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THE IMPACT OF ICT ON EMPLOYEE PERFORMANCE IN THE COVID-19 ERA
IN BOTSWANA

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Abstract

The Covid-19 pandemic struck the world in 2019 and caught humanity unprepared. Globally the pandemic brought normal life processes to a halt and caused much disruption to the lives of millions. Across the globe many lost jobs and livelihoods whilst the work environment had to eventually go on, a new way of doing things had to be introduced and adopted. This study seeks to show how establishments and entities have turned to Information and Communication Technology (ICT) to reintroduce the world to a world of work where the environment or work interaction has virtual aspects to it nested in ICT network services and various social media. New businesses, modes of production and work engagements and processes have emerged from the advent of the pandemic as a way of ensuring continued operations and productivity. LaBerge et al (2020) then show how, according to McKinsey, companies have digitized their customer and supply-chain interactions, highlighting how ICT supported commerce allows establishments and individuals to continue working outside the confines of their base or traditional work environment. Through study of various academic publications related to the research topic this study explores key questions relating to how ICT helps companies to stay productive, relevant and competitive in this newly transformed business and economic environment. First, it looks at what ICTs have been adopted to address employee effectiveness. Secondly how adopted technologies are helping with employee performance? and third, what the practical implications of ICT use in the current state of the Covid-19 challenged economic landscape are? This study draws and highlights lessons learned from various works on how different establishments in different sectors have started recognizing the strategic importance of ICT, and what steps they have taken to use ICT as a factor of performance improvement and management during and possibly after the Covid-19 pandemic.

Keywords: Covid-19, pandemic, Information and Communication Technology (ICT), Employee performance, Teleworking, Work From Home (WFH), United Nations (UN), Technology-Enhanced Learning.

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**THE IMPACT OF ICT ON EMPLOYEE PERFORMANCE IN THE COVID-19 ERA
IN BOTSWANA.....0**

TABLE OF CONTENTS

Abstract..... 1

Acknowledgements 2

CHAPTER 1: INTRODUCTION 4

 Purpose of the study.....5

 Hypotheses of the study5

 Research Question6

 Aim6

 Objectives6

CHAPTER 2: LITERATURE REVIEW 7

 The Role Of ICTs In Transforming The Workplace 10

 Measures Put In Place To Mitigate The Impacts Of Covid-19 On The Workforce 12

 The Impact of Mitigations Put in place to Ensure Continued productivity 13

CHAPTER 3: METHODOLOGY 14

 Ethical Considerations 17

CHAPTER 4: CRITICAL EVALUATION..... 18

 Mitigations put in place and the Role of ICT in improving work delivery 19

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS 21

 Conclusions..... 21

 Recommendations..... 21

REFERENCES 24

APPENDIX:..... 30

Appendix A: Ethics Review Checklist 30

CHAPTER 1: INTRODUCTION

In the wake of the Covid-19 pandemic numerous interventions have been conceptualized and implemented to mollify the adversity of the pandemic on the lives of people, the work place and the economy in general. According to Palladino and Moline (n.d) The Covid-19 pandemic has caused concern and economic hardships in all sectors including businesses across the globe. For many establishments, their business continuity plans did not cater for such as the aspect of quarantines in atypical with challenges to business. The initial response by world governments to the Covid-19 was lock downs, meaning the majority of people had to stay in their homes to avert infection. Evasion of the pandemic through lockdowns meant stoppage of business while people were home, whilst yet some continued to draw salaries. Quarantines and isolation measures were put in place for the infected and potentially infected rendering them unproductive whilst capable of performing their duties. In many places shift working schedules were introduced to minimize probability of entire establishment staff being infected and there having to be a total closure of business. Hence, this study explores measures that were put in place, namely use of ICT, to ensure employees continued to render due services and deliverables whilst away from the work place.

The purpose of this study is to explore or show how the use of ICT can ensure and improve employee performance in the challenging era of Covid-19 in Botswana. The study is premised on the works of various authors whose works show that use of ICT in different sectors across the globe. The research aims to deal with the problem that from time to time some establishments in Botswana are closed to public access for given periods of time while they are dealing with Covid-19 infections, which suggests that such establishments some of which are private entities whilst some are government departments do not have an up-to-date business continuity plan suitable for their employees to continue delivering services as and when needed. The Job Demands-Resources (JD-R) theory as posited by Shamsi et al (2021) will be instrumental for this study as it will help show how job related use of technology outside the work environment impacts performance and business continuity.

The significance of this study is that It is such establishments as are mentioned above shall draw lessons from this study to appreciate the value of ICT infusion in their practices, learning from the experiences of others in their field or related and non-related establishments, how they can tailor suitable ICT use frameworks that will enable their employees to continue performing to their optimum even when they are away from office due Covid-19 related exigencies such as quarantines, isolation and shift work.

To establish the core objective of the research, establishing the impact of ICT on the workforce in the era of Covid-19 the main tools to be used will be Internet searches for data produced independent researchers, government and non-government agencies, educational institutions and sources of business information including newspapers and magazines.

The project is organised into five core chapters being 1) Introduction, 2) Literature review, 3) Research methodology/Design, 4) Critical evaluation and 5) Conclusion and recommendations

Purpose of the study

The purpose of this study is to evaluate how the use of ICT has improved employee performance in light of the challenges to effective delivery that has become compromised by such developments as lockdowns, quarantines, isolations and shift working schedules that have been adopted to minimize total establishment infection with Covid-19 and resultant closure for business. The expectation is to draw lessons from other countries and some local institutions that have experienced and continue to experience temporary closure and learn to stay afloat at all times while avoiding loss of productivity and business.

Hypotheses of the study

1. The use of ICTs positively impacts employee performance during the covid-19 era in Botswana
2. The use of ICTs outside the work environment for service delivery ensures business continuity amidst Covid-19 restrictions in Botswana.
3. The use of ICTs ensures continued productivity against threats posed by the Covid-19 pandemic in Botswana.

Research Question

- How has the Covid-19 Pandemic affected the work force of Botswana?
- What measures have been put in place to mitigate the challenges brought about by the Covid-19 pandemic?
- To what extent have mitigation measures employed succeeded in normalizing employee effectiveness in delivery?
- How have ICTs fared in helping ease the complications brought about by Covid-19 on employee's capability to deliver effectively?
- How can the use of ICT impact employee performance in different sectors of the work environment of Botswana in during the challenging Covid-19 pandemic?

Aim

The aim of this study is to evaluate use of ICT in improving worker performance against the backdrop of a myriad of challenges brought about by Covid-19 to business and productivity.

Objectives

The objectives of this study are to:

- i) Assess the impact of Covid-19 on worker's ability to deliver meaningfully.
- ii) Understand the role of ICT ensuring work continues amidst the adversity of COVID-19.
- iii) Examine how ICT were deployed to help deal with challenges brought about by Covid-19 in day-to-day delivery of duties,.
- iv) Provide the government and independent entities with an indication of the level of employee empowerment ICT can provide.
- v) Identify milestones and developments brought about by the use of ICT in aiding workers deliver their core duties effectively.

CHAPTER 2: LITERATURE REVIEW

This chapter discusses the work of other scholars on the subject of the influence of ICTs on the employee. The work of Oberoi and Singh (2022) is amongst some of those that show how ICTs are the future for all industries and lay a basis on which we can deduce their value in improving employee effectiveness in challenging times. Firstly we shall discuss the role of ICTs in transforming the work environment in the backdrop of Covid 19. Some authors show that the use of ICTs created platforms through which employees to share ideas and workspace in virtually simulated meeting points without having to in person. Next we shall explore the depth of impact brought about by the ICTs adopted to help people's lives as seen in how social media platforms in various countries have enabled pooling of resources virtually and otherwise to keep the workforce meaningfully engaged during the Covid-19 era. Lastly we shall outline the most suitable mechanisms or technologies to adopt that help with increase of employee productivity levels during challenging moments brought about by the Covid-19 pandemic. Thereafter, an evaluation of best practices across various sectors and fields will be done so as to establish what ICT systems applications can be adopted to maximize employee effectiveness in Botswana.

The literature reviewed will consist of scholarly works drawn from various fields and countries so as to have a wider scope of lessons to draw form for multi-discipline tailored solution to the challenge facing Botswana's workforce.

To appreciate the scope of the challenge the study shall first assess the impact of Covid-19 on the work force at a global level, then the Botswana workforce. Kniffin et al (2021) posit that Covid-19 has had such a dramatic impact on the global workforce such that roles and modalities of work delivery have changed from conventional to such forms as Work from Home (WFH), virtual teamwork and unemployment to some. They also pointed out that the pandemic has even led to organisational structures changing, mostly by re-defining roles to a point of having workers and operations classified to such as essential and non-essential, downscaling and increasing flexibility so as to adapt to the exigencies of Covid-19. They cite the introduction of such models of work as shifting and social distancing as having become a norm for most establishments. Gartner (2020) reveals that “in a Gartner, Inc. Survey of 229 HR leaders on April 2 revealed that nearly 50% of organizations reported 81% or more of their employees are working remotely during the coronavirus pandemic.” This means that workers are in a position to be self driven and managers have to learn to remotely supervise to ensure continued efficiency in delivery hence Gartner (2020) suggest that managers should shift focus from processes to how much employees produce and their output.

According to the World Happiness Report (2021), the year 2020 saw almost a 60 percent decline in visitations to such places as shopping centres, theme park, museums and many other public places of interest, whilst about 15 million flights had been cancelled. The report further states that, “As of January 2021, more than 90 percent of the world’s workforce lived in countries where business closures were still in place for at least some economy sectors. Unemployment has also increased in countries affected by the COVID-19 crisis.” The report also suggest that those still remaining in the work place have had to educe their working hours and cites the International Labour Organisation (ILO) that, “Global working hours have declined by 17.3 percent in the second quarter of 2020. This is equivalent to 495 million full time jobs lost. By the end of the year, the total working hours losses were roughly four times greater than during the Great Recession in 2009. These dramatic reductions in working hours have been accompanied by equally dramatic reductions in income. Global labour income declined by 8.3 percent in 2020, amounting to a loss of USD 3.7 trillion, or 4.4 percent of global GDP. ”

On a different note Czeisler et al (2020) reveal that coronavirus disease has been linked to mental health challenges ranging from anxiety and depression to suicide tendencies resulting from the morbidity and mortality caused by the pandemic as well as the social distancing and home quarantine measures that were taken to arrest the spread of the virus. The study was conducted across the United States of America in June 2020 amongst adults 18 years old and above. The results showed that 40.9% of respondents showed at least one adverse mental or behavioral disorder such as anxiety or depression while 30.9% showed trauma and stress related disorder, 26.3% had either started or increased use of substances as a means to cope with the emotional stress, and 13.3% had shown to have seriously considered suicide.

The health sector according to SADC (2020) reveals that the health sector was heavily affected by the corona virus to a point where at the time of reporting over 10 000 thousand health workers in about 40 African countries were infected with the COVID-19 virus, leaving the health sector heavily stressed. The report also shows that the education sector was also hard hit mostly due to lockdowns and extreme social distancing measures that left school and institutions of higher learning having to close for prolonged periods about 5 weeks and beyond.

The World Bank in Botswana report (2022) suggests that the emergence of Covid-19 pandemic in Botswana, 2020 brought complications to the country's economy as it was already struggling due to dependence on diamonds exports as the main economic activity. The report shows that the country already has a high economic inequalities and low job creation, coupled with high unemployment rates recorded at 26 percent by end of 2021 compared to 24.5 percent in 2020, a situation that probably led to a lot of uncertainty among workers.

Zaballos et al. (2020) maintain that the outbreak of COVID-19 ensured putting in place various countermeasures, more especially improving access to telecommunication to enable commercial and social services continue being provided and accessed even when workers and consumers are at home through the work from home, online shopping, electronic learning (e-learning) and remote health care provision.

The Role Of ICTs In Transforming The Workplace

In light of the likely and noted impacts this work shall focus mainly on the use of ICTs as a mitigation strategy in tandem with other mitigations such as WFH to ensure continued productivity and business operations and more specifically how their use impacted the workforce in Botswana. Aiyuk, Tladi and Kaniwa (2021) highlight that due to the adverse effects of COVID-19 on a global scale the Botswana Open University has created a task team to deal with the ramifications of the pandemic through such measures as controlled working from home, making enhanced online application of ICT and other Technology enabled methods of curriculum delivery. The work also highlights that the Botswana Open University continues to adapt through the adoption of ICT to equip themselves with the necessary resilience to ensure business continuity.

The Rutgers Global Health Institute (2022) reports that though the Telehealth Partnership they forged with Botswana they have managed to establish a framework through which they can establish distance learning solutions, mitigate challenges brought about by the COVID-19 pandemic as well as other infectious diseases such as Tuberculosis and HIV/AIDS, and reaching out to under resourced and remote areas through webinars. They report that the webinar series they launched in April 2020 equipped Botswana front line health workers with “knowledge, skills and tools to combat COVID-19”, while also enabling wide spread dissemination of information that enabled the country to combat COVID-19 and all its exigencies.

Ali. (2020) reveals that in efforts to contain the spread of the COVID-19 pandemic many institutions for higher learning have had to shut down and in this regard the University of Botswana (UB) has had to be shut down twice according to Ntshwarang, Malinga and Sedimo (2021). Ali. (2020) Posits that for teaching and learning in higher institutions to continue there is need to improve e-learning systems, increasing the infrastructure and access devices and well as internet and related resources such that they can accommodate large volumes of students and tutors. Further to that, Ntshwarang, Malinga and Sedimo (2021) argue that there is need to upgrade existing solutions so that they can offer a more flexible learning environment for learners and tutors as the OCVID-19 pandemic exposed those gaps at the UB and many universities across Africa, and much training for tutors.

The work of Jackson et al (2020) posits that the number of people working from home has grown over the years, and mostly so due to growing innovation and use of ICTs. They further suggest that the COVID-19 pandemic has increased the numbers primarily because its advent meant a first reaction of extreme social distancing and lockdowns that kept people at home and the use of ICTs blurred the boundary that separated work from home as due to the need for business continuity employees had to carry out work duties or tasks at home. People became more connected to their work, and each other for work purposes through ICTs. Jackson et al (2020) further illustrate that ICT infusion in various work places has allowed individuals to meet their work obligations any place and any time thus, seeing the increase to over 50% of employees globally being able to work and deliver effectively whilst away from the workplace. ICTs in this regard have ushered in flexible working hours, allowing individuals to schedule their work around their familial times. Davies (2021) brings in a perspective that ICT supported work WFH arrangements usher in a diversity of opportunities for employment in that even a person in a rural setting has equal opportunities since the supervisory and monitoring mechanisms are uniform regardless of geographic location, and so argues that “Advancements in ICT functionality, capacity and accessibility is rapidly reshaping how work is done and the structure of the workplaces and workforces, with their workers able to work in locations remote from the central place.”

The National policy review and e-commerce strategy for Botswana (2021) suggests that, “In addition, in the past year e-commerce has played an important role in reducing the infection rates and risks to life endangered by the 2020 global COVID-19 pandemic and supporting the post-pandemic economic recovery.” Hence, The policy review calls for expansion of the ICT superstructure by means of investing more in building of ICT infrastructure, liberalizing the telecommunications sector, crafting laws that ease use of ICTs, modernizing the public sector and ensuring the majority of the country’s populace is equipped with basic ICT skills, and has easy access to ICT resources, services and facilities whilst stimulating local ICT development.

Zaballos et al. (2020) argue that for adoption of these various electronic or computer supported solutions including teleworking to effectively be deployed there is need to ensure such as access to adequate broadband internet connectivity, availability of suitable access or computing devices, digital literacy amongst workers and consumers, and practical applicability of work from situations for workers.

Measures Put In Place To Mitigate The Impacts Of Covid-19 On The Workforce

Bookbinder Business Law (2020) shows that as many countries were putting in place measures in place to curb the spread of the Covid-19 pandemic, Botswana had not yet registered any case but was already implementing measures to prevent introduction and spread of the pandemic which include that:

- The government of Botswana implemented a system whereby an employee that had been informed to self-isolate or quarantine would just do so without following the typical statutory procedures on assumption that they had a sick note as per typical expectation, which most likely opened loopholes in some areas and some employees taking advantage to use the time for personal endeavours.
- Drawing a policy specifically tailored to addressing Covid-19 exigencies including documenting the treatment of employee absence, hygiene protocols, closure of offices/operations as well as others.
- Implementation of a Work From Home (WFH) policy to ensure continued production and productivity. To that effect various departments were expected to draw WFH policies to ensure monitoring and curbing abuse. Hence institutions or relevant supervisors were expected to give work and appropriate monitoring and supervision for work given. WFH is driven and supported by use of ICT.

Bookbinder Business Law (2020) do, however, point out that regardless of the preparations put in place in addition to the ones noted above there remains great threats of closure, negative impacts on finances and general loss of business to establishments due to the spread of the virus, movement restrictions and limited movement of people and goods/shortage of supplies. The crux of the matter being that some establishments would be forced to restructure to retrenchments and thus shortage of staff in some areas would lead to change in initial work conditions. Masiya et al (2021) confirm that the fears allayed by Bookbinder Business Law (2020) came to reality, stating that the lockdown for extreme social distancing led to many jobs or livelihoods being lost due to retrenchments while on the other hand the government of Botswana issued wage subsidies for half salaries or a maximum of P2500.00 per employee to curb loss of employment whilst also emphasizing that there should be no retrenchments.

To ensure effective continued curriculum delivery various Technology-Enhanced Learning (TEL) solution have been adopted of which Tawafak et al (2021) identify use of electronic learning through such platforms as moodle, Google Classroom, and various other web based platforms through which learners and educators can interact in virtual spaces to share content, assess learning and discuss learning materials online without meeting physically.

The Impact of Mitigations Put in place to Ensure Continued productivity

With regards to the effectiveness of the mitigations put in place some have put forth the following. The use of ICT in WFH situations has positive psychological effect as this arrangement enables an employee to work in close proximity to family and thus easily balances work/work time according to Rachmawati et al (2021). They further posit that ICT aided WFH allows one to get support from the family and thus the reduced work/family conflict motivates an employee to work even during off-duty hours, and the arrangement also allows an employee to continue working even if they may not be feeling well or they are aged or have some disability simply because they are working from a conducive, comfortable and supportive environment. The use of cloud based technologies and teleconferencing softwares such as Zoom and Skype amongst others, according to Zhao et al (2021), have allowed people to work from the comfort and privacy of their homes allowing them to evade COVID-19 infection, saving time and enjoying flexible working conditions. They further suggest that the adoption of such technologies in the workplace can allow for employment of people based in and work from other countries.

On the educational front Patrinos and Shmis (2020) show that some countries in Europe and Central Asia, as well as the United States of America have put in place online learning systems that are supported by provision of high speed and reliable internet connectivity, learning content (electronic-content, support structures, skilled teachers and students have or can afford access devices.

Llorente-Barroso et al (2021) suggest that the use of ICT has been particularly instrumental in improving the self esteem of older people, who were mo socially isolated due to their high susceptibility to COVID-19 infection, and thus a positive emotional wellbeing that enables tem to perform better in their daily tasks. Further to the aforementioned, a study done by Zhiwen et al (2021) empirically affirmed that adoption of ICT more especially in relation to teleworking has a significant positive effect.

CHAPTER 3: METHODOLOGY

This study being secondary or desk based in nature is carried out through finding multi-disciplinary sources of information relating to the core areas of the study including understanding the impact of Covid-19 on the work force, measures put in place to mitigate the adverse effects of Covid-19 on the work force's ability to delivery effectively and evaluation of ICT solutions employed to mitigate the problems brought forth by Covid-19 to the work force's ability to perform effectively. The study is external secondary in nature and primarily makes use of data gathered from websites.

The structure of this study as the methodology is concerned is aimed at addressing the research objectives which are to: i) Assess the impact of Covid-19 on worker's ability to deliver meaningfully, ii) Understand the role of ICT ensuring work continues amidst the adversity of COVID-19, iii) Examine how ICT were deployed to help deal with challenges brought about by Covid-19 in day-to-day delivery of duties, iv) Provide the government and independent entities with an indication of the level of employee empowerment ICT can provide and v) Identify milestones and developments brought about by the use of ICT in aiding workers deliver their core duties effectively.

The driving theory of this paper is the Job Demands-Resources (JD-R) theory's influence and relation to employee's capacity to uptake ICT use to augment work time outside the work environment as a way of keeping the employee safely productive in a non-threatening environment. It systematically looks at the transition of work place adoption of ICT as a way of making work life more bearable amidst the COVID-19 pandemic and explores the applicability of the ICT mitigations adopted by different sectors to ensure continued productivity. The core theory underlying the research is the JD-R, which according to Bakker and Demerouti (2017) suggests that fostering of job autonomy, provision of social support adequate and relevant resources as well as comprehensive performance feedback help to reduce work burnout and hence good work output . In this regard the theory helps explore how availing relevant and adequate ICT resources with well crafted WFH frameworks and policies can help in ensuring workers continue delivering effectively regardless of displacement from the office by COVID-19.

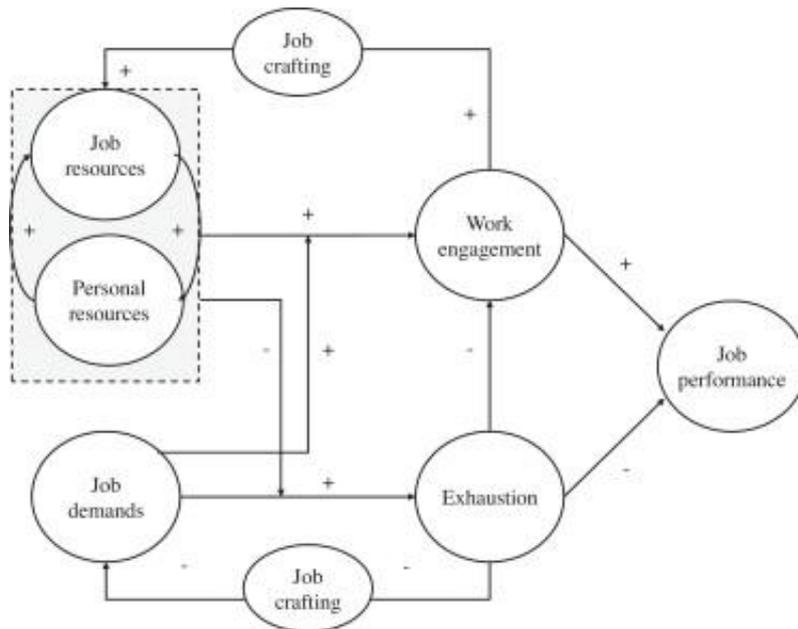


Figure 1: The Job Demands-Resources model. Resourced from Bakker & Demerouti (2017)

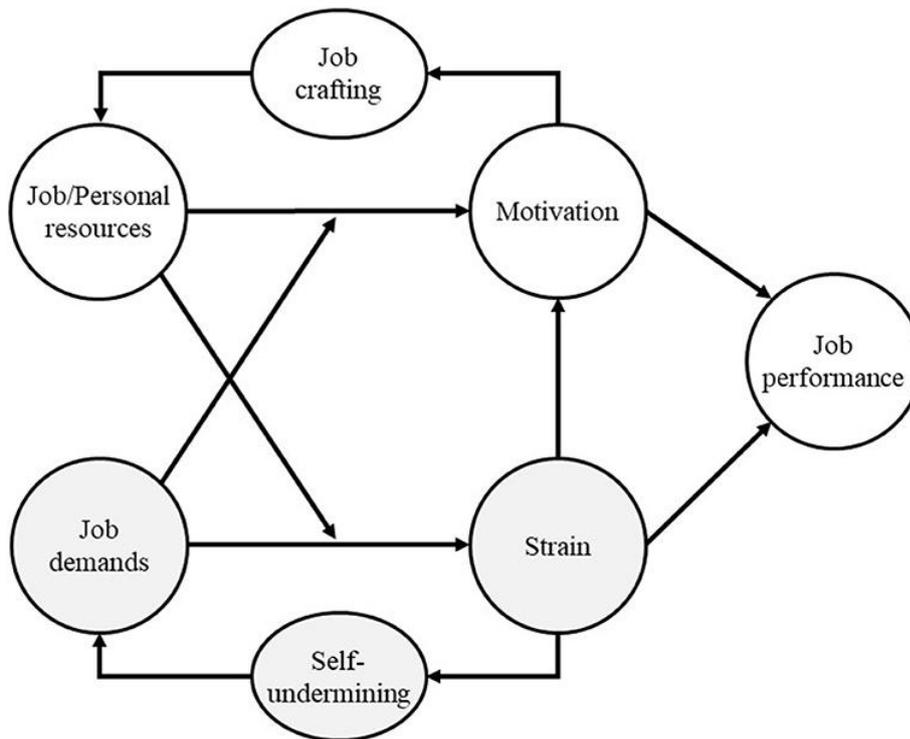


Figure 2: Job Demands-Resources (JD-R) theory, adapted from Bakker and Demerouti (2017).

Figure 2 above is an adaptation of the JD-R model by Tummers and Bakker (2021) as they show that leaders can apply the JD-R model by providing social support for their subordinates by offering them freedom to choose whether they can work from home or from the office, an aspect that can be fully realised with availing of adequate resources.

The study is purely qualitative and will primarily make use of content analysis of written materials in the form of journal articles, publications and other research documents published online. An in-depth analysis of the collected data will be used to formulate an informed statement that will either affirm or disqualify the hypothesis. It draws as widely as possible from experiences documented from other countries and even institutions based in Botswana to gauge how well they fared, note levels of success and factors leading to failure of adoption. This way this study can evaluate whether ICTs do indeed contribute positively to workforce empowerment to continue delivering in these adverse times of the COVID-19 pandemic.

The study explored numerous resources in the form of articles, reports and journals of published information by individuals, groups and establishments from various disciplines and countries so as to be able to get an objective solution for Botswana's work force in general.

The study strives to mostly make use of electronic media or articles found on various websites for various institutions or professional bodies that have online repositories since they are usually more reliable and much more easier to verify. Preference is given more scholarly documents presented by larger establishments since they have a vested interest in the subject already

Data gathered will be individually evaluated to get a balanced picture of the use of ICTs in mitigating the impacts of Covid-19 on the work force. The evaluation of the data gathered is approached in sequence of the research questions posed at the beginning of the research to ensure relevance of the study and avoidance of straying off from the essence of the research.

The first part of the paper focuses on exploring the extent of the destruction or disruption of the COVID-19 pandemic on a global scale, then on Botswana as a whole before picking up examples of sectors that have been affected. Data on the impacts is herein sourced from publications concerned with providing national decision making such as United Nations and UB establishments. The evaluation of the impact is establish if indeed there is need to evaluate the likely impact of ICTs on the workforce such that if the effects of COVID-19 in the country were to an insignificant level this research would be unnecessary.

The second part deals with explaining the role of ICTs in combating the spread of the COVID-19 and how they can ensure workers continue being productive while away from the work environment. In the same fashion as in the first part the paper draws lessons from other countries whilst taking stock of what the country has in place in terms of infrastructure and policies. This sections is intended to build an appreciation of what ICT integration into work processes through the WFH policy can avail to the country's various economic and social services and institutions.

The third part explores the mitigation measures put in place to deal with the COVID-19 pandemic. It draws specific lessons from specific studies done in other countries as well as in Botswana on how ICT solutions have been adopted to ensure continued service delivery and WFH. The discussion on this section is meant to acquaint the study with what has been put in the ground to ensure continued working in lieu of the COVID-19 pandemic.

The last part aims to present a balanced evaluation of the input of adopted ICT solutions. This draws from the both success stories and set backs or shortfalls experienced by those that widely adopted ICT aided WFH solutions. This section sets the basis for the critical evaluation of the adoption of ICT towards achieving effective WHF. Lessons here are drawn from both international and local establishments so that recommendations can be made where necessary. It is from this section that the study is able to deduce not only the relevance, practicality and importance of ICT integration with WFH but also by way of scholarly opinion weighing, determine whether the hypothesis of the study is true or false.

Ethical Considerations

In carrying out this research ethical considerations were made and as per ethics review checklist provided by my mentor, I have bound myself, and ensures that I abide fully to abide to not violate any part of the code. The research being external secondary in nature means the paper follows all legal and professional stipulations on conducting this type of research.

CHAPTER 4: CRITICAL EVALUATION

The expected outcome of this study is an outlined description on how use of ICTs has helped improve employee's capacity to deliver their duties effectively even when covid restrictions threaten to bring normal working conditions to a state of unproductiveness. Information found in the various sources will reveal what various establishments in different countries have accomplished through use of ICTs to avert the adversity of Covid-19 on the work force. This is in part deduced from Avila and Cabrera (2021) who suggest that, "ICT in an organization like schools can lead to improvement and attainment of organizational goals..." This section is dedicated to establishing with absolute clarity through evaluation of the data gathered if indeed the use of ICT positively impacts worker performance in Botswana during the COVID-19 era. The main Hypothesis is being put to test through examination of studied and cited literature. To reach that conclusion the main research questions will be interrogated thoroughly and systematically.

The first research question was to establish whether Botswana was indeed adversely affected by the COVID-19 pandemic. This question was intended to determine if the workforce is affected such that they are unable to perform their daily duties be it in public service or private enterprise. The UN Botswana (2020) shows that much like the rest of the globe Botswana was affected by COVID-19 and thus imposed an initial 28 day lockdown on the 2nd of April 2020, which subsequently led to further movement restrictions. This meant that workers across all sectors except frontline health workers and some individuals from some public service offices that were deemed as essential service providers could go to work but with special permits while the bulk of the populace was confined to their homes. Another UN Botswana (2020) publication states that, "The crisis has already transformed into an economic and labour market shock, affecting not only supply (production of goods and services) but also demand (consumption and investment). The newsletter cites the ILO showing a drop in working hours and further instigating that it was only going to get worse, and expressing that the situation is going to affect many people's livelihoods as already workers and enterprises in the informal sector had already lost their capacity to earn a living. The UN Botswana (2020) report that the county experienced losses of jobs, losses of earnings and in some instances reduced earnings due to movement restrictions, which meant no production.

Statistics Botswana (2021) presented the impact of COVID-19 as follows

Employees	Male	Female	Total	Male	Female	Total
Salary decreased	23,175	18,136	41,311	8.5	7.2	7.9
Salary increased	1,478	1,097	2,575	0.5	0.4	0.5
Hours of work decreased	17,788	20,010	37,798	6.6	8	7.2
Hours of work increased	3,934	6,062	9,996	1.4	2.4	1.9
Terms of contract changed	5,573	4,025	9,598	2.1	1.6	1.8
No change	138,219	136,800	275,019	50.9	54.5	52.6
Other (Specify)	15,507	12,784	28,291	5.7	5.1	5.4
Sub Total	205,674	198,915	404,588	75.7	79.2	77.4
Self-Employment						
Business went down	44,058	40,811	84,868	16.2	16.3	16.2
Business went up	3,298	4,686	7,984	1.2	1.9	1.5
Business closed	664	921	1,585	0.2	0.4	0.3
No change in business	2,528	1,465	3,993	0.9	0.6	0.8
Accumulated business debts	310	431	742	0.1	0.2	0.1
No/ low piece job opportunities	14,460	3358	17,818	5.3	1.3	3.4
No change in piece jobs	575	464	1,040	0.2	0.2	0.2
Sub Total	65,893	52,137	118,030	24.3	20.8	22.6
Total	271,567	251,052	522,618	100.0	100.0	100.0

Figure 3: The Impact of Covid-19 to jobs and businesses & sex, QMTS Q4 2021 sourced from Statistics Botswana (2021)

The table shows that of the 404, 588 employees surveyed, 275,019 have experienced no change in their work lives meaning that the exigencies of Covid-19 have not affected any part of their work life, earnings or terms of service regardless of the fact that there was no economic activity nor service delivery for a reasonable amount of time. A larger number of people had their salaries decreased 41,311 as opposed to those that experienced increased being 2,575 in number, and in like manner 37,798 people had their hours of work decreased opposed to the 9,996 who had their hours increased.

Both Statistics Botswana and UN Botswana show that economic losses were recorded due to the lockdowns, movement restrictions and extreme social distancing, hence the need for WFH measures that were put in place in some areas.

Mitigations put in place and the Role of ICT in improving work delivery

The argument of Rachmawati et al (2021) that ICT aided WFH offers workers flexibility and social support from family, allowing workers a happy space to work in and thus ability to produce even better to a point of working beyond office hours. This argument, however, doesn't take into consideration that some workers may gravitate towards pursuing their personal endeavours on work time, but that can be managed through close monitoring and comprehensive assignment of tasks.

Bookbinder Business Law (2020) shows that amongst other things some establishments put in place the WFH or telework policy which in many instances is ICT supported and allows employees to execute their office duties without leaving the comfort of their homes. The works of Llorente-Barroso et al (2021) and Zhao et al (2021), through case studies show that the use of ICT has a positive effect on the workforce and some of these ICT integrations according to Rachmawati et al (2021) include such software packages as office suites and teleconferencing applications that can be closely monitored or strong policies drawn to regulate their use in relation to ensuring effective work goals achievements. These works are however challenged by Patrinos and Shmis (2020) as they argue, based on their findings in Europe and Central Asia, that application of teleworking and effective delivery of educational content requires good infrastructure including access to high speed internet connectivity and compatible, up to date access or computing devices of which they noted that few countries in Europe and Central Asia have the capability of achieving. Similarly the work of Ntshwarang et al (2021) show that in Botswana there is need to greatly improve ICT infrastructure in tertiary institutions as well as improving access and curriculum content.

The arguments here show that for as much as ICT integration into the WFH program can yield good results in terms of ensuring work is done at all times and on time but requires much work to be done, including training of workers to be ICT literate. The argument of Jackson et al (2020) that ICT infusion in various work places has allowed individuals to meet their work obligations any place and any time thus, seeing the increase to over 50% of employees globally being able to work and deliver effectively whilst away from the workplace, implies that ICT aided WFH has ensured that workers continue working regardless of emerging social and other impediments.

The ICT aided WHF initiative along with its positives doesn't, however, cater much for the manual labourer and much of the informal sector. With regards to the arts in Botswana we saw the band, "Sereetsi and the Natives" using an online platform, Stage it, to give live performances during the country's lockdown and according to the Botswana Gazette online newspaper (2020) the proceeds were given to the Botswana COVID-19 relief fund. This showed that with enough research and dedication most workers can exploit various plat forms to accomplish economically beneficial tasks.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

Conclusions

From the arguments put forth the study concludes that the hypothesis that, “ i) The use of ICTs positively impacts employee performance during the covid-19 era in Botswana, ii) the use of ICTs outside the work environment for service delivery ensures business continuity amidst Covid-19 restrictions in Botswana and iii) The use of ICTs ensures continued productivity against threats posed by the Covid-19 pandemic in Botswana” is true. What compounds it is the limited availability of resources.

Based on some of the publications here used Botswana much like any other country, regardless of the rate of infection and death from COVI-19 was hard hit by the pandemic and some sectors near completely crippled. Some countries though hard hit were able to bounce back faster due to the fact that prior to the COVID-19 pandemic they already had in place policies and provision for WFH.

The studies done on the capacity of tertiary institutions’ capability to deliver e-learning or TEL showed that the challenge Botswana is facing is availability of resources since the minimal implementation that was done showed a positive inclination towards ICT integrated distance learning. The experience of other countries showed that those who availed resources such as high speed broadband internet connectivity in addition to making use of platforms such as Google class, Moodle and other web based platforms for curriculum delivery and assessment did not feel the pinch of the Covid-19 pandemic’s adversity.

Recommendations

Taking into cognizance the fact that the COVID-19 pandemic is still at large and keeps resurfacing in waves and mutating into different variants there is no telling when it’s severity is going to peak again. To avoid a repeat of the 2020 crash of the work force it is thus important for the government and private enterprise to consider making adjustments to their work culture and budgetary allocation.

Based on the table 3, from statistics Botswana a lot of people continued to draw a salary without having input in their places of work while many experienced a reduction in salary due to lack of productivity and it was costly to not have people working whilst the government made it illegal to retrench anyone during the COVID-19 era, it is imperative that adjustments be made to have WFH policies in all public sector and most private enterprise.

- The entities need to invest more money on laptops or net-books since they are cheaper for the majority of people who work desk jobs and provide subsidized broadband internet connectivity packages for them to ensure that they can continue working in the face of adversities such as the COVID-19 pandemic or any other possible threat that prevents people from going to work. In situations where it is deemed expensive to purchase computing devices they could offer subsidies and incentives such as volume licensed software for their employees.
- Government and private enterprises should invest in ICT literacy for all their employees regardless of level to ensure that in the face of adversity they are able to quickly continue with work deliverables.
- Provide managers with online project and human resource management software as well as engage specialists to up-skill managers to be able to remotely manage supervisees.
- Government and private educational entities to invest in the development of online educational content and platforms that can be used continuously and intensified in the face of adversities. Or, partner with existing platforms to tailor curricular specific and relevant to Botswana.
- Through the Ministry of Youth, Sports and Culture develop platforms such as “Stage it to accord up and coming performing artists to have a space to showcase, groom and develop their talents to a point where they will be able to respond quickly in times of adversity in the way the Sereetsi did to stay afloat during the COVID-19 pandemic.
- Government to invest in training and purchase of robotics (and training in development of such) and coding packages to help the manual labour sector including farming.

Above all else it is important to ensure ICT literacy for all citizens at the earliest possible stages of development as children are keen to learn and will grasp faster, and ensure political will to draw and implement suitable policies to foster an enabling environment for ICT aided WFH in the work environment.

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APPENDIX:

Appendix A: Ethics Review Checklist



UU_EC - Version 1.0



ETHICS REVIEW CHECKLIST

This checklist should be completed by the student undertaking a research project which involves human participants and must be checked and signed by the dissertation tutor. The checklist will identify whether an application for ethics approval needs to be submitted to the Unicaf Research and Ethics Committee (UREC), or not. Before completing this form, you should refer to the guidelines in your Programme (available in VLE) on ethics policy and procedure. As the principal researcher, you are responsible for exercising appropriate professional judgement in this review. You should append a copy of the checklist in your final project or dissertation submission.

Student's Name: Arthur Matshameko

Student's E-mail Address: amatshameko@gmail.com

Student's ID #: 10466860

Supervisor's Name: Giorgos Georgiou

University Campus: Unicaf University Zambia (UUZ)

Program of Study: MBA Management Information Systems ZM

Research Project Title: THE IMPACT OF ICT ON EMPLOYEE PERFORMANCE IN THE COVID-19 ERA IN BOTSWANA

	Yes	No
1. If the study will require the cooperation of a gatekeeper for initial access to groups or individuals to be recruited (e.g. students, employees of a company, members of a self-help group), will you be <u>unable</u> to obtain this?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Will the study involve discussions of or responses to questions which participants might find sensitive? (e.g. substance abuse, traumatic experiences).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Could the study induce psychological stress or anxiety, or cause harm or negative consequences, beyond the risks of everyday life?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. If the study will involve participants who are unable to give informed consent (e.g. children under the age of 16, people with learning disabilities), will you be unable to obtain permission from their parents or guardians (as appropriate)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Are there any problems with the participants' right to remain anonymous, or to have the information they give not identifiable as theirs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Will the study involve prolonged (more than an hour at a time) or repetitive testing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Yes	No
7.	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.	Will deception of participants be necessary during the study?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.	Does the study involve access to confidential information?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10.	Is the right to withdraw from the study at anytime withheld, or not made explicit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If you have answered YES to any of these questions you must submit further details of your proposal using Unicaf University Research Ethics Application Form (REAF) and other related documentation for approval by UREC. A decision will then be returned to you by e-mail. Further details available on your dissertation webpage on VLE.

If you have answered NO to all questions, give or send the completed checklist to your tutor/dissertation supervisor for signature. He / she should discuss your proposed research and the ethical implications of this. You should keep a signed copy and attach it to your final project or dissertation submission. Please note that even if this is the case, it is still your responsibility to follow the guidelines on ethics policy and procedure in the conduct of your study as these are described in International Ethical Guidelines for Health-related Research Involving Humans, Geneva (2016) <https://cioms.ch/wp-content/uploads/2017/01/WEB-CIOMS-EthicalGuidelines.pdf>

NOTE: When any doubt arises in relation to the above, always forward your application to your tutor.

All materials submitted will be treated confidentially.

I have read and understood the guidelines on Unicaf University ethics policy and procedures.

Student's Signature:  _____

Supervisor's Signature: _____

Date of Application: 24-Mar-2022