakeholders have access to reliable information on the quality and effectiveness of TVET offerings. The significant relationship also suggests that leaders with a high level of knowledge about TVET systems recognise the importance of ongoing learning and professional development. This implies that they are likely to invest in their own knowledge and skills, stay updated on

developments in the field of education and training, and adapt their leadership practices accordingly. The literature maintains that to become a capable leader, a person may not only need to have the knowledge but also be open to building and developing their capacity.

With effective course/programme evaluations and leadership knowledge of TVET systems can work together to drive systemic improvement. Leaders who prioritise evaluation and possess extensive knowledge of TVET systems can identify systemic issues, address gaps, and implement solutions, ultimately enhancing the overall effectiveness and efficiency of the TVET system.

These implications highlight the significance of course/programme evaluations and leadership knowledge in promoting quality, accountability, evidence-based decision-making, and continuous improvement within TVET to improve internal quality assurance. By acknowledging this positive correlation, organisations and policymakers can prioritise these factors in their efforts to enhance the outcomes and impact of TVET education and training.

Having available and qualified staff is an important factor for TVET internal quality assurance. Teachers form the foundation of educational and training systems in both general education and TVET (Paryono, 2015). The significance of the relationship between internal quality assurance and the management of TVET institutions suggests that TVET institutions that provide robust support and development opportunities for faculty and staff are more likely to prioritise and invest in business continuity planning. This implies a culture of collaboration and alignment where the organisation recognises the importance of involving all stakeholders, including faculty and staff, in ensuring the continuity of operations during disruptive events. To bridge the gap between TVET lecturers and market needs, collaboration with other ministries and departments is essential (Hassan et al., 2012). The correlation indicates that institutions that support and develop their faculty and staff are likely to have a workforce that is better equipped to respond to business

disruptions. As put forward strongly by Stone (2024), instructors' preparation for competency-based teaching is essential for the success of any TVET programme. The literature is consistent in promulgating a TVET system that is deeply engaged in the concepts and challenges of sustainable practices, as is the aim of this study. Employee readiness and resilience plays a crucial role in a sustainable TVET system. By investing in training, skill development, and knowledge sharing, organisations can enhance the resilience and readiness of their employees to face unexpected challenges and contribute effectively to business continuity efforts.

Faculty and staff support, and development programmes can contribute to the retention of institutional knowledge within the institution. Employees become repositories of critical information and expertise necessary for effective business continuity planning and response when they are encouraged to enhance their skills and knowledge. This implies that TVET institutions with a business continuity plan value the importance of retaining and leveraging institutional knowledge to navigate disruptions successfully. Providing support and development opportunities to faculty and staff also demonstrates a commitment to their professional growth and well-being. This, in turn, can improve employee engagement, morale and retention within the institution. Highly engaged employees are more likely to actively participate in business continuity planning, contribute innovative ideas, and work collaboratively during disruptions. Employee engagement and morale arguably also have significant implications for the leadership of the institution. Without employee engagement, the institution's mission and goals may not be effectively communicated to the team, which can lead to a lack of motivation and dedication. Additionally, employees may not be as productive or efficient if they are not engaged or motivated, and they are less likely to put in the extra effort needed to drive the success of the institution.

These implications highlight the interconnectedness between internal quality assurance and the governance/leadership of TVET in higher institutions. By prioritising business continuity and institutional sustainability plans, internal policies, course/programme evaluations and the training and development of employees, which are related to internal quality assurance measures, TVET institutions can enhance their readiness, engagement, and resilience, leading to a more effective response to disruptive events and the preservation of the institutions' operations. Despite the apparent strength of the relationships between the factors, the researcher acknowledges a few limitations to be considered when analysing the interrelationships between them. Although the strength and direction of the relationship between the factors are measured, it does not measure the causation. With this in mind, more qualitative and quantitative study is recommended to better understand the causes causing this link and to investigate the potential ramifications in greater depth.

External Quality Assurance and the Management of TVET Institutions

TVET institutions need leaders who have knowledge of external factors or elements that have a direct impact on their leadership (Abdullah et al., 2021). TVET institutions must strengthen linkages with industries to increase networking between academia and industries, resulting in a better understanding of each other's requirements and identifying how they might be satisfied through industry programmes, consequently improving their credibility (Loose & Spöttl, 2015). To fill this gap, TVET institutions require recognition from approval/accreditation bodies. A strong positive correlation suggests that TVET institutions that receive accreditation from reputable approval accreditation bodies tend to have higher levels of credibility and quality assurance. This finding implies that the accreditation process is effective in identifying institutions that meet the necessary standards and provide high-quality education and training. Additionally,

accreditation initiatives can improve the financial viability of institutions. This has been proven in cases reviewed by Ying (2022). This goes to show that when people or potential investors are given the opportunity to choose between two options, they are more likely to choose the option that offers a greater reward. This is because credibility and quality assurance are essential for a strong TVET system. This implication also aligns with Caves and Renold's (2018) four broad criteria for a strong TVET system, where they ensure that the education and training provided meet industry standards and produce competent graduates.

When TVET institutions are accredited by respected approval accreditation bodies, it enhances trust among stakeholders, including students, employers, regulatory agencies and international institutional relations. Approval from reputable accreditation bodies assures stakeholders that the institution meets certain standards and is accountable for its educational practices. Trust is built when individuals or institutions demonstrate accountability for their actions, decisions, and responsibilities. According to the Auditor General of Jamaica Performance Audit and Reform of Education in Jamaica reports by Ellis (2022) and Patterson (2021), TVET institutions must demonstrate value for money to restore the public's trust.

Accreditation from a recognised approval accreditation body can positively impact the employment opportunities for graduates of TVET institutions. Employers often value candidates with qualifications from accredited institutions, as it indicates that the graduates have received a certain level of education and skills training that meets industry standards. Across the literature, TVET institutions are encouraged to offer programmes that complement employer-required skills and knowledge. This can help to equip students with the necessary skills to navigate the job market. This also implies that TVET institutions should also ensure that their programmes are regularly updated to meet the changing needs of the labour market.

The correlation can also imply that TVET institutions that maintain accreditation are more likely to engage in continuous improvement processes. Institutions are typically required to meet specific standards and undergo periodic assessments to maintain their accreditation status. This can lead to ongoing efforts to enhance curricula, teaching methodologies, and the overall educational experience for students.

It is important to note that this analysis does not establish a causal relationship, but rather identifies a statistical association between external quality assurance and the governance/leadership of TVET in higher institutions. Further research may be needed to understand the factors driving this correlation and to explore the potential implications in more depth.

Respondents that participated in the qualitative aspect of this study unanimously agree that identifying key criteria for TVET institution's success will facilitate TVET planning, management, and administrative coordination by providing clear rules and benchmarks for measuring performance. It aids in the alignment of operations, the prioritisation of resources, and the effective achievement of goals.

A close look at the findings of this study, makes it clear that creating a positive learning environment, ensuring that the teachers are well-trained and supported, providing hands-on experience, and having strong leadership best describes the successful management and coordination of TVET institutions. These findings suggest that prioritising these essential elements can greatly enhance the effectiveness and outcomes of the institution. There are several deductions that can be taken into consideration as a result of the study's emphasis on the importance of these areas in obtaining success in TVET institutions.

Holistic Approach to Education – The emphasis on creating a positive learning environment and providing students with hands-on experiences suggests that respondents perceive the importance of a holistic approach to education. This approach values not only theoretical knowledge but also the practical application of skills. In essence, this is the core of TVET which is to provide practical skills and vocational training. TVET institutions should focus on creating an atmosphere that encourages student engagement, collaboration, and active learning to enhance their overall educational experience. It is also argued by Wahba (2012), that TVET institutions should provide students with opportunities to apply the knowledge and skills they are learning in real-world scenarios.

Teacher Professional Development – The recognition of well-trained and supported teachers implies and confirms the results of previous literature on teacher capacity and development, that respondents value ongoing professional development for TVET educators. To effectively manage and coordinate a TVET institution, it is crucial to invest in teacher training programmes, workshops, and other opportunities for professional growth. Continuous support and mentorship can contribute to the teacher's effectiveness in delivering quality education and keeping up with industry advancements.

Engaged Leadership – The acknowledgement of strong leadership as a key component of successful management and coordination suggests that respondents place importance on having leaders who are actively involved in the institution's operations. Strong leadership can foster a culture of collaboration, innovation, and accountability. Leaders should provide guidance, support, and resources to teachers and staff while ensuring the institution's vision and goals are aligned with industry demands. Pont et al. (2011) maintained that to improve the efficiency and equity of schooling, school leadership is essential. It serves as the primary link between the classroom,

individual schools, and the education system. They also help ensure that resources are allocated equitably and that teachers have the resources they need to succeed. Finally, school leadership sets the tone for a positive learning environment.

Industry Relevance – The emphasis on hands-on experiences points to the relevance of industry engagement within TVET institutions. For improved alignment, both the industry and TVET institutions must work together to strengthen their alliances and collaboration models (Ibrahim & Mat Nashir, 2022). As maintained by Raihan (2014) the collaboration increases TVET students' knowledge and abilities, in addition to their employability. To effectively prepare students for the workforce, it is important for TVET institutions to establish strong partnerships with industries and employers. This collaboration can help align curriculum with industry needs, facilitate internships or apprenticeships, and provide students with real-world experiences. Respondents recognise the value of equipping students with the practical skills required in their chosen fields.

Additionally, TVET institutions can promote a sense of inclusivity and involvement among staff members by including the opinions and experiences of employees in strategic and succession planning. Increased employee involvement and dedication to the institution's goals may follow from this. Ndzoyiya (2019) and Alqahtani and Alzahrani (2018) argue that strategic planning and implementation involve stakeholders at different levels, which also include staff members. This will ensure that they have a clear understanding for the plan and their commitment to its implementation. Their input might be useful in identifying internal organisational opportunities and obstacles that may not be seen at higher levels. Having a better understanding of these obstacles and strengths can help build more successful long-term growth and success strategies. In a nutshell, the implications of acknowledging the value of employees' opinions and experiences

in strategic and succession planning can improve TVET institution's efficiency, sustainable growth, organisational alignment, and employee engagement. It represents a change in organisational growth towards a more inclusive and people-centred strategy.

TVET institutions in Jamaica can use these findings as a roadmap to improve their governance/leadership strategies so that they meet stakeholder expectations. It is crucial to keep in mind that these conclusions are based on the study's findings and that further evaluations might be necessary in order to validate and put into practice particular procedures that deal with the highlighted areas of significance.

Ranking the Most Critical Factors in Managing TVET Institutions

The study revealed that funding, labour market responsiveness, partnerships and collaboration, internal quality assurance, external quality assurance, student centredness and external environment and interferences are ranked as the most critical success factors in managing TVET institutions in Jamaica. The ranking of these factors as the most critical have several significant implications that ought to be considered. The study suggests that these factors should be given higher priority and emphasised more in managing TVET institutions.

The study further shows how the factors are interconnected and the potential consequences of not prioritising them. It is critical to recognise that the elements availability of qualified staff, and teacher/instructor technical skills and background, which are industry grounded are inextricably linked. Additionally, coinciding with the literature, it is also observed that quality of training and delivery and commitment to providing high-quality education and training are inextricably connected. Given the foregoing, for this study, the ranking of the most critical success factors in managing TVET institutions will consider the availability of qualified staff and quality

training and delivery within the context of internal quality assurance, given that they are essential for ensuring a high standard of education.

Funding

With funding ranked as the most critical factor, implies that financial sustainability is the driver to the effective management of TVET institutions. To strive for financial independence TVET institutions must continuously scan their environments for opportunities that maximise their products and services. Ying (2022) puts forward that higher educational institutions should identify and develop sustainable financial models to increase their efficiency as well as the introduction of transformative methods that capture the attention of stakeholders. This ranking further underscores the importance of securing uninterrupted funding for the institutions' operations, programme delivery, technology integration, staff development, and infrastructure development, which will result in the long-term viability of the institution.

Labour Market Responsiveness

The literature emphasises that a responsive TVET system is one that adapts to changing needs and demands, ensuring relevancy and effectiveness in preparing individuals for the workforce. Typically, findings from labour market surveys are what drive vocational programmes, along with demands linked to present and future trends. Furthermore, aligning programme skills with labour market demands emphasises the importance of assessing and aligning the curricula offered by TVET institutions to help increase the relevance and effectiveness of TVET programmes. As a result, TVET institutions depend on the capability of their graduates to apply themselves effectively in the workplace (Raihan, 2014). This therefore implies that institutions may need to regularly review and update their programmes to ensure that they are relevant, meet the skills requirements of the different industries, identify skills gaps, and meet changing market

needs. This may be achieved through the guidance and industry insights of advisory boards or panels comprised of professionals from relevant industries.

It becomes increasingly important to collaborate with industry partners to align the labour market (National Policy for Technical Vocational Education and Training, 2014). Establishing solid partnerships with employers, trade organisations, and local businesses can help TVET institutions better understand how labour markets are evolving. This prioritisation also has the implications for a smooth transition into the workplace through industrial attachment, practicum, job placements, and internships. Additionally, as agreed by Winch (2013), investments in vocational education are a critical component of labour force planning that results in and proposes policy solutions. Prioritising labour market alignment as one of the most critical success factors, the government may arguably require TVET institutions to put in place robust monitoring and evaluation mechanisms that may inform policy development and shifts.

TVET institutions have the ability to guarantee that their graduates are equipped with the requisite skills, knowledge, and competencies required by prioritising labour market alignment of skills and programmes. This alignment has the potential to enhance employability, bridge skill gaps, and boost opportunities for students pursuing vocational education.

Partnership and Collaboration

Moreover, the implications of enhancing collaboration and engagement with industries and employees could lead to better outcomes for TVET institutions. TVET is vital as it is premised on preparing highly skilled workers for the industry (Choi, 2021; Wahba, 2012). This is so, as it provides the necessary skills and knowledge to help individuals enter the workforce and be successful while aiding employers to remain competitive within the global economy. This could mean establishing industry partnerships with local industries to provide internships, gaining access

to up-to-date industry knowledge, apprenticeships, and job placements for graduates, collaborative projects, as well as including employer input into curriculum development, design, and review to ensure that TVET programmes are aligned to industry needs.

This also implies that businesses also stand to benefit by having a direct hand in shaping the skills and competencies of future employees, thus creating a pipeline of skilled workers tailored to their specific requirements. This symbiotic relationship enhances the quality of education and training provided by schools while also addressing the skills gap in the workforce, ultimately benefiting both educational institutions and companies alike. This mutually beneficial relationship also provides an opportunity for business to give back as a form of corporate social responsibility by supporting institutions and providing students with the chance to gain valuable practical exposure.

Establishing strong relationships and agreements with employers to create more placement opportunities for students will eventually enhance real-world experience and stimulate employability. This also has implications for facilitators to aid their continuous professional and personal development, allowing them to remain up to date with the latest trends, technologies, and practices in their field, as previously indicated. They can bring real-world relevance to their teaching to better equip students for the workforce. This, in turn, has the implication of enhancing their teaching effectiveness and overall job satisfaction. When both students and facilitators benefit from such an exchange, this will lead to a more enriching and impactful learning experience.

Collaboration and partnership between TVET institutions have various implications that are beneficial to the institutions, students, and other stakeholders. Through working harmoniously, TVET institutions have the opportunity to optimise resources, share best practices and improve the overall educational experience of both faculty and students (Akoojee & McGrath, 2015;

Oviawe et al., 2017; Dwumfour-Asare and Typographical Society, 2017; Tlala & Ntshoe, 2018). The significance of this ranking implies that TVET institutions value programme quality where ideas and expertise can be exchanged between institutions. This amalgamation can stimulate innovative curricula, teaching strategies, and technological breakthroughs and create a more responsive and dynamic educational system. The ranking's implications also suggest that the collaboration allows TVET institutions to combine their resources, which includes staff, facilities, and equipment. This can assist institutions in overcoming resource limitations so they can provide students with a greater choice of services and programmes. This can help create a more inclusive learning environment for all students, regardless of their backgrounds or financial situations (Tlala & Ntshoe (2018). Additionally, it can help to reduce dropouts and student failure rates and provide students with more personalised educational experiences.

TVET institutions can save money by working together on cooperative initiatives, pooling costs, and streamlining processes. The implication of this is that, in the long run, this can lead to programmes being more inexpensive and sustainable. The implications of TVET institutions collaborating and partnering are vast, from innovation and enhanced programme quality to better resource availability and industry alignment. In all, these collaborative initiatives may support TVET training and education's expansion and sustainability.

Internal Quality Assurance

The ranking of internal quality assurance as a high factor highlights the importance of establishing robust mechanisms to monitor and improve the quality of education and services within the institution. By prioritising internal quality assurance practices, TVET institutions can enhance programme effectiveness and ensure compliance with internal standards and practices. The implication of this ranking signifies that TVET institutions should ensure that staff members

possess the necessary expertise and qualifications to deliver high-quality training, which directly impacts the overall educational experience of students. It establishes a solid foundation for maintaining consistency and excellence in educational services, ultimately benefiting both the institution and its students.

A key implication would be the need to attract, recruit, and retain (ARR) persons who have the right qualifications and expertise for TVET institutions, given their vital role. The implementation of effective recruitment strategies using competitive compensation packages, along with efforts to create a conducive working environment that promotes retention, would also be warranted. There are several significant benefits to having qualified staff within a TVET institution. Firstly, they possess the necessary expertise, and knowledge to provide high-quality education and training. While this has the potential to alter the negative perception of TVET, in turn, it will have a positive impact on the reputation of the institution. As emphasised by the literature, there are issues with fragmented delivery and the development of training programmes (World TVET Database Jamaica, 2012). Additionally, they would be qualified enough to effectively deliver up-to-date curriculum and industry-relevant skills, inspire, and motivate students, and foster a positive learning environment.

Ongoing prospects for professional growth for staff to improve their abilities and knowledge should also be emphasised. Using industry furloughs, workshops/seminars, training programmes and partnerships with industry experts can significantly assist faculty and staff in staying current with the newest advancements in their respective fields. Proper resource allocation also becomes crucial to addressing the shortage of qualified staff. TVET institutions may need to allocate budgets as part of their attract, recruit, and retain strategy. Employing these strategies has the implication of stemming the teacher shortage in Jamaica.

In both academic and vocational education, teachers are the anchor of the system (Paryono, 2015). The implication of unqualified staff on the quality of training and delivery can be significant, as they may lack the knowledge and skills to effectively teach the students. This can result in inadequate training, outdated curriculum, and a lack of industry relevance. Ultimately, it can have a negative impact on students' learning outcomes and their preparedness for the world of work.

Similarly, the implication of providing quality training and delivery could entail investing in modern teaching tools and methods, effective pedagogical techniques, curriculum development and delivery, and staff continual professional development. Interestingly, the literature also supports the position that total quality management is one of the most important drivers of TVET quality achievement, and the difference between success and failure occurs at the organisational level. This also further underscores the importance of designing and developing up-to-date curriculum that aligns with industry needs and emerging trends. To ensure relevance and quality, TVET institutions may need to revise and adapt their training programmes. The need for robust assessment and evaluation mechanisms for monitoring student progress and the success of training programmes cannot be overstated as an implication.

External Quality Assurance

External quality assurance, ranked as the fifth critical factor, underscores its significance as an element that is essential to providing independent and transparent evaluations of the institution's programmes and services. The implication of this ranking emphasises the institution's understanding of external validation mechanisms and independent regulatory bodies that accredit, give feedback, and provide benchmarks to maintain quality and credibility in TVET programmes. This practice also has the potential to enhance the quality of education and training provided.

According to Akhuemonkhan and Raimi (2014), external quality assurance has the capability to further improve the efficiency, performance, and relevance of TVET institutions, satisfying the increasing demands of the labour market. Ying (2022) case studies on tertiary institutions has shown that stakeholders are more likely to invest in institutions that are credible. Given the concise focus of external quality assurance which measures quality from an objective perspective, TVET institutions demonstrate the importance and commitment to transparency, accountability, and best practices.

Student Centredness

In spite of the fact that student centredness is ranked sixth, the implication is that TVET institutions should prioritise and incorporate the experiences, feedback, and needs of students when making decisions. Afterall, they are the main players in the TVET system. Without students, there is no one to be trained for the workforce. This low ranking raises concerns about the effectiveness of TVET institutions in preparing students for the world of work and the quality of learning experiences they provide for students. The importance of tailoring education and training to individual student needs, interests, and capabilities, which ultimately enhance students' motivation, achievement, and engagement, should not be ignored. In this regard, the low ranking of student centredness may have negative implications for student performance outcomes, graduates' profiles, and overall student effectiveness. According to Mohamad (2017), when emphasis is placed on students' interests and needs, this can contribute to a more meaningful learning experience for the students, which can lead to increased retention rates, thus improving performance. Additionally, this can reduce attrition and increase student completion, which is mission-critical to the institution's image and branding.

While the other critical success factors are important, they should not be prioritised at the expense of student centredness. This ranking further implies that the institutions may also not be addressing the needs of the labour market and potential employers. Studies have shown that employers in the industry value personnel with both technical and generic skills relevant to their profession (Hashim, 2016). These skills are normally outlined in the various competency and qualification standards. Interestingly, as outlined in the literature, they are being improperly used by the institutions. This is a possible reflection of the institutions not embracing the constructivist philosophy, which is the nucleus of TVET. Constructivist philosophy encourages students to actively participate in the learning process, rather than passively receiving knowledge. This philosophy is critical for TVET to be effective in providing the skills that are required by employers.

External Environment and Interferences (Stakeholders)

School leaders are responsible to connect and adapt their schools to their surrounding environment (Pont et al., 2011). An analysis of the study results clearly demonstrates that the respondents perceive external environment and interferences as a low-ranking critical success factor. The ranking of external environment and interferences as a low critical success factor in managing TVET institutions has significant implications on the viability of the institution in achieving its objectives and goals. Although ranked as the least, it is vital that TVET institutions address stakeholder dynamics to advance mutual understanding, collaboration, and support. Where there is an absence of the institution connecting to its environment, the implication signifies that there is no room for growth for the institution. This is because TVET institutions require interactions from industry and partnerships to enhance training and curriculum development (Kayere et. Al., 2019).

This ranking highlights the importance of TVET institutions managing external relationships, challenges and influences effectively. Hargreaves et al. (2008) cited in Pont et al. (2011, p. 20) that leaders of the most successful schools in difficult situations are often strongly involved with and supported by the school's parents and wider community. TVET institutions need to recognise that these external relationships can make or break an institution and the implications can greatly impact the quality of education and training provided. For instance, parents and communities can play an important role in reducing stigma and promoting TVET as a viable education pathway by advancing a positive viewpoint towards technical skills (UNESCO-UNEVOC, 2016b). They can also assist in forming partnerships and collaborations with entities and employers in order to give students practical training experience (European Training Foundation, 2020). Therefore, it is crucial for institutions to maintain strong connections with the external environment such as parents, community engagement groups, political affiliates, and prospective employers to ensure a well-rounded educational experience. As Choi (2021) points out, stakeholders such as employers, government agencies, and industry associations among others can influence curriculum development, provide resources, and ensure quality assurance in TVET institutions. By fostering these relationships, institutions can better align their programmes with the needs of the community and provide students with valuable real-world connections and opportunities.

Leadership's Ability to Effectively Lead Change

Finally, the study highlights the need to prioritise leadership development programmes for TVET leaders. This may entail providing training, workshops, seminars, and professional development opportunities that are expressly tailored to target leadership skills, managing change, and strategic decision-making. Leadership's ability to effectively lead change as a critical success factor necessitates that those institutions may need to invest in developing effective change management strategies and practices. Change management strategies provide a framework for

leaders to manage change effectively by identifying goals, developing strategies for attaining them, and assuring stakeholder engagement and commitment to the process. This may result in distributed leadership, which involves empowering faculty, staff, and students to take on leadership roles in decision-making (Badenhorst & Radile, 2018). This approach fosters a culture of collaboration and collective responsibility for improving teaching and learning outcomes, resulting in a successful institution. Without effective change management, it is arguably impossible to successfully implement changes to achieve the desired outcomes.

The emphasis placed on leadership's ability to lead change implies the necessity for visionary and transformative leaders who can set a clear direction for the institution. They should be able to develop compelling visions for the institution's longevity, establish strategic goals, and effectively communicate and engage stakeholders in the vision's implementation. This is also reinforced throughout the literature, where institution leaders have the responsibility to engage stakeholders at different levels in areas of prime importance. They should diversify their strategies and style of communication with employees to better understand the institution's mission, vision, and objectives (Mohamad & Omar, 2014). They should also ensure that their institution is able to remain relevant by adapting to changing trends within society, demonstrating resilience, and fostering an environment of trust and open communication with their stakeholders (Pont et al., 2011; Onorato, 2013). To further demonstrate resilience and adaptability, a culture that supports continuous improvement, planning for uncertainty, reflection, and experimentation should also be explored.

The ability of leaders to lead change should be reflected in performance evaluation systems. Institutions may need to revise their existing evaluation process to include metrics related to vision implementation, partnerships, and collaboration, change management, succession

planning, responding to the demands and needs of the industry, and innovation. In conclusion, the emphasis on leadership's ability to effectively lead change as a critical successful factor shows that proactive, flexible, and visionary leaders are required to motivate and navigate TVET institutions through transformative processes. Institutions can improve their capacity for innovation, responsiveness to industry demands, and overall organisational performance by prioritising leadership development while creating an appropriate environment for change.

The study highlighting these critical success factors provided valuable insights and recommendations for managing TVET institutions, ultimately leading to better outcomes for students, graduates, employers, and the broader Jamaican economy. Both the literature and the study's findings emphasise their importance because they help to ensure that resources and efforts are properly allocated to the most important aspects of the institution's success. On the contrary, not prioritising these critical success factors can have consequences and limitations. Institutions may struggle to achieve their goals and objectives if they do not have defined priorities. They may experience challenges in satisfying the needs of the students and industry demands, which can result in declining enrollment, through-put, credibility, and overall effectiveness. However, it is prudent to keep in mind that the given factors are not exhaustive but should be given priority. Given the limitations previously expressed within this study, practitioners must be mindful of the contexts that may have a significant impact on the implications.

The Views of TVE Professionals on the Significance of Management and Leadership as a Critical Success Factor in Governing TVET Institutions

The views of TVE professionals, who are integral to the training and administrative processes should not be oversimplified. Their years of experience in the field can provide valuable insights and, as such, have significant implications for managing TVET institutions. From an

academic and practical perspective, everything starts and ends with effective leadership. This highlights the importance of strong leadership in TVET institutions, as their ability to facilitate positive change is essential for the success of the institution.

Confirming the literature, the study also revealed that transformational leadership practices are conducive to the management of a TVET institution. Transformational leadership is widely acknowledged as a critical driver for organisational survival amidst threats and crises (Kim et al., 2021, as cited in Fiandra et al., 2021). This type of leadership is profoundly influenced by individuals who commit themselves to the members of their organisation as their main priority and foster a collegial atmosphere. The absence of transformational leadership practices in TVET institutions is conducive to negatively affecting the institutions' performance (Keedir & Geleta, 2017). This alignment has several implications, including leadership that involves setting compelling visions and inspiring others to work towards them, increasing motivation and staff engagement, and effecting change predicated on creativity and innovation. Furthermore, transformational leadership practices can positively impact the overall organisational performance of TVET institutions and can also result in increased support and opportunities. Cultivating a culture of continuous improvement through transformational leadership can enhance overall growth and success for the institution.

The respondents believed management and leadership are critical success factors in governing TVET institutions for the following reasons: it is a key driver of success in any organisation, it should be to the extent that leaders are capable of providing guidance; and management and leadership are critical success factors as they help to make informed decisions and should be able to motivate their team and be responsive. They further reiterated that they are

the foundation of a successful institution that can foster an environment of collaboration and be willing to take risks in order to move the institution forward.

These views emphasise the importance of leaders being capable of providing effective guidance to their teams. Coinciding with the literature, effective leadership ensures that goals are clear, that communication is good, and that employees can be driven and inspired. Consequently, productivity, teamwork, and overall organisational performance improve. Additionally, the results of the study underscore how critical of a role management and leadership are in making informed decisions and being responsive and adaptive. This implies that leaders with the required skills and knowledge should be able to analyse complex situations, evaluate their options, and make informed decisions in alignment with the institution's vision and strategy. With the rapid change within society, leaders should be agile in adapting to new challenges and seizing opportunities. In turn, through informed decision-making, TVET institution leaders can foster a culture of quickly responding to industry/labour market trends to achieve long-term sustainability.

In summary, confirming the results of the literature, the data supports the idea that management and leadership are critical factors in managing TVET institutions. It emphasises the need for competent leaders who are visionaries, capable of providing direction, making sound judgements, inspiring their employees, and creating and maintaining a positive school culture which all synonymous with the transformational leadership theory. Furthermore, they should be able to adapt to the sector's evolving needs.

The study also revealed that the management's focus should be on business continuity and sustainability, producing competent and confident graduates, and maximising the employment rate for the local and global economies. Additional focus areas include training and certification, staff motivation, aligning programmes and skills to the labour market, and student tracking. These focus

areas imply that the institution should be able to adapt to changing conditions, remain competitive, and create a reliable talent pool for the global market.

The development of policies, strategies, and practices to ensure the longevity of the institution is crucial for its sustainability and growth. It involves implementing effective governance structures, fostering a culture of innovation and collaboration, and promoting continuous learning and improvement. When these are in place, the quality of education and skills will improve, which matches industry standards. As put forward by Raihan (2014), TVET institutions are required to provide new skills as the needs arise, and they should be proactive in developing and adapting to the changing times. This also has the domino effect of producing competent and confident graduates. Students develop self-efficacy and confidence when they are challenged and routinely provided with the opportunity to develop their skills (Winch, 2013). These opportunities lend to the debate of what distinguishes competency-based training from traditional academic teaching and learning.

The implications of a TVET institution that has a market-responsive focus would arguably require a strategic plan that aligns its programmes and courses with the needs and demands of the job market. This helps students gain skills that are in high demand, increasing their employability and ensuring that the institution remains relevant. This entails analyzing and adapting programme offerings, instructional strategies, and infrastructure regularly to ensure relevance and viability. TVET institutions can better meet the demands of the economy, students, and society by addressing these implications.

5.4 Recommendations for Application

The overarching objective of this study is to evaluate the critical success factors that contribute to the effective management of TVET institutions in Jamaica. By understanding these

key drivers, the research seeks to develop a sustainable framework for improving the management of TVET institutions. Considering this objective, the literature review, and the research findings which have revealed valuable insights, this study proposes a holistic sustainable framework for managing these institutions. The three proposed frameworks encompass, (1) institutional, (2) managerial, and (3) national levels, ensuring a sustainable and cohesive approach to TVET development.

These recommendations presented have the potential to significantly improve the country's socio-economic status. The study identifies the most critical success factors that must be considered when managing a TVET institution. Using these insights, policymakers and TVET institutions can enhance training quality, foster industrial collaborations, and employee and student engagement, align programme skills with the labour market, and ensure sustainable funding.

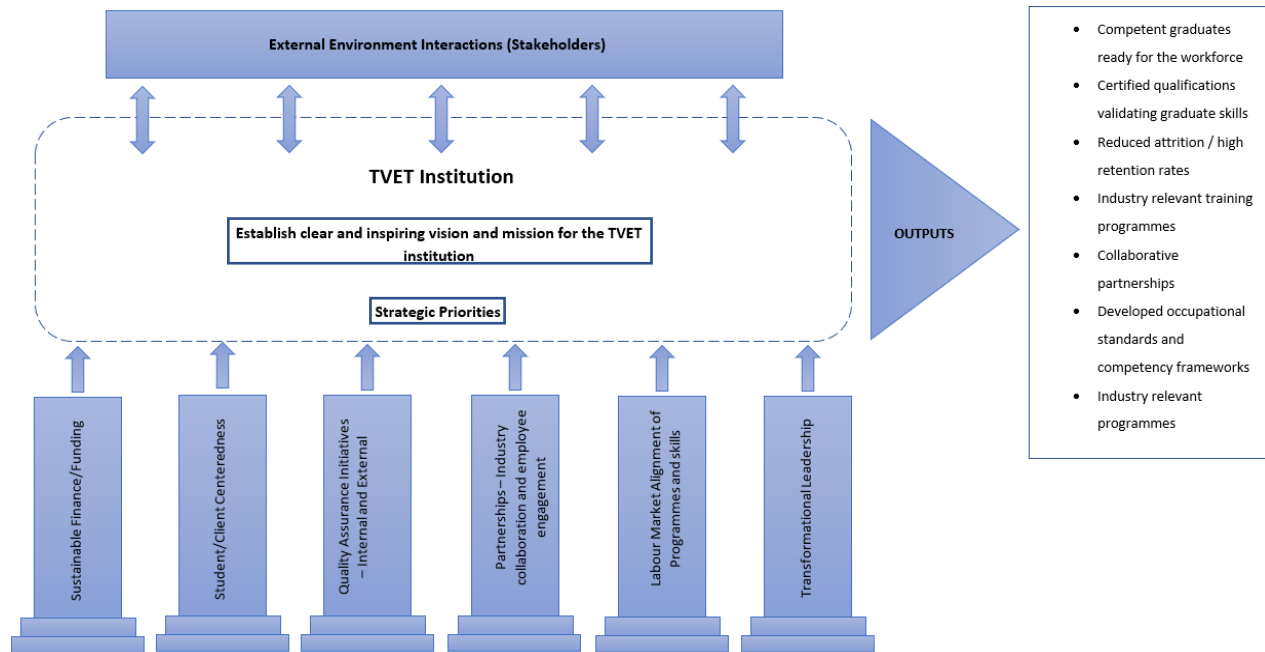
The recommendations offer a comprehensive approach to overcoming the challenges faced by TVET institutions in Jamaica and can be implemented to achieve the desired outcomes. Therefore, it is essential for policymakers and TVET institutions to take note of the findings and put the recommendations into practice to ensure the long-term sustainability and growth of TVET institutions.

5.4.1 Recommended Framework for Managing TVET Institutions

To enhance the management of TVET institutions, the study recommends establishing a technical-operational framework for institution leaders. This framework aims to streamline operations, optimise resource utilisation, and improve overall efficiency within the institutions. By implementing a structured framework, institution leaders can enhance their effectiveness, promote transparency, and ensure alignment with their organisational and strategic goals and objectives.

Managing TVET institutions requires a systematic approach that encompasses various key elements. The study recommends the following strategic priorities as part of the technical operational framework: vision, mission, and strategic planning; stakeholder engagement; curriculum development and evaluation; quality assurance (internal and external); staff recruitment and development; industry partnerships and engagement; labour market information and research; student support services; monitoring and evaluation; financial sustainability; and continuous improvement and innovation. The recommendations for properly implementing these key elements to improve the success and effectiveness of TVET institutions are discussed further below. In addition to an executive leadership team to lead the charge, it is recommended that sub-leadership teams be established where necessary to assist in the institution's operations.

It is recommended that the key elements be given quantifiable weights with clear targets and be measured across the academic year/cycle, and the stipulated evidence of success for each key element should be measured against actual success. It is critical to note that implementing these recommendations will require effective leadership with a collegial mindset, a transformative attitude, collaboration, and a commitment to continuous improvement. Flexibility and adaptability to changing contexts and requirements are essential to ensuring the long-term success of TVET institutions. The interdependencies between the critical factors and the suitability of the key priority areas will also further depend on the institution's specific context and goals, which may require further analysis and assessment. The institution should not be seen as operating within a vacuum but rather as perforated while it interacts with the external environment and operates within its habitat.

Figure 5.1*Technical Operational Conceptual Model for Managing TVET Institutions*

Note. Author's exaggeration of a recommended Technical Operational Model for Managing TVET institutions based on the findings of the study, 2024.

1. Vision, Mission and Strategic Planning

A tangible and inspiring vision statement and a well-constructed strategic plan are the foundations of a successful TVET institution. Recommendations for effective application include through inspirational motivation, the institution leader should involve stakeholders of varying dimensions in the strategic planning process, ensuring actionable plans with specific targets and timelines, and regularly reviewing, testing, and updating the strategic plan based on changing circumstances and feedback. The vision and strategic planning should also be encapsulated within the institution's succession and business continuity plan to ensure the continuity of the institution's operations in challenging times. If the mandate of the institutional mission changes as a result of

stimuli within or outside the institution, the approach to strategic planning should also be amended accordingly. Additionally, a cohesive approach should be taken as it relates to strategic planning, where all staff have a sense of involvement in the operations of the TVET institution.

2. Stakeholder Engagement

It is crucial for ensuring the relevance and effectiveness of TVET institutions by actively engaging with stakeholders. The study recommends that through intellectual stimulation TVET institution leaders should establish effective communication channels, seeking input from stakeholders, engaging them through regular meetings and feedback mechanisms, and fostering partnerships with industry representatives to strengthen curriculum relevance and create opportunities for students. The study recommends that the engagement should be extended to employers, industry representatives, government agencies, alumni, parents, communities, and other interest groups. Their input and feedback should be sought, as should collaboration in curriculum development, programme design, and partnerships. The study also recommends that efforts be made to raise awareness about the successful careers that TVET graduates can achieve and promote success stories to alter public opinion.

3. Curriculum Development and Review

To meet the demands of the constantly evolving job market, TVET institutions must have a robust curriculum development and review process. Recommendations in this regard include having internal quality assurance measures such as regular reviews of existing programmes, gathering feedback from employers and other stakeholders, encouraging collaborations between academia and industry professionals, and incorporating innovative teaching methods and technologies. The concept of micro-credentials should be integrated into the radical review of the curriculum to meet the needs of the industry. The study recommends establishing mechanisms

such as industry advisory boards, lead groups, and continuous feedback loops with employers to align programmes with skills requirements.

4. Quality Assurance

Quality assurance ensures that TVET institutions meet and exceed the expectations of students, employers, and society. Recommendations for effective implementation include TVET institution leaders developing and implementing a robust quality assurance system, conducting internal audits and evaluations, adhering to national and regional quality standards and accreditation requirements, and responding to feedback and suggestions for continuous enhancement. Regularly reviewing and evaluating of the institution's training programmes and delivery methods is one way of improving and ensuring quality. In return, areas of weakness will be identified that need improvement, and the necessary adjustments can be made.

5. Staff Recruitment and Development

Competent and motivated staff members are crucial for ensuring the success of TVET institutions. TVET institutions should prioritise recruiting and retaining qualified staff, including teachers, trainers, and support staff. The study recommends TVET institution leaders establishing clear criteria and processes for staff and faculty recruitment, providing ongoing professional development opportunities, facilitating institutional development by conducting regular gap analyses, fostering a positive work environment that recognises and rewards performance, and regularly evaluating staff satisfaction and engagement levels. A one-size-fits all approach should not be used, but rather individualised consideration. This may appear to be costly, as with anything associated with TVET; however, it has the potential to yield great returns.

6. Industry Partnerships and Engagement

Strong partnerships with industries are essential for TVET institutions to stay current with the evolving needs of the industry and society and to provide relevant training. Using idealised influence, the study recommends that TVET institution leaders actively engage with industry partners, establishing formal collaborations for internships and work-integrated learning, creating industry advisory committees, and fostering a culture of mutual benefit and partnership through industry engagement activities. The platform should be extended for continuous dialogue and engagement between staff, faculty, and industry partners to share best practices, emerging technologies, and industry trends.

7. Labour Market Information and Research

Access to timely labour market information is crucial for aligning TVET programmes with industry demands. The study recommends that TVET institutions develop a system for collecting and analysing labour market data, collaborating with relevant organisations, conducting regular research and surveys, and using this information to inform decisions regarding programme offerings and student support services.

8. Student Success and Support Services (SSS)

Comprehensive student support services contribute to student success and satisfaction. The study recommends that TVET institutions establish support services such as psychoanalysis, mentoring, and career guidance, collect student feedback through surveys or focus groups, regularly assess the effectiveness of the services offered, and implement strategies to address the diverse needs of students. To strategise on ways to improve the service provided to the main stakeholders, which are the students, and to improve the overall student experience, it is recommended that the composition of the Student Success and Support Services (SSS) be extended

to members of the student governance body. The student support services should be extended to stimulate the interest and involvement of parents, families, and guardians. The study also recommends that TVET institutions through individualised consideration, advance a student centred and inclusive learning environment that promotes student success and well-being in keeping with the concepts of constructivist learning theory.

9. Monitoring and Evaluation

Effective monitoring and evaluation systems enable TVET institutions to track progress and make data-driven decisions. The study therefore recommends that TVET institutions develop an institutional framework by collecting and analysing data regularly, using evaluation findings to inform decision-making and planning, and establishing a culture of continuous improvement through staff and student participation. Using research driven-insights and evidence-based policies to inform strategic direction will foster the continuous improvement of TVET institutions.

10. Financial sustainability

The study recommends that TVET institution leaders develop sustainable financial solutions that promote self-sufficiency within the institution. Through enhancing financial management practices, exploring diverse funding sources by leveraging products and services offered by the institution, and fostering a culture of financial responsibility, TVET institutions can reduce dependency on the government and external funding to ensure long-term financial stability. This approach aligns with the goal of empowering institutions to thrive independently while maintaining effective leadership practices that drive sustainable development.

11. Continuous Improvement and Innovation

To ensure that TVET institutions remain responsive and adaptable, adopting a culture of continuous improvement and innovation is warranted. It is therefore recommended that TVET institutions invest in a supportive environment for experimentation and creativity, providing resources and support for staff to explore innovative teaching methods and technologies, evaluating, and celebrating successful innovations, and sharing best practices within and beyond the institution.

The effective application of the key elements mentioned above is crucial for the success of TVET institutions. By following the recommendations provided, institutions can strengthen their vision and strategic planning, engage stakeholders effectively, develop a relevant curriculum, ensure quality assurance, recruit, and develop competent staff, foster industry partnerships, utilise labour market information, provide student support services, implement robust monitoring and evaluation mechanisms, be financially self-sufficient, and foster a culture of continuous improvement and innovation. TVET institutions can improve their performance and better satisfy the needs of students, employers, and society by implementing these guidelines, thereby contributing to the development of a trained and competent workforce. Albeit TVET is there to serve the needs of the workforce, institutions should not ignore services that cater to the needs of internal customers. It is the leadership's responsibility to review general systems and procedures to improve the services provided to internal customers, such as staff, for them to be more efficient and effective.

Framework and Strategic Planning Implementation

It would be inadvisable for a study to recommend a technical operational conceptual framework for the management of TVET institutions and not recommend nor indicate the phases in implementing the framework. Without clear strategic direction, VET institutions cannot effectively identify their strengths and weaknesses, set meaningful goals, and develop strategies to achieve them. A lack of strategic direction can lead to stagnation and irrelevance. The recommendations of these five key phases are considered important as they provide clear steps for implementation.

1. The first phase which is identified as the planning phase, sets the tone for the entire strategic planning process. To ensure that the strategic plan reflects the current and future needs of the industry partners, at this stage, the institution must involve stakeholders, carry out market research, and set specific goals that are in line with the institution's vision and mission. Table 5.1 below recommends the following mapping to be done in this initial phase, where each strategy should be mapped with performance metrics:

Table 5.1

Mapping of Strategic Planning with Strategies and Performance Metrics

Key Elements / Strategic Priorities	Strategies for Achievement / Initiatives	Evidence of Success / Performance Metrics	Critical Success Factors
Vision, Mission and Strategic Planning	Establish an executive management team to examine matters concerning the institution's strategic direction.	Strategic plan development.	Transformational Leadership concepts and initiatives
	Engage various stakeholders (junior staff, employers,	Identify and manage potential risks related to the institution and its programmes.	

industry, government
reps', parents,
communities, etc.)

Establish a clear and
inspiring vision and
mission for the TVET
institution.

Clearly defined and
shared vision, mission
statements and
strategic goals.

Improved the image of
the institution.

Align goals with
industry needs and
labour market
demands.

Achievement of
planned objectives and
targets.

Develop an extensive
strategic plan that
outlines the vision's
goals, objectives, and
action stages.

Consistent
implementation of the
strategic plan over
time.

Conduct business
according to the
institutions' values and
standards.

Continuity of the
institution's operations
in challenging times
(disruptions or crises).

Encourage faculty and
staff by articulating the
importance and value
of their roles in
achieving the
institutions visions and
mission.

Positive impacts on
student outcomes and
institutional
performance.

In using this model, policy-makers and TVET institutions should keep in mind that these indicators may vary depending on the regional contexts and specific institutional goals and programme offerings. Regular assessment and feedback from stakeholders will keep refine and adapt the evidence of success for each element overtime.

Note. The author's exaggeration of the initial phase in strategic planning for managing TVET institutions based on the findings of the study, 2024.

The strategy for achievement can be adjusted as seen fit by the institution. Factors such as market trends, technological advancements, and changes in regulatory policies can influence

strategic adjustments. Additionally, internal factors such as resource allocation, organisational goals, and employee feedback play crucial roles. However, by staying adaptable, the institution can better navigate these variables to achieve its goals.

2. The second phase is the analysis. The institution should perform a SWOT analysis throughout the analysis phase in order to identify gaps and determine its internal strengths and weaknesses, as well as its external opportunities and threats. This phase aids in understanding the institution's existing situation and the external context in which it functions.
3. The third phase is the strategy formulation for each of the key elements or strategic priorities identified within the technical operational framework, where the institution develops strategies for rolling out and achieving its goals. The institution must create detailed action plans, and identify, and allocate resources while making certain that the plans are specific, practical, quantifiable, and time-bound. It is recommended that the following alignment be done between the strategic priorities and the critical success factors:

3.1 Stakeholder Engagement: Aligns with Partnerships – Industry collaboration and employee engagement. In doing this alignment and creating the action plans, the study recommends the following questions being asked: What strategies is the institution implementing to enhance collaboration between itself and local businesses to ensure that its programmes align with real-world workforce needs? What specific skills and competencies should the TVET institution and programmes focus on to meet the demands of the local community and contribute

to economic growth? In what ways can the institution involve students, faculty, and alumni to ensure that their perspectives are represented?

3.2 Curriculum Development and Review: Aligns with Student centredness, Labour market alignment of programmes and skills and Partnerships – Industry collaboration and employee engagement. The study recommends the following questions being asked in doing this alignment and in creating the action plans: How can the institution leverage emerging technology and innovation, such as machine learning and the application of artificial intelligence (AI) in the curriculum and teaching methods, to augment the quality and applicability of the vocational training programmes? How can the TVET institution measure the effectiveness of the curriculum and its impact on employability, entrepreneurship, and student outcomes?

3.3 Quality Assurance: Aligns with Quality assurance initiatives – internal and external. The study recommends asking the following questions when completing this alignment and draughting the action plans: What strategies can the institution employ to promote a culture of quality assurance and accountability among all stakeholders involved in the implementation of the strategic initiatives? How can the institution establish clear quality benchmarks and performance indicators to monitor the success of the strategic goals in enhancing student outcomes and employability? In what ways can the institution involve external evaluators or accreditation bodies to provide independent assessments of the quality and effectiveness of the institution's operations and programmes?

3.4 Staff Recruitment and Development: Aligns with Transformational leadership and

Labour market alignment of programmes and skills. When conducting this alignment and developing the action plans, the study recommends asking the following questions: How can the institution align its strategic plan to attract and retain high-quality faculty and staff who are committed to enhancing student outcomes and promoting innovation in vocational training? What professional development opportunities can be integrated within the strategic initiatives to support continuous growth and upskilling of the teaching and administrative staff? In what ways can the institution's recruitment strategies for new staff members align with the goals and values that are outlined in the strategic plan for the institution? What performance evaluation mechanisms can be implemented to assess the effectiveness of staff development programmes and ensure they align with the institution's strategic priorities?

3.5 Industry Partnerships and Engagement: Aligns with Partnerships – Industry

collaboration and employee engagement and Transformational leadership. In doing this alignment and creating the action plans, the study recommends the following questions being asked: How can the institution establish strategic alliances with key industry stakeholders to ensure that the vocational training programmes meet current and future industry needs and trends, enhancing student employability? What mechanisms can the institution implement to facilitate ongoing dialogue and feedback exchange between the TVET institution and industry partners to ensure relevance and alignment of the institution's programmes with industry requirements? In what ways can the institution leverage industry partners to create

internship opportunities, work-integrated learning experiences, and job placement programmes for students and faculty?

3.6 Labour Market Information and Research: Aligns with Labour market alignment of programme and skills. The study recommends asking the following questions when completing this alignment and draughting the action plans: In what ways can the institution leverage research findings on employment trends, job projections, and skill requirements to tailor its training programmes to meet the evolving needs of the labour market and enhance graduates' employability? How can the institution establish partnerships with research institutions and engage in ongoing data collection and analysis to continuously assess the effectiveness of the institution's programmes in preparing students for successful entry into the workforce?

3.7 Student Success and Support Services (SSS): Aligns with Student centredness. When doing this alignment, and creating the action plans, the research recommends the following question: How can the institution ensure that its strategic planning effort prioritises student success and well-being by providing comprehensive support services that address their academic, personal, and career development needs?

3.8 Monitoring and Evaluation: Aligns with Quality assurance initiatives – internal and external. The following questions are recommended in doing this alignment and creating the action plans: In what ways can the institution ensure that its monitoring and evaluation processes are transparent participatory, and inclusive of all relevant stakeholders to gather diverse perspectives and insights? For the benefit of its students and the institution, how can the institution use the findings from its

monitoring and evaluation activities to make well-informed decisions based on evidence, address challenges, capitalise on opportunities, and continuously improve its strategic planning efforts?

3.9 Financial sustainability: Aligns with Sustainable funding. The study recommends the following question to be asked when completing this alignment and coming up with the action plan: In what ways can the TVET institution diversify its programmes, services, and partnership engagements to experience 360-degree financial freedom?

3.10 Continuous Improvement and Innovation: Aligns with Transformational leadership and Quality assurance initiatives – internal and external. How can the institution drive a culture of continuous improvement and innovation in its strategic planning process by fostering creativity, embracing change, adapting to changing industry needs, and leveraging emerging technologies to enhance the quality and relevance of its TVET programmes?

The alignment and questions posed in each key priority area are in no way exhaustive. Rather, they are intended to serve as a starting point for discussion and reflection. It is up to each leader or organisation to identify additional areas of focus. The study recommends and encourages stakeholders to add additional questions, topics and targets as needed.

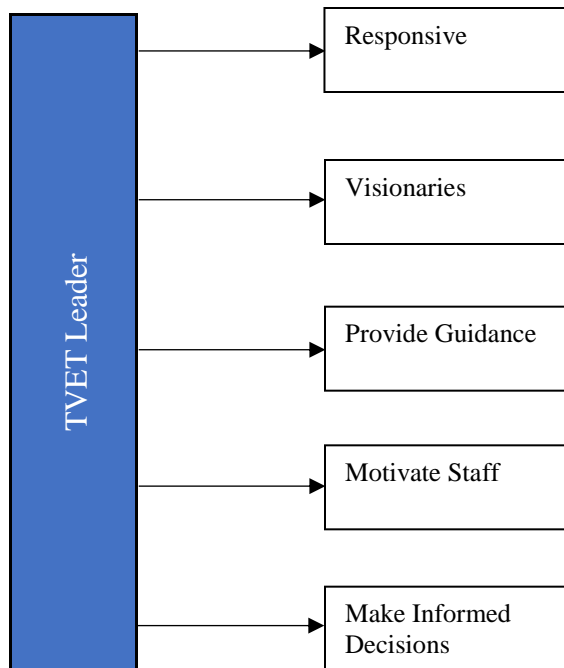
4. The fourth phase is the implementation of strategies within the framework. Within the execution, it is crucial to share the plan with all institutional levels, delegate tasks and responsibilities, provide the required training, and establish mechanisms to measure progress. The institution's leadership would be required to empower all staff members along with effective department or unit collaboration within this phase.

5. Lastly, the monitoring and evaluation phase is where the institution routinely reviews and examines the progress, adjusts where necessary, and assesses the effectiveness of the strategies. Actual performance should be compared with pre-determined goals, and adjustments can be made accordingly, along with feedback from stakeholders. This constant monitoring guarantees the framework remains relevant and functional and facilitates decision-making.

While not limited to TVET institutions, successful planning is essential to any organisation. Therefore, these recommendations are transferrable to individuals and organisations that wish to streamline their business operations and maximise their full potential. They can be further used to help improve the overall quality of the services provided.

5.4.2 Recommended Framework for TVET Managers and Leaders

This study fits into a larger agenda for this nation's TVET managers and leaders to become more professionally equipped. Although transformational leadership theory is recognised as the ideal leadership model for managing TVET institutions, in keeping with the findings of this study, the research also recommends a leadership model for managing these institutions. This model emphasises the importance of being responsive, empowering the employees by providing guidance and support and being able to make informed decisions. It also emphasises the importance of being visionaries and engaging everyone in the institution through motivation. In aligning the leadership model for a TVET leader, the tenets of transformational leadership are all considered: Idealised Influence, Inspirational Motivation, Intellectual Stimulation, and Individualised Consideration.

Figure 5.2*TVET Leadership Model*

Note. The author's exaggeration of a recommended TVET leadership model based on the findings of the study, 2024.

1. **Responsive:** A TVET leader can exhibit responsiveness by actively listening to the needs and concerns of their staff, students, and stakeholders. Being open to feedback, promptly addressing issues, and adapting to changes in the industry or education landscape are all key aspects of being responsive. To be successful in today's dynamic environment, being engaging is crucial, but one must be able to pivot when necessary.
2. **Visionary:** A visionary TVET leader sets a clear and compelling vision for the institution or programme or departments, inspiring others to work towards common goals. They should have a forward-thinking approach, anticipating future trends in skills development and technology to ensure relevance and competitiveness.

3. **Providing Guidance:** Effective TVET leaders provide guidance by offering mentorship, coaching, and support to their team members. They should create a supportive environment that fosters growth, development, and continuous learning and should be able to identify unique strengths within their staff and be able to provide support and feedback. There is also the need to have a strong commitment to social justice and equity.
4. **Motivating Staff:** Motivating staff in a TVET setting can be achieved through recognition of achievements, creating opportunities for professional growth, and fostering a positive work culture. Leaders can also encourage creativity, collaboration, and innovation to keep staff engaged and enthusiastic about their work.
5. **Make Informed Decision:** To make informed decisions, TVET leaders should gather relevant data, consult with stakeholders, and consider the potential impact of their choices. Applying critical thinking and utilising evidence-based practices can help ensure that decisions are well-informed and aligned with the institution's goals.

With the right mix of qualities, a TVET leader can skillfully manoeuvre through the intricacies of the education sector, steering their institution and community towards favourable results. A leader who embodies these attributes can inspire progress and growth both within their institutions and the community they serve, in addition to being able to adjust to the constantly changing landscape of education.

Implications for Management

Employing this leadership model encourages the following diagnostic questions, which the managers must ask themselves:

1. Am I actively listening to my team and stakeholders? Reflecting on how well they understand and respond to the needs and concerns of their staff and students can enhance responsiveness.
2. Is my vision clearly communicated and understood by my team? Assessing whether their vision is effectively conveyed and aligned with the goals of the institution can help ensure everyone is on the same page.
3. How am I supporting the professional growth of my staff? Evaluating the structure that is in place for mentoring and guidance staff will ensure that the TVET leader provides adequate support and direction.
4. What strategies am I using to motivate my team? Considering. What are the motivational tactics are effective? And if they are, recognising and celebrating staff achievement can foster engagement and moral.
5. Am I using reliable data and evidence to inform my decisions? Accessing the sources of information and data used for decision-making can improve the quality and effectiveness of their choices.
6. What feedback mechanisms do I have in place to assess my leadership effectiveness? Evaluating how they gather feedback from their team and stakeholders regarding their leadership can help identify areas for improvement and reinforce accountability.

The TVET manager can improve their effectiveness as a leader by routinely reflecting on the above diagnostic questions. Continuous self-improvement will allow them to stay adaptable

and relevant. It fosters a culture of learning and growth within their teams, setting a positive example for others to follow. Additionally, it helps the leader identify and address their own weaknesses, thereby enhancing their overall effectiveness. Not only will they be able to spot knowledge gaps among staff members by considering how well they convey their vision and how clear it is, but improved communication techniques may result from this, ensuring that all parties are on the same page and pursuing the same objectives.

Mentoring and training are crucial, and this is highlighted by concentrating on offering direction and assistance for staff development. Leaders and managers in TVET can create programmes that focus on the needs of their staff, resulting in more motivated and skilled employees. These programmes should be tailored to the individual needs of the staff, considering the skills and knowledge they already have. Managers can modify their techniques to better fulfil the demands of their team by assessing their motivation strategies. Higher employee retention rates, work satisfaction, and general morale can come from this, all of which can improve the performance of the institution. They might be motivated to prioritise evidence-based procedures by reflecting on the instruments and resources they use to make decisions. Better decisions that support institutional goals and enhance results are made using this method, which is more effective and well-informed. Finally, establishing feedback channels promotes a culture of continuous improvement. Managers demonstrate adaptability and willingness to change by valuing the opinions of employees and stakeholders, resulting in creative solutions and a more innovative workplace. Additionally, they are more likely to act transparently and build credibility and confidence within the organisation when they acknowledge their responsibilities in the success or failure initiatives, promoting self-reflection and accountability.

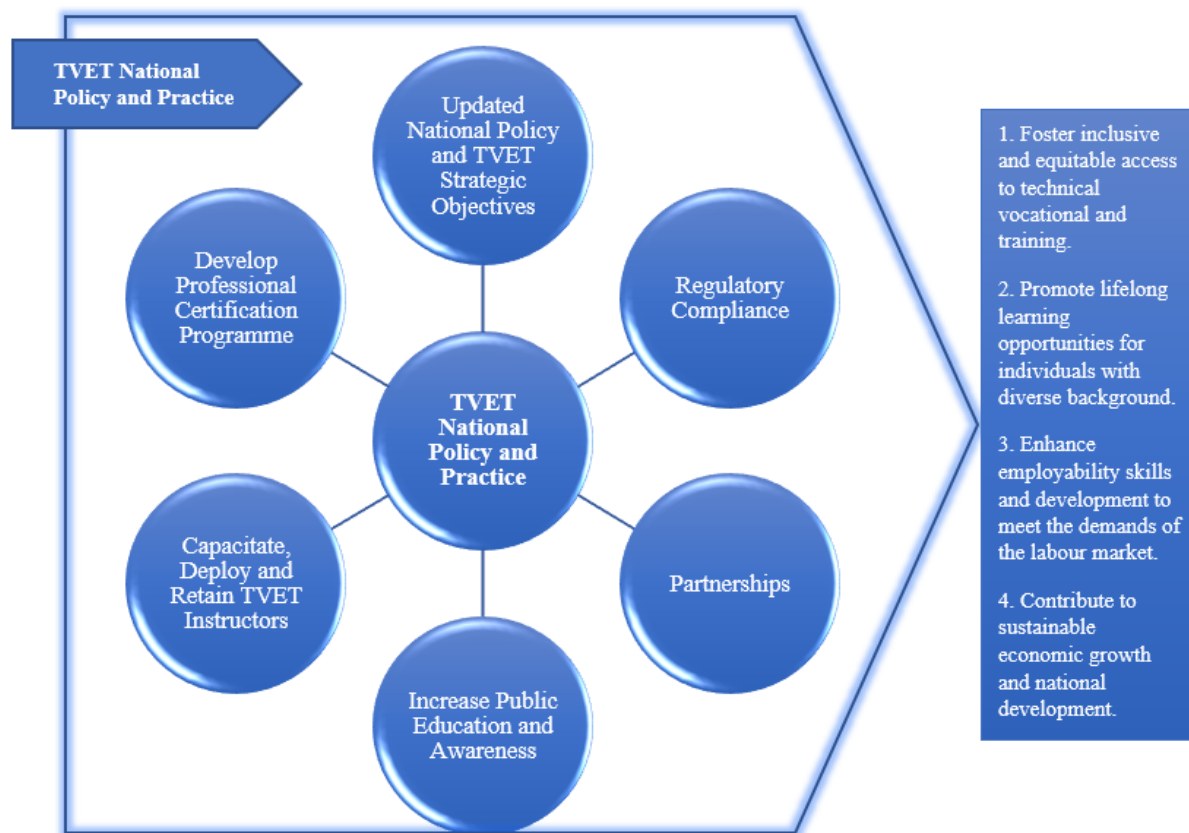
As the future of higher education develops, this study acknowledges that leadership practices may need to be modified and enhanced on a regular basis. The distinct competencies required for such a role should not be one that is met nor is considered with low esteem. There are numerous similarities between developing into a skilled athlete and learning how to lead or manage others. Both the development of a thorough grasp of the game's theory and the mastery of particular skills and competencies are necessary. A manager or leader can be effectively developed via personal experience alone. However, combining personal experiences with insightful advice and guidance from others is a more effective approach to develop leadership and management skills. Therefore, this study recommends the practical application of observing successful leaders and managers in action as an invaluable learning tool, integrated with professional development training and cultivated with their own unique experiences, to accelerate the requisite competencies in managing TVET institutions.

5.4.3 Recommended Framework for National Policy and Practice

In addition to the operational framework for TVET institutions, and the TVET leadership model, it is equally important for recommendations to be made at the national policy level (macro), in keeping with the findings of this study. This is because national policies, such as providing resources, establishing incentives, or providing a framework for stakeholder participation, can have a direct impact on the development of TVET institutions. Patterson (2021) argues that the system lacks an unambiguous description of what the government is responsible for in terms of programme funding as well as an overall philosophy that guides the sector. The aforementioned concepts can aid in ensuring that TVET institutions are well-equipped to satisfy not only Jamaica's National Outcomes and Goals, but also the needs of the twenty-first century.

Figure 5.3

TVET National Policy and Practice Conceptual Framework (TVET Ecosystem Technical Model)



Note. Author's exaggeration of recommendations for TVET National Policy and Practice based on the findings of the study, 2024.

Updated National Policy and TVET Strategic Objectives

It is therefore recommended that Jamaica's national policy on TVET be revised and updated in keeping with the global demands and direction of skills development. Additionally, the policy should include a philosophy that guides the sector, having clear guidelines, and strategic objectives for managing TVET institutions effectively. This should be in keeping with Jamaica's National Goal, goal number one, 'Jamaicans are empowered to achieve their fullest potential'. The

roles and responsibilities of all stakeholders should be incorporated, whereas the policy and its use should be communicated to all stakeholders within the TVET system.

Regulatory Compliance

It is recommended that a governance regulatory framework in TVET institutions be reinforced to improve compliance with established norms and guidelines. This should be enforced through an independent regulatory body. In return, this will effect Jamaica's National Outcome 1.2, 'World-Class Education and Training'. Additionally, an aggressive approach should be taken to monitor and analyse compliance regularly to identify areas for improvement and to maintain a high standard of quality. To ensure that it continues to be an effective driver for economic growth and development, this type of investment in TVET is needed from the government's end.

Partnerships

The need for partnerships at all levels cannot be overemphasised. With strong partnerships, TVET institutions will be able to boost a nation's vision and re-energise the economy with skilled and competent labour while contributing to the global workforce. As such, it is strongly recommended to create partnerships with industry, enterprises, technical institutions, and other relevant stakeholders that encourage collaboration and the exchange of expertise. Establishing regular contact and engagement channels with partners to discover industry needs and adjust TVET programmes accordingly is a necessity. Institutional partnerships not only align with SDG 8 but also contribute to fostering collaboration and knowledge exchange between TVET institutions. By collaborating on initiatives that promote decent work and economic growth, the exchange of knowledge creates sustainable employment opportunities and can improve productivity and working conditions. To create a multifaceted and dynamic workforce, these

collaborative initiatives should be extended on a global scale to foster innovation, critical thinking, knowledge, and cultural exchange.

Increase Public Education and Awareness

The engagement of all stakeholders in skill development and training is a critical aspect that must not be disregarded. Individuals are inclined to explore training opportunities when they appreciate the importance and rewards of skill development and training opportunities. This creates a positive and supportive atmosphere that fosters the development of individuals and enhances the community, especially if they are considered in the decision-making or curriculum development process, and policy design. Repackaging or re-branding TVET as a realistic choice to make it more appealing and compelling is recommended as a viable option for ensuring that everyone appreciates the significance of vocational and educational training and development. It is also recommended that the central government increase public awareness by creating avenues for meaningful engagement, which includes organising workshops, conferences, and forums. This is also a viable recommendation that may result in boosting enrollment. For greater impact, the study recommends that central government identify and hire transformation officers or champions that can boost the image of the TVET sector.

Capacitate, Deploy and Retain TVET Instructors

There is a need for qualified and trained teachers within the TVET system. Once qualified and competent staff are in place, the quality of instruction and delivery will improve within the institution, and all other related factors will eventually be expressed in the established goals. Therefore, continuous professional development programmes for TVET instructors to improve their skills and knowledge are recommended by this study. This should also entail devising

strategies to attract and retain competent educators by providing competitive wages, professional advancement possibilities, and supportive work cultures.

Develop Professional Certification Programme

It is recommended by this study that a comprehensive professional certification programme be introduced for all TVET institution leaders, managers, and administrators and be pushed aggressively by central government. The certification programme or course should reside with an institution whose mandate is identified as one that trains and upskills TVET educators, managers, leaders and other TVET professionals. The courses or programme should cover essential management and leadership skills required for effective TVET institution management, strategic planning, decision-making and change management. The knowledge and skills required for the evaluation of TVET institutions' financial performance are recommended by this study and should not be overlooked, given that there is much value in understanding the institution's finances which is relevant to effective strategic planning and leadership. The upskilling of educators will also ensure that they remain relevant not just in their skill area but in competency-based education, training, and delivery methodologies.

In ensuring that this TVET national policy and practice conceptual framework is effective and contributes to sustainable development, its outcomes are aligned with UNESCO's sustainable development goals. This framework targets areas such as gender equality, quality education, reduced inequality, decent work and economic growth, and industry innovation and infrastructure, which are essential components of sustainable development. The alignment is as follows:

1. Foster inclusive and equitable access to technical vocational and training aligns with SDG 4 (Quality Education) and SDG 5 (Gender Equality) as it aims to ensure equal access to education and training, promoting inclusivity and gender equality.

2. Promoting lifelong learning opportunities for individuals with diverse backgrounds is linked to SDG 4 (Quality Education) and SDG 10 (Reduced Inequalities) by emphasising continuous learning for all, regardless of background, to reduce inequalities and promote quality education.
3. Enhance employability skills and development to meet the demands of the labour market corresponds to SDG 8 (Decent Work and Economic Growth) by focusing on skill development to enhance employability, contributing to decent work and economic growth.
4. Contribute to sustainable economic growth and national development is aligned with SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure) by emphasising the role of TVET in fostering sustainable economic growth and supporting infrastructure development for national progress.

TVET institutions can significantly contribute to the advancement of sustainable development and address key global issues by integrating the outcomes of the national policy and practice conceptual framework with UNESCO's sustainable development goals. Furthermore, a more competent, inclusive, and sustainable workforce will be served by the TVET system in the future. Additionally, the study recommends twining the transformational leadership theory and the human capital theory to create an overarching philosophy for the sector.

This study aimed to explore the critical success factors associated with the management of TVET Institutions in Jamaica in a bid to formalise a sustainable framework. It also seeks to provide policymakers and TVET leaders with a roadmap for creating a more sustainable and formalise framework. As per the significance of this study, they will be more efficient, effective, and well informed in the expansion and restructuring of the TVET system. By analysing the findings of this study, opportunities for improvement and strategies that can help increase the effectiveness of

these institutions were identified. It is important to know that the implementation of these recommendations may vary based on the specific context and needs. Thus, it is crucial to consider the unique circumstances and available resources within the national TVET system pre- and post-implementation.

5.5 Recommendations for Future Research

Undoubtedly, continued research allows research practitioners to generate recommendations and insights that can be applied in practical settings, address real-world challenges, and make significant impacts and strides in a variety of industries and sectors. Research provides the necessary artillery to identify and address problems, develop solutions, and evaluate their effectiveness. While embarking on further research, researchers maintain academic relevance by advancing knowledge, addressing gaps, and contributing to the ongoing discourse within their respective fields. This study is not only significant to help educational leaders and policymakers be more efficient, effective, and well-informed in their development and restructuring of the TVET system, but it also opens an academic portal to a plethora of additional studies. Based on the study's observations and key findings, it is recommended that future research focus on the following areas:

1. The TVET ecosystem is filled with a myriad of stakeholders with unique roles and responsibilities, making the system vibrant and viable. This study was limited to the perceptions of Adjunct and Full-time faculty and Management Officers who are integral to the management of technical and vocational institutions. As mentioned earlier, the participants in this mixed-method study were selected using stratified sampling and purposive sampling techniques. Against this background, the perceptions may not accurately portray the factors that are integral to the management of TVET institutions in Jamaica. As such, the study recommends a study that considers other alternative probability

sampling methodologies such as systematic sampling, cluster sampling, or multi-stage sampling, to increase the generalisability and representativeness of the findings.

2. The study recommends conducting a case study for a more in-depth analysis of real-world examples of successful institutions to provide accurate information about the factors contributing to their success. Additionally, the case study would provide detailed insights into the strategies and best practices for the success of TVET institutions.
3. The study recommends a comparative analysis of the responses between part-time and full-time faculty members. Such a comparison can provide insight into whether part-time faculty members have different attitudes or perceptions than full-time faculty members. Given their perceived industry experience, it can also provide a better understanding of the impact of part-time faculty members on TVET institutions' success. Factors such as stress levels, job satisfaction, and salary should be included in the comparison.
4. Additionally, the study also recommends a comparison of job satisfaction between both groups of different genders and age groups, which can provide suggestions for improving job satisfaction for all faculty members, resulting in the institution's success.
5. A close look at the findings of the study revealed that external environment and interference-related factors (stakeholders) were ranked as the lowest among all the factors. The mean range for this set of factors is mostly indicated to be Moderately Important. Research practitioners should seek to explore the opportunities and challenges within the external environment that impact TVET institutions. The potential effects of changes in the external environment on the management and operations of TVET institutions should also be investigated.

6. Given the high political interest in TVET, it was also surprising to see that the study unearthed political involvement/endorsement as the lowest ranking factor amongst all participants, with a ranking of 39 and an *RII* value of 0.748. Research that examines how successful TVET institutions adapt to and leverage these types of involvement and interference should be explored.
7. The conducting of comparative studies across different regions or countries should not be ruled out as future research. This is to understand how these externally related factors vary and their impact on TVET institutions.
8. According to the literature, family problems or parental decisions are factors that lend themselves to the high attrition and low throughput rates within TVET institutions. The literature also stresses that the leadership of educational institutions also has the responsibility of managing people which extends to political constituents, community engagement groups as well as parents. Based on the study's findings, the respondents ranked parents/families/guardian's interest as 38th with an *RII* value of 0.764 and community engagement groups as 37th with an *RII* value of 0.793. Future research should explore the reasons behind the low ranking of these factors.
9. To effectively enhance TVET education, it is crucial to explore the barriers and challenges that prevent community engagement groups and parents from actively participating. Addressing these issues will empower stakeholders and foster a more collaborative educational environment.
10. There is a need to examine the impact of increased community engagement and parent, family, or guardian involvement on student outcomes and overall school performance.

11. Researchers should also investigate the role of TVET institutions in fostering meaningful partnerships with community engagement groups and parents/guardians to promote student success.
12. It is also recommended that future research explore effective strategies and interventions to promote and enhance community engagement and parents/families/guardian's interest in vocational education, considering cultural and socio-economic contexts.

Conducting future research in these areas can gain an in-depth understanding of the factors influencing these stakeholders' involvement and engagement in TVET institutions. This knowledge not only has the potential to strengthen the relationships between these groups and TVET institutions but also has the potential to enhance educational outcomes for students.
13. The literature offers findings across similar studies where adequate funding was ranked among the most important factors. During the interviews, participants also reinforced their belief that continuous financial support significantly impacts the management of TVET institutions. For this study, funding had an overall ranking of 1st and an *RII* value of 0.941. Although this is still considered to be high, for future research, it is recommended that academic researchers and policymakers investigate the impact of other funding models on the overall performance and sustainability of TVET institutions.
14. This study recommends a study that investigates the relationship between funding levels and the quality of education and training provided by TVET. Moreover, a comparative study across different regions or countries to understand the variations in funding practices and their impact on TVET institution's outcomes is a possibility of future research.

15. The study evaluated critical success factors in managing TVET institutions. Future research should explore issues and challenges in measuring success in these institutions.
16. The study recommends a comparative analysis of different success metrics used by various TVET institutions to identify commonalities, differences, and best practices in measuring success. These best practices in-turn can serve as the basis for future study to become standard practice.
17. A thorough analysis of the critical success factors, their related variables, and the extent of their influence on one another is recommended for future study. To gain a clearer understanding of the variables driving the correlation between these success factors and to explore any potential implications, further qualitative and quantitative research is also advised.
18. It is recommended that longitudinal studies or tracer studies be undertaken to track the career trajectories and long-term outcomes of TVET graduates to understand the sustained impact of their vocational training.
19. Given the ranking of the student centredness factor in this study, it is recommended that future research be undertaken to ascertain the level of influence of faculty and management on students successfully completing vocational studies.
20. This study recommends research be conducted on the quality and impact of work-based learning experiences on students' success in Technical and Vocational Education and Training (TVET) institutions. This research should be integrated into the success measurement framework. Additionally, it is important to evaluate the role of student involvement and feedback in shaping success measurement methodologies within TVET

programs. The consequences of not providing a platform for students to share their perspectives should also be examined.

21. Given that technology is embedded within TVET, this study recommends future studies investigating how integrating technological advancements such as nano-learning, robotics, artificial intelligence (AI), and virtual reality simulations influences the measure of success in TVET programmes.
22. This study recommends future research in the use of innovative assessment strategies that incorporate competency-based approaches to measuring success in TVET institutions and their effectiveness in capturing diverse skills and competencies. Such strategies could include the use of online and virtual platforms, as well as the use of simulations, among others.
23. In keeping with SDGs 4 and 5, quality of education and gender equality, respectively, this study recommends that future research investigate the gender disparities in the measurement of success in TVET programmes and identify strategies to ensure equitable assessment practices. This recommendation can also be extended to cross-cultural studies to explore how cultural differences affect the measurement of success to develop culturally sensitive evaluation frameworks.
24. While this study explored critical success factors related to the success of TVET institutions, it is not opposed to the management of TVET facilities playing a fundamental role in enhancing the success of TVET institutions. Under the right circumstances, technology and educational reform can work together to promote student learning. Against this background, it is recommended that research be done in this area to include effective

utilisation of resources, the physical space to accommodate the diverse needs of students and staff, and technology integration in TVET facilities to enhance its success.

25. Future research is recommended to investigate how green building practices and technology within TVET facilities can lead to ecologically friendly infrastructure, reduced operational costs, and increased sustainability efforts. By aligning facility management practices with research findings, these institutions can create modern, conducive, and innovative spaces for technical and vocational education and training, ultimately contributing to their success.
26. Using the findings of this study, two frameworks were proposed, a Technical Operational Framework for Managing TVET institutions and a TVET National Policy and Practice Conceptual Framework (TVET Ecosystem Technical Model). It is recommended that researchers implement, replicate, or build on these findings, either by validating or challenging any inconsistencies or contradictions. This will assist in establishing the reliability and robustness of existing knowledge in the area studied.
27. Considering the foregoing, the study also recommends investigating how policy changes at the national and regional levels affect TVET institutions' measurement of success and their implications for future policy development and implementation.

Delving deeper into these recommended areas is by no stretch of the imagination exhaustive. However, these recommendations for future research have the potential to provide valuable insights and recommendations for managing and improving TVET institutions. Not only will they provide explorative strategies to ensure the sustainability of TVET on a global level, but to ensure that the topic of TVET remains academically relevant. In the ever-evolving academic landscape, researchers can remain current by ensuring that their work remains relevant. By

conducting additional research on the topic, researchers can also expand on existing concepts and theories, as well as refine and propose new frameworks to enhance academic understanding as with this study.

5.6 Conclusion

The educational system in Jamaica is no stranger to challenges. The lack of qualified instructors, quality concerns, and fragmented training delivery are among the many challenges faced by Jamaica's TVET system. In addition, there is variation in the usage of endorsed industry standards, and a lack of a coordinated regulatory framework across educational and training institutions delivering TVET programmes. Transformation of the present system requires diligent attention and a collective effort from all stakeholders involved. It is important for educators, policymakers, parents, students, and the wider society to come together and actively participate in shaping the future of education in Jamaica.

TVET is seen with the same prejudices as traditional academic courses in Jamaica, a country that has historically struggled with providing technical education for its youth. Nevertheless, by working collaboratively, an educational system can be created to meet the needs of all learners and prepare them for success in the ever-evolving world. In light of the Jamaican Government's Vision 2030 commitment to delivering world-class education and training, it is only prudent that TVET be delivered within a harmonised framework to achieve its objectives.

Notwithstanding the emphasis on the education sector, specifically TVET, there are still areas where there are opportunities to foster skill development and empower individuals to drive national development forward. The government and other stakeholders should collaborate to ensure that TVET is readily accessible, affordable, and relevant. The high value placed on the Jamaican educational system resulted in the recent commission of the Patterson (2021) report. This

is by far one of the most critical transformative initiatives, of the Jamaica's education. The Most Honourable Prime Minister, in his mandate to the JETC, indicated that one of the commission's main aims is to identify a roadmap for Jamaica to fully become an integral component of the fourth industrial revolution. In addition to further sub-recommendations, there were 54 prioritised recommendations that were described in conjunction with their relationship to the Five Pathways. Eleven recommendations were provided that focused on how TVET is now taught in schools and what must be done to enhance and improve it. However, if policymakers and national and political leaders are serious about making significant strides within the educational sector and TVET, more needs to be done in the interest of national development. This study, however, evaluated the critical success factors associated with the management of TVET institutions in Jamaica.

Further to the highlighted critical success factors, the study also prioritised them in order of importance. The findings of this study have significant implications for creating a sustainable and quality TVET system in Jamaica. This is due to the fact that the absence of a harmonised operational template governing tertiary technical institutions, coupled with variations in the standards across them, has resulted in a lack of uniformity in the quality of education and accountability of technical institutions. However, the study's findings and recommendations offer a holistic approach to addressing these challenges. The study's insights can also guide future research initiatives aimed at improving the quality and sustainability of TVET institutions in Jamaica. Nine objectives were employed to investigate the main aim using methodological approaches such as literature reviews, questionnaire surveys, and engaging key stakeholders utilising interview techniques.

The study's objectives one through seven sought to examine the relationship between the critical success factors that are most applicable with the management of TVET institutions in

Jamaica. This study highlighted that partnerships and collaboration, labour market responsiveness, student centredness, external environment and interferences, funding, internal quality assurance, and external quality assurance were found to be the factors most applicable with the management of TVET institutions in Jamaica. It should be noted that this also coincides with prior research and practice. While it is argued that success factors may differ for each institution, TVET institutions are able to enhance their capacity to deliver meaningful and high-quality education and training by acknowledging these factors.

The study reveals that the management of TVET institutions is dependent upon a positive learning environment, well-trained teachers, internal and external quality control mechanisms, hands-on experience, and strong leadership, all of which can significantly enhance the institution's effectiveness and outcomes. The findings further suggest that a comprehensive approach to education that prioritises practical skills and vocational training, that stimulates participation, experimentation, cooperation, and active learning can improve the overall experience of students. With the incorporation of the constructivist learning environment model, the varied needs of the students will be addressed through active learning engagement, and teacher direction. The study also highlighted the necessity of having internal quality assurance measures such as investing in teacher training programmes and professional development for TVET educators to guarantee that they are well-trained, supported, and capable of providing quality education. Having qualified teachers/instructors who possess industry experience further enhances the quality of education and prepares students for successful careers in their field.

Industry engagement is also critical for TVET institution's credibility and for improving students' knowledge and employability. Collaboration between industries and TVET institutions has the potential to align curriculum with industry demands, allowing real-world experiences and

providing students with the practical skills needed. Additionally, it also has the capability to keep the institutions and their courses and programme offerings relevant. This thrust is preferable lead by persons who understand the rudiments of TVET. Finally, but not the least, the respondents stress the necessity of good leadership in successful management and coordination of TVE institutions in Jamaica, as they should be able to interact with their constituents, promote collaboration, creativity, and provide direction to connect the institution's vision and goals with industry demands. As one of the most crucial factors that contributes to the success of an organisation, they should be able to demonstrate their knowledge and understanding of the philosophy that drives TVET.

The eighth objective sought to prioritise the critical success factors in managing TVET institutions and ranking them in order of importance. Thirty-nine related factors were extrapolated under eight main categories and were tabularised in a survey questionnaire to capture the perceptions of Adjunct faculty and Full-time faculty on the factors that are of high importance associated with the management of TVET institutions in Jamaica. The factor ranking analyses revealed that the overall five most critical success factors are as follows: funding ($\bar{x}=9.40$; $RII = 0.941$); labour market responsiveness/relevance ($\bar{x}=9.37$; $RII = 0.939$); partnerships and collaboration ($\bar{x}=9.21$; $RII = 0.921$); internal quality assurance ($\bar{x}=50.52$; $RII = 0.919$); and external quality assurance ($\bar{x}=22.48$; $RII = 0.903$). Student centredness ($\bar{x}=521.51$; $RII = 0.861$); and external environment interferences (stakeholders) ($\bar{x}=20.16$; $RII = 0.821$) were ranked the least.

It was noted that when the response groups were isolated, both groups ranked availability of qualified staff and quality of training and delivery, alternatively, as their top factors. The Full-time group ranked availability of qualified staff as their highest factor with a RII value of 0.980, while the Adjunct faculty placed quality of training and delivery as their top factor with a RII value

of 0.968. Respondents that participated in the in-depth interviews, using their experience as management officers, were asked to give their own set of factors and rank them in order of importance in managing TVET institutions in Jamaica. The factor ranking analyses revealed the availability of qualified staff, partnerships, and labour market alignment of programmes and skills were ranked first, second, and third, respectively. Commitment to providing high-quality education and training was also ranked fourth.

Identifying and ranking these critical success factors according to their importance has several benefits. It can be concluded from these rankings that effective management of TVET institutions requires a strategic approach to financial management, industry alignment, stakeholder engagement and quality assurance. TVET leaders need to prioritise strategic planning, and decision-making grounded in evidence and foresight when managing the institution's finances, programmes, and partnerships to ensure long-term goals and impact. This in turn will aid the institution to maximise its resources and being effective and efficient within the context and goals of the institution. In addition to having clear goals and objectives, they can be used as quantifiable measures to assess the effectiveness and impact of the institution. The data analysis can enable the institution to identify areas for improvement, capitalise on strengths, and address challenges proactively, thus improving overall management performance. The harmonisation of these critical factors will lead to a quality management framework that encourages excellence, accountability, and continual improvement.

When these factors are identified and communicated effectively, team members understand their roles and responsibilities in achieving success. This clarity helps to hold each team member accountable for their contributions towards common objectives, fostering a sense of ownership and commitment within the team. This accountability boosts overall team performance by ensuring

that everyone is aligned and working efficiently towards the same goals. It reduces misunderstandings and conflicts, leading to a more cohesive and productive working and learning environment. Additionally, it also helps to keep moral high, which may result in higher productivity. In the end, all of this fosters a cooperative atmosphere that inspires everyone to work towards becoming part of a successful institution.

The ninth objective of this study sought to survey technical vocational and educational professionals to capture their views on the importance of management and leadership as a critical success factor in governing TVET institutions. The perspective of TVET professionals is critical for operating institutions since their personal and professional experience provides beneficial insights. To achieve positive change and success, effective leadership is critical. Numerous studies have shown that organisations with strong and effective leadership are more likely to achieve positive change and experience long-term success. This study also adds credibility and supports the importance of effective leadership in driving positive outcomes. The group of experts that participated in the study all showed a keen interest in the research topic. As viewed by the respondents, it can be concluded that management and leadership are essential key success features, as they provide guidance, make informed decisions, motivate their staff, are responsive, and is the foundation of a successful institution. Their expertise and enthusiasm added valuable insights and perspectives to the study's conclusion.

It is also important that TVET institutions understand what their core functions are in order to effectively fulfil their mission. TVET institutions provide specialised training programmes that prepare individuals for the workforce and contribute to economic development by addressing the gaps in industries and promoting employability. Irrespective of the individual context and local, TVET institutions provide technical training and equip individuals with practical skills and

knowledge that are applicable to specific industries or occupations. Therefore, it was no surprise that the professionals surveyed shared this forgoing view. From the information gathered from the perspectives of TVET professionals, it can be concluded that the management and leadership focus in governing TVET institutions should be on the business continuity of the institution and producing competent and confident graduates that will contribute to the local and global economies. They should also be able to demonstrate through their decision-making that they understand what TVET is, and not only through lexical prowess. This also means they should be able to demonstrate an understanding of the interacting factors and how they evolve and influence the politics of TVET in varying ways.

For numerous reasons, it is imperative that TVET leaders comprehend the political ramifications of their field. The intricate interactions between interests, values, and power dynamics that influence the creation, application, and management of TVET systems are referred to as TVET politics. TVET leaders need to be aware of the political implications of their field to effectively advocate for their interests in securing resources building support and ensuring the achievement of their objectives. They must also be aware of potential conflicts of interest that may arise between stakeholders, be aware of the decisions that affect their sector, and strike a delicate balance between competing priorities and interests. Knowing the political aspects of TVET can help a leader become more credible and likeable to stakeholders. To further TVET's goals and agendas, they might create coalitions and strategic partnerships. Additionally, by understanding the political issues, they can have an impact on TVET policies and reforms. Bearing these in mind, TVET leaders can anticipate and adapt to changes in the TVET sector by having a solid understanding of political trends and advancements.

Another distinguishing feature of this study is that it utilised two distinct data collection instruments. This allowed for a comprehensive and multifaceted analysis of the research topic. By using this wide-range approach, it can also be concluded that transformational leadership is more suited to managing TVET institutions in Jamaica. The overall organisational performance associated with achieving its primary goals can be predicated by transformational leadership practices. By virtue of employing this leadership style, it will encourage collaboration, inspire motivation and innovation, which are essential qualities to successfully run a TVET institution. It also allows for more flexibility and adaptability, which are critical in continuously changing environments.

The intention of the researcher is to propose informed recommendations from the study that will be geared towards developing a comprehensive technical operational educational framework for managing TVET institutions in Jamaica. There must be a concerted effort for real change to occur within the TVET and, by extension, the educational system in Jamaica, to deliver world-class education and training. History has shown that no transformation takes place with the government but with the institutions. Additionally, both policymakers and academia must value the journey it requires to continuously adapt and improve TVET institutions. This entails recognising the importance of ongoing research, collaboration, and feedback from industry stakeholders to ensure that programme offerings remain relevant and responsive to the changing needs of the workforce. This research study was designed to explore the critical success factors associated with the management of TVET institutions with the intention of creating a sustainable framework. Deriving from this study, three frameworks have been recommended: the Technical Operational Framework for Managing TVET Institutions, the TVET Leadership Model, and the TVET National Policy and Practice Conceptual Framework (TVET Ecosystem Technical Model).

These frameworks are designed to be the guiding principles for a sustainable and quality TVET system in Jamaica. The adoption of these frameworks by policymakers and enforcers has the potential to revolutionise education and training within the country. By incorporating the proposed concepts, the leaders of TVET institutions will enhance students' outcomes and employability by delivering quality education. Nevertheless, training programmes cannot be developed, and quality education cannot be delivered in a vacuum. It is only through meaningful institutional collaboration and industrial partnerships, quality assurance systems and financial sustainability that TVET institutions can truly thrive and meet the various demands of the workforce. It is also within these parameters that TVET institutions will reach their full potential in ensuring institutional sustainability and contribute to building Jamaica as the ideal place where people will work, do business, earn an honest living, raise their families, and retire.

The uniqueness of this research cannot be overstated. The study has created a holistic model and a foundation for the academic community. In addition to this, the study is the first of its kind to investigate a phenomenon like critical success factors related to the management of vocational training institutions in Jamaica. By adopting a comprehensive approach that combines multiple methods and perspectives this study offers a holistic understanding of the topic and its challenges. The incorporation of diverse methodologies, such as questionnaire surveys and interviews, allowed for a more robust and nuanced exploration of the subject matter. Furthermore, by acknowledging and discussing the findings from these different methods, it can be concluded that the research findings, implications, recommendations, and contributions are reliable and trustworthy. This approach not only added depth and credibility to the study but also cemented it as a valuable contribution to the field.

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APPENDICES

Appendix A: UREC Approval Decision



UREC Decision, Version 2.0

Unicaf University Research Ethics Committee Decision

Student's Name: Appolenon Lee Gordon

Student's ID #: R2008D11215303

Supervisor's Name: Dr Muraina Kamilu Olanrewaju

Program of Study: UU-EDUD-900-3-ZM

Offer ID /Group ID: O59858G63185

Dissertation Stage: DS3

Research Project Title:

Evaluating Critical Success Factors Associated With The Managing Of Technical Vocational Training Institutes And Centers With Particular Reference To Jamaica

Comments: No comments.

Decision*: A. Approved without revision or comments

Date: 16 May 2023

*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 B: Informed Consent Template



UU_IC - Version 2.1

Informed Consent Form

Part 2: Certificate of Consent

This section is mandatory and should to be signed by the participant(s)

Student's Name: Appolenon Lee Gordon

Student's E-mail Address: jappo.gordon@gmail.com

Student ID #: R2008D11215303

Supervisor's Name: Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctor of Education (Ed.D.)

Research Project Title: Evaluating Critical Success Factors Associated With The Managing Of Technical Vocational Training Institutes And Centers With Particular Reference To Jamaica

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 in 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:

Appendix C: Electronic Survey Tool

Part 1: Debriefing of Participants

Students' Name: Appolenon Gordon

Student's E-mail Address: jappo.gordon@gmail.com

Student ID #: R2008D11215303

Supervisor's Name: Dr. Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctor of Education (Ed.D.)

Research Project Title: Evaluating Critical Success Factors Associated With The Management Of Technical Vocational Training Institutes And Centres, To Jamaica

The purpose of this study is to evaluate the critical success factors in managing vocational training institutes in Jamaica and prioritising them in order of their importance subject to the perception of management officers and teaching faculty. This study will contribute to the body of knowledge in the academia world on critical success factors, specifically in managing vocational training institutes in Jamaica. By virtue of learning and understanding the set of factors that are perceived to have high importance, it will allow educational leaders and policy makers to be more efficient, effective, and well informed in their restructuring of the TVET system in their target towards Vision 2030 in creating a sustainable model/framework. Participants were selected because they are actively engaged, knowledgeable and experienced in the administration and management of these types of institutions.

The above-named student is committed to ensuring participant's voluntarily participation in the research project and guaranteeing there are no harm and or potential risks to the participants.

Participants have the right to withdraw at any phase (prior or post the completion) of the research without any repercussions and without offering any justification. In these instances, the collected data will be erased. All data and information collected will be coded and will not be accessible to anyone outside this research. Only coded information will be discussed and used in dissemination efforts, guaranteeing participants identity beyond the realm of possibility.

I Appolenon Gordon, ensure that all information stated above is true and that all conditions have been met.

Students' Signature: Appolenon Lee Gordon

Section 2

Part 2: Certificate of Consent

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 in 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.

☐ I agree to give consent to proceed.

Date: _____

Section 3

Questionnaire

The estimated time to complete this Questionnaire is six (6) minutes. Thank you in-advance for your time and effort spent in completing this survey.

Participant Profile

Instructions: Check / select the box that reflects your response.

1. What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other

2. What is your age?

- ☐ 18-20 ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ 41-45
- ☐ 46-50 ☐ 51-55 ☐ 56-60 ☐ 61-65 ☐ 66 & over

3. What is your highest level of qualification?

- ☐ Vocational Skills Certificate
- ☐ Associate Degree / Diploma
- ☐ Bachelors
- ☐ Post Graduate (Dip/Cert.)
- ☐ Masters
- ☐ PhD / EdD.

4. What category best describes your role within a TVET institution?

- ☐ Full-time faculty
- ☐ Adjunct faculty
- ☐ Other

5. How many years of experience do you have teaching within TVET institutions?

- ☐ 0 – 5 years
- ☐ 6 – 10 years
- ☐ 11 – 15 years
- ☐ 16 – 20 years
- ☐ 21 – 25 years

- ☐ 26 – 30 years
- ☐ 31 – 35 years
- ☐ 36 years and more

Section 4

Leadership Styles

6. Which leadership style do you believe is the most effective in managing TVET institutions?
- ☐ Managerial ☐ Transformational ☐ Transactional ☐ Contingency ☐ Postmodern
☐ Moral

Section 5

Critical Success Factors Associated With The Managing Of Technical Vocational Training Institutes And Centres With Particular Reference To Jamaica

Use one of the following keys: (5 – Extremely important, 4 – Very important, 3 – Moderately important, 2 – Slightly important, 1 – Low importance) to express your perception of the critical factors that you believe would contribute to the success of managing TVET institutions.

Partnerships & Collaboration Related Factors

	Low Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
Industry collaboration / employer engagement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Institution / school collaboration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Labour Market (responsiveness) Relevance Related Factors

Low Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
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Benchmarking programmes and skills against industry, government, regional, and international standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benchmarking programmes against emerging skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Management of TVET Institutions Related Factors

	Low Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
Leadership experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clearly defined mission and vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leadership ability to effectively lead change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staff/faculty expectations, roles, responsibilities, and accountability distributed and clearly defined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leadership skills and practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leadership knowledge of TVET systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leader contributing to creating equal opportunities for staff/faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Student Centredness Related Factors

	Low Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
Focusing on student employability skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student support services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development of graduate attributes/profile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equal opportunity /equitable access for trainees/students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased enrollment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

External Environment and Interferences Related Factors (Stakeholders)

	Low Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
Parents/families/ guardian's interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community engagement groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Political involvement/endorsement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regulatory body's input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prospective employer's involvement and engagement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Funding Related Factors

	Low Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
Continuous financing (adequate financial support)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Well-defined budget	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Internal Quality Assurance Related Factors

	Low Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
Teacher/instructor technical skills and background are industry grounded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student information management system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Faculty/staff support and development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policies and strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using cutting-edge technology and software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Course/programme evaluations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of training and delivery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conducting regular reviews to assure and verify institutional processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dropout reduction strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Availability of qualified staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having a business continuity plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

External Quality Assurance Related Factors

	Low Importance	Slightly Important	Moderately Important	Very Important	Extremely Important
Available occupational standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
National legal/technical framework in place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accreditation of the TVET institution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stakeholder's feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Approval/accreditation body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix D: Interview Instrument

Part 1: Debriefing of Participants

Students' Name: Appolenon Gordon

Student's E-mail Address: jappo.gordon@gmail.com

Student ID #: R2008D11215303

Supervisor's Name: Dr. Muraina Kamilu Olanrewaju

University Campus: Unicaf University Zambia (UUZ)

Program of Study: Doctor of Education (Ed.D.)

Research Project Title: Evaluating Critical Success Factors Associated With The Management Of Technical Vocational Training Institutes And Centres, Jamaica

The purpose of this study is to evaluate the critical success factors in managing vocational training institutes in Jamaica and prioritising them in order of their importance subject to the perception of management officers and teaching faculty. This study will add to the repository of knowledge in the academia world on critical success factors, specifically in managing vocational training institutes in Jamaica. By virtue of learning and understanding the set of factors that are perceived to have high importance, it will allow educational leaders and policy makers to be more efficient, effective, and well informed in their restructuring of the TVET system in their target towards Vision 2030 in creating a sustainable model/framework. Participants were selected because they are actively engaged, knowledgeable and experienced in the administration and management of these types of institutions.

The above-named student is committed to 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 Appolenon Gordon, ensure that all information stated above is true and that all conditions have been met.

Students' Signature: Appolenon Lee Gordon

Section 2

Part 2: Certificate of Consent

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 in 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.

☐ I agree to give consent to proceed.

Date: _____

Section 3

Survey

Thank you for taking the time to complete this survey, which aims to gather expert opinions on the importance of managing critical success factors in TVET institutions.

Your participation is greatly appreciated, and I thank you for your effort, time, and energy.

Your participation in this study is entirely voluntary and will be kept strictly confidential. You have the option to withdraw from the study at any point during the research process.

Instructions: Please respond to each item on the 'post-it' note/paper provided. Additional information and responses can be entered into the spaces provided for each of the questions.

Participant Profile

1. What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other

2. What is your age?

- | | | | |
|--------------------------------|--------------------------------|------------------------------------|--------------------------------|
| <input type="checkbox"/> 18-20 | <input type="checkbox"/> 21-25 | <input type="checkbox"/> 26-30 | <input type="checkbox"/> 31-35 |
| <input type="checkbox"/> 36-40 | <input type="checkbox"/> 41-45 | <input type="checkbox"/> 46-50 | <input type="checkbox"/> 51-55 |
| <input type="checkbox"/> 56-60 | <input type="checkbox"/> 61-65 | <input type="checkbox"/> 66 & over | |

3. What is your highest level of qualification?

- ☐ Associate Degree / Diploma
- ☐ Bachelors
- ☐ Post Graduate (Dip/Cert.)
- ☐ Masters
- ☐ PhD / EdD.

4. What category of management officer best describes your role within a TVET institution?

- ☐ Director/Principal
- ☐ Institution Manager / Administrative Manager
- ☐ Head of School / Programme / Department
- ☐ Programme Coordinator
- ☐ Admission and Assessment Monitoring Officer

5. How many years of experience do you have as a managing officer within a TVET institution?
- ☐ 0 – 2 years
 - ☐ 3 – 5 years
 - ☐ 6 – 10 years
 - ☐ 11 – 15 years
 - ☐ 16 – 20 years
 - ☐ 21 – 25 years
 - ☐ 26 – 30 years

Section 4

Interview Items

1. How would you best describe the successful management and coordination of a TVET institution in Jamaica?
2. Would vocational training institutions' planning, management, and administrative coordination be easier in the event critical success factors are established?
3. What are the critical factors that you believe are applicable to the management and coordination of TVET institutions in Jamaica?
4. Do you believe that having continuous financial support affects the management and coordination of a TVET institution in Jamaica?
5. What benefits are there to gain in identifying and ranking the critical success factors according to importance?
6. How would you evaluate the factors that you have indicated that are applicable to the management and coordination of TVET institutions using the following scale: (1 – Not at all important, 2 – Low importance, 3 – Slightly important, 4 – Neutral 5 – Moderately important, 6 – Very important, 7 – Extremely important).

Success Factors	1	2	3	4	5	6	7

7. How would you rank the evaluated success factors that are most critical in order of importance in managing TVET institutions in Jamaica?
8. To what extent do you believe management and leadership is a critical success factor in governing TVET institutions?
9. What should be management's focus in governing TVET institutions?
10. From your experience, which leadership style/theory is conducive to the management of TVET institutions?
11. Why do you believe the given leadership style/theory is conducive to the management of TVET institutions?

Appendix E: Ethical Defensible Checklist*Informed consent*

____ 1. Is it necessary to obtain informed consent from participants? Why or why not?

____ 2. If informed consent is required, how can you explain the nature and goals of your study to potential participants in a manner that they can understand?

Debriefing

____ 3. In the event a post-participation debriefing is applicable, what format might be best?

____ 4. What information would your debriefing contain?

____ 5. In the event discrepancies are identified between the participants' understanding and the aim of the study, how will they be addressed?

Protection of Participants

____ 6. Could your study expose participants to any physical risks or hazards? If this is the case, a list of the identified risks should be made.

____ 7. Could your study cause psychological harm to all or some of your participants (e.g., offensive stimuli materials, self-esteem threats)? If so, specify the specific types of harm that could occur.

____ 8. Will there be any significant monetary costs for participants (e.g., transport or mailing expenses)? If this is the case, how can the researcher reduce or eliminate those costs?

Deception

____ 9. Given the context what potential benefits could your research have for (a) those who participated, (b) your field of study, and (c) society as a whole?

____ 10. Is the greater good worth the cost to acquire the data?

Confidentiality and Anonymity

____11. What specific measures will be implemented to protect the privacy of participants?

Appendix F: Test-re-test Reliability Responses to Interview Items 1-4

Respondent Number	Interview Question 1 Code Numbers	Interview Question 2 Code Numbers	Interview Question 3 Code Numbers	Interview Question 4 Code Numbers
1	C4, C12, C13	C1	F1, F4, F7	C1
2	C12, C13	C1	F1, F4, F10	C1
3	C12, C13, C14	C1	F1, F2, F7, F11	C1
4	C4, C14	C1	F4, F7, F10	C1
5	C1, C4, C13	C1	F2, F4	C1

Responses for interview question 1 (Narrative responses coded)

C1 – Shared Values and Vision of Staff and Trainees
 C2 – Clear Policies
 C3 – Governance Framework
 C4 – Strong Leadership
 C5 – Enhancing Student Success and Retention
 C6 – Efficient Resource Monitoring and Allocation
 C7 – Building Pathways to Students Success
 C8 – A Solid Performance Management System
 C9 – Collaborative Efforts for Sustainable Development
 C10 – Developing Strategic Plans that Prioritise Fairness and Inclusivity
 C11 – Establishing Industry Partnerships
 C12 – Creating A Positive Learning Environment
 C13 – Teachers Are Well Trained and Supported
 C14 – Providing Students with Hands-on Experience

Responses for interview question 2 (Narrative responses coded)

C1 – Yes

Responses for interview question 3 (Narrative responses coded)

F1 – Adequate Funding
 F2 – Partnerships
 F3 – Effective Leadership
 F4 – Availability of Qualified Staff
 F5 – Well Defined Budget
 F6 – Student Retention
 F7 – Labour Market Alignment of Programmes and skills
 F8 – Strategic and Succession Planning
 F9 – Performance Management System
 F10 – Commitment to Providing High Quality Education and Training
 F11 – Transparency and Accountability System
 F12 – Student Advisement System
 F13 – Assessment & Feedback System

Responses for interview question 4 (Narrative responses coded)

C1 – Agree

Appendix G: Test-re-test Reliability Responses to Interview Items 5-7

Respondent Number	Interview Question 5 Code Numbers
1	C5, C1
2	C5, C3, C8
3	C3, C5, C8
4	C3
5	C3

Responses for interview question 5 (Narrative responses coded)

C1 – Continuous and Increased Funding for Programmes/Specific Areas

C2 – Increased level of Interest from Key Stakeholders

C3 – Increased Focus on Key/Priority Areas

C4 – Make it Easier for Good Governance

C5 – The Institution is Better Positioned to Make Informed Decisions

C6 – Information and Data Available Especially for Sustainability

C7 – Prioritisation of Resources

C8 – Effective and Efficient Planning (Strategic Planning)

Interview Question 6 Code Numbers Evaluated		Interview Question 7 Code Numbers Ranked
Success Factor	Frequency	Rank
F1	3	2
F2	2	3
F4	4	1
F7	3	2
F10	2	3
F11	1	4

Responses for question interview 6 & 7 (Narrative responses coded)

F1 – Adequate Funding

F2 – Partnerships

F3 – Effective Leadership

F4 – Availability of Qualified Staff

F5 – Well Defined Budget

F6 – Student Retention

F7 – Labour Market Alignment of Programmes and skills

F8 – Strategic and Succession Planning

F9 – Performance Management System

F10 – Commitment to Providing High Quality Education and Training

F11 – Transparency and Accountability System

F12 – Student Advisement System

F13 – Assessment & Feedback System

Appendix H: Test-re-test Reliability Responses to Interview Items 8-11

Respondent Number	Interview Question 8 Code Numbers	Interview Question 9 Code Numbers	Interview Question 10 Code Numbers	Interview Question 11 Code Numbers
1	C2, C3	C4, C5	L2	C2, C5
2	C6, C7	C1, C5	L2	C2
3	C6, C3, C4	C3, C4, C5,	L2	C2, C3
4	C6	C3, C6	L2	C2
5	C1, C6	C3, C4	L2	C2

Responses for interview question 8 (Narrative responses coded)

C1 – Responsive Leadership
 C2 – Visionaries
 C3 – The Extent to Which Leaders Who Are Capable to Provide Guidance
 C4 – Make Informed Decisions
 C5 – It is The Foundation of a Successful Institution
 C6 – A Key Driver of Success in Any Organisation
 C7 – Should Be Able to Motivate Their Staff and Student

Responses for interview question 10 (Narrative responses coded)

L1 – Situational Leadership
 L2 – Transformational Leadership
 L3 – Servant Leadership
 L4 – Authentic Leadership

Responses for interview question 9 (Narrative responses coded)

C1 – Training and Certification
 C2 – Staff Motivation and Welfare
 C3 – Producing Competent and Confident Graduates
 C4 – Maximising the Employment Rate for the Local and Global Economy
 C5 – Business Continuity and Sustainability
 C6 – Aligning Programmes and Skills to the Labour Market
 C7 – Student Tracking

Responses for interview question 11 (Narrative responses coded)

C1 – Matching Their Style to The Situation
 C2 – Flexible and Adapt to The Changing Times / Creating A Vision and A Culture
 C3 – Should be Able to Lead by Example
 C4 – Should be Authentic
 C5 – Guiding (Motivating) Employees Toward Achieving Specific Goals

		Partnerships and collaboration	Labour market responsiveness	Management of TVET institutions	Student centredness	External environment and interferences (Stakeholders)	Funding	Internal quality assurance	External quality assurance
Partnerships and collaboration	Pearson Correlation	1	.338**	.452**	.287**	.320**	.391**	.393**	.282**
	Sig. (2-tailed)		.000	.000	.001	.000	.000	.000	.001
	N	135	135	135	135	135	135	135	135
Labour market responsiveness	Pearson Correlation	.338**	1	.555**	.402**	.284**	.398**	.607**	.475**
	Sig. (2-tailed)	.000		.000	.000	.001	.000	.000	.000
	N	135	135	135	135	135	135	135	135
Management of TVET institutions	Pearson Correlation	.452**	.555**	1	.538**	.473**	.411**	.731**	.481**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000
	N	135	135	135	135	135	135	135	135
Student centredness	Pearson Correlation	.287**	.402**	.538**	1	.570**	.243**	.590**	.420**
	Sig. (2-tailed)	.001	.000	.000		.000	.005	.000	.000
	N	135	135	135	135	135	135	135	135
External environment and interferences (Stakeholders)	Pearson Correlation	.320**	.284**	.473**	.570**	1	.276**	.546**	.344**
	Sig. (2-tailed)	.000	.001	.000	.000		.001	.000	.000
	N	135	135	135	135	135	135	135	135
Funding	Pearson Correlation	.391**	.398**	.411**	.243**	.276**	1	.450**	.397**
	Sig. (2-tailed)	.000	.000	.000	.005	.001		.000	.000
	N	135	135	135	135	135	135	135	135

Internal quality assurance	Pearson Correlation	.393**	.607**	.731**	.590**	.546**	.450**	1	.640**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	N	135	135	135	135	135	135	135	135
External quality assurance	Pearson Correlation	.282**	.475**	.481**	.420**	.344**	.397**	.640**	1
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.000	.000	
	N	135	135	135	135	135	135	135	135

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Appendix J: Adjunct and Full-time Faculty Mean Analysis Results

Category	Adjunct Faculty			Full-time Faculty			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
Leader contributing to creating equal opportunities for staff/faculty	4.30	56	.658	4.47	79	.617	4.40	135	.637
Focusing on student employability skills	4.59	56	.565	4.54	79	.573	4.56	135	.568
Development of graduate attributes/profile	4.30	56	.685	4.28	79	.659	4.29	135	.668
Equal opportunity/equitable access for trainees/students	3.80	56	.923	4.15	79	.833	4.01	135	.885
Increased enrollment	4.48	56	.632	4.47	79	.676	4.47	135	.656
Development of graduate attributes/profile	4.39	56	.755	4.04	79	1.006	4.19	135	.924
Parents/families/guardian's interest	3.75	56	.977	3.65	79	1.075	3.69	135	1.033
Community engagement groups	3.96	56	.914	3.86	79	.997	3.90	135	.961
Political involvement/endorsement	3.46	56	1.220	3.63	79	1.064	3.56	135	1.130
Regulatory body's input	4.41	56	.708	4.29	79	.719	4.34	135	.714
Prospective employer's involvement and engagement	4.70	56	.570	4.65	79	.578	4.67	135	.573

Continuous financing (adequate financial support)	4.64	56	.586	4.77	79	.530	4.72	135	.555
Well-defined budget	4.61	56	.562	4.75	79	.438	4.69	135	.496
Teacher/instructor technical skills and background are industry grounded	4.71	56	.494	4.77	79	.576	4.75	135	.542
Student information management system	4.39	56	.652	4.39	79	.649	4.39	135	.648
Faculty/staff support and development	4.61	56	.593	4.67	79	.524	4.64	135	.553
Policies and strategies	4.45	56	.630	4.53	79	.596	4.50	135	.609
Using cutting-edge technology and software	4.36	56	.645	4.48	79	.714	4.43	135	.686
Course/program me evaluations	4.36	56	.724	4.57	79	.570	4.48	135	.645
Quality of training and delivery	4.84	56	.371	4.86	79	.348	4.85	135	.357
Conducting regular reviews to assure and verify institutional processes	4.45	56	.630	4.66	79	.528	4.57	135	.580
Dropout reduction strategy	4.57	56	.599	4.54	79	.616	4.56	135	.607
Availability of qualified staff	4.79	56	.414	4.90	79	.304	4.85	135	.357
Having a business continuity plan	4.41	56	.654	4.57	79	.592	4.50	135	.621

Available occupational standards	4.27	56	.842	4.41	79	.670	4.35	135	.746
National legal technical framework in place	4.29	56	.594	4.44	79	.615	4.38	135	.609
Accreditation of the TVET institution	4.48	56	.572	4.56	79	.675	4.53	135	.633
Stakeholder's feedback	4.66	56	.611	4.65	79	.481	4.65	135	.537
Approval accreditation body	4.57	56	.499	4.59	79	.543	4.59	135	.524
Industry collaboration/employer engagement	4.71	56	.563	4.84	79	.406	4.79	135	.479
Institution/school collaboration	4.46	56	.713	4.41	79	.670	4.43	135	.686
Benchmarking programmes and skills against industry, government, regional, and international standards	4.66	56	.549	4.78	79	.443	4.73	135	.492
Benchmarking programmes against emerging skills	4.57	56	.735	4.70	79	.540	4.64	135	.629
Leadership experience	4.52	56	.572	4.43	79	.592	4.47	135	.583
Clearly defined mission and vision	4.66	56	.514	4.78	79	.498	4.73	135	.507
Leadership ability to effectively lead change	4.68	56	.508	4.78	79	.443	4.74	135	.473
Staff/faculty expectations, roles, responsibilities,	4.52	56	.603	4.65	79	.481	4.59	135	.537

and accountability distributed and clearly defined									
Leadership skills and practices	4.61	56	.528	4.54	79	.595	4.57	135	.567
Leadership knowledge of TVET systems	4.27	56	.726	4.52	79	.617	4.41	135	.673

Appendix K: Overall Descriptive and Non-Parametric Statistics

Overall Descriptive Statistics and Non-Parametric Statistics						
Variables/Factors Measured	N	RII	Mean	Std. Dev.	CV	Rank
Partnerships & Collaboration						3rd
Related Factors	135	0.921	9.21	1.02	13%	Overall
Industry collaboration/employer engagement	135	0.957	4.79	0.477	10%	3
Institution/school collaboration	135	0.886	4.43	0.684	15%	28
Labour Market (responsiveness)						2nd
Relevance Related Factors	135	0.939	9.37	0.90	12%	Overall
Benchmarking programmes and skills against industry, government, regional, and international standards	135	0.947	4.73	0.490	10%	6
Benchmarking programmes against emerging skills	135	0.930	4.64	0.626	13%	11
Management of TVET Institutions						
Related Factors	135	0.912	31.91	2.48	12%	-
Leadership experience	135	0.893	4.47	0.581	13%	25
Clearly defined mission and vision	135	0.947	4.73	0.505	11%	7
Leadership ability to effectively lead change	135	0.948	4.74	0.471	10%	5
Staff/faculty expectations, roles, responsibilities, and accountability distributed and clearly defined	135	0.919	4.59	0.535	12%	14
Leadership skills and practices	135	0.914	4.57	0.565	12%	16
Leadership knowledge of TVET systems	135	0.883	4.41	0.671	15%	29
Leader contributing to creating equal opportunities for staff/faculty	135	0.880	4.40	0.635	14%	30
						6th
Student Centred Related Factors	135	0.861	21.51	2.33	17%	Overall
Focusing on student employability skills	135	0.913	4.56	0.566	12%	18
Student support services	135	0.858	4.29	0.665	16%	32
Development of graduate attributes/profile	135	0.801	4.01	0.882	22%	36

Overall Descriptive Statistics and Non-Parametric Statistics						
Variables/Factors Measured	N	RII	Mean	Std. Dev.	CV	Rank
Equal opportunity/equitable access for trainees/students	135	0.895	4.47	0.654	15%	24
Increased enrollment	135	0.839	4.19	0.920	22%	35
External Environment and Interferences Related Factors (Stakeholders)	135	0.821	20.163	2.98	23%	7th Overall
Parents/families/guardian's interest	135	0.764	3.69	1.029	28%	38
Community engagement groups	135	0.793	3.90	0.957	25%	37
Political involvement/endorsement	135	0.748	3.56	1.126	32%	39
Regulatory body's input	135	0.868	4.34	0.711	16%	34
Prospective employer's involvement and engagement	135	0.933	4.67	0.571	12%	10
Funding Related Factors	135	0.941	9.40	0.91	11%	1st Overall
Continuous financing (adequate financial support)	135	0.944	4.72	0.553	12%	8
Well-defined budget	135	0.938	4.69	0.494	11%	9
Internal Quality Assurance Related Factors	135	0.919	50.52	4.25	12%	4th Overall
Teacher/instructor technical skills and background are industry grounded	135	0.950	4.75	0.540	11%	4
Student information management system	135	0.879	4.39	0.645	15%	31
Faculty/staff support and development	135	0.929	4.64	0.551	12%	13
Policies and strategies	135	0.899	4.50	0.607	14%	22
Using cutting-edge technology and software	135	0.886	4.43	0.684	15%	27
Course/programme evaluations	135	0.896	4.48	0.642	14%	23
Quality of training and delivery	135	0.970	4.85	0.355	7%	2
Conducting regular reviews to assure and verify institutional processes	135	0.914	4.57	0.578	13%	17
Dropout reduction strategy	135	0.911	4.56	0.605	13%	19
Availability of qualified staff	135	0.970	4.85	0.355	7%	1
Having a business continuity plan	135	0.901	4.50	0.619	14%	21
External Quality Assurance Related Factors	135	0.903	22.48	2.24	14%	5

Overall Descriptive Statistics and Non-Parametric Statistics

Variables/Factors Measured	N	RII	Mean	Std. Dev.	CV	Rank
Available occupational standards	135	0.870	4.35	0.744	17%	33
National legal/technical framework in place	135	0.890	4.38	0.607	14%	26
Accreditation of the TVET institution	135	0.905	4.53	0.630	14%	20
Stakeholder's feedback	135	0.930	4.65	0.535	12%	12
Approval/accreditation body	135	0.917	4.59	0.522	11%	15
