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The effects of remote working on leadership styles and job quality due to Covid-19

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2379347

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Protocol number: WBS/BA2379347/214

DECLARATION

I, Ntomboxolo Nyathi, declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Ntomboxolo Nyathi 

Signed at ……Norkem Park……

On the ……29…… day of ……March…… 2022

DEDICATION

I am dedication this study to my husband Luvo Nyathi for his unwavering support, my two loving daughters Qhawekazi and Nandile for understanding when mommy was busy with school work and my family at large for all the words of encouragement.

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I would like to thank the following people:

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ABSTRACT

The Covid-19 global pandemic took the whole world by surprise and has a social and economic devastating effect. Social distancing was one of the measures put in place by the World Health Organisation (WHO) for the prevention of the spread of the coronavirus. Governments across the world were advised by the WHO to encourage employers to allow employees to work from home as one of the measures used to minimize the spread of the virus.

The purpose of this study was to investigate the effectiveness of leadership when leading teams over digital platforms when they were forced to work from home due to the Covid-19 pandemic in South African organisations context.

The study explored three leadership qualities that were used as measuring tool to determine the effectiveness of leadership on virtual teams that were enforced due to the Covid-19 pandemic. According to the proposed conceptual model, leadership effectiveness on virtual teams was determined by three main factors, which were Delegation (DELE), e-Communication (COMM) and Technology Savvy (TS). In this model, leadership effectiveness on virtual teams (EL) was hypothesised to be affected by DELE, COMM and TS.

The study confirms that there is a relationship between these leadership qualities and the effectiveness of leadership on virtual teams that were enforced as a result of the Covid-19 pandemic. These relationships were confirmed by the hypotheses the study focused on

Keywords

Virtual teams

Remote working

Effective leadership

Delegation

e-Communication

Technology savvy

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CHAPTER 1: INTRODUCTION

On 15 March 2020 the President of South Africa made an announcement to declare the country a State of disaster. This came after the World Health Organisation (WHO) declared the coronavirus disease a pandemic on the 11 March 2020, three months after the initial detection of Covid-19 (Kaushik & Guleria, 2020).

The Covid-19 global pandemic caught the whole world by surprise and has a social and economic devastating effect (Kaushik & Guleria, 2020) . Suddenly people had to find new ways of doing things. The common term used in South Africa when referring to the new ways of doing things was called the “New Normal”. Organisations in South Africa had to now think of ways on how they were going to continue to operate their businesses under the “new normal” while preserving the lives of their employees from this deadly virus.

Social distancing was one of the measures put in place by the World Health Organisation (WHO) for the prevention of the spread of the coronavirus (Collings et al., 2021) . The social distance was stipulated to be a physical distance of at least 2 meters away from one another (Prin & Bartels, 2020). Governments across the world were advised by the WHO to encourage employers to allow employees to work from home as one of the measures used to minimize the spread of the virus. Furthermore, people with comorbidities were regarded as high risk and the employers were urged to allow these employees to work from home in order to save lives.

Therefore, due to the unprecedented nature of the Covid-19 pandemic (Collings et al., 2021) no one would have predicted the massive increase in scale of organisations who had to let their employees work from home would happen so rapidly. As a result, many organisations find themselves having to find new ways of operating away from the tradition way of having to work in the same workplace. While the leaders of these organisations suddenly find themselves in a situation where they have to manage their teams remotely.

Consequently, the continuity and sustainability of the organisations dependent on virtual teams set up because of the Covid-19 restrictions and regulations (Bull et al., 2020) and it seems to be the only way some of these organisations would survive the storm. Leaders of these organisations are then faced with a challenge of having to manage virtual teams where most of them have never lead teams virtually before

1.1 Purpose of the Study

The purpose of this study was to investigate the effectiveness of leadership when leading teams over digital platforms when they were forced to work from home due to the Covid-19 pandemic in South African organisations context. This study will help determine whether or not leadership was effective when conducted over digital platforms that arose as a result of the new way of working organisations found themselves in, where they had to move away from the traditional way of operating but still be able to execute the organisation's vision.

1.2 Context of the Study

The Covid-19 pandemic came as an unprecedented global health and economic crisis (Stoker et al., 2021) that forced many organisations to operate with virtual teams. This situation creates uncertainty and anxiety for the leaders of these organisations, as a result it affects their behaviours (Fritsche et al., 2011). Basically, working from home during the Covid-19 pandemic meant that the leaders and their teams will be working remotely (Stoker et al., 2021) but are still expected to execute their roles in the same way they do when there were in the organisation's workplace (Greer & Payne, 2014) .

For many organisations, this crisis is huge and has resulted in a massive disruption and anxiety causing so much uncertainty especially to the leaders who found themselves having to manage virtual teams (Collings et al., 2021). Basically, the Covid19 crisis is a human one, therefore, making the leadership of these organisations central in enabling the organisations to manage through and eventually exit the crisis successfully (Stoker et al., 2021).

Over the past year since the pandemic started, working from home has escalated and has resulted in organisations having to make significant changes on work process. This

includes flexible working hour where there is no limitation on time, location and the type of communication platform used (Contreras et al., 2020).

The current arrangement of working from home during the pandemic will likely to remain in place even beyond the pandemic (Contreras et al., 2020). This then creates a need for leaders to look at what leadership qualities are needed to cultivate high performing virtual teams now and beyond the Covid-19 pandemic.

1.3 Problem Statement

Leaders of organisations were in South Africa were faced with the challenge of leading their teams remotely using digital platforms due to the Covid-19 pandemic. Since this situation was not planned and many of the leaders have never led teams remotely in their careers, this study will research whether their leadership was effective or not.

1.4 Research Objective

This study will determine whether leadership was effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic by using leadership qualities as a measuring tool.

1.5 Research Question

Was leadership effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic?

1.6 Significance of the study

Most organisations in South Africa are trying to run operations through the “New Normal” where employees suddenly had to work from home. The leaders of these organisations are expected to drive forth the new normal by bringing new concepts of how employees should connect using disruptive technology (Cortellazzo et al., 2019). The leaders are now having a big task of keeping their teams are on high performance during this time while ensuring that the organisations vision and goals are being met.

Consequently, there are potential risks in this virtual working (Bull et al., 2020) on leaders who were forced to manage teams that are working from home, where these managers have to seize the utilisation the traditional leadership skills that are more effective on a face to face basis under the new normal (Contreras et al., 2020). Leadership practices must become accustomed to the new virtual set up in order to achieve effective leadership and sustainable performance for their organisations (Stoker et al., 2021).

Therefore, this study will benefit the following group of people:

Junior, middle, senior and executive managers: Due to the unprecedented nature of the Covid-19 pandemic, these leaders were not trained to lead their teams remotely and were forced into this situation. These leaders will get to know and understand what it takes to effectively lead remote teams.

Organisations and Entrepreneurs: With the rapid increase to remote working due the to the Covid-19 pandemic it is predicted that remote working will become the norm for most organisations and entrepreneurs. Therefore, this study will help them navigate how to effectively manage remote team's setups.

Future Researchers: The participants of this study were only on management level, therefore, this could give opportunities to future researchers to expand the research to employees who are not in management positions.

1.7 Scope of the Research

1.7.1 Limitations

- The research will only be conducted within a limited time.
- Due to Covid-19 regulations face-to-face interviews are not recommended.

1.7.2 Delimitations

- The participates on the research are only junior, middle, senior and executive managers with teams that were forced to work from home due to the Covid-19 pandemic.
- The research focuses on both private and public sectors in South Africa cross all provinces.
- All industries will be considered for this study

1.7.3 Assumptions

- The participates will answer the questions truthfully.

CHAPTER 2: LITERATURE REVIEW

2.1 Background

A corona infection known as SARS, Cov-2 was released in the city of Wuhan in China in December 2019. However, people were still allowed to travel internationally and as a result the disease managed to spread across the world causing a pandemic (Kaushik & Guleria, 2020) . The World Health Organisation declared the coronavirus disease as a pandemic on the 11th of March 2020 while the disease had already spread across many countries in the world due to the fact that the declaration was made 3 months after the first case of Covid-19 was detected (Kaushik & Guleria, 2020).

One of the measurers recommended by the World Health Organisation to curb the spread of the coronavirus disease was social distancing (Bull et al., 2020). As a result of the need to social distance, the concept of work from home became a tool for business to use for business continuity and survival (Richter, 2020).

2.2 Introduction

The concept of teleworking or remote working has been around since the1970s, it was established to create flexibility in the organisations (Stoker et al., 2021). The massive increase in the number and scale of people working from home due to the Covid-19 pandemic is what is new. Leaders had to lead virtual teams which comprised of individuals who are isolated by distance but are working together on the same job via digital platforms and face-to-face interaction is reduced (Malhotra et al., 2007).

In August 2021, the coronavirus pandemic has been with us for about 16 months, therefore, there is little literature available on whether the managers were effective in leading virtual teams due to the recent nature of the pandemic.

2.3 What is leadership

(Nanjundeswaraswamy & Swamy, 2014) describes an effective leader as a person who is able to influence followers in a preferred manner to reach the organisation's goals as a result there are many definitions of leadership written by different authors in literature of what leadership is. (Omolayo, 2007) defines leadership as a social process where the leader influences others to voluntary take part in the organisation's efforts to achieve its goals. According to (Yücel, 2021) leadership is understood to be an instrument in which one has the ability to influences a purpose, and is able to lead the organisation in a way that makes it more unified and coherent.

2.4 The role of leadership during the pandemic

The human impact of the Covid-19 pandemic caused so much anxiety and stress. The leadership teams were under so much pressure due to the fast pace and scale at which the Covid-19 pandemic evolved (Collings et al., 2021).Lockdown restrictions caused disruption in organisational routines with some becoming obsolete overnight. This and many other factors mean that the impact of Covid-19 pandemic is hugely disruptive, complex and causes anxiety due to many uncertainties for leaders (Collings et al., 2021).

Therefore, the role of leadership during the Covid-19 pandemic is to effectively lead their teams do carry out their duties and be productive in order to achieve the set objectives for the organisation and also ensure that they exit this pandemic with the organisation still standing (Stoker et al., 2021). According to (Collings et al., 2021) decision making at strategic and operational levels has been extremely challenging to leaders as they try to resolve conflicts and manage the complex interrelationships that are arose from the Covid-19 pandemic crisis

2.5 What is e-leadership

(Van Wart et al., 2019) describes the concept of e-leadership as being the optimal utilisation and combination of technologies to the traditional ways of communication. According to (Politis, 2014) e-leadership happens in an e-environment context where information technologies facilitates work but the leader is certainly not an IT expert. Therefore, e-leaders know how to get the best benefit from technologies to lead their teams (Contreras et al., 2020). While (Avolio & Kahai, 2003) states that e-leadership cannot be seen as an extension of traditional leadership.

2.6 Why is e-leadership important in the pandemic

In the past few years, e-leadership was refer to as an encounter that is unavoidable by the organisations (Esguerra & Contreras, 2016). While (Avolio & Kahai, 2003) said e-leadership is the “quiet revolution” that transpired to organisations much earlier.

Due to the globalised world immerse in the digital era, being equipped for a remote work set up was of importance for many organisations (Politis, 2014) . Now due to the Covid-19 pandemic and onward, working from home has become critical for the survival of the organisation (Contreras et al., 2020). Thus, making e-leadership a relevant challenge that organisations need to face in order to be successful and sustainable. Therefore, e-leadership has become a trend that is irreversible and will carry on beyond the Covid-19 pandemic (Contreras et al., 2020).

According to (Liu et al., 2020), e-leadership tendency is vital for the speedy development in technology and the implementation thereof during the Covid-19 pandemic cannot be looked at in isolation but also possess a task for organisations of having to embrace

technology, therefore, taking advantage of the opportunity. E-leadership has become the new style of leadership that will turn things around in order for the organisations to succeed in the tech economy (Politis, 2014) .

2.8 Why is effective leadership important in the pandemic?

According to (Brunelle, 2013) when there is effective leadership in an organisation, it creates trust, admiration, loyalty and respect amongst the subordinates for their leaders. The influence a leader has is measured by their capability to motive their followers, by making them aware of what will be the penalties should their tasks not be prosecuted well, and help them create an alignment between personal needs with those of the organisation (Brunelle, 2013). Therefore, organizations need effective leaders who comprehend these complexities (Nanjundeswaraswamy & Swamy, 2014).

The Covid-19 pandemic came as an unprecedented global health and economic crisis (Stoker et al., 2021) that forced many organisations to operate with virtual teams. For a leader to be effective in this crisis, they must be able to make changes on their leadership styles based on the situation they found themselves in (Fred Garcia, 2006).

2.9 Role of leadership styles in virtual teams

Leadership styles have a direct effect on the employee's performance and productivity (Nanjundeswaraswamy & Swamy, 2014). As a result of using leadership styles, the leader encourages the progress of a clear mental demonstration in their followers on the work procedure to be followed and conduct to be embraced (Larsson & Vinberg, 2010).

Due to the Covid-19 pandemic, the global environment is changing rapidly (Kaushik & Guleria, 2020) which resulted in a rapid increase of virtual teams. The literature recommends that a leader's style of leadership is a determining factor of whether the virtual team will succeed (Hambley et al., 2007). Therefore, this gives an thought-provoking approach on the effect of this leadership style in the context of virtual working (Whitford & Moss, 2009)

2.9.1 Behavioural leadership style

(Eddy & VanDerLinden, 2006) defines behavioural style as leadership that looks at how effective leaders behave, instead of how they look up on others.

This style suggests that leaders can learn behaviours from others hence it supports the notion that leaders are not born successful. They learn on their capacity as leaders by viewing the how other successful leaders act (Nawaz & Khan_ PhD, 2016). Therefore, leaders behaviour is an important factor to the follower concerned (Cortellazzo et al., 2019).

According to (Kniffin et al., 2021) a lot of managers are hesitant to implement remote working mostly because they fear that they will lose control of the employees. This is justified by the report that shows that managers of remote working teams tend to show task-oriented leadership more than relation leadership (Madlock, 2012). While (Lautsch et al., 2009) found that when managing teams that are working remotely, task-oriented behaviour is revealed to be ineffective.

2.9.2 Contingency or situational leadership style

According to (Nawaz & Khan_ PhD, 2016) the contingency theory commends that there is no leadership style that can stand on its own because any leadership style used is depended other elements. For example, the leadership qualities the leader may apply depends on the circumstances of the followers or many other variables. Therefore, contingency or situational leadership style one cannot single out one way of doing things right in order to lead because the forces of both internal and external environment require the leader to adapt to that particular situation (Nawaz & Khan_ PhD, 2016).

Any one of the styles might be effective in the right situation. A leader might vary the leadership style depending on circumstances. According to (Yang et al.,2010) suggest that leaders vary the leadership style when the situation turns, using a different leadership style at different phases of the project life cycle. To select the most effective leadership style for various situations requires the ability to assess situations correctly and applying appropriate styles for effective communication (Zulch, 2014).

2.9.3 Conclusion

According to (Konradt & Hoch, 2007) a decent leadership style decreases or even removes the destructive impact of caused by virtual working. By practising an appropriate style , the leader is able to decrease, or even remove, the negative effects of virtual working on the individual's opinion of interpersonal quality (Brunelle, 2013) that might have been compromised. As a result of using leadership styles, the leader encourages the progress of a clear mental demonstration in their followers on the work procedure to be followed and conduct to be embraced (Larsson & Vinberg, 2010).

2.10 Leadership Qualities as tools to measure effective leadership

The objective of this study is to determine whether leadership was effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic by using leadership qualities as a measuring tool. The leadership qualities identified for the study are discussed below.

2.10.1 Delegation

When leaders delegate and make provision for reviews, it enables e-leaders to build and give support to their virtual working employee who may feel isolated (Contreras et al., 2020). There is an expectation that managers will start delegating more responsibilities to their virtual teams due to the effect of remote working (Stoker et al., 2021). The employees are expected to determine and take responsibility for matters such as what time do they start and finish work, where are they going to sit while working, this is due to the fact that employees work from different geographical places (Contreras et al., 2020). Thus, managers need to let go some of their authorities and delegate tasks to their virtual teams (Cortellazzo et al., 2019).

Consequently, it is predicted that due to the enforced virtual working as a result of the Covid-19 pandemic, managers who are adopting the behavioural leadership style will reduce their controlling behaviour by delegating more responsibilities to their virtual teams (Stoker et al., 2021).

The implementation of remote work may force managers to show less direction and control and more delegation (Bao et al., 2020). On the other hand, research into the effects of exogenous shocks such as the Covid-19 pandemic suggests that managers may become more controlling and delegate less (Stoker et al., 2021). According to (Stoker et al., 2021) an increase in delegation is associated with an increase in perceived productivity and effective leadership. In the context of the Covid-19 pandemic crisis, the effectiveness of remote working might be hampered by the fact that it requires changes in leadership behaviours, particularly delegation, are difficult to realize in times of crisis.

Hypothesis 1

$H1_0$: Deligation has a direct positive relationship with effective leadership of virtual teams

$H1_a$: Deligation has a direct negative relationship with effective leadership of virtual teams

2.10.2 e-Communication

(Roman et al., 2019) defines electronic communication as being capable to rely the message effectively thought the use of information and communications technology, by eliminating inaccuracies and unrestrained behaviour that result into high performance. This capability is weighted by the suitable tone used by the leader and giving clear messages to employees via an appropriate communication platform.

Communication has a great effect on effective leadership and the different leadership styles adopted affects the communication process (Luthra & Dahiya, 2015). According to (Jaussi & Dionne, 2003) leaders who are managing their teams remotely rely heavily on explicit communication. Leaders have to communicate and work synchronously and asynchronously via different information and communication technologies platforms such as e-mail, video conferencing and voice calling but technology mediated communication may be less effective in conveying social presence.

Due to the Covid-19 pandemic that enforced working from home for many organisations in South Africa, leaders found themselves having to move from face to face communication to using Information and Communication Technology platforms (Collings et al., 2021). Therefore, the effective use of e-communication by e-leaders is

extremely important because according to (Wojcak et al., 2016) leaders who lack communication may result in unknown situations where employees will be left feeling hopeless. In addition, it is important to uphold high stand of communication by having frequent collaboration with the virtual teams, provide constructive feedback, evade miscommunication and conduct proper observation of the contribution made by each employee (Cortellazzo et al., 2019).

Hypothesis 2

$H2_0$: e-Communication has a direct positive relationship with effective leadership of virtual teams

$H2_a$: e-Communication has a direct negative relationship with effective leadership of virtual teams

2.10.3 Technology savvy

Virtual work gives enormous prospects to organisations, but poses a challenge to leaders that must lead their teams through technology (Contreras et al., 2020). This task suggests that leaders must improve on their technical capabilities in order to be able to the monitor, coordinate and distribute work through the technology platforms (Alfehaid & Mohamed, 2019).

Even though the e-leader doesn't have to be an expect in Information Technology (Esguerra & Contreras, 2016) but in order to implement the leadership skills over the virtual organization, e-leaders will at least have to know how to use the technology that will enable them to deliver their leadership skills (Politis, 2014).

However, (Gurr*, 2004) has described leaders in e-leadership as unique and are able to cope with complexities in the technology facilitated environment. (Gurr*, 2004) further states that e-leaders must have the capability to build a suitable social platform where communication is constant and their interpersonal skills are demonstrated through the use of associated technologies.

According to (Contreras et al., 2020) leaders should be able to promote adequate social interactions by knowing how to use the technological platforms to build responsible teams, inspire change and cultivate trust virtually. However, this requires awareness of

current Information and Communication Technologies, choosing which ICTs the individual and the organization will adopt and technical competence in using the chosen ICTs (Contreras et al., 2020).

Hypothesis 3

$H3_0$: Technology savvy has a direct positive relationship with effective leadership of virtual teams

$H3_a$: Technology savvy has a direct negative relationship with effective leadership of virtual teams

2.11 Conclusion of Literature Review

This study will investigate the research question i.e., was leadership effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic? Using leadership qualities as measuring tool, the three hypothesis that were identified in the literature review on leadership qualities will be used. The hypothesis are as follows:

2.11.1 Hypothesis 1

$H1_0$: Deligation has a direct positive relationship with effective leadership of virtual teams

$H1_a$: Deligation has a direct negative relationship with effective leadership of virtual teams

2.11.2 Hypothesis 2

$H2_0$: e-Communication has a direct positive relationship with effective leadership of virtual teams

$H2_a$: e-Communication has a direct negative relationship with effective leadership of virtual teams

2.11.3 Hypothesis 3

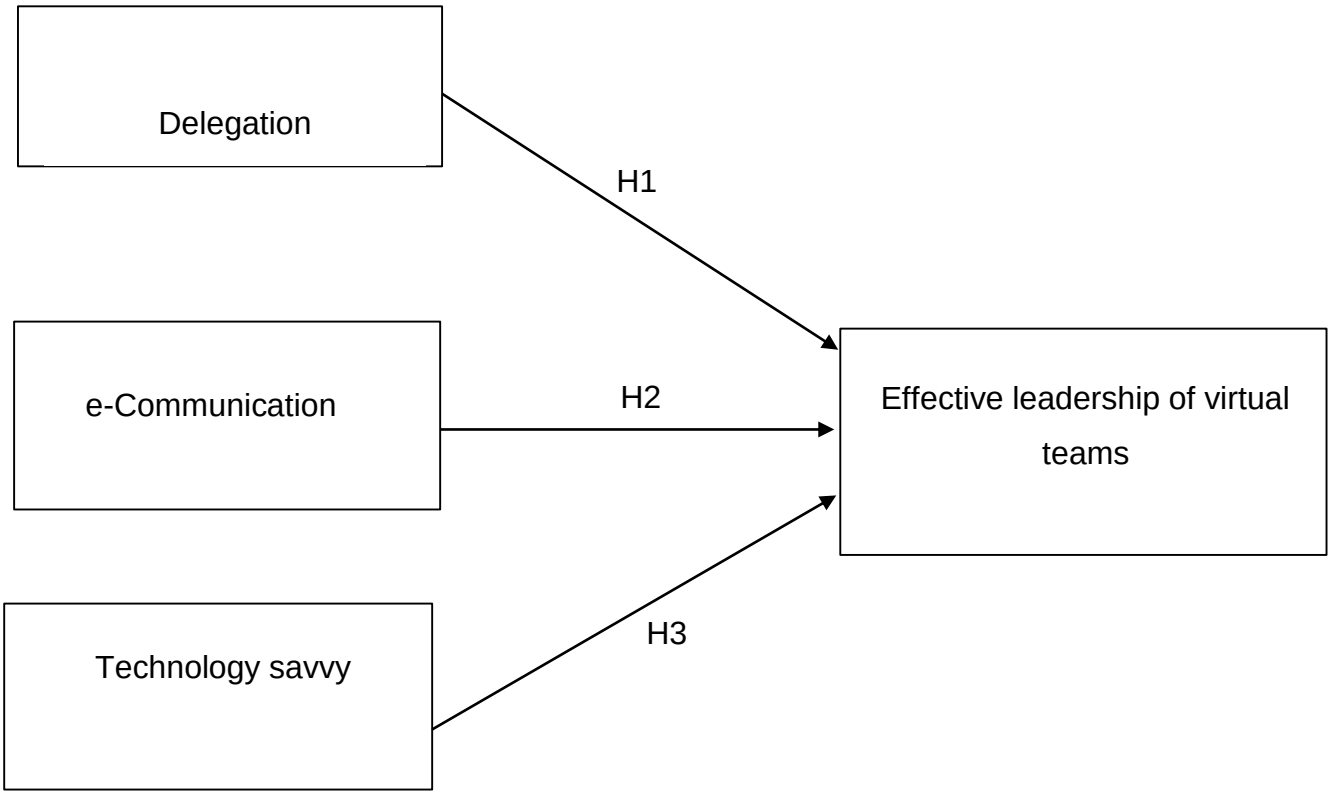
$H3_0$: Technology savvy has a direct positive relationship with effective leadership of virtual teams

H3a: Technology savvy has a direct negative relationship with effective leadership of virtual teams

2.11.4 Conceptual model framework

The proposed conceptual model framework constructed on Figure 1 below shows that leadership effectiveness on virtual teams was determined by three main factors, which were Delegation (DELE), e-Communication (COMM) and Technology Savvy (TS). In this model, leadership effectiveness on virtual teams (EL) was hypothesised to be affected by DELE, COMM and TS.

Figure 1: Conceptual model framework



In conclusion, without taking into account the current enforced work from home set up in many organisations in South Africa, research strongly indicates that virtual working has an effect on the likelihood and the desire for managers to demonstration certain leadership qualities (Stoker et al., 2021). The sudden increase in physical distance has

resulted in managers having to lead teams without any physical contact which requires them to give some control to their virtual teams. There is an expectation that the choice of leadership qualities leader chooses to apply will differ across hierarchical levels of management.

In the past 22 months of the Covid-19 pandemic there has been research on how the enforced move to work from home is affecting organisations across the world but there is not enough research out there to help leaders on how to navigate the sudden virtual teams they now have to lead; therefore, this study will be attempting to close that gap.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Methodology

This study is descriptive and analytical in nature, therefore, the quantitative methodology was used. The utilisation of surveys was adopted for the collection of data and answering of the research questions (Kaushik & Guleria, 2020).

3.2 Research Design

A quantitative survey was constructed as per the questionnaire on Appendix one. The questions asked on the questionnaire were addressing the research objectives i.e. to determine whether leadership was effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic by using leadership qualities as a measuring tool.

3.3 Population and Sample

3.3.1 Population

The population for this study were the organisations in South African that were forced to move to a “work from home” set up to comply to some of the measures to curb the spread of Covid-19 virus. It included all industries in both public and private sectors across all provinces of the country. During the lockdown period in South Africa, these

industries were classified as non-essential, therefore, this study was using the population that work at management level in these industries.

3.3.2 Sample

(Taylor, 2007) explains that convenience sampling is a technique where subjects are selected because of their convenient accessibility and proximity to the researcher. A random sampling was used to select junior, middle and senior managers of organisations in South African with teams that are working remotely as a result of the Covid-19 pandemic to use as a sample for this research. A sample of 210 participates will be sufficient for this study. The sample was extracted from different industries that were deemed non-essential during the lockdown restrictions in South Africa.

3.4 Research instrument

The instrument was the questionnaire created according to the procedure suggested by (Hair et al., 2013) . Thus, the concepts utilised comes from the measures presented in the literature (Brunelle, 2013).

The questionnaire was made available through an online survey platform named Qualtrics all digital devices including mobile telephones. The Qualtrics link that contained the questionnaire was posted on LinkedIn. The survey link comprised of a short summary of what the study is about, it then requested the recipients to participant on the study by completing the survey.

The survey consisted of items relating to communication, delegation, and technology savvy as tools to measure leadership effectiveness on remote teams due to the Covid-19 pandemic. The participants were able to specify the extent to which they agree or disagree with the statements on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

3.5 Data Collection

Data was collected amongst junior, middle and senior managers of organisations in South African with teams were forced to work from home due to the Covid-19 pandemic,

including all industries in both public and private sectors across all provinces of the country. This data collection starts at about 22 months after the South African government requested organisations to consider the work from home set up for all non-essential workers. Therefore, this timeframe gave a reasonable measure of the respondent's reaction and perceptions of effective leadership when teams were working from home.

The study objective was itemized on the e-mail with clear instructions on how the recipient can access the survey should they wish to participate. The participates had 6 weeks in which they can complete the survey. . Participants were required to state whether they were in management positions or not, if yes they will proceed to the next question which will ask if their team had to work virtually due to the Covid-19 pandemic or not, if yes they were then allowed to complete the survey.

3.6 Data Analysis

The purpose of this study was to investigate the effectiveness of leadership when leading teams over digital platforms when they were forced to work from home due to the Covid-19 pandemic in South African organisations context. The leadership qualities that were recognised from the literature review will be used as tools to measure the effectiveness of leadership. To achieve this objective, data was collected from junior, middle and senior managers of organisations in South African with teams that were working virtually due to the Covid-19 pandemic and was thematically analysed by independent variables (Braun & Clarke, 2006).

This study used two statistical software tools to analyse the data. These statistical software tools are called Statistical Package for Social Sciences (SPSS) which was used to analyse the preliminary data and the Analysis Moment of Structures Software (AMOS) for Structural Equation Modelling (SEM) was used to measure the model analysis and test the proposed hypothesized model.

Additionally, SPSS was used to perform descriptive statistics for example frequencies, percentages, mean values and standard deviations (Mishra et al., 2019). Each variable regarding the demographic profile of the respondents was analysing independently in

order to get an understanding of the primary data. Furthermore, Exploratory Factor Analysis (EFA) was used to analyse the variable in the proposed research model into smaller number of factors (Thompson, 2004). Thereafter, Confirmatory Factor Analysis (CFA) was used to test discriminant validity of the factors loadings to establish any correlations (Thompson, 2004).

3.7 Reliability and validity

Validity describes exactly how well the collected data covers the actual area that is being investigated of (Sinkovics et al., 2005). According to (Taherdoost, 2016) validity is a "measure of what is intended to be measured". Therefore, to enforce the overall validity of this study, the research questions only stipulated matters that were relevant to the research topic.

The measurement model was tested for internal reliability, convergent validity and discriminant validity. The internal reliability was evaluated using Cronbach's alpha which needs a value of at least 0.70 for acceptable internal consistency (Hair et al., 2013).

3.8 Limitations of the Study

- There is not a lot of research articles on work from home enforced by Covid-19 pandemic since the topic is still fairly new
- The research results will be limited to the 22 months' experience of the pandemic
- Only respondents that were in management positions were allowed to participate in this study

3.9 Ethical Considerations

An ethical issue is concerned with whether the behaviour conforms to a code or set of principles (Adams et al., 2001). This study took into consideration the following:

The researcher clarified ethical matters related to the research prior to commencement of the research and informed the respondent that they can withdraw their participation any time while the research is not concluded.

Confidentiality of the participants was assured. Therefore, instead of using the names of the participants, numbers were used to identified each participant and that ensured that the data is anonymous.

The information gained during the survey from the participants was treated strictly confidential. In this way the participant's right to privacy was observed In order to achieve this, the data received from the participants was presented in a manner where other people cannot easily identify how some or particular participant actually responded to certain questions .

The participants were assured that they are free to discontinue their participation at any time without being required to offer an explanation. When a participant decided not to continue participating, they were allowed to do so. In addition, under no circumstances were the participants put at risk whether physical or psychological.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

An online survey was conducted to evaluate whether leadership effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic in South Africa organisations. Out of the 307 respondents that participated on the online survey, only 207 were in management positions and were forced to work from home due to the Covid-19 pandemic.

The respondents were required to provide some demographic information about themselves, thereafter they were asked to respond to questions in five-point Likert scales (ranging from 1 strongly disagree to 5 strongly agree) regarding the effectiveness of leadership on virtual teams using leadership qualities identified in in the literature review. The results presented in this section are according to the literature review and hypotheses identified in Chapter 2.

4.2 Demographics

The sample of the study as indicated in Chapter 3 were individuals that are on management level and their teams were forced to work from home due to the Covid-19 pandemic. Therefore, the first two question where to ensure the respondents are the correct sample fit.

Table 1: Are you in a management position?

Source: Primary data

		Frequency	Percent	Cumulative Percent
Respondents	No	70	22.8	22.8
	Yes	237	77.2	100.0
	Total	**307**	**100.0**	

As shown on Table 1 above, a total of 307 respondents participated on the survey. This was the first question that identified whether the respondent met the first requirement to be eligible to participate on this study. Therefore, only 237 of the respondents are in management positions and eligible to proceed to the next question. 70 were not in management positions.

The next question was as follows:

Table 2: Was your team forced to work from home due to the Covid-19 pandemic?

Source: Primary data

		Frequency	Percent	Cumulative Percent
Valid	No	27	11.4	11.4
	Yes	210	88.6	100.0
	Total	**237**	**100.0**	

From Table 2 above, the respondents were narrowed down further by posing the question “Was your team forced to work from home during Covid-19 pandemic”. Out of the 237, 210 participants responded yes and 27 responded no.

Therefore, there were only 210 respondents that met both requirements and were eligible to participate on this study. This number was enough to proceed with the data analysis for the study.

Figure 2: Please select your age category

Source: Primary data

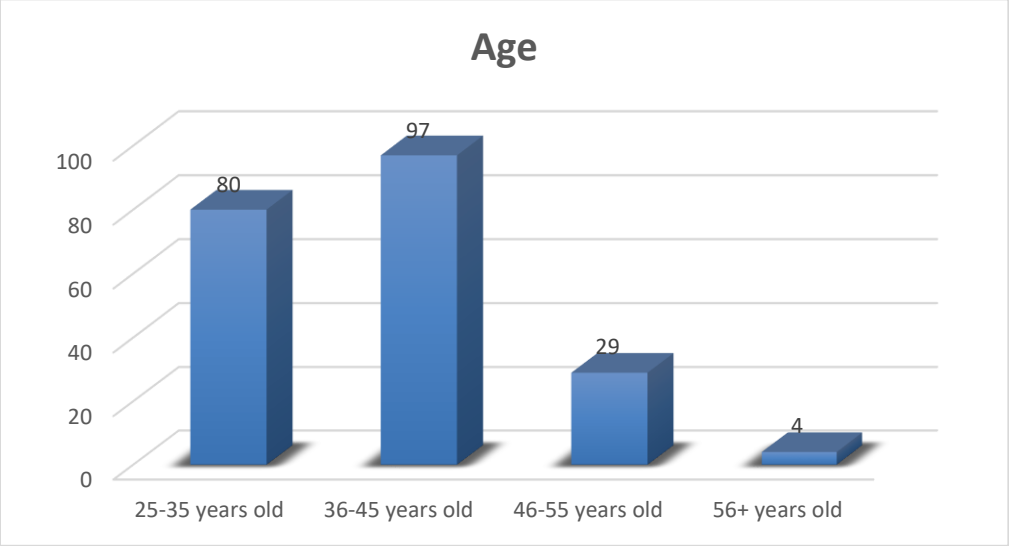


Figure 2 above reveals that out of the 210 participants, 80 (38.1%) were between the ages of 25 to 35 years old, 97 (46.2%) were between the ages of 36 to 45 years old, 29 (13.8%) aged between 46 to 55 years old and 4 (1.9%) were 56 years old and above.

Figure 3: Please select your gender

Source: Primary data

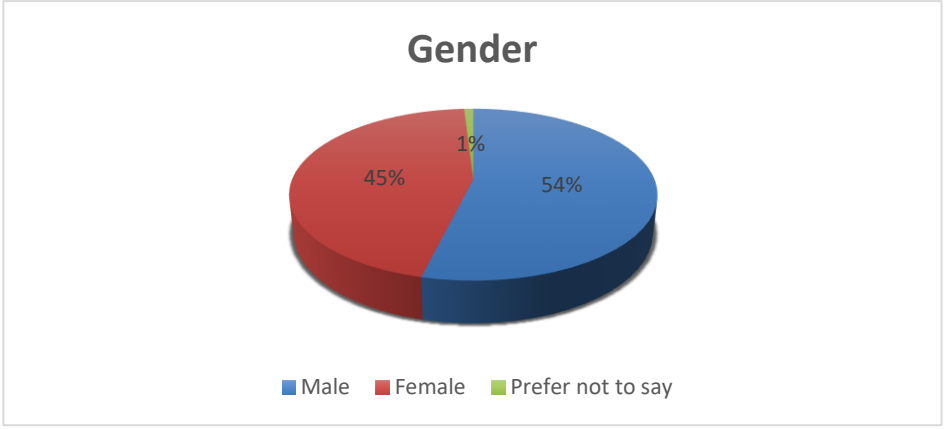


Figure 3 above shows that there were 113 (53.8%) males, 95 (45.2%) females and 2 (1.0%) individuals that preferred not to state their gender that participated on the study.

Figure 4: Please select your highest level of education

Source: Primary data

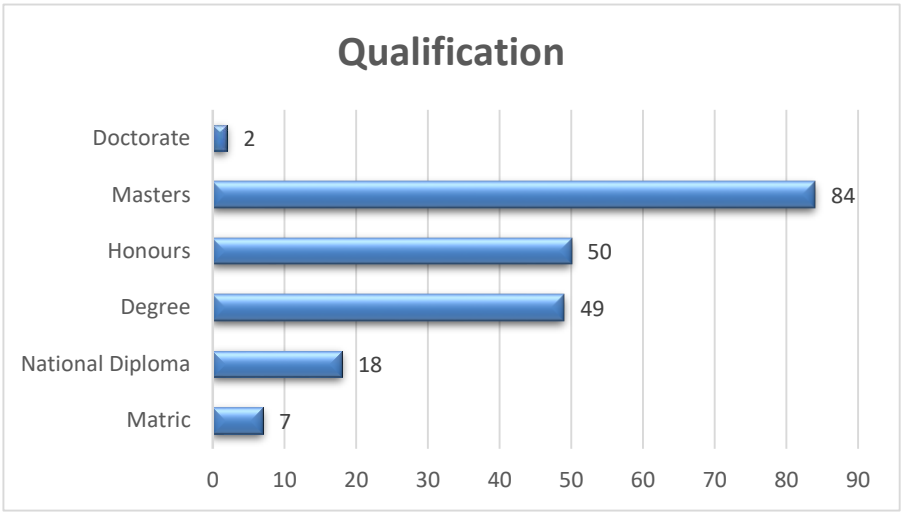


Figure 4 above reveals that out of the 210 participants, 2 (1.0%) had doctorates, 84 (40.0%) had masters, 50 (23.8%) had honours, 49 (23.3%) had degrees, 18 had national diplomas and 7 (3.3%) had matric only as a qualification.

Figure 5: Please select your management level

Source: Primary data

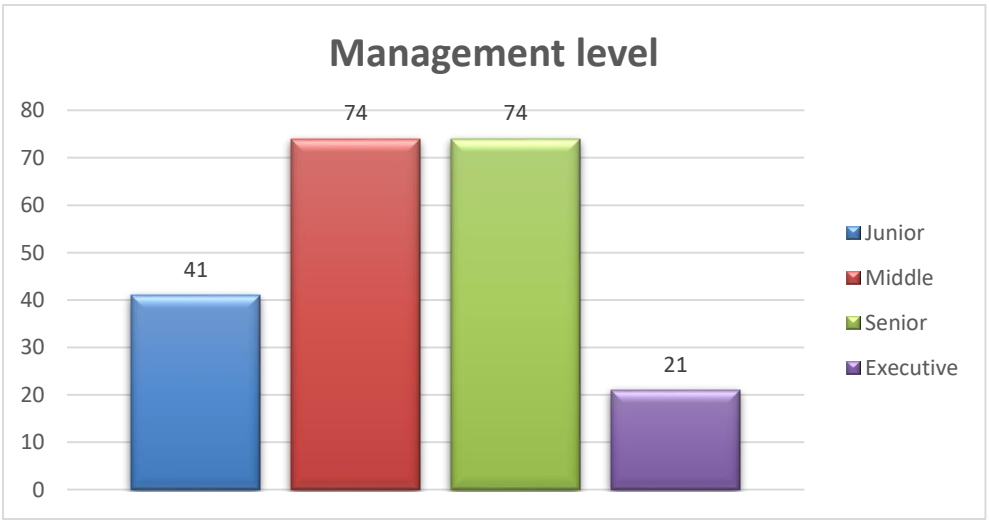


Figure 5 above reveals that out of the 210 participants, 14 (19.5%) were in junior management, 74 (35.2%) were in middle management, 74 (35.2%) were in senior management and 21 (10.1%) were in executive management level.

Table 3: Please select your industry

Source: Primary data

Industry	Frequency	Percent
IT & Telecommunications	19	9.05%
Banking, Finance, Insurance & Stockbroking	35	16.67%
Engineering, Technical, Production & Manufacturing	19	9.05%
Sales & Purchasing	1	0.48%
Accounting, Auditing	4	1.90%
FMCG, Retail, Wholesale & Supply Chain	8	3.81%
Administration, Office Support & Services	30	14.29%
Human Resources & Recruitment	6	2.86%
Transport, Logistics & Freight	7	3.33%
Health, Fitness, Medical & Optometry	8	3.81%
General Management	5	2.38%
Media, Advertising, PR, Publishing & Marketing	6	2.86%
Construction, Design, Architecture & Property	8	3.81%
Legal	1	0.48%
Mining	17	8.10%
Agriculture, Forestry, Environmental & Fishing	1	0.48%
Education & Training	11	5.24%
SHEQ & Security Work	1	0.48%
Hospitality, Hotel, Catering, Tourism & Travel	1	0.48%
R&D, Science & Scientific Research	1	0.48%
Chemical , Petrochemical, Oil & Gas	5	2.38%
Government & NGO	12	5.71%
Pharmaceutical	4	1.90%
Total	**210**	**100.00%**

As mentioned in Chapter 3, the leaders that were forced to lead their remote teams on digital platforms worked in different industries in South Africa. Therefore, Table 3 above reveals that the 210 respondents that participated in the study worked in 23 different industries.

4.3 Descriptive statistics on a Likert scale

Hypothesis 1 Results

Hypothesis one was:

$H1_0$: Deligation has a direct positive relationship with effective leadership of virtual teams

$H1_a$: Deligation has a direct negative relationship with effective leadership of virtual teams

Participates answered the following questions about deligation as a leadership quality that can influence leadeship effectiveness when leadership is conducted over digital platforms due to Covid-19 pandemic.

Table 4: Level of Expertise Measurement Scale for Delegation

Source: Primary data

Questions	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Since many teams were moved to remote working due to the Covid-19 pandemic, leaders have been delegating more responsibilities to their teams (DELE1)	6.2%	16.7%	17.6%	34.8%	24.8%
A leader gives their team the responsibility to choose when they want to start and finish work, and plan how they will execute their tasks as	5.7%	14.3%	8.1%	33.3%	38.6%

long as they meet the deadlines (DELE2)					
It is vital to delegate work to the virtual team without worrying that the work will get done within the set deadlines (DELE3)	11.4%	15.7%	7.6%	36.2%	29.0%
Delegating tasks to a team working virtually increases staff moral	4.3%	11.0%	22.9%	33.3%	28.6%
Delegating tasks is crucial when leading virtual teams (DELE4)	3.3%	2.9%	11.4%	31.4%	51.0%

The following were the highlights of table 4 above. It was observed that a high percentage of leaders found that there was an increase in 29.0% of the leaders found it was vital to delegate work to their visual teams without worrying that the work will get done by the set deadline of which 36% of the leaders somewhat agreed, 7.6% neither agree nor disagree, 15.7% somewhat disagreed and 11.4% strongly disagreed. The last observation was the importance of delegating tasks when leading virtual teams, of which 51.0% of the leaders strongly agreed, 31.4% somewhat agreed, 11.4% neither agree nor disagreed, 2.9% somewhat disagreed and 3.3% strongly disagreed.

Looking at the age group of the respondents on Figure 1 above, there are 130 participants who are 36 years old and above. Therefore, this age group is expected to find it easy to show less control and delegate more work to the virtual teams that were enforced by the Covid-19 pandemic.

Hypothesis 2 Results

Hypothesis two was:

$H2_0$: e-Communication has a direct positive relationship with effective leadership of virtual teams

$H2_a$: e-Communication has a direct negative relationship with effective leadership of virtual teams

Participates answered the following questions about e-Communication as a leadership quality that can influence leadeship effectiveness when leadership is conducted over digital platforms due to Covid-19 pandemic.

Table 5: Level of Expertise Measurement Scale for e-Communication

Source: Primary data

Questions	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Digital communication platforms are vital for effective communication when leading virtual teams (COMM1)	12.9%	1.0%	0.5%	15.2%	70.5%
As a result of effective digital communication to my virtual team, the organization performed well (COMM2)	4.8%	5.2%	8.6%	41.0%	40.5%
Leaders use the digital platforms available to them to communicate effectively with their virtual teams (COMM3)	5.7%	6.2%	4.3%	32.4%	51.4%
There has been improvement with communication to my team	3.8%	15.2%	18.6%	36.2%	26.2%

ever since they have been working remotely (COMM4)					
Effective communication via digital platforms is crucial when leading virtual teams (COMM5)	6.7%	1.4%	1.9%	19.0%	71.0%

The following were the highlights of table 5 above. The leaders found that effective communication is vital on digital platforms, where 70.5% strongly agreed, 15.2% somewhat agreed, 0.5% neither agreed nor disagreed and a small percentage of 1% and 12.9% somewhat disagreed. It was observed that a higher percentage of leaders found that effective communication is crucial when leading virtual teams. This is reflected by a total of 90.0%, where 71% strongly agreed and 19% somewhat agreed. Of the remaining 10%,1.9% of these leaders neither agreed nor disagreed, 1.4% somewhat disagreed and 6.7% strongly disagreed. Out of the 210 participants, 95 (45.3%) of them in senior and executive management levels (see Figure 4 above) which suggests that leaders in these management levels understand and appreciate the importance of effective communication on digital platforms when leading virtual teams that were enforced by the Covid-19 pandemic.

Hypothesis 3 Results

Hypothesis three was:

$H3_0$: Technology savvy has a direct positive relationship with effective leadership of virtual teams.

$H3_a$: Technology savvy has a direct negative relationship with effective leadership of virtual teams.

Participates answered the following questions about technology savvy as a leadership quality that can influence leadeship effectiveness when leadership is conducted over digital platforms due to Covid-19 pandemic.

Table 6: Level of Expertise Measurement Scale for Technology Savvy

Source: Primary data

Questions	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
You do not have to be an expert in information technology in order to lead virtual teams successfully (TS1)	4.3%	5.2%	5.2%	33.8%	51.4%
You can lead virtual teams successfully with limited knowledge to information technology platforms (TS2)	3.8%	12.9%	6.7%	50.5%	26.2%
It was easy to transform from leading the team face to face, to leading them over a digital platform when the team was forced to work remotely (TS3)	9.0%	31.4%	11.9%	29.5%	18.1%
It is easy to navigate the different Information and Communications Technology platforms to get the best out of a virtual team (TS4)	2.4%	18.6%	11.9%	44.8%	22.4%

The following were the highlights of table 6 above. It was found that 54.4% of the leaders strongly agreed that you do not have to be an expert in information technology in order to lead virtual teams successfully, 33.8% somewhat agreed while 5.2% neither agree nor disagree, another 5.2% somewhat disagreed and only 4.3% strongly disagreed. Furthermore, 26.2% of the leaders strongly agree that they can lead a team successfully with limited knowledge of information technology platforms, 50.5% somewhat agreed while 6.7% neither agreed nor disagreed, 12.9% somewhat disagreed and only 3.8% strongly disagreed. Looking at the fact that 136 (64.8%) of the respondents had

postgraduate qualifications (see Figure 3 above), these leaders are expected to know how to navigate digital platforms in a remote working set up.

4.4 Descriptive Statistics of Scale Items

Descriptive statistics of scale items was carried out to on SPSS to measure the central tendency and variability. Measures that are included in central tendency are mean, median and mode, while the measures that are included on variability are standard deviation, minimum and maximum variables

Table 7: Descriptive Statistics of Scale Items

Source: Primary data

Variables	Min	Max	Mean	Std. Deviation
Comm1	1	5	4.3	1.351
Comm2	1	5	4.07	1.062
Comm3	1	5	4.18	1.138
Comm4	1	5	3.66	1.135
Comm5	1	5	4.46	1.085
Dele1	1	5	3.55	1.206
Dele2	1	5	3.85	1.24
Dele3	1	5	3.56	1.355
Dele4	1	5	3.71	1.122
Dele5	1	5	4.24	0.993
TS1	1	5	4.23	1.056
TS2	1	5	3.82	1.077
TS3	1	5	3.16	1.295
TS4	1	5	3.66	1.091
EL1	1	5	4.41	0.946
EL2	1	5	4.4	0.902
EL3	1	5	4.5	0.843
EL4	1	5	4.02	1.082
EL5	1	5	3.07	1.174
EL6	1	5	4.14	0.88

Table 7 above shows the minimum and maximum numbers of the scales. It was observed that the highest mean of all the constructs was 4.46 and lowest was 3.07.

4.5 Exploratory factor analysis

SPSS was used to perform exploratory factor analysis on the initial stages of data analysis in order to get a summary of information from the variables in the suggested research model into a reduced number of factors.

Table 8: Factor-weight-matrix

Source: Primary data

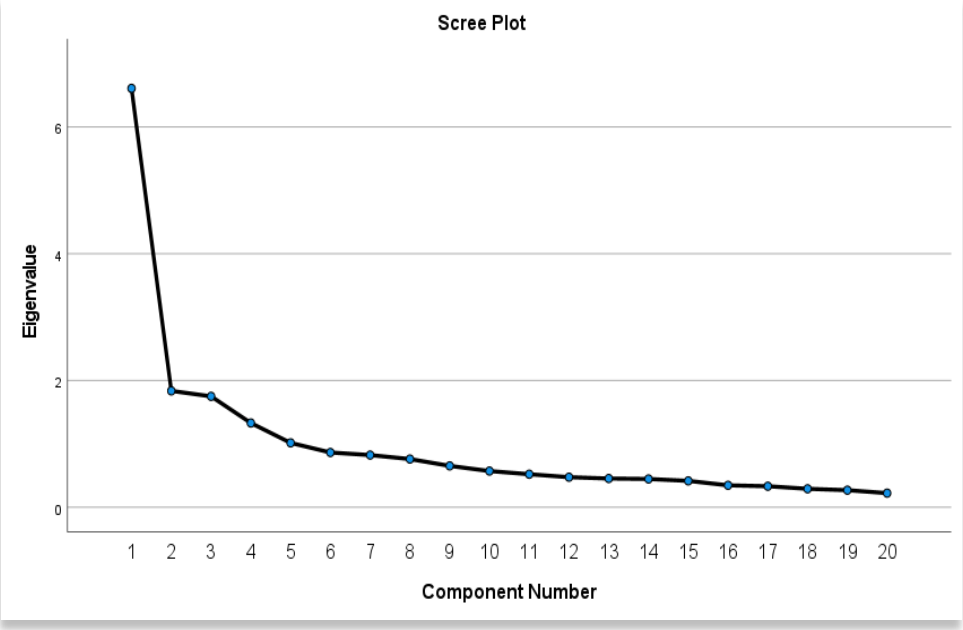
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.609	33.047	33.047	6.609	33.047	33.047	3.33	16.65	16.65
2	1.837	9.183	42.23	1.837	9.183	42.23	2.91	14.548	31.198
3	1.751	8.753	50.983	1.751	8.753	50.983	2.657	13.286	44.484
4	1.33	6.651	57.634	1.33	6.651	57.634	1.98	9.898	54.382

Table 8 above reveals results of factors extraction based on the eigenvalues more than 1 criterion, which resulted in identification of three factors. The first factor explained 33.047% of the total variance and when taking into account the other two factors the variance percentage accumulate to 50.983%. Which means that all three factors combined represents 50.983% of the constructs in the questionnaire.

Figure 6 below shows the scree plot test used to confirm the maximum number of factors extracted in this study where eigenvalues are more than one criterion. The slop of the scree plot shows that there are the four components that can be extracted in the study.

Figure 6: Scree Plot

Source: Primary data



The rotated component matrix in table 8 demonstrate how the eigenvalues were grouped together into components.

Table 9: Rotated Component Matrix

Source: Primary data

Variables	Components			
	1	2	3	4
Digital communication platforms are vital for effective communication when leading virtual teams (COMM1)	.797			
As a result of effective digital communication to my virtual team, the organisation performed well (COMM2)	.809			

Leaders use the digital platforms available to them to communicate effectively with their virtual teams (COMM3)	.778			
There has been improvement with communication to my team ever since they have been working remotely (COMM4)	.559	.453		
Effective communication via digital platforms is crucial when leading virtual teams (COMM5)	.734			
Since many teams were moved to remote working due to the Covid-19 pandemic, leaders have been delegating more responsibilities to their teams (DELE1)			.800	
A leader gives their team the responsibility to choose when they want to start and finish work, and plan how they will execute their tasks as long as they meet the deadlines (DELE2)			.470	
It is vital to delegate work to the virtual team without worrying that the work will get done within the set deadlines (DELE3)			.575	
Delegating tasks to a team working virtually increases staff moral (DELE4)			.555	
Delegating tasks is crucial when leading virtual teams (DELE5)			.693	
You do not have to be an expert in information technology in order to lead virtual teams successfully (TS1)				.785
You can lead virtual teams successfully with limited knowledge to information technology platforms (TS2)				.788
It was easy to transform from leading the team face to face, to leading them over a digital platform when the team was forced to work remotely (TS3)			.743	

It is easy to navigate the different Information and Communications Technology platforms to get the best out of a virtual team (TS4)			.646	
It is crucial to adopt to electronic platforms when leading virtual teams in order to be effective as a leader (EL1)		.527	.488	
For leadership to be effective on digital platform, it is essential that the organisation's strategic objectives are met (EL2)		.803		
For a leader to be effective on digital platform, it is important to ensure high staff moral (EL3)		.666		
For a leader to be effective on digital platform, it is important for the organisation to meet its financial targets (EL4)		.753		
A leader is more effective when leading virtual teams (EL5)		.412		
As a result of effective leadership on digital platforms, a team's performance could be improved (EL6)		.504		

Table 9 above represents the questions form the questionnaire and the loadings per question. The results of this the exploratory factor analysis revealed that there was no difference between the factor structure of the bisected and complete data which means that the results are validated.

4.6 Construct reliability

Reliability of research instruments was considered by utilising reliability analysis of the questionnaire. Reliability analysis was completed to all the questions under the four variables of this study using Cronbach Alpha Coefficient. The results of the analysis are indicated in the table 9 below.

Table 10: Construct reliability

Source: Primary data

Variable	Cronbach's Alpha
Communication	.853
Delegation	.711
Technology savvy	.703
Effective leadership	.767

From table above, all the reliability statistics measured almost well but below above the 0.7 minimum threshold.

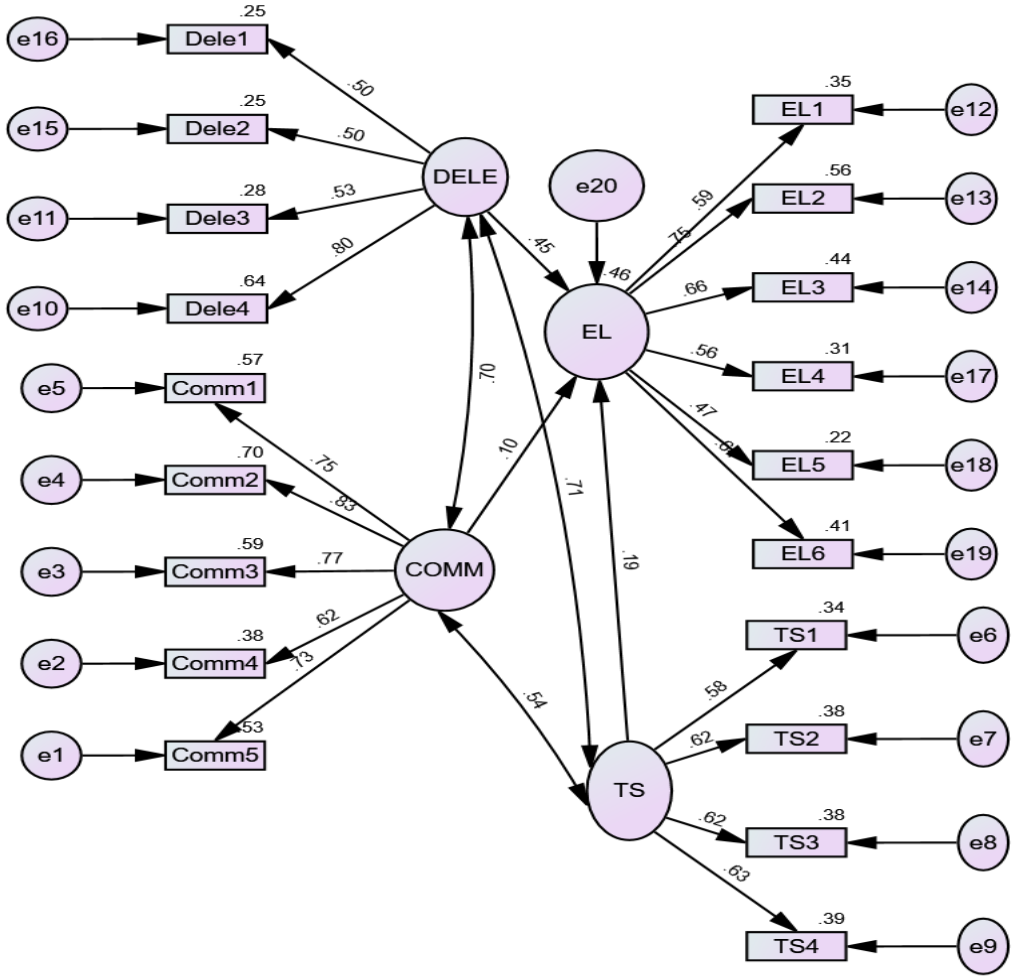
4.7 Confirmatory Factor Analysis

Discriminant Validity

Based on the objective on this study, which is to determine whether leadership was effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic by using leadership qualities as a measuring tool. The leadership qualities identified in literature review in Chapter 2 were Delegation, e-Communication and Technology savvy. Therefore, the confirmatory factor analysis was appropriate for this study.

Figure 7: Hypothesized CFA model

Source: Primary data



Note: DELE, COMM, TS and EL are acronyms of Delegation, e-Communication, Technology savvy and Effective Leadership. DELE, COMM and TS are independent variables within its framework as each of them are assumed to predict effective leadership. Similarly, EL is the dependent variable in the model as it is predicted by independent variables

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From Figure 7 above, DELE, COMM, TS and EL are connected to one another by straight single and double-headed arrows. The straight single arrow initiates from the independent variable and points toward the dependent variable. For example, the straight single-headed arrow from DELE to EL is representing the hypothesis that

Delegation (DELE) predicts Effective Leadership (EL). The arrows that are double-headed connects two variables are representing correlation between variables. For example, the double-headed curved arrow that connects DELE to COMM represent correlations between the variables but these variables cannot predict the hypotheses of the other.

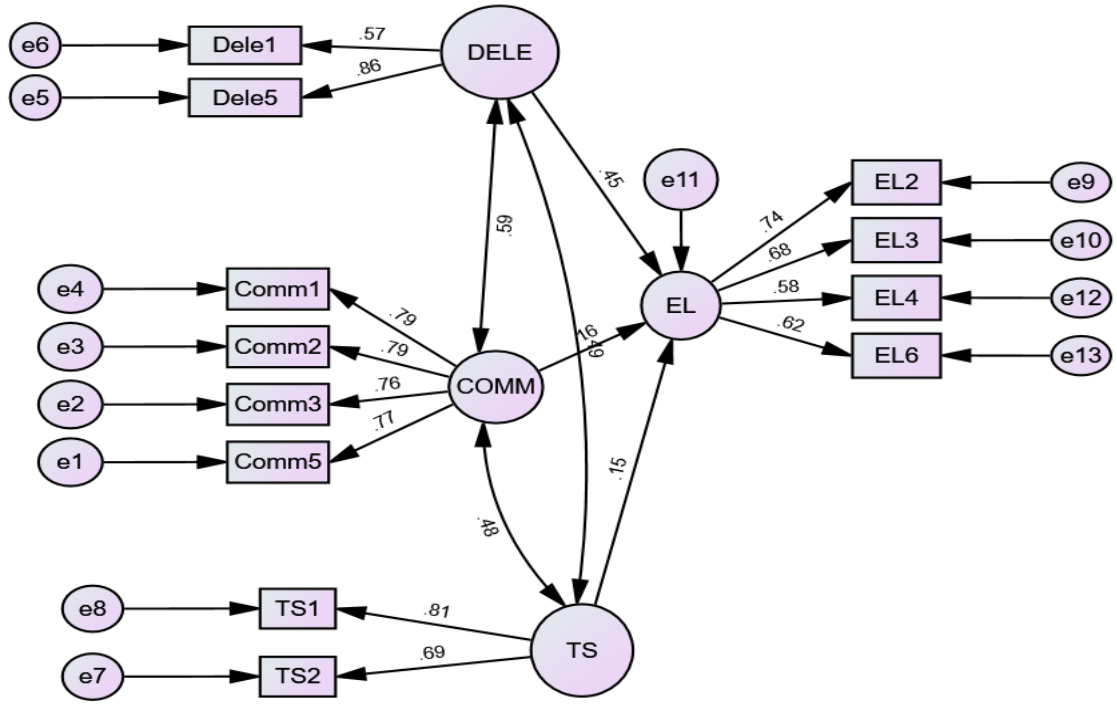
The confirmatory factor analysis (CFA) was performed on the measurement model to assess the discriminant validity. The goodness of fit criteria indices was utilised to measure discriminant validity. During the process of factor analysis, there were factors that weighted lower than 0.5, these factors were then excluded.

CFA tested the four-factor model that was identified in the in Chapter 2. The model ran numerous times on the measurement in order to get to the acceptable goodness of fit. As a result, some of the factors that had low standardized estimates were removed. These factors are as follows: Comm4, Dele2, Dele3, Dele4, TS3, TS4, EL1 and EL5. Thereafter the model fit was improved and it produced a highly acceptable fit.

The new CFA model after deleting factors is presented on Figure 7 below. On this new model it was observed that the correlation between delegation (DELE) and e-Communication (COMM) was 0.59. The correlation between e-Communication (COMM) and technology savvy (TS) was 0.48. The correlation between technology savvy (TS) and delegation (DELE) was 0.49. All of these values are revealing that there was a positive relationship between the variables. Therefore, the correlation between delegation (DELE) and e-Communication (COMM) was the biggest one amongst all three with a value of 0.59. Followed by technology savvy (TS) and delegation (DELE) which was 0.49 and the last one was 0.48 which is the correlation between e-Communication (COMM) and technology savvy (TS).

Figure 8: Final CFA model

Source: Primary data



Note: DELE, COMM, TS and EL are acronyms of Delegation, e-Communication, Technology Savvy and Effective Leadership. DELE, COMM and TS are independent variables within its framework as each of them are assumed to predict effective leadership. Similarly, EL is the dependent variable in the model as it is predicted by independent variables.

Additionally, it was observed that the standard regression weight between delegation (DELE) and Effective Leadership (EL) was 0.45. The standard regression weight

between technology savvy (TS) and Effective Leadership (EL) was 0.15. The standard regression weight between e-Communication (COMM) and Effective Leadership (EL) was 0.16. All of these values are revealing that there is a positive relationship between the exogenous and endogenous variables. Therefore, the predictive model between delegation (DELE) and Effective Leadership (EL) is the highest with 0.45, followed by e-Communication (COMM) and Effective Leadership (EL) at 0.16 and lastly technology savvy (TS) and Effective Leadership (EL) at 0.15.

4.8 Structural Equation Model Analysis for the Conceptual Model

The Conceptual Model developed earlier was from the literature and is explained in Chapter 2. The estimated structural equation model for the Conceptual Model is presented in Figure 8 above. The measures of fit for the model are listed on the table and table below.

Table 11: Chi-square Model

Source: Primary data

Model	Nonparametric tests (NPAR)	Chi-square (CMIN)	degrees of freedom (DF)	Probability level (P)	Chi-square/ degrees of freedom (DF)
Default model	30	93.849	48	0	1.955
Saturated model	78	0	0		
Independence model	12	945.048	66	0	14.319

From Table 11 above Chi-square equals to 93.849, degrees of freedom equals to 48 and the probability level equals to .000. Chi-square divided by degrees of freedom should range between 2 to 2.5, in this model CMIN/DF is 1.955 which equals to 2 when rounded off. Therefore, this requirement has been satisfied.

Table 12: Model Fit Baseline Comparisons

Source: Primary data

Default model	Threshold	Conceptual Model
Goodness-of-fit statistic (GFI)	Greater than .90	.935
Normed Fit Index (TLI)	Greater than .90	.928
Comparative fit index (CFI)	Greater than .90	.948
Root mean square error of approximation (RMSEA)	Less than .08	.068

From Table 12 above, the measures of model fit for GFI was .935, TLI .928 and CFI .948 of which all three of the measures were above the recommended threshold of 0.90. RMSEA was .68 which lies contentedly within the maximum threshold of .08.

Consideration of the significance of the paths in the structural model indicates that all the estimated coefficients associated with the construct are statistically significant. For the measures, the null hypothesis that the true value of the coefficient is zero is rejected at the .001 level of significance.

4.9 Correlation

The bivariate Pearson's correlation was used to assess the linearity in data. This is an important part of the initial analysis to know the level of correlation in data and to figure out if there is any deviancy from the linearity that might affect the correlations. Table reveals that all latent factors were positively and significantly correlated with each other.

Table 13: Pearson's Bivariate Correlations between latent factors

Source: Primary data

	COMM	**DELE**	**TS**	**EL**
COMM	1	.459**	.381**	.368**
DELE	.459**	1	.299**	.441**
TS	.381**	.299**	1	.314**
EL	.368**	.441**	.314**	1

** Correlation is significant at the 0.01 level (2-tailed)

4.10 Coefficients

It is observed from Table 14 below that all measures associated with the constructs are statistically significant. For each measure, the null hypothesis that the true value of the coefficient is zero is rejected at the .001 level of significance. All the measures for Delegation, e-Communication and technology savvy acceptable coefficient of 0.441, 0.368 and 0.314 respectively.

Table 14: Basics of the Analysis of the Structural Model

Source: Primary data

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model	B	Std. Error	Beta		
DELE	0.650	0.092	0.441	7.083	0.000
COMM	0.266	0.046	0.368	5.716	0.000
TS	0.468	0.098	0.314	4.446	0.000

4.11 Test of Hypotheses

The constructs used in the proposed theoretical model were classified in two main groups: exogenous and endogenous constructs. Exogenous constructs were

Delegation, e-Communication and technology savvy while endogenous construct was effective leadership on virtual teams.

Table 15: Hypothesis testing

Source: Primary data

Hypothesis	Regression weights	Beta Coefficient	R Square	t-value	p-value	Hypothesis supported
H1 – $H1_0$ $H1_a$	DELE ⟶ EL	0.441	0.194	7.083	0.000	Yes
H2 – $H2_0$ $H2_a$	COMM ⟶ EL	0.368	0.136	5.716	0.000	Yes
H3 – $H3_0$ $H3_a$	TS ⟶ EL	0.314	0.099	4.446	0.000	Yes

Table 15 above shows the results of the hypothesis testing. These result reveal that three hypotheses i.e. $H1_0$, $H2_0$ and $H3_0$ were positive and statistically significant. The results suggest that standardized estimates for these hypotheses i.e. (β = 0.441, 0368, 0.314) respectively indicate statistical significance and thus showing support for these hypotheses. While the other three hypotheses i.e. H1a, H2a and H3a had standardized estimates (β =00.92, 0.046, 0.098, respectively) that were found to be statistically not significant. Hence, these hypotheses were rejected.

There is a positive direct relationship between delegation and effective leadership of virtual teams

As shown on Table 15 above, the Beta Coefficient of $H1_0$ was 0.44. This supports a significant relationship between delegation and effective leadership of virtual teams.

The p-value shows a 0.00 level of confidence and this affirms that the hypothesis is significant and supported

There is a positive direct relationship between e-Communication and effective leadership of virtual teams

As shown on Table 15 above, the Beta Coefficient of $H2_0$ was 0.368. This supports a positive relationship between e-Communication and effective leadership of virtual teams**.** The p-value shows a 0.00 level of confidence and this affirms that the hypothesis is supported.

There is a positive direct relationship between technology savvy and effective leadership of virtual teams

As shown on Table 15 above, the Beta Coefficient of $H3_0$ was 0.314. This supports a positive relationship between technology savvy and effective leadership of virtual teams**.** The p-value shows a 0.01 level of confidence which then accepts the hypothesis is significant and supported.

4.12 Conclusion

This chapter presented the results of this study. EFA using SPSS version 26.0 was used to perform Factor-weight-matrix and Rotated Component matrix. Structural equation modelling using AMOS version 26.0 was used to test the measurement and structural model of this study. The results suggested that some variables be deleted. The item deleted were Comm4, Dele2, Dele3, Dele4, TS3, TS4, EL1 and EL5 from e-Communication (COMM), Delegation (DELE), technology savvy (CDC) and Effective leadership constructs.

Confirmatory factor analysis (CFA) was applied to examine the fit of measurement model. The measures of model fit for GFI was .935, TLI .928 and CFI .948 of which all three of the measures were above the recommended threshold of 0.90. RMSEA was .68 which lies contentedly within the maximum threshold of .08.

Thereafter, structural model was assessed to test the hypothesized relationships between latent constructs. Coefficients were examined to check whether the hypothesized structural model fitted the data and to test the hypotheses. The indices indicated that the hypothesized structural model provided the good fit to the data. However, three hypotheses i.e. H1a, H2a, and H3a out of six were statistically not significant and were rejected.

CHAPTER 5: DISCUSSION OF RESULTS

5.1 Introduction

The purpose of this study is to investigate the effectiveness of leadership when leading teams over digital platforms when they were forced to work from home due to the Covid-19 pandemic in South African organisations context. The objective of the research was to determine whether leadership was effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic by using leadership qualities as a measuring tool. Therefore, in line with the objective a hypothesized model of the elements that impact leadership effectiveness on virtual teams during the Covid-19 pandemic in South Africa was developed, examined and validated by discovering relationships between the studied elements.

This chapter will discuss the results and findings of the research conducted on leadership effectiveness on virtual teams during the covid-19 pandemic using the leadership qualities identified in literature review in Chapter 2 i.e. delegation, e-communication and technology savvy as measuring tools together with the six hypothesis that were tested. These results and findings are based on the analysis of the information gathered from the 210 responded who participated on the online survey.

5.2 Demographic information

The demographic information revealed that the highest qualification of the majority of the respondents was a master’s degree. Majority of these leader held junior and senior

leadership positions. Out of the 23 industries that are represented in the study, majority of the respondents worked in 35 Banking, Finance, Insurance & Stockbroking industry. In addition, about 54 per cent of participants in this survey were male and the majority of the participants were between the ages of 36 and 45 years.

5.3 Discussion regarding hypothesis 1

The findings of the descriptive analysis showed that the mean scores for the 5 measuring items were scaled between 3.55 and 4.24 (see Table 6). These mean scores suggest that there is a relationship between delegation and effective leadership of virtual teams due to the covid-19 pandemic. Item DELE4 which stated “Delegating tasks is crucial when leading virtual teams” was rated high while item DELE1 which stated “Since many teams were moved to remote working due to the Covid-19 pandemic, leaders have been delegating more responsibilities to their teams” was rated low (see Table 3). However, the average mean score for all the items relating to delegation was above the neutral point. The high ratings of item DELE4 item may suggest that the respondents highly believed that delegation (DELE) was a crucial leadership quality for leadership to be effective on virtual teams. Additionally, Cronbach’s Alpha coefficient of the constructs was .711 (see Table 9).

Conclusion regarding hypothesis 1

From the data that is presented above it reveals that there is a strong relationship between delegation and effective leadership of virtual teams due to the covid-19 pandemic (Contreras et al., 2020). The likelihood of using delegation as a leadership quality in order to be effective when leading virtual teams (Stoker et al., 2021) is higher.

5.4 Discussion regarding hypothesis 2

This construct was measured on a 5-point scale Likert scale and the results of this finding revealed that all five items in this construct where highly rated with the mean scores between 3.66 and 4.46 (see Table 6). These mean scores are suggesting that there is a relationship between e-Communication and effective leadership of virtual teams due to the covid-19 pandemic. Item COMM5 which stated “Effective communication via digital platforms is crucial when leading virtual teams” was rated high

while item COMM4 which stated “There has been improvement with communication to my team ever since they have been working remotely” was rated low (see Table 4). The high ratings of item COMM5 item may suggest that the respondents highly believed that e-Communication (COMM) was a crucial leadership quality for leadership to be effective on virtual teams. Additionally, Cronbach’s Alpha coefficient of the constructs was .853 (see Table 9) which indicates that a strong reliability of the items measured in this construct.

Conclusion regarding hypothesis 2

From the data that is presented above it reveals that there is a strong relationship between e-Communication and effective leadership of virtual teams due to the covid-19 pandemic. There is a strong belief that e-Communication as a leadership quality makes leading virtual teams highly effective.

5.5 Discussion regarding hypothesis 3

In the 5-point Likert scale of this construct, the findings revealed that the mean scores are between 3.16 and 4.23 (see Table 6). These mean scores reflect a relationship between technology savvy and effective leadership of virtual teams due to the covid-19 pandemic. Item TS1 which stated “You do not have to be an expert in information technology in order to lead virtual teams successfully” had the highest rating while item TS3 which stated “It was easy to transform from leading the team face to face, to leading them over a digital platform when the team was forced to work remotely” had the lowest rating (see Table 3). The high ratings of item TS1 item may suggest that the respondents highly believed that leaders do not have to be experts in Information Technology platforms in order to be effective in leading virtual teams. Additionally, Cronbach’s Alpha coefficient of the constructs was .703 (see Table 9) which is just above > .70 threshold (Hair et al., 2013).

Conclusion regarding hypothesis 3

There is a positive relationship between technology savvy and effective leadership of virtual teams due to the covid-19 pandemic. The data shows that leaders at least have

to know how to navigate the Information and Communications Technology platforms in order to be effective when leading virtual teams.

5.6 Conclusion

The statistical analyses revealed that all the leadership quality in this study i.e. Delegation, e-Communication and Technology savvy have a positive relationship with the effective leadership of virtual teams when these teams were forced to work remotely to the Covid-19 pandemic.

5.7 Hypothesis Testing Discussion

Table 15 below is presenting a summary of the hypothesis tests. This section will discuss the findings of each hypothesis.

Table 16: Hypothesis testing discussion

Source: Primary data

Hypothesis	Regression weights	Beta Coefficient	R Square	t-value	p-value	Hypothesis supported
$H1 – H1_0$ $H1_a$	DELE ⟶ EL	0.441	0.194	7.083	0.000	Yes
$H2 – H2_0$ $H2_a$	COMM ⟶ EL	0.368	0.136	5.716	0.000	Yes
$H3 – H3_0$ $H3_a$	TS ⟶ EL	0.314	0.099	4.446	0.000	Yes

There is a positive direct relationship between delegation and effective leadership of virtual teams

The Beta Coefficient of $H1_0$ was 0.441. This supports a significant relationship between delegation (DELE) and effective leadership (EL) of virtual teams during the Covid-19 pandemic. The p-value shows a 0.00 level of confidence and this affirms that the hypothesis is significant and supported. This hypothesis has revealed the strongest relationship amongst the other two. These results support the finding that there is a positive direct relationship between delegation and effective leadership of virtual teams. The implementation of remote work may force managers to show less control and more delegation (Bao et al., 2020). According to (Stoker et al., 2021) an increase in delegation is associated with an increase in perceived productivity and effective leadership. It is perceived that managers in junior to middle management positions show less control and delegate more responsibility to the members of their team (Haselhuhn et al., 2017).

In the Covid-19 pandemic where the remote working was not a deliberate choice for organisations in South Africa but was forced upon them as a tool to limit the spread of the coronavirus (Stoker et al., 2021), the results suggests that the leaders in these organisations believes that delegation of tasks was crucial when leading these virtual teams in order to have high performing virtual teams which results to effective leadership of the virtual team.

There is a positive direct relationship between e-Communication and effective leadership of virtual teams

The Beta Coefficient of $H2_0$ was 0.368. This supports a positive relationship between e-Communication (COMM) and effective leadership (EL) of virtual teams during the Covid-19 pandemic**.** The p-value shows a 0.00 level of confidence while and this affirms that the hypothesis is supported. These results support the finding that there is a positive direct relationship between e-communication and effective leadership of virtual teams. The manner in which leaders choose to communicate with their teams will differ but effective communication remains an essential part of effective leadership

(Zulch, 2014).Effective communication from the leaders encourages the employees to stay engaged and to execute their duties efficiently (Luthra & Dahiya, 2015).

During the Covid-19 pandemic where leaders found themselves having to communicate with their teams on digital platforms because of the forced remote working environment (Collings et al., 2021) the results suggest that for leadership to be effective, the leaders in these organisations believe that effective communication via digital platforms is crucial when leading virtual teams in order to meet the organisation's strategic objectives.

There is a positive direct relationship between technology savvy and effective leadership of virtual teams

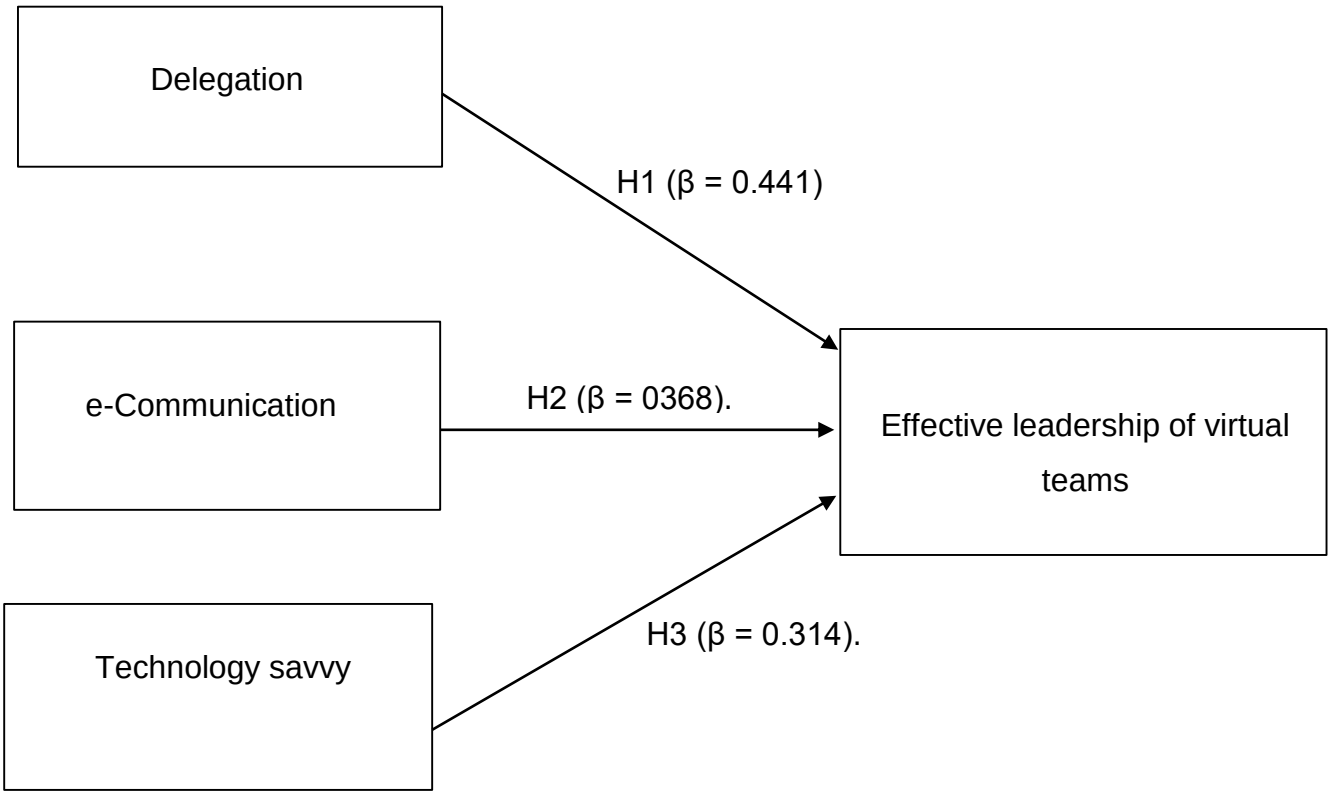
In this construct Beta Coefficient of $H3_0$ was 0.314. This supports a positive relationship between technology savvy (TS) and effective leadership (EL) of virtual teams during the Covid-19 pandemic**.** The p-value shows a 0.01 level of confidence which then accepts the hypothesis is significant and supported. This hypothesis has revealed the weakest relationship amongst the other two. These results support the finding that there is a positive direct relationship between technology savvy and effective leadership of virtual teams. The ability of the leader to navigate the Information and Communication Technologies platforms creates a responsible, satisfied and efficient teams in virtual business environments (Contreras et al., 2020). According to (Roman et al., 2019) for an e-leader to be competent, the must be alert of novel technologies and must be able to keep up with relevant technological developments.

In the context forced remote working due to the Covid-19 pandemic the results suggest that the leaders in these organisations believes that they do not have to be an expert in information technology in order to lead virtual teams successfully for them to be effective in leading these virtual teams.

5.8 Conclusion

This chapter discussed the key findings of the study. The objective of this study was to determine whether leadership was effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic by using leadership qualities as a measuring tool. In order to achieve this a conceptual framework model showing leadership effectiveness on virtual teams was determined by three main factors, which were Delegation (DELE), e-Communication (COMM) and Technology Savvy (TS) see Figure 9 below. In this model, leadership effectiveness on virtual teams (EL) was hypothesised to be affected by DELE, COMM and TS.

Figure 9: Conceptual framework model discussion



Therefore, the discussion of the hypotheses highlighted that all three hypotheses were supported with a significant p-value indicating 0.01 level of confidence. The results revealed that all three hypotheses as shown on Figure 9 above have significant relationships.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter will outline the conclusions that have been reached regarding the research topic and recommendations that can be made on the effectiveness of leadership on virtual team when these teams were forced to work remotely as a result of Covid-19 pandemic.

6.2 Conclusion of the study

The purpose of this study was to investigate the effectiveness of leadership when leading teams over digital platforms when they were forced to work from home due to the Covid-19 pandemic in South African organisations context. The research question was to determine whether leadership was effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic. Three leadership qualities that were identified in literature review i.e. delegation, e-communication and technology savvy were used as measuring tools of leadership effectiveness. Structural equation modelling using AMOS version 26.0 was used to test the measurement and structural model of this study. The study confirms that there is a relationship between these leadership qualities and the effectiveness of leadership on virtual teams that were enforced as a result of the Covid-19 pandemic. These relationships were confirmed by the hypotheses the study focused on.

The results of the study showed that delegation has a direct positive relationship with effective leadership of virtual teams ($\beta = 0.441$). The respondents strongly agreed that it is crucial to delegate tasks when leading virtual teams. Since many teams were moved to remote working due to the Covid-19 pandemic, leaders that participated in this study agreed that they have been delegating more responsibilities to their teams. This creates high staff moral within the virtual teams with results in effective leadership of the virtual teams during the Covid-19 pandemic.

Furthermore, the results of the study showed that e-communication has a direct positive relationship with effective leadership of virtual teams (β = 0368). The leaders that participated on this study strongly believed that effective communication conducted over digital platforms is crucial when leading virtual teams.

Finally, leaders are effective when they are able to navigate Information and Communication Technology platforms to achieve the organisation's objective strategies when working with virtual teams (β = 0.314). The leaders that participated on this study strongly believed that they do not have to be experts in information technology in order to lead virtual teams successfully.

Therefore, founded on the research question of this study that seek to find leadership was effective when conducted on digital platforms to remote teams due to the Covid-19 pandemic, this was found that indeed the leaders that were forced to lead their teams virtually due to the Covid-19 pandemic were effective in leading their teams. Based on this study, the organisations in South Africa in both public and private sector should be able to make long term decision regarding the future of remote work in their businesses and also support the managers of these virtual teams through training to develop the skills needed to lead virtual teams.

6.3 Recommendations

As a result of the Covid-19 pandemic, remote working accelerated in many organisation in South Africa but these organisation did not plan and were note prepared for this change. Remote working was encouraged by the South African government as a measure to curb the spread of the virus while ensuring business continuity. Therefore, the recommendations below will assist managers on how to lead virtual teams effectively during and beyond the Covid-19 pandemic.

- Managers that are leading virtual teams should allow the individuals in the team to plan how they will execute the tasks delegated to them as long as they meet the stipulated deadlines.
- From the result, hypotheses H2 showed that the relationship between e-Communication and effective leadership on virtual teams was not strong.

Therefore, managers must develop the skill to communication effectively on the Information and Communication Technology platforms that are available to them when leading virtual team.

- Managers that are leading virtual teams do not have to be experts in information technology in order to lead virtual teams successfully but are require to know how to navigate the different Information and Communications Technology platforms to get the best out of a virtual team
- From the result, hypotheses H2 showed that the relationship technology savvy and effective leadership on virtual teams was weak. Therefore, organisations must to ensure that they invest on Information and Communications Technologies that are user friendly and easily accessible to the managers

6.4 Suggestions for future research

- This study was piloted at management level, therefore, it could be extended to employees that are not in management positions in the organisation to get a broader perspective on the impact of remote working on leadership effectiveness during the Covid-19 pandemic in South Africa.
- This study focused only on three leadership qualities, hence there is an opportunity to extend this study and use other leadership qualities such as trust and empathy.
- Further research can be done to build on other attributes that impacted effective leadership during and beyond the Covid-19 pandemic, for example investigate how employee resistance to virtual setup affects impacted effective leadership during and beyond the Covid-19 pandemic.

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