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The impact of transformational leadership on business model innovation

Submitted by

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Abstract

Leadership and leadership style are critical drivers of the business model innovation process. Business model innovation research has singled out transformational leadership as best suited for driving business model innovation. There is, however, an apparent lacuna in extant research in understanding how transformational leadership impacts the business model innovation processes and practices. This research investigated the nature of the relationship between the transformational leadership style and firm business model innovation processes. In this quest, the study explored how the components of transformational leadership of vision, intellectual stimulation, inspirational communication, supportive leadership, and personal recognition impact business model innovation. This breaking down of the transformational leadership style into its components enhanced the aim of understanding the relationship between transformational leadership and business model innovation in the face of environmental uncertainty.

An online survey was conducted, and a questionnaire was sent to participants working across all industries in junior, middle, executive management, and supportive roles in South Africa. Purposive sampling with snowballing data collection technique was used to collect data from 113 respondents, and the data was used to assess the measuring instrument's validity and reliability. Based on hierarchical multiple and moderated regression analyses, the study confirmed that the transformational leadership style positively impacted the business model innovation process. The transformational components of vision, inspirational communication, and supportive leadership positively impact business model innovation. Environmental uncertainty negatively moderates all the relationships. The study's findings therefore proffered empirically validated evidence to suggest that transformational leadership positively impacts business model innovation

Keywords: Business model, business model innovation, transformational leadership, environmental uncertainty, leadership style

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Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of master of business administration at the Gordon Institute Of Business Science, University Of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research

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TAWANDA MAZORODZE **DATE**

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1 TOPIC REVIEW

1.1 Introduction to the research problem

Increased competition, changing consumer needs, and rapid technological developments have resulted in increased uncertainty in the operating environment creating the need for businesses to continuously adapt (Bocken & Geradts, 2019; Holzmann et al., 2020). The ability of a firm to adapt in uncertain and highly complex environments is crucial for survival, growth, and the development of competitive advantages (Boylan & Turner, 2017; Haarhaus & Liening, 2020). One of the ways businesses adapt is by innovating their business models (Snihur & Zott, 2020; Teece, 2018). Past research has noted the importance of leadership and leadership styles in the business model innovation process (Foss & Saebi, 2016, 2018; Foss & Stieglitz, 2014; Saebi et al., 2017; Teece, 2018; Wirtz & Daiser, 2017). Existing literature, however, highlighted that there is a gap in understanding how leadership styles impact the business model innovation process (Achtenhagen et al., 2013; Cortimiglia et al., 2016; Ograjenšek & Buhovac, 2016). The study therefore aims to understand how the transformational leadership style impacts the business model innovation processes.

Business models are the mechanisms through which firms create, deliver, and capture value (Teece, 2010). Understanding of how leaders innovate business models would prove to be valuable to organisational leaders. Business model innovation serves as an essential and cheaper form of innovation relative to process and product innovation for building a sustainable competitive advantage in uncertain environments (Bashir & Farooq, 2019; Snihur & Wiklund, 2019; Teece, 2010). Leadership's role in firms includes but is not limited to influencing, motivating, and enabling followers to achieve organisational success and effectiveness through among other goals promoting business model innovation (Zaccaro et al., 2018). Business model innovation research has, therefore highlighted the need to understand how leadership influences the business model innovation process. By successfully innovating their business models, firms like Apple, Uber, Netflix, Ford, and IBM managed to create substantial competitive advantages and considerable stakeholder value (Cramer & Krueger, 2016; Teece, 2010, 2018). In the case of these firms, Cramer and Kruger (2016) and

Chatman and O'Reilly (2020) confirmed that the transformational leadership style played a central in facilitating the innovation of the business model.

Transformational leadership's strengths as a leadership style include creating favourable environments for business model innovation and increasing follower creativity and motivation (Carreiro & Oliveira, 2019). Transformational leadership has five subdimensions, namely "vision, inspirational communications, intellectual stimulation, supportive leadership, and personal recognition" (Carreiro & Oliveira, 2019, p. 106). Through these dimensions, transformational leadership fosters organisational learning and continuous adaptability (Darwish et al., 2020). This research, therefore, sought to empirically confirm or dispute if the transformational leadership style and its components positively impact the business model innovation process.

In light of this aim, the following sections will highlight the objectives this research intended to achieve by providing the background of the proposed research topic. The sections will also seek to answer the question of why this research is relevant to both business and academic contexts. The sections also present the existing views by researchers on this topic and highlight the proposed scope of the study.

1.2 Research problem background

Businesses are facing increased competition from new firms that are introducing new business models leading to reduced competitiveness for incumbents (Schiavi & Behr, 2018). Bashir and Farooq (2019) argued that these incumbents need to innovate their business models or risk being pushed out of business and through reduced profitability. Business model innovation is a creative and collaborative process that is important for sustaining firm competitiveness (Szopinski et al., 2019). It is, therefore, apparent that business model innovation plays a vital role in creating organisational competitive advantages. For incumbent firms to innovate their business models, they must possess the ability to engage in business model innovation and, the creation of these abilities falls under the ambit of leadership (Amit & Han, 2017; Chesbrough, 2010; Wirtz & Daiser, 2017). Leaders create these abilities by deliberately taking time

to transfer knowledge, upskill, and empower their followers to be able to engage in business model innovation. A study by Foss and Stieglitz (2014) identified four key roles that leadership plays in the business model innovation process, namely monitoring, sponsoring, moderating, and architectural functions.

Leadership styles serve to assist leaders in making people work together to achieve a common goal (Hasan & Khajeh, 2018). Ograjensek and Buhovac (2016) reported that different leadership styles might have different effects on the firm's business model innovation process. These authors went on to confirm that the transformational leadership style is the most relevant leadership style for business model innovation. Despite this being the case there is still no clear understanding of how different leadership styles impact the business model innovation process (Foss & Saebi, 2018; Foss & Stieglitz, 2014; Ograjenšek & Buhovac, 2016). The finding enhances the transformational leadership style's relevancy that it fosters a culture of innovation, promotes team collaboration, facilitates organisational success, and organisational adaptability (Lord et al., 2017).

Business model innovation is best achieved by firms that are willing to experiment and explore new ways of creating customer value (Chesbrough, 2007, 2010). Transformational leadership is associated with firms that experiment with new ways of doing business and followers that explore new ways of solving problems hence its increased relevancy for business model innovation (Carreiro & Oliveira, 2019; Hasan & Khajeh, 2018; Hughes et al., 2018; Yahaya & Ebrahim, 2016). Business model innovation depends on the choices a firm's leadership makes about how it will configure its value-creating activities (Amit & Han, 2017; Foss & Saebi, 2016, 2018; Foss & Stieglitz, 2014). For example, in the case of IBM, Birkinshaw, Zimmermann, and Raisch (2016) argue that it is the continued revisions of IBM's business model by its leadership - the architectural role - that resulted in the firm's continued successes. Leadership style is, therefore, a key enabler of business model innovation. Leaders are the custodians of the firm's business model formulation process by creating the requisite environment for the process to take place (Carreiro & Oliveira, 2019).

Despite the amount of research done on leadership, new questions are still emerging around the implications of various leadership styles on orgnisational success (Stone & Gandolfi, 2018). Gandolfi and Stone (2016) concluded that a leadership style is characterised by the influence that moves followers from the current understanding of the future to one that is better and different. They suppose that the leaders' ability to achieve a particular organisational goal is, therefore, a function of his/her leadership style. Transformational leadership was proposed by Dong et al. (2017) as a leadership style that could promote different forms of innovation, including business model innovation in individuals, teams, and organisations. Wirtz and Daiser (2017) confirmed business model innovation as a critical leadership tool that can assist firms in surviving the growing global competition and fast-changing operating environment. Leadership wields a strong influence on the firm's ability to sense, seize and exploit new opportunities by adapting its business model (Demil & Lecocq, 2010; Foss & Saebi, 2018; Teece, 2018; Zott & Amit, 2012).

Careirro and Oliveira (2019) concluded in their study that the leaders of the future should be able to learn for them to be able to create an innovative organisation that will survive the increased environmental uncertainty. They also found that the advent of the digital age has made the environment more fluid and demands leaders that encourage high performance and continuous organisational adaptation. These abilities predominantly reside in leaders that are visionary and have the charisma to facilitate organisation-wide innovation like business model innovation and encourage creativity. Transformational leaders are more suited to lead the business model innovation process (Koh et al., 2019).

Transformational leaders can create a shared vision of the future for their firms and communicate it to both their teams and individuals within their teams (Nekhili et al., 2018). New business models are a result of leadership reimagining of the future of competition, consumer needs, and technological innovations in their respective industries (Spieth et al., 2016; Suifan et al., 2018). Transformational leaders are good at crafting new solutions to problems strengthening the case for them to lead business model innovations. How transformational leadership impacts the business model

innovation process is therefore, essential to both practitioners and academia in the field of leadership research and business model innovation research.

1.3 Research problem and objectives

This study investigated how leadership styles influence a firm's business model innovation process in creating and sustaining organisational competitive advantages. Increased competition has created the need for firms to innovate extant business models to maintain competitive advantages continuously. The business model innovation takes place by reconfiguring the activities that the firm performs, how the activities are linked, and who performs the activities (Bashir & Farooq, 2019; Zott & Amit, 2012). To achieve this, organisations need leaders that can develop business model innovation capabilities in their employees. A review of the existing literature showed that there is limited research focusing on how the transformational leadership style impacts a firm's business model innovation process (Achtenhagen et al., 2013; Cortimiglia et al., 2016; Ograjenšek & Buhovac, 2016). Because of the existence of this gap in business model innovation and leadership research, this study, therefore, sought to initiate the process of bridging this gap.

Foss and Saebi (2017, 2018) concluded that innovating business models is the role of leadership since business models reflect management's dominant logic about how the firm will go to market. Because business model innovation is the responsibility of the firm's leadership, leadership style is, therefore, an essential ingredient for firm success in competitive and uncertain environments (Schiavone et al., 2019). The ability of transformational leaders to effectively communicate a shared vision and facilitate organisational learning could be a useful attribute in fostering business model innovation. Transformational leadership's components could prove helpful in understanding and answering the research question posed by this study. The components are vision, inspirational communication, intellectual stimulation, supportive leadership, and personal recognition. This study, therefore, strove to answer the questions of:

RQ1. How does the transformational leadership style impact the business model innovation process, followed by the following sub-question

- How does each component impact a firm's business model innovation process, and

RQ2. Does environmental uncertainty moderates the relationships asked in RQ1?

To be able to answer the research questions posed in this study, the following investigations were done:

- To determine whether the transformational leadership style and its components impacts the business model innovation process
- Determine if the relationships are moderated by environmental uncertainty

An understanding of these relationships will give insights to organisations seeking to create and sustain competitive advantages through business model innovations. The study will assists firms in appreciating the role of leadership in improving the firm's business model innovation capabilities. The research will also aid future leaders to understand how to successfully lead the business model innovation processes and defend their firms from the threat posed by new business models developed by existing competition and new entrants. The study will also seek to contribute to the growing bodies of business model innovation and transformational leadership research.

1.4 Research relevance and motivation

Business model innovation is increasingly gaining importance as a way of creating competitive advantages for firms (Snihur & Wiklund, 2019). With the rising costs of other forms of innovation for achieving competitive advantage, business model innovation is a cheaper and more sustainable form of innovation (Bashir & Farooq, 2019; Carreiro & Oliveira, 2019; Teece, 2010). Birkinshaw et al. (2016) concluded that for firms to be able to achieve a sustainable competitive advantage, their leadership needs to hone their ability to shape, renew, and adapt their business models. Whilst researchers agree that the transformational leadership style is more suitable for the business model innovation process, it is not yet clear how transformational leaders impact the process (Spieth et al., 2014).

A firm's leadership is responsible for choosing how to configure the business model in response to changes in the competitive landscape, technological developments, and consumer demand. These choices lead to business model innovation and have a bearing on the firm's ability to create value and compete (Teece, 2018) sustainably. How the firm makes these choices is a function of the leadership style its leaders' practice. This study will add to the understanding of the impact of leadership style on the business model innovation process. The study will focus on the impact of the transformational leadership style though its components of vision, inspirational communications, intellectual stimulation, supportive leadership, and personal recognition on the business model innovation process.

Whilst innovation literature has confirmed a link between transformational leadership and follower innovation; there is limited research on investigating how transformational leadership impacts the business model innovation process (Carreiro & Oliveira, 2019; Saiyed, 2019). Spieth et al., (2016), Wirtz et al., (2017), Zott and Amit (2015), and Foss and Saebi (2018) all conducted meta-studies on business models and business model innovation and concluded that there is a gap in understanding the role of leadership styles on business model innovation.

The limited amount of research on how leadership styles influence business model innovation despite the amount of research done on the two constructs also made a cased for this study to be done. This study, therefore, proposed to assess how the transformational leadership style impacts the business model innovation process. An understanding of this relationship could give leaders insights in their quest to achieve and sustain firm competitive advantages whilst creating stakeholder value.

1.5 Scope of the research

The study made use of literature from transformational leadership, business model innovation, and environmental uncertainty in formulating pertinent questions for data gathering. The study focused on business model innovation, transformational leadership, and environmental uncertainty constructs. The research selected participants across all industries in South Africa. Because of the growing competition

from new and existing players across all sectors, there is a strong likelihood that there is enough business model innovation taking place. The findings from the study will possibly apply to other countries outside South Africa.

1.6 Structure of the research

The study will be structured as follows in seeking to answer the proposed research question:

- Chapter two: Literature review to ascertain the need for the research from existing literature
- Chapter three: Conceptual model development and hypotheses formulation
- Chapter four: Research methodology – explaining and defending the research methodology employed in answering the research question posed by the study
- Chapter five: Data gathering, presentation and analysis
- Chapter six: Discussion of results and findings in chapter five in light of the literature findings in chapter one, two and three
- Chapter seven: Presentation of research findings, implications of the findings to stakeholders, limitations of the research, and suggestions for future research.

2 LITERATURE REVIEW

This study focused on understanding how the transformational leadership style impacts the business model innovation process. This chapter, therefore, presented a review of the relevant literature reviewed in establishing the relevance of the proposed study. The study examined existing assertions on the business model innovation and transformational leadership constructs.

2.1 Business Models

The business model is a "description of the design or architecture of the value creation, delivery, and capture mechanisms [a firm] employs" (Teece, 2010, p. 172). This definition implies that for firms to create value, they use processes that link to each other. The way these processes are linked is dependent on how the leadership decides to arrange them. In the same vein, business models were conceptualised by Zott and Amit (2012) as a system of activities that a firm engages in to create, capture and deliver value. According to Teece (2010) and Zott and Amit (2013), the business model is at the heart of the firm's value creation process. Chesbrough (2010) and Cortimiglia et al. (2016) described the business model as a leadership tool used to commercialise technologies to create and capture value. The business model is also a manifestation of a firm's strategy. Scholars concur that the business model sits at the intersection of a firm's strategy, operations and as micro-foundations of firm dynamic capabilities. All these are the results of firm leadership choices (Casadesus-Masanell & Zhu, 2013; Cortimiglia et al., 2016; Spieth et al., 2014; Teece, 2018).

Business models are, therefore, the result of how leadership conceptualises the firm's dominant logic for creating and capturing value (Casadesus-Masanell & Ricart, 2010; Massa et al., 2017; Rauter et al., 2017). Consequently, business models are vital in explaining why there is heterogeneity in firm performance. This heterogeneity can be attributed to different leadership practices and ultimately, styles (Spieth et al., 2014). Business models are, therefore, instrumental in achieving superior firm performance and sustainable competitive advantages (Cortimiglia et al., 2016; Fjeldstad & Snow, 2018; Teece, 2018; Wirtz et al., 2016). Therefore, firms that achieve better

performance are those that configure their business models in a way that aligns to customer demand (Priem et al., 2018).

At their core, business models are the firm's representation of how it does business through the creation of an ecosystem of activities comprising the firm, its vendors, and suppliers (Amit & Han, 2017; Rauter et al., 2017; Zott & Amit, 2012). Ultimately, leadership is responsible for designing and redesigning business models for advancing their firm's quest to create stakeholder value and achieve competitive advantages (Baden-Fuller & Morgan, 2010; Fjeldstad & Snow, 2018; Markides, 2013).

Scholars confirm that most of the disruptions that have taken place in most industries have been achieved through superior business model designs by new entrants (Cramer & Krueger, 2016; Fjeldstad & Snow, 2018; Rezazade Mehrizi & Lashkarbolouki, 2016). It is, therefore, pivotal that firms seeking to achieve sustainable value creation acquire the ability to craft business models that allow them to remain relevant. Research has also established that a business model has three dimensions namely value creation, value delivery, and value capturing/appropriation (Anwar & Ali Shah, 2020; Clauss, 2017; Cortimiglia et al., 2016; Priem et al., 2018). Anwar and Ali Shah (2020) and Clauss (2017) describe the value creation dimension as relating to firm "resources, processes, activities, and capabilities" whilst value delivery speaks to how the created value reaches its stakeholders. They also clarify that value capturing or appropriation refers to the way the business captures the created value profitably. It is these dimensions of the business model that a firm should innovate in the search for the elusive competitive advantage (Clauss, 2017; Rezazade Mehrizi & Lashkarbolouki, 2016).

Baden-Fuller and Mogan (2010) referred to the business model as a recipe created by firm leadership, and as "cooks", a firm's leadership must be creative coming up with these recipes. Leadership's role is, therefore, to create and change business models to maintain their relevancy. Rezazade Mehrizi and Lashkarbolouki (2016), reported that the creation and redesign of existing business models are equivalent to business model innovation. Business model innovation is the subject of the next section.

2.2 Business model innovation

There is growing interest in the business model as the object of innovation for firms seeking to achieve competitive advantages (Bocken & Geradts, 2019; Cortimiglia et al., 2016). Business models are a source of sustainable competitive advantage and value creation thereby attracting attention of businesses seeking to create and capture more value (Berends et al., 2016; Casadesus-Masanell & Zhu, 2013; Futterer et al., 2018; Zott & Amit, 2012). Fjeldstad and Snow (2018) argued that for a firm to survive in a competitive environment, its leadership should be able to innovate the business model continually. The firm's leadership does this by answering questions around how the firm creates value; having a plan to change the business plan; understanding the role of collaboration in their firm's business model; and anticipating the future of their firm's business model.

Business model innovation happens through changing the activities conducted by a firm; changing the way the activities in the business model's components are linked or changing the roles of the parties that perform the activities (Schiavi & Behr, 2018; Schiavone et al., 2019; Zott & Amit, 2012). Foss and Saebi (2017, p. 2) defined business model innovation as the "designed, novel, and non-trivial changes to the key elements of a firm's business model and/or the architecture linking these elements". They further claim that the "designed" aspect of this definition speaks to the fact that leadership must be deliberate about how to configure the activities the firm uses to create, deliver, and capture value. Business model innovation can manifest itself in varying degrees depending on how radical the firm's leadership decides the architectural changes to be (Foss & Saebi, 2018; Schiavone et al., 2019).

Technological advances, innovative business models, and shifts in the regulatory landscape have resulted in changes that demand firm leadership responses (Osiyevskyy & Dewald, 2018). Osiyevskyy and Dewald (2018) propose business model innovation and adaptation as a potential response by incumbent firms. Since the benefits of product and process innovation are increasingly becoming short-lived, new ways of creating a sustainable competitive advantage have become imperative and Bashir and Farooq (2019) proposed business model innovation as an alternative

response. Chesbrough (2010, p.12) in making a case for the importance of business model innovation found that “a better business model will beat a better idea or technology”. This argument highlighted leadership’s need to implement business model innovation and grow within their firms the capacity to engage in business model innovation.

Business models are relatively perishable and imitable outcomes; therefore needing to be continuously renewed to ensure firm survival (Achtenhagen et al., 2013; Berends et al., 2016). Firms, therefore, need to create business models that are not easy to imitate but not very difficult to innovate. Chesbrough (2010) and Teece (2018) noted that most firms could not innovate their business models. They argued that some leaders find model innovation challenging to implement. Chesbrough (2007) attributes the failure by leadership to innovate the business model to the absence of the skill and not committing sufficient resources for the process. Whilst it is easy to discuss business model innovation, Osiyevskyy and Dewald (2018) confirmed that firm inertia is a significant cause of firms’ failure to innovate their business models. They attributed this inertia to leadership practices. They concluded that firms prefer to maintain extant business models because leadership lacks the vision and ability to influence their firms to innovate their business models. It, therefore, requires leaders that are inclined to change and willing to experiment to achieve business model innovation.

Chesbrough (2010) found in his study that the same technology commercialised through two different business models can generate different returns for its stakeholders due to differences in leadership’s understanding and appreciation of customer needs. Business model innovation also keeps incumbents ahead of the pack in the product, process, and technology innovation race (Priem et al., 2018; Zott & Amit, 2012). A firm’s leadership should master the art of innovating business models to achieve sustainable value creation. It is also critical for firms to identify leaders that promote the innovation of business models and engage these to create competitive advantages. From the literature reviewed a firm needs leaders that can help their followers to think of new ways of doing business, satisfy customer needs and collaborate to be able to achieve significant business innovation. Business model

innovation is about being in touch with the operating environment to ensure the firm remain relevant to its customers and stakeholders. The leader needs to be the embodiment of change to foster the culture of change in the firm that will drive it to innovate its business model (Foss & Saebi, 2018; Ograjenšek & Buhovac, 2016). Business model innovation occurs when any one of the dimensions of the business model are innovated (Clauss, 2017). The next sections, therefore, discuss the innovation of the three dimensions of the business model.

2.3 Business model innovation - value creation, value delivery & value capture

The business model innovation process as described by Clauss (2017) involves innovation of the business model in three key areas namely value creation innovation, value delivery/proposition innovation, and value capture/appropriation innovation by a firm. The intention of innovating the business model for leadership is to create a competitive advantage and fend off competition. This intention can either be deliberate on the part of leadership or can be the result of unforeseen environmental circumstances (Cortimiglia et al., 2016; Demil & Lecocq, 2010; Foss & Saebi, 2018; Foss & Stieglitz, 2014; Teece, 2018). This study investigated how the transformational leadership style impacts the business model innovation process.

2.3.1 Value creation innovation

Value creation innovation is an innovation by a firm of all its internal and external value creation processes based on its resources and capabilities (Clauss, 2017; Clauss et al., 2020). The authors reported that value creation innovation includes the innovation by a firm of all its internal and external value creation processes based on its resources and leadership capabilities. For the firm to satisfy customer needs, it must have a value proposition which appeals to the customers. Its is the role of leadership to identify the market needs and create the value proposition that best satisfies the market needs. According to Priem et al. (2018), value refers to the customer's willingness to pay for a good or service created by a firm. Firms are can, therefore, only capture value from their customers if they have created value. Chesbrough et al. (2018, p. 3) defined value as "all actor-perceived consequences arising from the deployment of a resource

in a process". This deployment of resources is the result of leaders' actions driven by their understanding of the operating environment.

Firms need to understand how leadership influences the value creation innovation process. Leadership manifests through different leadership styles. Understanding of which leadership style is appropriate for innovating the value creation dimension of the business model (Achtenhagen et al., 2013). In the case of a firm, value creation is an attempt by the firm to increase its stakeholders' value by engaging in activities that create value. The concept of value creation also answers the question of 'for whom' was the value created and in innovating this process, the firm, through its leadership, seeks to establish its relevance continuously. Since value creation determines the firm's raison d'être, it requires that the leaders possess the ability to engage in its innovation for the firm to remain relevant (Berends et al., 2016; Reymen et al., 2017).

Understanding how leaders influence this process can be the key to its successful implementation in firms. Value creation innovation is driven by the firm's ability to monitor changes in its consumer tastes and preferences continually and create goods and services that address the changing needs (Priem et al., 2018; Teece, 2018). The value creation dimension of the business model creates an intersection between business model innovation research and dynamic capabilities research since leadership ability to innovate a business model also forms the micro-foundations of its dynamic capabilities (Spieth et al., 2014). Because of the centrality of leadership in this crucial aspect of firm success, it is essential to know what kind of leadership and leadership is best suited for value creation innovation.

2.3.2 Value Capture Innovation

Value capture was defined by Chesbrough et al., (2018, p. 4) as "the process of securing financial or nonfinancial return from value creation" by the firm. The authors posited that value capture refers to the exchange of resources between the firm and users of its goods and services. They further argued that in the value capture process, the firm's leadership, in exchange for its goods and services negotiates reciprocal resource exchange at the time of the sale. The value capture process demonstrates the centrality of leadership in successfully capturing the value created by the firm. For

the value capture process to be successful, the firm must have leaders that appreciate how best to assist the firm to capture the created value profitably. According to Priem et al. (2018), a firm's ability to capture value is a function of its resource base and the power it commands in the value chain. A firm's leadership, therefore, needs to craft value capture mechanisms that allow it to capture more of the value created by its business model. An appreciation of the leadership style that enables the firm to capture value successfully will be beneficial for the firm.

Innovating the value capture dimension of the business model is done through reconfiguring how the firm links the activities in the business model to allow it to enjoy the lion's share of the customers' willingness to pay (Clauss et al., 2020). Fjeldstad and Snow (2018, p. 34) reported that "value appropriation [capture] mechanisms, such as favourable resource and industry positions, increase a firm's bargaining power vis-a-vis other actors". A firm, therefore, needs to ensure that it maintains its ability to capture more value in the value chain by continually innovating the value capture dimension of its business model. The firm needs to develop the capabilities to innovate its business model to capture the value created profitably and this role of capacitating the firm rests with the leader.

The firm needs to identify, hire and develop leaders that increase its ability to engage in the innovation of its value capture mechanisms to sustain competitive advantages. Foss and Saebi (2016, 2018) confirmed that business model innovation occurs when the firm's leadership deliberately change in a way that is either new to the firm's processes or new to its industry the mechanisms through which it captures value from the consumers of its goods and services in a profitable way. It is in this regard that an understanding of which leadership style best serves the organisation's objective of maximising its ability to capture value through value capture innovation becomes essential. Appreciating how the leadership style impacts this objective will improve the firm's understanding of which leaders to hire and which skills to impart to these leaders.

2.3.3 Value Delivery Innovation

Parida et al. (2019) highlighted that the value delivery dimension of the business model relates to activities and processes that the firm employs to deliver the promised value. For the firm to deliver on its value proposition, it must efficiently deliver the created value to its target customers to capture value. Value delivery encompasses all business model activities related to product and service offerings; the distribution channels including the communication and sales channels; the firm's customer segments; and the value chain network and partners (Ibarra et al., 2020). Value delivery innovation, therefore, articulates changes in the way business model activities link for delivering the product or service to partners and customers through the firm's distribution and delivery channels (Cortimiglia et al., 2016).

The choice of how the product goes to the market rests with the firm's leadership. To successfully innovate the value delivery dimension of the business model, the firm leadership should possess the ability to orchestrate its delivery channels. This orchestration of the delivery channels should get the firm closer to its customers and increase the accessibility of their product or service. Firms should continuously look for better ways of reaching their customers to improve the firm's value proposition. Sorescu (2017), noted that this value delivery component focuses on the firm's products and services in conjunction with the context in which the firm sells the goods and services. Value delivery innovation in this regard pertains to the firm's reimagining of the way it takes its goods and services to the market.

According to Birkinshaw et al. (2016), value delivery innovation was a critical part of Netflix's business model innovation which led to the creation of a new value proposition for its clients. Foss and Saebi (2018) highlighted that a firm engages in value delivery innovation if it deliberately changes either a single activity or all of the activities that constitute its value delivery mechanism. According to Zott and Amit (2012), the innovation of the value delivery mechanism of the business model is best achieved by a critical study of the customer needs and using this understanding to create activities with a structure, content and governance that is aligned to meet customer needs. This finding also confirms Priem et al.'s (2018) finding that the

business model innovation process is a customer-oriented process which starts and ends with an understanding of customer needs. Value delivery innovation, therefore, becomes a critical strategic issue which is truly the preserve of the firm's leadership in this regard (Casadesus-Masanell & Ricart, 2010; Demil & Lecocq, 2010; Markides, 2013).

A firm's leadership, therefore, needs to be able to envision, foster and inspire its followers to participate in the work of reimagining and innovating the firm's business model. There is a limited understanding of how leadership impact the innovation of the business model and its dimensions in the existing literature is limited despite the importance of understanding the subject for organisations and academia alike (Achtenhagen et al., 2013; Foss & Saebi, 2018; Ograjenšek & Buhovac, 2016; Spieth et al., 2014). As a contribution to addressing this gap, this study sought to understand how the transformational leadership style impacts, because of the relevance of its attributes to the process, the business model innovation process. Why the study considered the transformational leadership style is the focus of the next sections.

2.4 Leadership, organisational success and business model innovation

An appreciation of how leadership styles impact the business model innovation process warrants an investigation given their importance to the process (Foss & Saebi, 2018; Foss & Stieglitz, 2014; Spieth et al., 2016; Teece, 2018). Business model innovation constitutes part of organisational success, and Berson et al. (2006) and Suifan et al. (2018) reported leadership to be of significance in achieving organisational success. Hasan and Khajeh (2018) noted that leadership plays the roles of vision creation, mission and objective setting, policy creation and activity coordination. For a firm to be able to be successful, its leadership has to possess attributes that are suited for its objectives. The need for leader attribute aligned to firm objectives makes a case for the firm to understand how different leadership styles impact organisation objectives including innovating business models to achieve competitive advantages. Berson et al., (2006, p. 579) defined leadership as "a process of influencing and teaching others to understand why and how certain activities and goals need to be accomplished". The authors concluded that leadership is a key

enabler of the organisation's ability to achieve new ways of creating value and successfully achieving goals like business model innovations.

Saebi et al., (2017) in their study established the importance of leadership is a vital facilitator of a firm's ability to innovate its business model. Despite this finding, the importance of leadership behaviours and how they influence organisational success remains an underresearched area in leadership research (Darwish et al., 2020; Lord et al., 2017; Stone & Gandolfi, 2018). Part of organisational success includes innovating business models to achieve competitive advantages (Carreiro & Oliveira, 2019; Chesbrough, 2010; Saebi et al., 2017; Spieth et al., 2016). Achtenhagen et al. (2013) confirmed the importance of leadership in fostering business model innovation and problem-solving in their followers as the environment demands increased organisational ability to adapt to changes, including increased competition.

According to Stone and Gandolfi (2018), a significant amount of research exists that focuses on different leadership behaviours which help to understand different leadership styles and their role in organisational performance. Leadership styles pertain to relationships used by leaders to motivate their followers to work towards a common good (Hasan & Khajeh, 2018). In the context of business model innovation, the transformational leadership style has been cited by Ograjensek and Buhovac (2016) as the most relevant leadership style. Transformational leadership has been extensively researched in light of organisational success but how it impacts the business model innovation as part of this success remains unaddressed (Ng, 2017; Siangchokyoo et al., 2020; Suifan et al., 2018).

There is limited literature focusing on how the transformational leadership style influences the business model innovation process (Achtenhagen et al., 2013; Ograjenšek & Buhovac, 2016; Spieth et al., 2014). It is in this regard that this study investigated how the transformational leadership style impacts business model innovation. The study examined the impact of the various transformational leadership style components on the business model innovation process. The component focused research deepened the researcher's understanding of the nature of the relationship between the constructs.

2.5 Transformational Leadership and business model innovation

Transformational leadership is the most relevant in fostering organisational goal achievements because transformational leaders' followers are more productive and innovative (Carreiro & Oliveira, 2019; Darwish et al., 2020; Hughes et al., 2018; Ng, 2017). The authors attribute this aspect of transformational leaders to the leaders' being more relational with followers. They also noted that transformational leaders motivate followers to achieve higher performances; possess an interactive vision; and foster effective communication. Transformational leaders share values and create an environment that promotes innovation and put the interests of the organisation first. Innovating the business model calls for leadership with the ability to stimulate new ways of thinking in the followers; encourage exploratory and experimenting behaviour; flexibility amongst leaders; and capable and empowered employees (Carreiro & Oliveira, 2019; Chatman & O'Reilly, 2020; Hughes et al., 2018; Ograjenšek & Buhovac, 2016). These leadership requirements for business model innovation are more aligned to the transformational leadership style. Therefore the study focused on investigating the impact of the transformational leadership style on the business model innovation process.

According to Rafferty and Griffin (2004) and Khalili (2016), notable key attributes of transformational leadership that make it suitable for supporting organisational wide activities like business model innovation include the following:

- Transformational leadership serves as an independent force in inspiring change because it seeks to address the leader and follower needs in a way that fosters collective change.
- Transformational leaders pay attention to follower developmental needs in a manner that allows the leaders to effect organisational wide change like business model innovation.
- Transformational leaders can bring about organisational transformations like innovating extant business models.
- Transformational leaders foster an environment where followers are empowered and have a voice to be able to come up with ideas that facilitate organisational, including but not limited to business model innovation.

Transformational leadership is often contrasted with transactional leadership in which the latter refers to a leadership style which focuses on the promotion of individual interests of the leader and the followers. Transactional leadership fails to promote the organisation's values and objectives. Transformational leadership refers to a leadership style which seeks to empower the follower and pay attention to the follower's individual needs, personal development, develop follower leadership potential through coaching, mentoring, and support as well as challenging them to solve problems innovatively (Chatman & O'Reilly, 2020). It is in this regard that transformational leadership becomes a better leadership style for business model innovation than transactional leadership.

Transformational leadership has five key components: vision, inspirational communication, intellectual stimulation, supportive leadership, and personal recognition (Carreiro & Oliveira, 2019; Ng, 2017; Rafferty & Griffin, 2004; Suifan et al., 2018). The authors further elaborate these components or dimensions as follows: vision speaks to the leader's ability express an ideal picture of the organisation's future for followers; inspirational communication refers to the leader's ability to use inspiring messages to rally followers. Intellectual stimulation on the other hand embodies leadership practices that get followers to think in a disruptive manner, challenge the status quo and question old assumptions. Chesbrough (2010), Massa et al. (2017), and Teece (2018) confirmed that business model innovation to be more prevalent in firms that promote experimentation and new ways of thinking the transformational leadership may be more suited to promoting business model innovation. The business model innovation process requires that leaders present an anticipated vision of the future of the market conditions hence the firm. The visionary component of the transformational leadership style gives transformational leaders the ability to better engage in business model innovation.

Supportive leadership refers to the leader's empathy with regards to the follower's needs and goals, including being a coach and mentor for their followers. Rafferty and Griffin (2004) describe personal recognition as the granting of rewards as an acknowledgement of follower effort and verbally recognising the achievement of

individual goals. These components are the agents through which transformational leaders support new ways of doing business and promote innovations by facilitating divergent thinking and empowering employees (Zuraik & Kelly, 2019). This study, therefore, sought to understand how the transformational leadership, through its dimensions, impacts the business model innovation process for firms seeking to achieve competitive advantages in the face of increased competition and environmental uncertainty.

2.5.1 Leadership vision

Leadership vision is a sub-component of the broad leadership construct of charisma. Rafferty and Griffin (2004) found that charisma is a significant component of transformational leadership that is associated with follower satisfaction with the leader. The authors further state that the common theme related to charisma is the ability of the leader to articulate the firm's vision. They went on to define vision as the "expression of an idealised picture of the future based around organisational values" (2004, p. 332).

The ability of the leader to create and articulate a vision for the followers has a bearing on the business model innovation process. The business model innovation process involves anticipating or visualising the future and crafting a new or innovating the extant business model to align it with the expected future. This reengineering of the business model results in another one that will help the firm achieve its objectives. Vision is associated with being creative and is the result of the internalisation of organisational goals. Leader vision strongly influences followers to share in the leaders idealised future, which for transformational leaders will be aligned with the organisation's objectives (Khalili, 2016). Vision allows a transformational leader to shape the business model innovation process by assisting the organisation to show its followers an example to follow that represents the firm's ideology. This ideology results in business models that allow the firm to successfully operationalise their strategies in a manner that creates competitive advantages (Spieth & Schneider, 2016).

2.5.2 Inspirational Communication

Inspirational communication refers to a transformational leader's attribute of using inspirational appeals and emotional speeches to inspire followers to sacrifice self-interest for the greater good of the organisation and team (Bednall et al., 2018; Carreiro & Oliveira, 2019; Rafferty & Griffin, 2004). Inspirational communication allows the transformational leader to communicate their vision in a way the causes their followers to be emotionally attached to the organisation's objectives by saying positive things about the organisation. Inspirational communication also allows the leader to articulate the firm's vision and demonstrate high levels of performance, determination and confidence. This attribute drives business model innovation through motivating followers to identify with the organisation positively. Ograjensek and Buhavoc (2016) noted that one of the critical drivers of business model innovation is information sharing. The authors also noted that communication helps build trust in followers, and high levels of trust are associated with improved business model innovation. Inspirational communication does not only influence internal stakeholders but positively affects the firm's relationship with its customers and channel partners. An improvement in these relationships, therefore aides the innovation of the value creation and value delivery dimensions of the business model.

Inspirational communication or inspirational motivation seeks to, through verbal communications, build followers' confidence and inspire belief in the organisation's cause (Bednall et al., 2018). Rafferty and Griffin (2004, p. 332) defined inspiration as "the action or power of moving the intellect or emotions". According to Bednall et al., (2018, p. 4), inspirational leadership refers to "leadership behaviours that add non-intellectual, emotional qualities to the influence process, such as displaying an action orientation, seeking to build employees' confidence through verbal communications, and inspiring belief in the cause". Business model innovation is difficult for most firms because of leadership inertia. The ability of inspirational communication to instil confidence in the leader and follower and make them action-oriented can address the adverse effects of organisational and leadership inertia (Chesbrough, 2010).

2.5.3 Supportive Leadership

Supportive leadership is transformational leadership behaviour associated with respecting followers and being sensitive to the followers' needs and feelings (Podsakoff et al., 1990). The transformational leader's ability to demonstrate individualised consideration has been noted by Rafferty and Griffin (2004) as one of the factors that distinguish transformational leadership from other leadership styles. They went on to highlight expressing concern for followers and taking account of their individual needs hence creating an environment where employees feel happy. Happy employees are associated with improved innovation; hence transformational leadership positively influences business model innovation practices.

According to Carreiro and Oliveira (2019), supportive leadership allows the leader to show concern for the followers and creates a friendly environment, and followers needs are met. This aspect adds to the finding by Khalili(2016) that a supportive environment increases innovation. Transformational leadership supportive leadership therefore positively influences the business model innovation

2.5.4 Intellectual Stimulation

Intellectual stimulation relates to leadership behaviours that sensitise followers to develop an interest in problems and crafting solutions for these problems by looking for new ways to solve the problems (Hughes et al., 2018; Khalili, 2016; Rafferty & Griffin, 2004). The authors further affirmed that intellectual stimulation by leaders increases the followers' ability to craft better quality solutions, including crafting new business models by better conceptualising, comprehending and analysing problems. Rafferty and Griffin (2004) defined intellectual stimulation based on its ability to enhance employee interest in, and awareness of problems whilst increasing their ability to think about problems in new ways. Business model innovation is likely to be more aligned to intellectual stimulation amongst the five transformational leadership components (Hamelink & Opdenakker, 2019; Koh et al., 2019; Ograjenšek & Buhovac, 2016). Business model innovation involves creating new ways of creating value by rethinking the ecosystem of the value creation, value delivery, and value capture mechanisms of the business model (Kim & Min, 2015). To achieve this new way of

bundling the activities the firm uses to deliver on its value proposition, the leaders must inspire the whole team to think differently (Snihur & Zott, 2020).

According to Carreiro and Oliveira (2019), transformational leaders exhibit behaviours that increases the followers' ability to explore new ways of solving problems, seek new knowledge and experiment with new alternatives. Chesbrough (2010); Chesbrough et al (2018); and Teece (2018) identified experimentation as a critical antecedent of business model innovation. The ability of transformational leaders to experiment and stimulate experimentation in their followers increases the potential of transformational leadership to drive the business model innovation process (Chesbrough, 2010; Chesbrough et al., 2018; Cortimiglia et al., 2016; Teece, 2018). Therefore transformational leadership intellectual stimulation positively impacts the business model innovation process.

2.5.5 Personal Recognition

Personal recognition was defined by Rafferty and Griffin (2004, p. 334) as “the provision of rewards such as praise and acknowledgement of effort for the achievement of specified goals”. The authors noted that personal recognition occurred when leaders demonstrated to followers that they valued follower efforts. Follower personal recognition occurs when follower individual achievements aligned to the firm’s vision and objectives are rewarded. Because business model innovation occurred in a group setting for all team members to do their best, they need to be recognised. Followers that are personally recognised tend to buy their leaders’ visions hence contribute positively to business model innovation initiatives.Because leaders and followers in a transformational relationship have a vested personal investment in the firm’s vision, personal recognition has the potential to produce outcomes that are consistent with firm objectives like business model innovation (Carreiro & Oliveira, 2019). The authors further noted that personal recognition allows the leader to demonstrate to followers that they value individual efforts and rewards individual follower achievements through praise and appreciation of the employee’s actions.

Transformational leadership is associated with the ability to inspire innovative behaviour in followers by encouraging followers to go beyond expected performance levels (Bednall et al., 2018; Hughes et al., 2018). Personal recognition leaves followers feeling valued hence end up surpassing their desired levels of performance. To achieve innovation of all dimensions of the business model, followers need to identify with the firm's objectives personally. Personal recognition has the potential to encourage this follower personal identification with the organisation and hence positively contribute to the business model innovation process.

2.6 Business model innovation, leadership, and the environment

Cortimiglia et al. (2016) reported that business model innovation to be a function of the firm's operating environment. They went on to conclude that "…[since] it is highly dependent on environmental factors (i.e. technology, competitive, market, and legal/regulation structures), a [business model] has to be constantly revisited, and if necessary innovated to keep it viable, competitive, and hard to imitate". Business model innovation, therefore, plays a critical role in helping the firm create and sustain a competitive advantage. Business model innovation is the result of deliberate leadership actions which according to Cortimiglia et al., (2016) include monitoring and identifying uncertainties, anticipating potential consequences of external and internal change, and proactively acting toward innovating the business model.

According to Fjelstad and Snow (2018, p. 36), "…business model innovation seeks to align the elements of a business model to a particular environment. Complex, dynamic, and interconnected environments require agile and continuous adaptation". The authors in this study highlighted the need for understanding the role played by the environment in business model innovation. They also stressed the need for intent on the part of the firm to engage in business model innovation, and this intent reflects the leadership's dominant logic. In highlighting the need for environmental considerations in business model innovation, Cosenz and Bivona (2020) noted that business model innovation includes changing the firm's strategic direction to fulfil new, hidden of unmet customer needs. To be able to achieve this change in strategic direction, the firm's leadership should develop an understanding of the firm's operating environment.

An understanding of the operating environment by the firm's leadership therefore plays a critical role in helping the firm create a competitive advantage through innovating its business model. According to Spieth et al. (2014), firm leadership can resort to business model innovation to respond to uncertain environments. Leadership influences the way the firm configures its activities to create, deliver, and capture value profitably. Transformational leaders may best serve this leadership role as they are more adaptive and embrace learning (Ograjenšek & Buhovac, 2016). Carreiro and Oliveira (2019) also emphasized the part each dimension of the transformational leadership style plays in creating organisational environmental adaptability through enabling innovation even in turbulent operating environments.

2.6.1 Business model innovation,and transformational leadership

Uncertainty remains a central concept in strategic management studies and has been extensively researched in the context of firm performance, including business model innovation, in different external operating environments (Haarhaus & Liening, 2020; Rhisiart et al., 2015; Vecchiato, 2015). Milliken (1987), defined environmental uncertainty as the inability of rationally bounded managers to fully gather, process and understand information about the organisational environment, which is often due to the environment's instability and ambiguity. Business leaders operate in uncertain environments. For the firm to engage in business model innovation, it needs to develop an understanding of how its environmental factors that affect the process behave. Because these cannot be fully understood, according to Cortimiglia et al.(2016), the firm needs to possess the capability to deal with environmental uncertainty to successfully innovate its business model.

The factors that are central to environmental uncertainty as found by Haarhus and Liening (2020), Rhisiart et al. (2015), and Vecchiato (2015) are also the same factors that drive business model innovation as highlighted by Bocken and Geradts (2019). Changes in these factors have made a case for engaging business model innovation stronger as firms continue to experience increased competition from new and improved business models in their respective industries. Increasing uncertainty and

rate of external change for most operating environments are the leading drivers of environmental uncertainty (Haarhaus & Liening, 2020; Vecchiato, 2015). The authors identified increased heterogeneity of business environment components, the emergence of new competitors with new business models, and the rapid pace of technological advances that have shortened product lifecycles as the primary sources of environmental uncertainty.

Ojha et al. (2018); Pieterse et al. (2010); and Waldman et al. (2001) reported that in challenging times, vision and intellectual stimulation traits improved the quality of leadership decisions. The authors further established that during times of environmental uncertainty, firms need to respond and increase their efforts to innovate business models quickly. Transformational leadership is best suited to achieve these requirements.

2.7 Conclusion

The literature review confirmed the significance of both business model innovation and transformational leadership in organisational success during times of environmental uncertainty. Despite the extensive research on both variables, there is limited literature focusing on how transformational leadership impacts business model innovation. An undertaking of this study started the process of addressing this gap in existing research. The study also contributed to improving organisational understanding of how the transformational leadership style impacts business model innovation in times of increased environmental uncertainty. The study assessed whether environmental uncertainty moderated the relationship between the two constructs.

3 RESEARCH HYPOTHESES

3.1 Research questions and hypotheses

This research investigated how the transformational leadership style impacts the business model innovation process in the face of increased environmental uncertainty. As noted in chapters one and two, there has been extensive research on both constructs in other contexts. Foss and Saebi (2018); Ograjensek and Buhavoc (2016); Spieth et al. (2014); and (2013) confirmed the importance of leadership and the transformational leadership style in business model innovation. Still, there is limited research on how transformational leadership impacts the business model innovation process.

Hoch et al., (2016, p. 4) concluded that transformational leadership "highlighted the leader's ability to influence positive follower outcomes through identifying and addressing followers' needs and transforming them by inspiring trust, instilling pride, communicating vision, and motivating followers to perform at higher levels". They went on to describe transformational leadership as constituting part of the positive leadership theories. Organisational success is a result of a combination of individual follower contributions to firm initiatives in a reconfiguring way. Transformational leadership plays a critical role in facilitating employees, as enablers of creative and innovative experience, positively influence firm success including business model innovation (Carreiro & Oliveira, 2019; Hoch et al., 2016; Khalili, 2016; Rowold & Heinitz, 2007).

Business model innovation helps firms achieve competitive advantages in uncertain environments, as was discussed in chapters one and two. Bucherer et al. (2012) concluded that product and services innovation is less important than business model innovations because the latter allows companies to change the rules of the game. It is this ability to change the 'rules' of the game that creates a sustainable firm competitive advantage (Amit & Zott, 2015; Bucherer et al., 2012; Zott & Amit, 2012). The transformational leadership style influences the firms' ability to change the rules of the game. The study therefore hypothesises the following:

H1: The transformational leadership style positively impacts firm business model innovation as measured by value creation innovation, value delivery innovation and value capture innovation

3.2 Leadership vision and business model innovation

Ograjensek and Buhovac (2016) confirmed that transformational leadership was the most supportive leadership style of a culture and practice of business model innovation. Hoch et al., (2016) argued that one of the reasons why transformational leaders are best able to facilitate innovation is because they "are dynamic and proactive and capable of leading not only themselves but also their followers to embrace changes". Business model innovation is a dynamic capability most useful in uncertain environments where change is continuously required (Teece, 2018), this trait of transformational leadership of embracing changes may indicate a positive relationship between transformational leadership and business model innovation.

A business model is a manifestation of the firm's strategy and is the embodiment of leadership's vision and the articulation of the same. For a firm to be able to innovate its business model its leadership should be able to envision what the future will look like and anticipate the best way to organise how the firm will create, deliver and capture value in the expected future. Leadership vision as explained by the transformational leadership component of vision has the potential to positively influence the role leadership plays in preparing the firm for the future by creating and sustain its competitive advantage through innovating the firm's business model (Waldman et al., 2001). Based on the literature reviewed and arguments presented so far, based on the literature, it was hypothesized that:

H1a: Leader vision positively impacts firm business model innovation measured by value creation innovation, value delivery innovation and value capture innovation

3.3 Inspirational communication and business model innovation

Inspirational leaders are outstanding in the use of oral communication in motivating and stimulating their followers' emotions (Carreiro & Oliveira, 2019). The authors went on to define inspirational communication as "the expression of positive and encouraging messages about the organisation and statements that build motivation and confidence" (2019, p. 107). For followers to embark on business model innovation, they need to have confidence in the organisation's vision and objectives in a manner that drives them to strive for the firm's success. Business model innovation can be conceptualised as firm success and the firm's propensity to engage in it is a function of firm leadership (Chesbrough, 2010; Fjeldstad & Snow, 2018; Foss & Saebi, 2016). The ability of the firm's leadership to inspire confidence in their followers to embark on business model innovation as a way of helping the firm achieve its objectives and maintain a competitive advantage in the face of increased competition can is critical. Leadership inspirational communication has the potential to positively influence firm practices that relate to innovations, including new ways of creating and capturing value (Ojha et al., 2018). Thus, based on the literature reviewed, it was proposed that:

H1b. Inspirational communication positively impacts business model innovation measured by value creation innovation, value delivery innovation and value capture innovation

3.4 Intellectual stimulation and business model innovation

Intellectual stimulation focuses on leadership behaviours that increase the followers' interest in devising new ways of solving problems and experiment with new approaches to achieving firm objectives (Bednall et al., 2018; Carreiro & Oliveira, 2019). Intellectual stimulation positively influences exploratory innovation which forms a vital part of business model innovation that it includes experimentation with new alternatives (Amit & Han, 2017; Amit & Zott, 2015; Bashir & Farooq, 2019; Chesbrough, 2007; Teece, 2010).

Carreiro and Oliveira (2019) also argue that the role of intellectual stimulation in driving follower innovation and organisational success, including business model innovation is under-explored. Research on the business model innovation as a construct has revealed that it is a cheaper way of achieving and sustaining a competitive advantage in today's highly competitive environment (Anwar & Ali Shah, 2020). Because business model innovation focuses on innovating the mechanisms through which a firm creates, delivers, and captures value, intellectual stimulation has the potential to positively influence how the firm's leadership drives the business model innovation process. Based on the reviewed literature, the study hypothesises that:

H1c. Intellectual stimulation positively impacts business model innovation measured by value creation innovation, value delivery innovation and value capture innovation

3.5 Supportive leadership and business model innovation

Supportive leadership focuses on the leader's ability to express concern for followers and indicate that s/he cares about the needs and feelings of the followers (Bednall et al., 2018; Hughes et al., 2018; Rafferty & Griffin, 2004). The leadership behaviour, in turn, creates an environment that fosters employees' willingness to explore and experiment with new ways of doing things and ideas. This experimentation plays a crucial role in business model innovation (Chesbrough et al., 2018; Teece, 2018; Zott & Amit, 2012). Transformational supportive leadership is responsible for causing followers to do more than is expected of them and helps firms achieve exceptional performance through the creation of a friendly work environment that is conducive for business model innovation (Carreiro & Oliveira, 2019). This study therefore supposes that:

H1d. Supportive leadership positively impacts business model innovation measured by value creation innovation, value delivery innovation and value capture innovation

3.6 Personal recognition and business model innovation

Personal recognition, also called individualised consideration, has been found to facilitate improved leader understanding of employee needs, skills and aspirations (Bednall et al., 2018). Personal recognition drives follower commitment to the

organisational objectives by providing follower encouragement and recognition for follower creativity which plays a critical role in promoting business model innovation (Banks et al., 2016; Carreiro & Oliveira, 2019; Hughes et al., 2018; Pieterse et al., 2010; Rafferty & Griffin, 2004).

Personal recognition also incorporates leadership behaviours that reward individual performance, and this plays a crucial role in driving employee commitment to organisational success, including business model innovation. The ability to sell the leader's vision and help followers internalise the vision influences the leader's inclination to provide rewards in the form of praise and recognition to followers (Bednall et al., 2018; Carreiro & Oliveira, 2019). Business model innovation is a firmwide process and requires the contribution of all team members. The role of the leader is rallying followers around the objective is needed more in the business model innovation process. Based on these findings for the literature reviewed, the study proposes that:

H1e. Personal recognition positively impacts business model innovation measured by value creation innovation, value delivery innovation and value capture innovation

3.7 Transformational leadership, business model innovation and environmental uncertainty

Environmental uncertainty is of significance in the relationship between transformational leadership and business model innovation (Waldman et al., 2001). Increased environmental uncertainty is best addressed by transformational leadership since uncertainty drives more innovative behaviours in response to increased threats to organisational success (Milliken, 1987; Vecchiato, 2015). Transformational leaders are capable of driving these creative responses that may result in firms innovating their business model as a way of adapting to the increased uncertainty and the risks it poses to the firm's objectives. (Elkins & Keller, 2003; Ojha et al., 2018; Pieterse et al., 2010). Based on the literature reviewed it was proposed that

H2. Environmental uncertainty does not moderate the relationship between the transformational leadership style and firm business model innovation

H2a. Environmental uncertainty does not moderate the relationship between leader vision and firm business model innovation

H2b. Environmental uncertainty does not moderate the relationship between inspirational communication and firm business model innovation

H2c. Environmental uncertainty does not moderate the relationship between intellectual stimulation and firm business model innovation

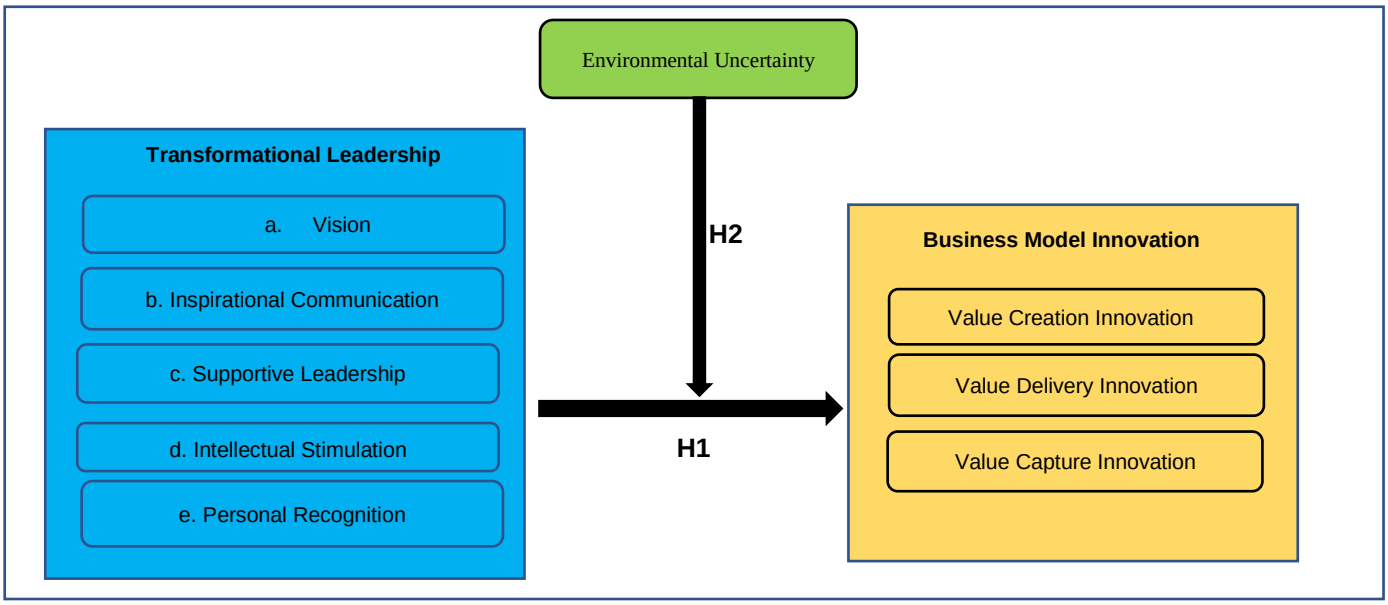
H2d. Environmental uncertainty does not moderate the relationship between supportive leadership and firm business model innovation

H2e. Environmental uncertainty does not moderate the relationship between personal recognition and firm business model innovation

3.8 Conclusion

Based on the findings from extant literature thus far and arguments provided, the researcher employed deductive reasoning to reduce the theoretical findings and formulated the presented research hypotheses. Figure 1 is a conceptualisation of the hypothesised theoretical model showing the hypotheses that were tested in a bid to understand how the transformational leadership impacts business model innovation in an uncertain environment.

Figure 1: Conceptualised theoretical model



The business model innovation – transformational leadership model adapted from Careirro and Oliveira (2019); Clauss (2017); Spieth and Sneider (2016); and Rafferty and Griffin (2004)

4 RESEARCH METHODOLOGY

4.1 Introduction

This study used the positivism research philosophy as the investigations sought to understand the nature of the relationship between two measurable variables relating to transformational leadership and business model innovation. The study made use of a quantitative approach to study how the transformational leadership style and its components impact the business model innovation process of firms across all industries in South Africa. The participants were professionals working in all sectors in South Africa as these participants would be able to provide useful data for use in investigating how transformational leadership impacts the business model innovation process. Data was collected using a questionnaire sent online to the target respondents. The data was first cleaned, coded and then analysed. In the course of the research, the researcher assessed the data for validity and reliability. The limitations of the study were noted and presented in this chapter.

4.2 Research Design

This study investigated how transformational leadership and its components impact the business model innovation process. This study took a deductive research approach as it tested the hypotheses formulated using extant literature in chapter two (Saunders & Lewis, 2018). The study, in this case, investigated if the transformational leadership style has an impact on the business model innovation process. The study also assessed whether environmental uncertainty moderated the relationship between transformational leadership and ints components with business model innovation. The research design constitutes activities conducted in this study to determine how transformational leadership and its components impacts the business model innovation process. Research design can take several forms including positivism, critical realism, interpretivism, post-modernism and pragmatism (Saunders & Lewis, 2018). The study used a survey research design where a survey questionnaire was the main instrument of enquiry. The researcher used a self-administered questionnaire to collect data from a selected group of respondents online.

This research design was appropriate for the following reasons:

- According to Saunders and Lewis (2018) this research design was appropriate because it allowed the researcher to ask the same questions to a large cohort of respondents whilst enabling comparability of responses.
- The research design format allowed the researcher to reduce biases, foster participant confidentiality and save on time and resources, considering that the researcher had a limited amount of time (Saunders & Lewis, 2018).
- The potential respondents had access to the internet on their computers and mobile phones which made it easier to reach them through an online questionnaire. This research design gave the researcher access to a relatively large population in one place (Wright, 2017).
- The design also facilitated to respondent confidentiality (Saunders & Lewis, 2018; Wright, 2017)

The research design's disadvantages include the following: -

- Sampling challenges – online survey are prone to sampling challenges as random sampling is difficult to achieve (Wright, 2017)
- The design is prone to self-selection biases (Wright, 2017)

Saunders and Lewis (2018) also noted that there are three types of research, namely explanatory, descriptive, and exploratory. Explanatory research is appropriate when the study strives to explain and account for descriptive information (Singh, 2007). Explanatory research answers questions that ask why and how phenomenons occur; it also seeks to identify the reasons why a phenomenon occurs. At its heart, an explanatory study aims to establish causes and explanations to support or refute explanations and predictions (Gray, 2014). It, therefore, serves to discover and report relationships among different aspects of the subject under study. Explanatory research was appropriate for this study because it is asking a 'how' questions in that it seeks to explain how transformational leadership and its components impact the business model innovation process (Saunders & Lewis, 2018).

4.3 Research methodology

From the three types of research methodologies, namely qualitative, quantitative, and mixed methods (Quinian et al., 2019), the study made use of the quantitative research method. Quantitative research produces reliable and quantifiable results that have the potential to be generalised to large populations (Singh, 2007). Quantitive research is suitable for testing and validating existing theoretical relationships by determining how and why they occur by testing hypotheses formulated before that collection of data (Creswell, 2017). This study investigated an already established theoretical relationship between transformational leadership and business model innovation; therefore, it used a quantitative research methodology (Singh, 2007).

The key research question in this study was: How does the transformational leadership style impact the business model innovation process? Sub questions based on the components of the transformational leadership style are also asked and phrased in the form of ‘how’ questions.

This study collected data by themes associated with the variables studied and then systematically analysed them to reach some conclusions. Qualitatively explaining how transformational leadership impacts the business model innovation process is difficult, rendering the study easier to conduct as a quantitative study (Saunders & Lewis, 2018). The literature reviewed in this study focused on the leadership, specifically transformational leadership(Bednall et al., 2018; Carreiro & Oliveira, 2019; Hughes et al., 2018; Koh et al., 2019; Rafferty & Griffin, 2004), and business model innovation constructs(Chesbrough, 2010; Cortimiglia et al., 2016; Fjeldstad & Snow, 2018; Hamelink & Opdenakker, 2019; Saebi et al., 2017; Spieth et al., 2014; Spieth & Schneider, 2016; Teece, 2018). These two constructs are extensively researched and have empirically proved relationships that makes them most malleable to quantitative research (Singh, 2007)

4.4 Population

The target population for this study are firms operating in across all sectors of the South African economy. This choice of the target population allowed the study to assess the transformational leadership practices within firms in different industries. Based on the National Small Business Amendment Act of 2003 and 2004 of section 1 (National Small Business Act of 1996), the researcher grouped responding organisations as micro (ten or fewer employees), small (11 to 50 employees), medium (51 to 250 employees) and large (more than 250 employees) based on the size of the workforce. An understanding of how transformational leadership impacts the business model innovation process would benefit all firms regardless of size.

Firms across in all industries have experienced the effects of new business models and how they erode incumbent profitability (Bashir & Farooq, 2019). New business models have been introduced in all segments of the South African economy including the entrance of Uber into the metered taxi industry, Capitec in banking, WhatsApp as an alternative to voice calls for the fixed-line and mobile telephony voice products. Amazon has also shaken the whilst Netflix is eating Multichoice's lunch. All these changes demand that firm leadership come with strategic responses.

Business model innovations have been implemented in all segments of the economy, including those traditionally known to be stable like the banking sector. The entrance of new banking business models like that proposed by Discovery Bank should be a cause of concern for the mainstream businesses. It is in this regard that this study set out to understand how leaders can aide their firms in responding to the changing face of competition and build increased competitive advantages (Siangchokyoo et al., 2020). The incidence of the COVID-19 pandemic has accelerated the need for leaders that can assist firms in becoming more adaptive and responsive to change.

4.5 Unit of analysis

The unit of analysis is a single or group of elements that represent the subject of the sample (Quinian et al., 2019). The unit of analysis in this study is a firm based in a South African. These are the ones expected to benefit from the findings of this study. The understanding of how the transformational leadership style impacts the business model innovation will help firms that are looking to establish sustainable competitive advantages in the face of increased competition (Ograjenšek & Buhovac, 2016).

4.6 Sampling method and size

The study made use of a purposive non-probability sampling technique. The researcher called upon his contacts and his contacts' contacts that met the study's criteria using social media platforms, namely LinkedIn and WhatsApp (Saunders & Lewis, 2018). Because of the practical challenges of collecting data from every member of the proposed population Quinian et al., (2019, p. 173) noted that "sampling is carried out for pragmatic reasons". The authors further argued that sampling, when done correctly, improves the research results. The researcher did not have a defined sampling frame due to the high probability that the researcher would not be able to get a complete list of all individuals that constitute the representatives of companies in South Africa (Quinian et al., 2019; Saunders & Lewis, 2018).

To achieve increased chances of the researcher reaching respondents from firms that had engaged in business model innovation, the researcher requested the respondents to share the questionnaire with their contacts (Creswell, 2017). A sample must be representative of the target population for the research results to answer the proposed research question accurately and snowball sampling further assisted the study in achieving its goal (Singh, 2007). To encourage potential participants to respond to the questionnaire encouragements were used that included promising to share the findings of the study with respondents (Carreiro & Oliveira, 2019).

The study targeted to reach up to 120 respondents in the proposed target population. Achieving a healthy sample size would lead to an improved data analysis result that

would likely yield dependable results and findings (Quinian et al., 2019). This study measured nine latent variables, and Singh (2007) argues that there should be at least 15 qualifying respondents per measured variable with an anticipated response rate of 25%. A total of 120 responses had to be collected from 480 questionnaires to achieve a 25% response rate. The study managed to collect 113 completed responses from a count of 1,715 views of the survey link of both LinkedIn and WhatsApp for four weeks. The sampling frame challenges raised by Wright (2017) affected the study since it was difficult to ascertain the actual sample size. Using the views as the number of questionnaires sent out the study achieved a response rate of 6.59%.

4.7 Measurement instrument description

Responses were collected online using a survey questionnaire. The researcher administered the questionnaire to participants working in various firms in the South African economy using purposive and snowball sampling methods. The measurement instrument had three key sections. The first section of the measuring instrument contained a preamble. The preamble served to introduce the participant to the research, its purpose, benefits to the respondent and the researcher's commitment to maintaining participant confidentiality. Section B of the measuring instrument contained questions used to measure the latent variables if business model innovation, transformational leadership, and environmental uncertainty. The section had 28 items designed to take no more than 10 minutes of the participant's time to answer.

The constructs were all measured using five-point Likert scales which were adapted from the studies of Hamelink and Opdenakker (2019) and Clauss (2017) for items relating to business model innovation – value creation innovation, value delivery innovation, and value capture innovation. Measuring items relating to transformational leadership were adapted from the studies done by Carreiro and Oliveira (2019) and Rafferty and Griffin (2004) whilst environmental uncertainty was measured using items adapted from the study by Haarhaus and Liening (2020).

The scale anchors were all of one type ranging from strongly agree to strongly disagree. The anchors were used for measuring the transformational leadership, business model innovation, and environmental uncertainty constructs. The Five-point Likert scale has the advantage of being less confusing to the respondent and increases response rates (Bouranta et al., 2009). The five-point Likert scale on the other produces an inferior in result quality than scales with more points (Bouranta et al., 2009). The study used the five-point scale to minimise participant confusion and increase the response rate. The scale anchors are as shown in table one below:

Table 1: Five-point Likert scale anchors

1	Strongly disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly agree

The instrument, together with the measured variables played a critical role in helping to understand the role of transformational leadership components on the business model innovation process in an uncertain environment. The measuring instrument is in the appendices section of this report (**Appendix A**).

4.8 Measuring instrument design

The measuring instrument was used in the gathering of data relating to the measured variables of the study in a manner that does not influence the respondent's perceptions about the variables. The questions were adapted from Hamelink and Opdenakker (2019) and Clauss (2017); Carreiro and Oliveira (2019); and Rafferty and Griffin (2004) and Haarhaus and Liening (2020) for collecting data on the three constructs of transformational leadership and its sub-dimensions, business model innovation and its sub-dimensions and environmental uncertainty namely:

- Value creation innovation
- Value delivery innovation

- Value Capture Innovation
- Leader Vision
- Leader inspirational communication
- Leader supportive leadership
- Leader intellectual stimulation
- Leader personalised recognition and
- Environmental uncertainty

The questionnaire sought to gather the information that would help the study in determining the nature of the relationship between transformational leadership and business model innovation.

The questions used in data collection were arranged in a manner that would allow the potential respondent to follow the study logically. The items were grouped in a way that reduced their ability to influence the respondent's responses. How the study arrived at the questions used in the data gathering process and measuring instrument design is the subject of the next sections.

4.8.1 Business model innovation

The questions on the dimensions of business model innovation were adapted from the seminal work of Spieth and Schneider (2016). This work opened the avenues for work that reduced the measurement items from 73 to nine (Hamelink & Opdenakker, 2019). The questions were all structured in a way that allowed the study to collect the respondents' firms' business model innovation practices based on the sub-dimensions of the business model innovation namely value creation innovation, value delivery innovation and value capture innovation (Anwar & Ali Shah, 2020; Bashir & Farooq, 2019; Clauss, 2017; Foss & Saebi, 2018). All questions were adapted from Spieth and Schneider (2016) and Hamenlink and Opdenakker (2019)

Table 2: Business model innovation questions

Question Number	Question	Adapted from
VCI1_B8	My firm overall achieved dramatic cost advantages	(Hamelink & Opdenakker, 2019; Spieth & Schneider, 2016)
VCI2_B9	Relative to our direct competitors, our employees have very up to date knowledge and capabilities	
VCI3_B10	We constantly reflect on which new competencies need to be established in order to adapt to changing market requirements	
VDI1_B11	My firm added a completely new product or service range	
VDI2_B12	My firm captured a new market segment we never used to serve before	
VDI3_B13	My firm now has completely new significant sales and distribution channels	
VCIn1_B14	As a business we significantly improved customer satisfaction of desires and requirements	
VCIn2_B15	Our business is now more efficient in resources uses like in HR, Finance, technologies etc	
VCIn3_B16	Our firm now has new suppliers and more profitable ways of dealing with external counterparties	

4.8.2 Transformational Leadership

Questions for measuring the transformational leadership were adapted from Rafferty and Griffin's (2004) and Carreiro and Oliveira (2019) whose work represents a major shift from the traditional Multifactor Leadership Questionnaire (Antonakis & House, 2014) that had dominated transformational leadership research. The sections of the questionnaire on transformational leadership and its sub-dimensions contains 15 questions. The findings of Bednall et al. (2018) were also incorporated in adapting Carreiro and Oliveira (2019) and Rafferty and Griffin's (2004) questions that constituted the questionnaire section for measuring transformational leadership. The questions collect information on the five dimensions of transformational leadership according to Carreiro and Oliveira (2019) and Rafferty and Griffin (2004) namely vision, inspirational communication, supportive leadership, intellectual stimulation, and personal recognition. The questions used to collect information on transformational leadership and its components are shown in Table 3.

Table 3: Transformational leadership components questions

Question Number	Question	All Adapted from
TLVision1_B17	My supervisor has a clear understanding of where we are going	(Bednall et al., 2018; Carreiro & Oliveira, 2019; Rafferty & Griffin, 2004)
TLVision2_B18	My supervisor has a clear sense of where he/she wants to be in 5 years	
TLVision3_B19	My supervisor has no idea where the organisation is going	
TLInspCom1_B20	My supervisor says things that make employees proud to be part of this organisation	
TLInspCom1_B21	My immediate superior says positive things about the work unit	
TLInspCom1_B22	My immediate superior encourages people to see changing environments as situations full of opportunities	
TLIntStim2_B23	My immediate superior challenges me think about old problems in new ways	
TLIntStim2_B24	My immediate superior has ideas that have forced me to rethink some things that I have never questioned before	
TLIntStim2_B25	My immediate superior has challenged me to rethink some of my basic assumptions about my work	
TLSupLead1_B26	My immediate superior considers my personal feelings before acting	
TLSupLead2_B27	My immediate superior behaves in a manner which is thoughtful of my personal needs	
TLSupLead3_B28	My immediate superior sees that the interests of employees are given due consideration	
TLPersRec1_B29	My immediate superior commends me when I do a better than average job	
TLPersRec2_B30	The top management executive acknowledges improvement in my quality of work	
TLPersRec3-B31	My immediate superior personally compliments me when I do outstanding work	

4.8.3 Environmental Uncertainty

The questions for measuring environmental uncertainty were adapted from the work of Haarhaus and Liening (2020). The authors in concurrence with Vecchiato (2015) noted that environmental uncertainty is the result of fast-paced operating environments and firms need to devise ways of coping with these potentially disruptive environments. Since business model innovation is a key strategic tool at the disposal of firm leadership, it has the potential to help firms cope with increasing environmental uncertainty (Rhisiart et al., 2015). The questions in the questionnaire gauged the respondents' perception of their firms' operating environments.

The questions used to assess and determine respondents' understanding of the role of environmental uncertainty were adapted from Haarhaus and Liening (2020) firm operations are shown in Table 4.

Table 4: Environmental uncertainty questions

Question Number	Question	Adapted from
EU1_B32	It is impossible to foresee today how our business segment is going to change over the next 10 years.	(Haarhaus & Liening, 2020)
EU2_B33	It is not possible to make exact predictions about our business segment's development over the next 10 years.	
EU3_B34	How our market is going to change over the next 10 years is unpredictable.	
EU4_B35	Over the next 10 years, there can be changes that represent a major threat to the competitiveness of our company.	

All items used in measuring the variables studied in this research were rated on a five-point Likert scale with the anchors like those in Table 1.

4.8.4 Pretesting the measuring instrument

The measuring instrument used in this study contained 35 questions encompassing respondent demographics and variables relating to the research questions that the study sought to address. The researcher pretested the questionnaire before being distributed to targeted respondents to ensure that the items were easy to understand and to confirm the instrument's validity and reliability (Quinian et al., 2019; Saunders & Lewis, 2018). A respondent was expected to spend no more than 10 minutes to complete the questionnaire. The questionnaire was distributed to 10 individuals that qualified to be in the target population, and the respondents gave their opinion on the measuring instrument's simplicity and wording clarity. A few word omissions in the preamable namely 'firms' was missing, on question 10 the word 'new' had been omitted on the google form, and item 22 had the environment misspelt. The typographical errors were noted and corrected. The changes suggested by the ten individuals did not materially change the intended message on the questionnaire.

Most individuals in this pre-test cohort found the questionnaire easy to understand, and most of them expressed interest in the study's findings upon completion and were willing to refer their contacts once the study commenced. Most of the members of the 10-member cohort also managed to complete the survey in less than 10 minutes rendering the questionnaire time efficient.

4.9 Data gathering process

According to Quinian et al., (2019) quantitative research methods use experimental, quasi-experimental and non-experimental methods, including surveys to collect data. A self-administered online survey was conducted on LinkedIn and WhatsApp social media platforms using a Google form was used to collect data. This form of data collection facilitated for quick dissemination of the questionnaire to the target respondents (Saunders & Lewis, 2018). Online data collection has the advantage of being less time consuming, highly flexible and makes data collection easier (Singh, 2007). Despite these advantages, online data collection methods have been found to be prone to question misinterpretation by respondents and low response rates

(Quinian et al., 2019). To address these shortcomings, this study's questionnaire was pre-tested and snowball sampling used as explained in section 4.7.4.

The challenges of low response rates associated with online data collection techniques were dealt with through continually engaging with the online community by sending reminders every five working days during the data collection period. Solicitations were made on LinkedIn and WhatsApp to existing contacts with the hope of encouraging the connections to engage their contacts to speed up the snowballing effects. Existing contacts were also approached through physical meetings and voice calls and direct messaging on LinkedIn and WhatsApp to thank them for the assistance rendered and solicit for more contacts. A promise to share the findings of this study was made to solicit prospective participant responses (Carreiro & Oliveira, 2019).

1,715 potential respondents viewed the questionnaire on both LinkedIn and WhatsApp, and from these 113 completed questionnaires were collected. The 113 responses implied a response rate of 6.59% from all potential respondents.

4.10 Analysis approach

Analysis of the data collected as part of a study serves to proffer findings that can be used to draw conclusions from the conducted research. This study collected numeric interval (Likert) scale data for the measured variables, which is best suited for quantitative analysis methods. To conduct the quantitative analysis Microsoft Excel and Statistical Package for Social Sciences (SPSS) and Analysis Moment of Structure (AMOS 26) were more appropriate tools to use for the analysis data collected in this study. To be able to test the proposed hypotheses shown in the conceptualised theoretical model in Section 3.8 the latent variables were measured using the observed variables from the collected data.

4.10.1 Summarising the collected data

A Google form was used to collect data from all the respondents for this study. This allowed the collected data to be exported into Microsoft Excel for initial tabulation. According to Quinian et al. (2019), statistical manipulation of collected data takes place after the editing, coding, and filing have been performed. These three critical steps created the opportunity for the researcher to ensure that the data is correct and in a suitable format before any analysis conducted on the data (Quinian et al., 2019). The data coding used the developed codebook as a guide and relevant list definitions when checking the data for errors (Saunders & Lewis, 2018). Having been edited, coded, and filed the data was then imported into SPSS for initial analysis.

The study collected Likert scale data making, which is categorical and ordinal data fit for quantitative analysis. As part of the initial analysis, the collected data was tabulated and grouped according to the demographic variables in the measuring instrument. The summarised data was then used to determine question response rates. Descriptive statistic analysis was performed on the data to gauge the characteristics of the respondents to the study. Charts and tables were generated and used to present the data graphically. The demographic profiling of the participants was used to assess how representative the responses were of the target population and understand the potential biases embedded in the data.

4.10.2 Determining composite reliability

Reliability refers to the base of departure for questions asked to all the participants being the same, within their specific context, ensuring question neutrality to enable the study to gather consistent information (Saunders & Lewis, 2018). The study used IBM SPSS for testing each construct's Cronbach's alpha to check scale reliability of the measuring instrument (Bonett & Wright, 2015; Henseler et al., 2014). The study's measuring instrument contained adapted items from other previous studies, as shown in section 4.8, and these were to assessed to determine if they were still reliable. The Cronbach's alpha tests were performed to ascertain the consistency of the replies to the questions used to measure the constructs under study. For a measuring instrument to be deemed reliable, the constructs' Cronbach alpha must be at least

0.65 (Hair et al., 2010; Henseler et al., 2014). Despite Bonnet and Wright's (2015) argument that there's no universally agreed lower limit for the Cronbach's alpha, this study adopted a lower limit of 0.65 based on Henseler et al.(2014) and Hair et al. (2010).

According to Bonnet and Wright's (2015), inter-construct relationships amongst observable variables must measure the same construct. Cronbach's alphas measure the ability of a set of questions to measure a given latent construct reliably. Henseler et al. (2014) and Hair et al. (2009) associated Cronbach's alpha with construct factor analysis, and this study conducted factor analysis for all the constructs studied.

4.10.3 Measuring construct validity

Validity refers to the data collection methods' ability to measure what they were intended to measure so that the findings are about what they appear to be about (Saunders & Lewis, 2018). The measuring instrument contained questions designed to measure the observable variables through participants' responses to the questions about the constructs and their sub-constructs. The study sought to ensure that all the items were standard and that they did not deviate from the adapted measurement items to allow for a uniform measure of the constructs.

The study investigated how the transformational leadership style impacts the business model innovation process for a firm. A review of existing literature determined that the relationship existed a priori. The research intended to test the hypotheses formulated in chapter three that a relationship does exist between transformational leadership and business model innovation the confirmatory factor analysis was therefore appropriate.

Fundamental relationships between the measured variables were determined using confirmatory factor analysis in AMOS 26. The study conducted an assessment of the model fit and the cut-off points for the factor loading, absolute fit, incremental fit, and parsimonious fit tests are shown in Table 5. The advantage of CFA is that researchers can specify latent variable models that provide separate estimates of relations among latent constructs and their manifest indicators (the measurement model). Another

advantage of CFA is its ability to generate measures of global fit that can provide a summary evaluation of even complex models.

Table 5: Validity and reliability thresholds

Category	Index name	Fit Criteria	Literature
Factor Loading	Standardized Regression Weight	weight 0.5	Hair *et al.* (2010)
Absolute Fit	Chi-square (χ^2)	p > 0.05	Wheaton et al. (1977); Kline (2011)
	Root mean square error of approximation (RMSEA)	Close fit ≤ 0.05 Reasonable fit : 0.05-0.08 Poor fit: ≥ 0.10	Browne & Cudeck (1993)
	Goodness-of-fit-index (GFI)	≥ 0.9	Jöreskog & Sorbom (1993)
Incremental Fit	Comparative fit index (CFI)	Great > 0.95 Traditional: 0.9 Sometimes acceptable: 0.8	Hu &Bentler (1999)
	Tucker-Lewis index (TLI)	> 0.9	Hu & Bentler (1999)
	Normed fit index (NFI)	> 0.9	Bentler (2007)
Parsimonious fit	Chi-square/df	< 5.0	Bentler (2007)
	Adjusted GFI (AGFI)	> 0.9	Jöreskog & Sorbom (1993)

4.11 Limitations

The study made use of purposive and snowballing sampling methods. Purposive sampling increased the possibility of reduced representativeness in the sample (Quinian et al., 2019). According to Sanders and Lewis (2018), the challenges posed by purposive sampling's lack of representativeness are addressed by snowballing. On the other hand, snowballing uses third-party networks, and this increases the risk of getting responses from participants outside the target population (Singh, 2007).

Business model innovation and transformational leadership are dynamic processes and using a cross sectional study failed to capture these dynamic aspects of the measured variables thereby reducing the depth of the findings (Quinian et al., 2019). This study made use of online surveys, and these have the disadvantage of failing to capture sufficient details from respondents hence reduced the quality of the findings

(Saunders & Lewis, 2018; Wright, 2017). The sample size for this study was 113 participants which was below the preferred 120 participants. This exposed the study prone to type II errors.

The study collected data online using a google distributed on LinkedIn and WhatsApp. Online data collection presents the challenge of self-selection bias which can land the research to the challenge of unrepresentative samples (Wright, 2017). Unrepresentative samples limit the generalisability of the study's findings and ability to make estimations about population parameters. To address this challenge the study only limited participants to one response per email. Once an email participated it was restricted from responding to the questionnaire again.

Another limitation of the study is the challenge of sampling frames. The study could not ascertain the actual size of the population from which the sample was drawn due to the use of online data collection (Quinian et al., 2019). The study made use of a standardised questionnaire to collect data. Standardised questionnaires limit the participant ability to provide information that increase the insights gathered from the study (Saunders & Lewis, 2018).

The questionnaire was designed for Englsh speraking participants in a setting where the majority of the respondents' first language is not English. This reduced the potential participants and restricted it to only those that are conversant in English.

5 RESEARCH RESULTS

5.1 Introduction

This chapter contains the findings from the data collected from 113 participants in the study through an online survey. The chapter explains the data used in the study and the tests that were carried out in a bid to answer the questions posed by this study. The chapter also describes the methods used to assess the respondents' demographic characteristics; establish the measuring instrument's reliability and validity; and test the hypothesised relationships between transformational leadership and business model innovation. The results of the data analysis are also presented in this chapter.

5.2 Survey response rate

The data used in this study was collected over one month using a google form. The google form was shared with the target population via LinkedIn and WhatsApp. The form received a total of 1,715 views on both LinkedIn and WhatsApp, and a total of 113 completed responses were collected. This implied a response rate of 6.59% with all questions on the measuring instrument receiving a 100% response rate by all 113 participants.

5.3 Participant demographics based on collected data

5.3.1 Gender and age group analysis

The study's target population was professionals serving in supportive, junior, middle, and executive management roles in different industries in South Africa. A total of 113 respondents completed the questionnaire. Almost 41% of the respondents were senior or executive managers, while about 35% were in middle management or professional roles. Equal proportions of the respondents of just below 10% were in CEOs / owners and junior management/supervisory positions, respectively (Figure 2).

The gender statistic for the respondents was predominantly (76%) of the respondents, and the remaining 24% (27) were female. Most of the respondents by age were participants in the 30 to 39 age group. The smallest group of respondents by age group were the 21 to 29 and 50 plus age groups which were 3.5% of the respondents each. Figure 3 and Figure 4 are graphical depictions of the sample based on gender and age groups.

Figure 2: Respondents composition based on their job roles

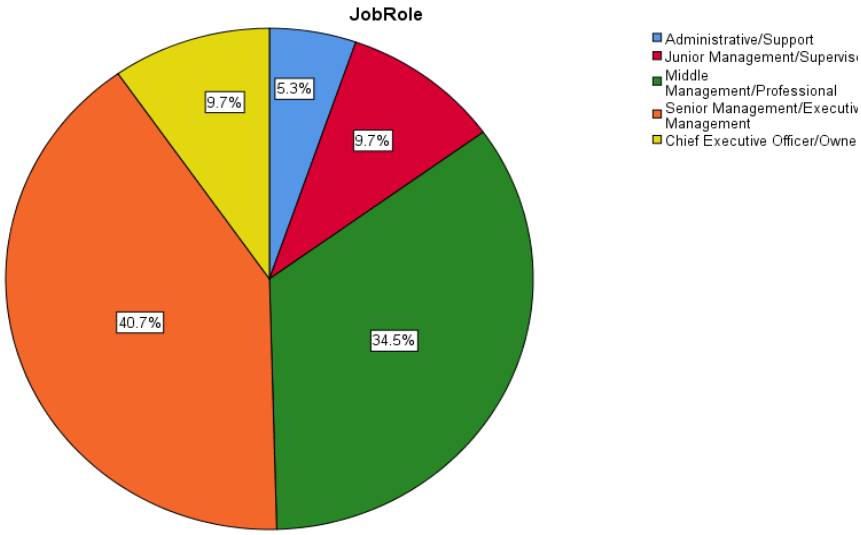


Figure 3: Participants composition by gender

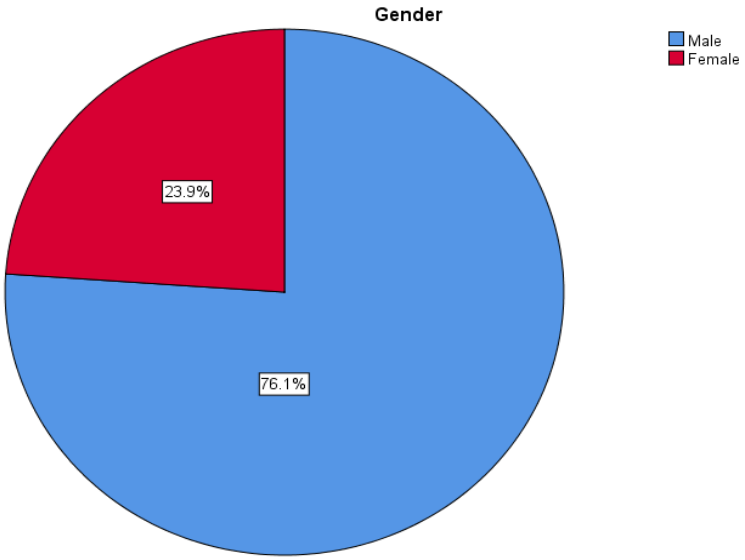
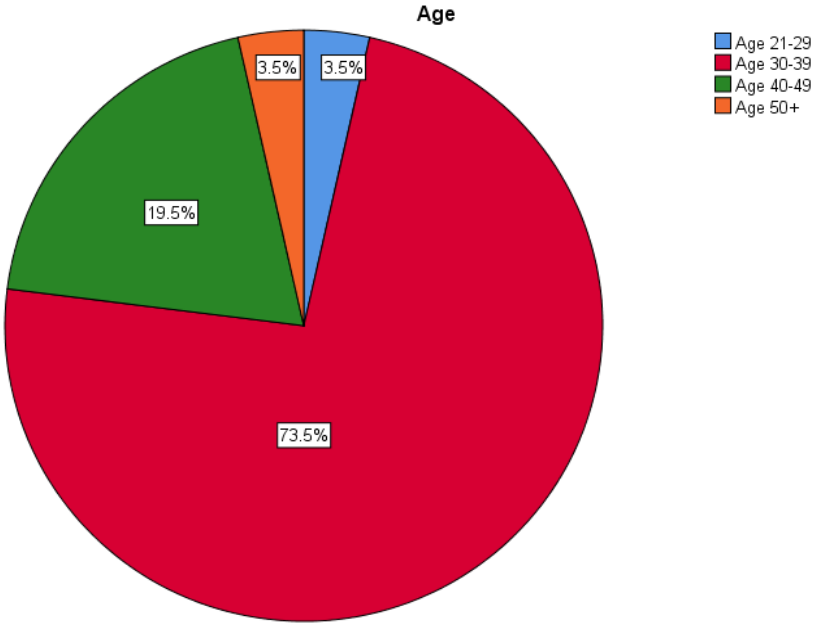


Figure 4: Respondents composition by age group



5.3.2 Respondents' firm operating industry and size composition

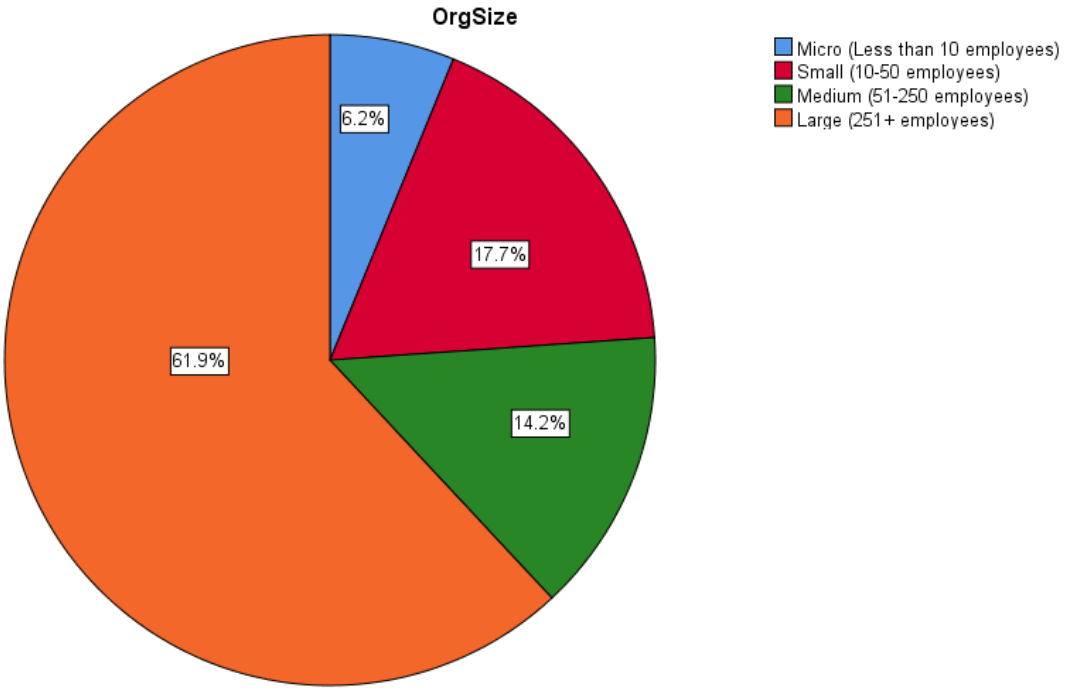
Table 6 is a depiction of the 113 respondents' distribution based on the industries in which their firms operate. The study sought to explain the relationship between constructs that is observable in firms across all industries; hence the choice of the industry was wide. The majority (54.9%) of the respondents were from the financial services sector. Those from the mining sector constituted 12.4% while the information and communications technology and professional services sectors constituted 8.8% and 8% respectively. The remaining 15.9% consists of those from the health care, industrial and manufacturing, public service, fast-moving consumer goods, and all other sectors.

Table 6: Participant composition based on industry of operation

Industry of operation	Number of participants	% of total participants
Fast Moving Consumer Goods	4	3.5%
Financial Services	62	54.9%
Healthcare	5	4.4%
Information and Communications Technology	10	8.8%
Industrial and Manufacturing	5	4.4%
Mining	14	12.4%
Professional Services	9	8.0%
Public Service	4	3.5%
Total	**113**	**100.0**

Figure 5 shows that approximately 62% of the respondents worked in large companies. Medium-sized and small companies participants constituted 18% and 14% of the sample population, respectively. Participants from micro-sized (less than ten employees) companies were 6.2% of the total participants.

Figure 5: Composition of respondents' firm by size



5.3.3 Education, job role, and tenure in current role statistics

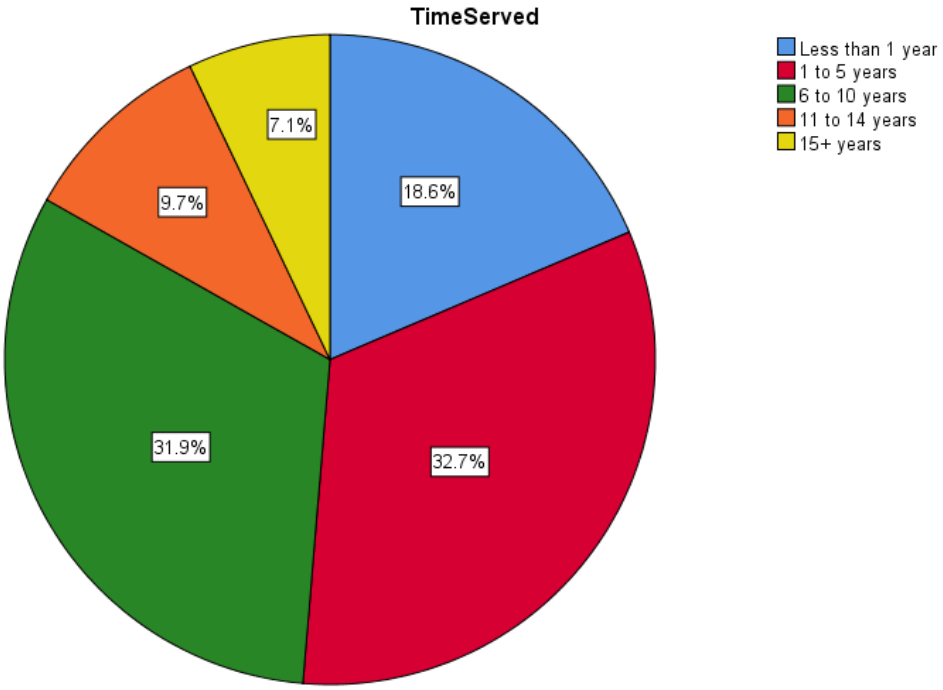
The study also collected participant demographics relating to the level of education, their role in the firm and the time served in the current position. These demographics were used to assess the variety of respondents and their ability to understand the questions. An analysis of the respondents based on these demographics showed that 48.7% of the respondents held a Master's/Doctorate degree, 25.7% held a Post-graduate diploma, 18.6% had bachelor's degree qualification and the rest of the population's educational qualifications are shown in Table 7.

Table 7: Respondents composition based of level of education

Level of education	Frequency	Percent
Bachelor's Degree	21	18.6%
Post Graduate Diploma	29	25.7%
Master's/Doctorate	55	48.7%
Other	8	7.1%
Total	**113**	**100.0%**

Of the respondents in the survey, almost 65% had been in their current positions for 1-5 years (32.7%) and 6-10 years (31.9%) respectively. Approximately 19% of the respondents had occupied their current position for less than a year, while 7% had more than 15 years' experience in their current roles. The composition of the respondents in the survey based on tenure in their current positions is shown in Figure 6.

Figure 6: Respondents composition based on tenure in current role



5.4 Construct validity and reliability assessments

The study sought to investigate the nature of the relationship between the transformational leadership style and business model innovation constructs using observable, measurable variables. Environmental uncertainty was expected to moderate the relationship between transformational leadership and business model innovation, as shown in section 3.7. The variables, including environmental uncertainty, were measured using items designed as questions that represent sub-elements of the constructs studied. Before any tests were conducted on the collected data, the items used to measure the latent variables were validated.

The measuring items' validation was done through the conducting of a confirmatory factor analysis (CFA) which then led to the confirmation of the hypothesised model's fit to the collected data before the testing of the hypotheses proposed in chapter three.

5.4.1 Confirmatory factor analysis process and results

Confirmatory factor analysis was conducted prior to testing the hypotheses proposed in Chapter three. The hypothetical model used in this study was adapted from existing models with known a priori relationships hence a CFA was deemed appropriate (Basto & Pereira, 2012). The construct discriminant validity and composite reliability assessments were proved using CFA.

5.4.2 Model Estimation

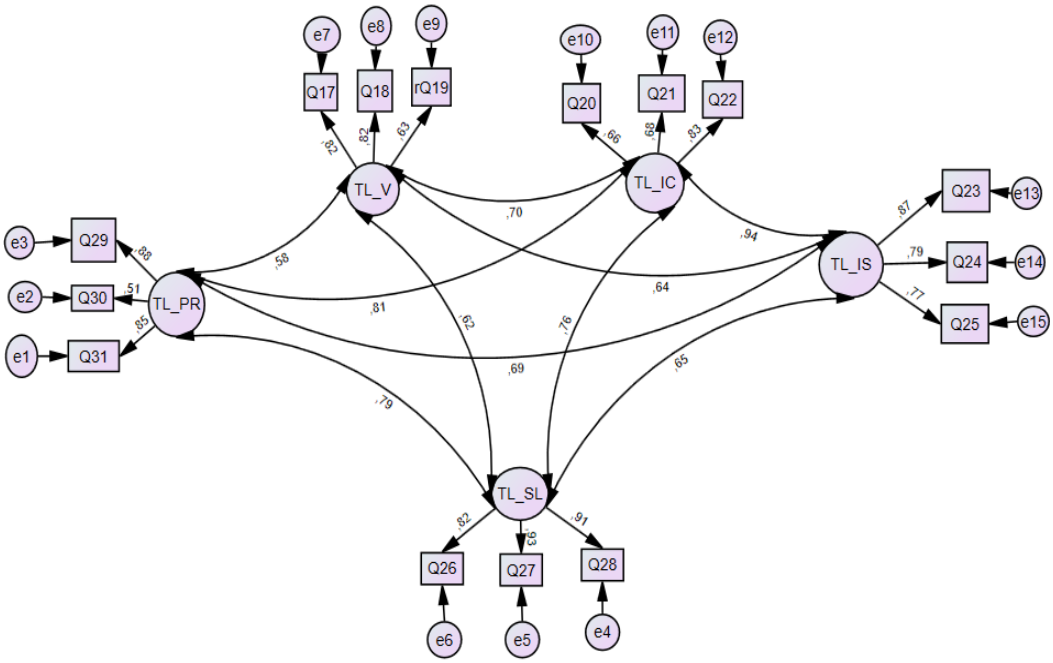
As a first step, IBM's SPSS, and Analysis Moment of Structure (AMOS 26) data analysis software packages were used to conduct the CFA which was used to determine the measuring instrument's construct validity. CFA was used for substantiating the factor loadings and assessing the fitness of the model on the collected data (Awang et al., 2015).

The goodness of fit of the models was evaluated using the following absolute goodness-of-fit (AGFI) indices: the likelihood-ratio chi-square (χ^2), the ratio of the chi-square to the degrees of freedom (χ^2/df) and the root mean square of approximation (RMSEA) (Jöreskog & Sörbom, 1993). Since the χ^2 is sensitive to sample size – that is the probability of rejecting a hypothesised model increases with sample size, the use of relative goodness-of-fit measures is strongly recommended (Bentler, 2007; Hu & Bentler, 1999). Consequently, CFA makes provision for the use of the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Incremental Fit Index (IFI) and these were resorted to in this study to produce the results shown in Table 6 (Moore & Brown, 2014). The cut-off values for the different tests are shown in Table 5 in chapter four (Brown & Cudeck, 1993; Hu & Bentler, 1999; Moore & Brown, 2014; Perry et al., 2015).

5.4.3 CFA for the transformational leadership style (TLS)

Using AMOS to conduct the CFA produced the results shown in Figure 7. The path diagram shows the CFA standardised estimates of the original TLS model. Figure 7 shows the resultant factor loadings as well as correlation coefficients between the latent variables observed from the data analysis. Values on doubled headed arrows represent correlations (e.g., the correlation coefficient between TL_PR and TL_V is equal to 0.58). The observed correlations among the factors ranged from 0.58 to 0.94. The correlation between TL_IC and TL_SL was very high (0.94), indicating multicollinearity. An analysis of the factor loadings showed that the values ranged from 0.51 to 0.93.

Figure 7: Path diagram showing CFA standardised estimates for TLS constructs



5.4.4 Original model evaluation results

A combination of different indices was used to evaluate model fit. In this study, the χ^2, χ^2 /df, GFI, RMSEA, NFI, CFI and AGFI were used for the assessment of model fit. Tables 8 and 9 show the values of indices of interest that were obtained for the original (proposed) model for this study. Information about the original model is contained in

the row labelled **Default model** (Table 8). CMIN is equivalent to the $\chi 2$ value and represents the minimum discrepancy between the model and the data. Low $\chi 2$ values relative to the degrees of freedom (df) with a non-significant *p*-value ($p > 0.05$) would support the model as representative of the data. The $\chi 2$ test of the model was statistically significant with a value of 156.722 $(80, N = 113)$, $p < 0.001$. This, however, is inconclusive as the $\chi 2$ statistic almost continually rejects the model when samples of large size are used. It is for this reason that the relative chi-square (χ^2/ν) was preferred. The relative chi-square, represented in the table by CMIN/df, is deemed acceptable if based research is in the range of between less than 2 (Ullman, 2001) and less than 5 (Schumacker & Lomax, 2004). Since the observed relative chi-square was 1.959, it was less than 2, the model was deemed to be a good fit and representative of the collected data.

Table 8: Original hypothesised model fitness indices

Model	NPAR	CMIN	DF	P	CMIN/DF	Result Comment
Default model	40	**156.722**	80	0.000	**1.959**	**Acceptable**
Saturated model	120	.000	0			
Independence model	15	1182.924	105	0.000	11.266	

Table 9 shows the goodness of fit index (GFI) and the adjusted goodness of fit index (AGFI). As shown in Table 9 both indices were below the recommended 0.9 cut-off value listed in Table 5 in chapter four. There was, therefore, a need to re-specify the model to improve the model fit.

Table 9: GFI and AGFI

Model	RMR	GFI	AGFI	PGFI	Comment
Default model	.048	**.852**	**.777**	.568	GFI- not acceptable AGFI - not acceptable
Saturated model	.000	1.000			
Independence model	.394	.233	.123	.204	

Table 10 shows values for the normed fit index and the comparative fit index. The CFI value (0.929) suggested an acceptable fit while that of NFI (0.868) was below the recommended 0.9 cut-off value. The NFI value of less than 0.9 can be improved by re-specifying the model to improve the model fit.

Table 10: NFI and CFI

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI	Comment
Default model	**.868**	.826	.930	.907	**.929**	NFI - not acceptable CFI – acceptable
Saturated model	1.000		1.000		1.000	
Independence model	.000	.000	.000	.000	.000	

The RMSEA value obtained for the original model was 0.093, with a 90% confidence interval of 0.071 to 0.114. Since the RMSEA < 0.10 it indicated an acceptable fit (Table 5). In summary, the model produced acceptable fit indices for the relative chi-square, CFI and RMSEA; however, the GFI, NFI and AGFI were inadequate. The model was thus modified. Table 11 displays values for the RMSEA for the data.

Table 11: RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE	Comment
Default model	**.093**	**.071**	**.114**	.000	Acceptable
Independence model	.303	.287	.318	.000	

5.4.5 Modification of original TLS model

Modification indices, as proposed by Wheaton et al. (1977), were used to modify the model. A covariance was included between e10 and e11, to modify the model. The resultant modified model is shown in Figure 8.

Figure 8: Re-specified TLS model

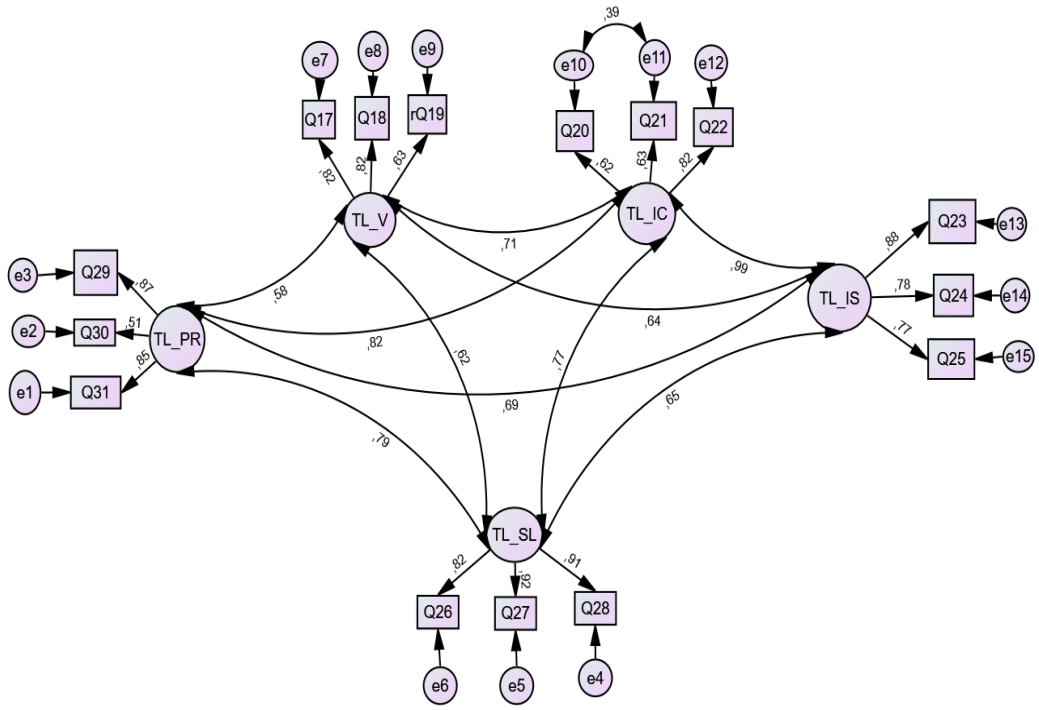


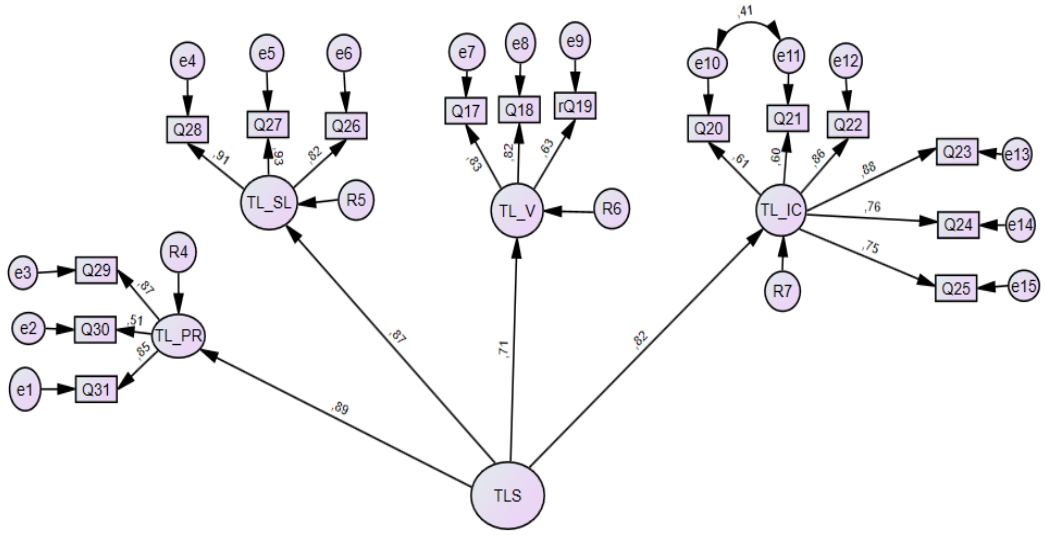
Figure 10 shows the modified model after covarying e10 and e11. Parameter estimates and model fit indices for this respecified model were computed and are shown in Appendix C. Table 12 shows the model fit comparison for the two models.

Table 12: Model Fit Comparison

Fit Index	Original Model	Respecified Model 1	Recommended Thresholds	Comment
χ^2(Cmin)	156.722	141.069	*p* > 0.05	
χ^2/df	1.959	1.786	< 5	Acceptable
GFI	**0.852**	**0.864**	≥ 0.90	Not acceptable
RMSEA	0.093 (0.071, 0.114)	0.084 (0.061, 0.106)	Close fit ≤ 0.05 Reasonable fit: 0.05 - 0.08 Poor fit: ≥ 0.10	Acceptable
CFI	0.929	0.942	> 0.90	Acceptable
NFI	**0.868**	**0.881**	> 0.90	Not acceptable
AGFI	**0.777**	**0.793**	> 0.90	Not acceptable
AIC	236.722	223.069	No threshold but compares values in alternative models. Lower values are better	
BCC	250.056	236.736		
ECVI	2.114 (1.831, 2.466)	1.992 (1.730, 2.323)		

Co-varying e10 and e11 resulted in the improvement of all fit indices, as shown in Table 12. The relative chi-square $(\chi 2/df)$, CFI and RMSEA were still adequate and showed better values. The GFI, NFI and AGFI were all higher than in the initial model but still fell below the recommended threshold of 0.9. Overall, the re-specified model was better as evidenced by the lower AIC, BCC and ECVI values. No further modification was possible based on the modification indices. A look at the correlations, however, revealed that inspirational communication (IC) and intellectual stimulation (IS) were almost perfectly correlated (r = 0.99). These two components of transformational leadership were combined into a single construct called Inspirational Communication, as shown in the second-order CFA model depicted in Figure 9.

Figure 9: Second Order CFA for TLS



The second-order CFA for TLS shows slightly changed fit indices. The model fit indices for the three models are displayed in Table 13.

Table 13: Model Fit Comparison of The Three Models

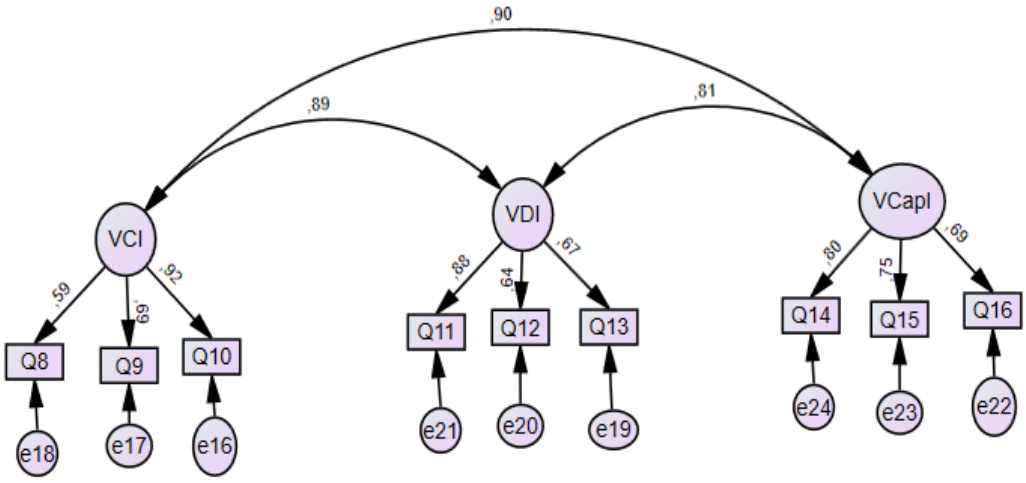
Fit Index	Original Model	Re-specified Model 1	Second-order Model	Recommended Thresholds	Result Comment
χ^2 (Cmin)	156.722	141.069	150.788	$p > 0.05$	
χ^2/df	1.959	1.786	1.774	< 5	**Acceptable**
GFI	**0.852**	**0.864**	**0.854**	≥ 0.90	**Not Acceptable**
RMSEA	0.093 (0.071, 0.114)	0.084 (0.061, 0.106)	0.083 (0.061, 0.105)	Close fit ≤ 0.05 Reasonable fit: 0.05 - 0.08 Poor fit: ≥ 0.10	**Acceptable**
CFI	0.929	0.942	0.939	> 0.90	**Acceptable**
NFI	**0.868**	**0.881**	**0.873**	> 0.90	**Not acceptable**
AGFI	**0.777**	**0.793**	**0.792**	> 0.90	**Not acceptable**
AIC	236.722	223.069	220.788	No threshold but compares values in alternative models. Lower values are better	
BCC	250.056	236.736	232.454		
ECVI	2.114 (1.831, 2.466)	1.992 (1.730, 2.323)	1.971 (1.700, 2.313)		

Given that fit had been established, the constructs within the model were then assessed for validity.

5.4.6 CFA for business model innovation (BMI)

Figure 10 shows the CFA standardised estimates of the original BMI model in the form of a path diagram. The path diagram shows the factor loadings as well as correlation coefficients between the latent variables. The correlations among the factors were high and ranged from 0.81 to 0.90. The correlation between VCI and VDI and that between VCI and VCapI were above 0.85, indicating multicollinearity. Inspection of the factor loadings shows that the values ranged from 0.59 (moderate) to 0.92 (high).

Figure 10: Path diagram showing CFA standardised estimates for BMI constructs



Tables 14 and 15 show the model fit indices for the original BMI model. The $\chi 2$ test of the model was statistically significant with a value of 84.932 $(24, N = 113)$, $p < 0.001$. As noted in section 5.4.3, this is inconclusive as the $\chi 2$ statistic almost continually rejects the model when samples of large size are used and the relative chi-square (χ^2/ν) is preferred. The relative chi-square is the variable shown in the table as CMIN/DF (3.539) and falls within the preferred range of between less than 2, and less than 5 (Table 14).

Table 14: CMIN and CMIN/DF

Model	NPAR	CMIN	DF	P	CMIN/DF	Result Comment
Default model	40	**156.722**	80	0.000	**1.959**	**Acceptable**
Saturated model	120	.000	0			
Independence model	15	1182.924	105	0.000	11.266	

Table 15 shows the goodness of fit index (GFI) and the adjusted goodness of fit index (AGFI). As shown in Table 15, both indices were below the recommended 0.9 cut-off value listed in Table 5. There was, therefore, a need to re-specify the model to improve the model fit.

Table 15: GFI and AGFI

Model	RMR	GFI	AGFI	PGFI	Result Comment
Default model	.048	**.852**	**.777**	.568	GFI- not acceptable AGFI - not acceptable
Saturated model	.000	1.000			
Independence model	.394	.233	.123	.204	

Both the CFI and NFI values were below the recommended 0.9 cut-off value. As shown in section 5.4.4, NFI values less than 0.9 can be improved by re-specifying the model to improve the model fit. Table 16 shows values for the normed fit index and the comparative fit index.

Table 16: NFI and CFI

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI	Result Comment
Default model	**.868**	.826	.930	.907	**.929**	NFI - not acceptable CFI - acceptable
Saturated model	1.000		1.000		1.000	
Independence model	.000	.000	.000	.000	.000	

The RMSEA value obtained for our model was 0.151, with a 90% confidence interval of 0.117 to 0.186. Since the RMSEA > 0.10 it indicated a poor fit. In summary, the

model produced an acceptable fit index for the relative chi-square; however, the CFI, NFI, AGFI and RMSEAI were inadequate. The model thus needed to be modified. Table 17 displays values for the RMSEA.

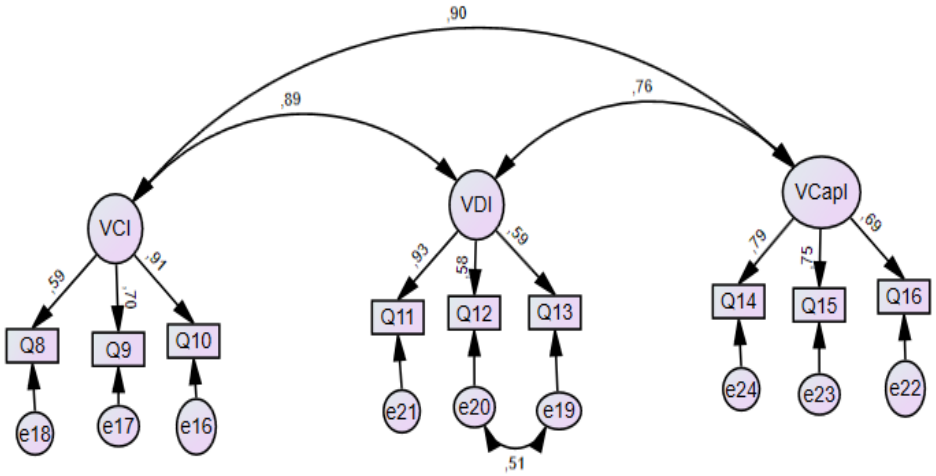
Table 17: RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE	Result Comment
Default model	**.093**	**.071**	**.114**	.000	Acceptable
Independence model	.303	.287	.318	.000	

5.4.7 Modification of original BMI model

Wheaton et al.'s (1977) modification indices were used to modify the original BMI model. A covariance was included between e19 and e20 (see Appendix C). The resultant modified model is shown in Figure 11. The path diagram shows the modified model after covarying e19 and e20. Parameter estimates and model fit indices for this respecified model were computed and are shown in Appendix C.

Figure 11: Re-specified BMI model



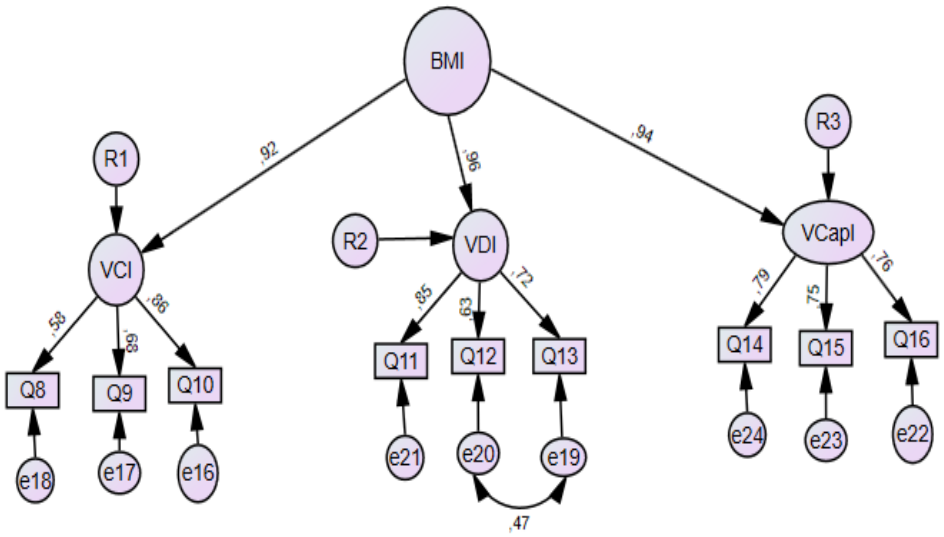
Co-varying e19 and e20 resulted in the improvement of all fit indices, as shown in Table 18. The relative chi-square $(\chi 2/df)$, CFI and NFI were adequate and showed better values. The GFI, NFI and AGFI were all higher than in the initial model but still fell slightly below the recommended threshold. Overall, the re-specified model was

better as evidenced by the lower AIC, BCC and ECVI values. No further modification was possible based on the modification indices. The second-order CFA model is shown in Figure 12. Table 32 shows the model fit comparison for the two models.

Table 18: Model Fit Comparison

Fit Index	Original Model	Respecified Model 1	Recommended Thresholds	Result Comment
χ^2(Cmin)	156.722	141.069	$p > 0.05$	
χ^2/df	1.959	1.786	< 5	Acceptable
GFI	**0.852**	**0.864**	≥ 0.90	Not acceptable
RMSEA	0.093 (0.071, 0.114)	0.084 (0.061, 0.106)	Close fit ≤ 0.05 Reasonable fit: 0.05 - 0.08 Poor fit: ≥ 0.10	Acceptable
CFI	0.929	0.942	> 0.90	Acceptable
NFI	**0.868**	**0.881**	> 0.90	Not acceptable
AGFI	**0.777**	**0.793**	> 0.90	Not acceptable
AIC	236.722	223.069	No threshold but compares values in alternative models. Lower values are better	
BCC	250.056	236.736		
ECVI	2.114 (1.831, 2.466)	1.992 (1.730, 2.323)		

Figure 12: Second Order CFA for BMI



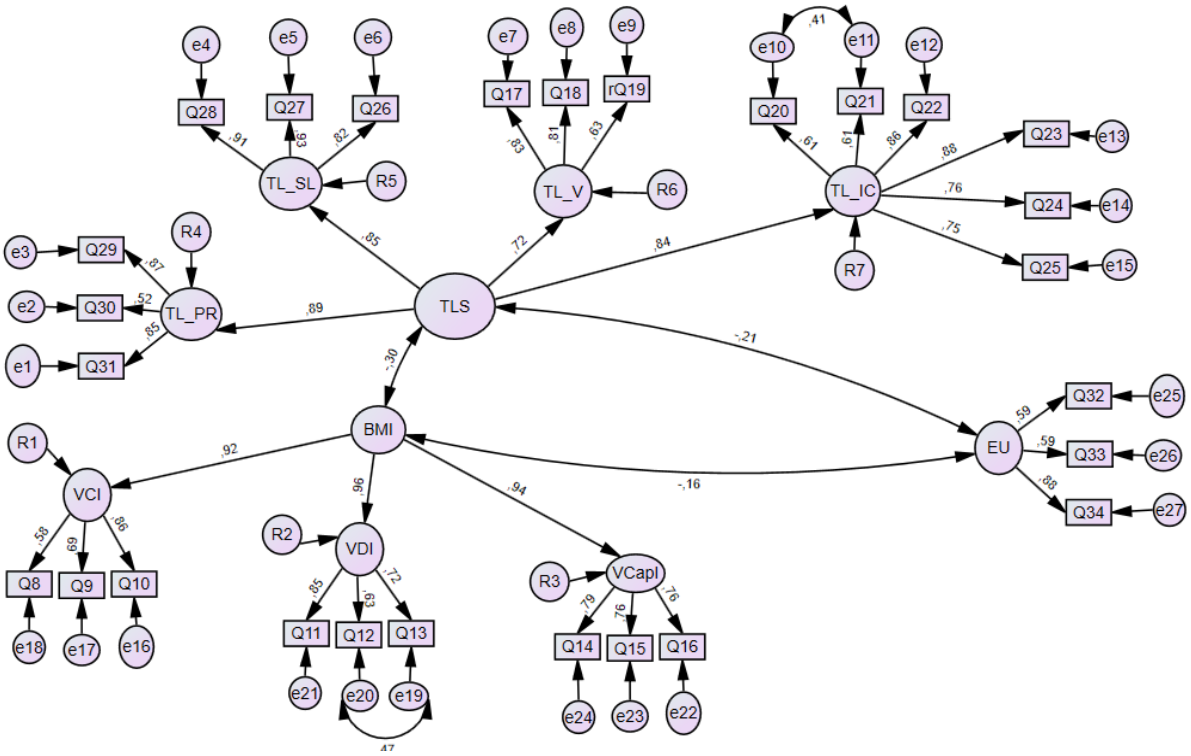
The second order CFA for BMI shows slightly changed fit indices. The model fit indices for the three models are displayed in Table 19.

Table 19: Model Fit Comparison of The Three Models

Fit Index	Original Model	Re-specified Model 1	Second order model	Recommended Thresholds	Result Comment
χ^2 (Cmin)	156.722	141.069	150.788	$p > 0.05$	
χ^2/df	1.959	1.786	1.774	< 5	Acceptable
GFI	**0.852**	**0.864**	**0.854**	≥ 0.90	Not Acceptable
RMSEA	0.093 (0.071, 0.114)	0.084 (0.061, 0.106)	0.083 (0.061, 0.105)	Close fit ≤ 0.05 Reasonable fit: 0.05 - 0.08 Poor fit: ≥ 0.10	Acceptable
CFI	0.929	0.942	0.939	> 0.90	Acceptable
NFI	**0.868**	**0.881**	**0.873**	> 0.90	Not acceptable
AGFI	**0.777**	**0.793**	**0.792**	> 0.90	Not acceptable
AIC	236.722	223.069	220.788	No threshold but compares values in alternative models. Lower values are better	
BCC	250.056	236.736	232.454		
ECVI	2.114 (1.831, 2.466)	1.992 (1.730, 2.323)	1.971 (1.700, 2.313)		

Table 19 shows that the first re-specified model was better than both the original and the second order models. Results for the second order model were slightly better than those for the original. Complete results are shown in Appendix C. Before assessing the constructs' validity, a CFA for the combined model was carried out, and the path diagram is shown in Figure 15.

Figure 13: CFA for all model constructs



After conducting the CFA for all constructs, the constructs within the combined TLS-BMI model were then assessed for validity.

5.5 Convergent Validity and composite reliability (CR)

To ensure convergent validity, the researcher checked if items loaded on their respective constructs with standardised loadings greater than 0.5, average variance extracted,AVE > 0.5, composite reliability,CR > 0.6 and item-total correlation > 0.6 (Hair et al., 2010). The results obtained for the measurement model, using MS Excel, are given in Table 20.

Table 20: Confirmatory Factor Analysis Convergent Validity Results

Constructs		Cronbach's test		Composite Reliability	AVE	Measurement Item Loadings (λ)
		Item-total correlation	α value			
Value Creation Innovation (VCI)	Q8	0.517	**0.767**	**0.784**	**0.556**	0.590
	Q9	0.606				0.689
	Q10	0.703				0.920
Value Delivery Innovation (VDI)	Q11	0.599	**0.812**	**0.782**	**0.549**	0.882
	Q12	0.690				0.645
	Q13	0.688				0.674
Value Capture Innovation (VCapI)	Q14	0.629	**0.790**	**0.790**	**0.557**	0.798
	Q15	0.662				0.749
	Q16	0.603				0.687
Vision (TL_V)	Q17	0.717	**0.799**	**0.804**	**0.581**	0.830
	Q18	0.627				0.810
	Q19	0.575				0.630
Inspirational Communication (TL_IM)	Q20	0.622	**0.885**	**0.884**	**0.563**	0.609
	Q21	0.590				0.605
	Q22	0.774				0.856
	Q23	0.775				0.877
	Q24	0.732				0.762
	Q25	0.701				0.749
Supportive Leadership (TL_IC)	Q26	0.778	**0.912**	**0.915**	**0.782**	0.817
	Q27	0.875				0.927
	Q28	0.825				0.905
Personalised Recognition (TL_PR)	Q29	0.698	**0.774**	**0.801**	**0.584**	0.872
	Q30	0.456				0.516
	Q31	0.677				0.851
Environmental Uncertainty (EU)	Q32	0.490	**0.721**	**0.859**	**0.679**	0.589
	Q33	0.502				0.960
	Q34	0.632				0.877

Table 20 shows that all items had factor loadings greater than 0.5. The composite reliability (CR) for each latent variable exceeded 0.6 as required. The Cronbach's alpha values for all variables were above 0.7. The measured variables were, therefore, good indicators of their respective factors (latent variables).

5.6 Discriminant validity

Discriminant validity refers to the extent to which a construct is entirely distinct from another construct both in terms of how much it correlates with other constructs and how distinctly measured variables represent only this single construct (Henseler et al., 2014). The inter-correlation matrix and average variance extracted (AVE) were used to assess discriminant validity (Henseler et al., 2014). Results are shown in Table 21.

Table 21: Discriminant validity for the measurement model

	1	2	3	4	5	6	7	8
1. Value Creation Innovation (VCI)	**0.746**	***	***	*	**	Ns	ns	Ns
2. Value Delivery Innovation (VDI)	0.887	**0.741**	***	*	**	Ns	ns	Ns
3. Value Capture Innovation (VCapI)	0.898	0.750	**0.746**	**	**	Ns	*	Ns
4. Vision (TL_V)	0.291	0.231	0.373	**0.762**	***	**	***	Ns
5.Inspirational Communication (TL_IL)	0.353	0.360	0.355	0.644	**0.750**	***	****	Ns
6. Intellectual Stimulation (TL_IS)	0.078	0.090	0.098	0.604	0.687	**0.884**	***	Ns
7.Personalised Recognition (TL_PR)	0.173	0.199	0.309	0.572	0.734	0.794	**0.764**	*
8.Environment Uncertainty (EU)	0.174	0.195	0.101	-0.234	- 0.137	-0.165	-0.267	**0.824**

***p* < 0.05 ** *p* <0.01 *** *p* <0.001**

Off diagonal values in Table 21 show correlations between the pairs of latent variables. As shown in the table correlations range from - 0.267 to 0.898, suggesting that collinearity may be an issue in this model. Most correlations were statistically significant at $p < 0.05$. Diagonal elements (in bold) show the square root of the AVE for a given construct. Discriminant validity was measured by comparing these values with the inter-construct correlations. If the off-diagonal elements are less than the square-root of the AVE in the corresponding rows and columns, the discriminant validity is achieved (Henseler et al., 2014). As can be seen in Tables 21, all inter-construct correlations are less than the square root of the AVE. Overall, these results confirm the existence of discriminant validity of the measurement instrument used in this study.

Based on the evidence of the model fit indices and confirmation of convergent and discriminant validity, The combined model for testing explaining the nature of the relationship between the constructs was acceptable. The variables were, therefore,

used to form composite variables that were further be used for hierarchical multiple regression and moderated regression analysis to test the proposed hypotheses.

5.7 Hypotheses tests results

Hierarchical multiple regression analysis was performed to test hypotheses 1, 1a, 1b, 1c/d, and 1e. Moderated regression analysis was then performed to test the proposed hypotheses 2, 2a, 2b, 2c/d and 2e. This section documents the findings for each hypothesis tests conducted. The null and alternate hypotheses and sub-hypotheses for the research questions and subquestions were restated, and the standardised results presented in tables. The p-values were used to identify the nature of the relationships between the variables. The results were interpreted for the benefit of the readers of this research.

Composite variables for use in the regression analysis were obtained by taking the mean score of the variables making up the composite variable. Before conducting the regression analysis, the descriptive statistics of business model innovation (BMI); transformational leadership (TLS); environmental uncertainty (EU); vision (TL_V); inspirational communication and intellectual stimulation (TL_IC); supportive leadership (TL_SL); and personal recognition (TL_PR) were computed. Table 22 shows the composite variables, reliability, descriptive statistics, values, and correlations for the variables.

Table 22: Variable descriptive statistics

Variable	1	2	3	4	5	6	7
1. BMI	**(.853)**						
2. TLS	.311**	**(.844)**					
3. EU	.038	-.230*	**(.721)**				
4. TL_V	.315**	.768**	-.239*	**(.799)**			
5. TL_IC	.369**	.857**	-.161	.572**	**(.885)**		
6. TL_IS	.096	.867**	-.157	.513**	.643**	**(.912)**	
7. TL_PR	.301**	.832**	-.210*	.457**	.681**	.666**	**(.774)**
M	3.25	3.92	3.09	4.04	3.91	3.74	3.99
SD	0.87	0.67	0.92	0.83	0.71	0.96	0.73

***p < 0.05 ** p < 0.01**

The reliability values (shown in brackets along the diagonal) for the composite variables shown in Table 22 were the same as those obtained for the variables in the confirmatory factor analysis (Table 20). Reliability values for business model innovation and transformational leadership were not computed in the CFA model since they are second order latent variables. Variable mean scores for all variables were all above 3, indicating more positive participant dispositions. The statistics observed were consistent with those obtained for the measurement model. The standard deviations for all variable mean scores ranged from 0.67 to 0.96. Results in Table 22 also indicated that there was significant correlation ($p < 0.01$ or $p < 0.05$) between most of the variables.

Null hypothesis 1: The transformational leadership style does not positively impact firm business model innovation practices.

Alternate hypothesis 1: The transformational leadership style positively impacts business model innovation practices.

Null hypothesis 2: Environmental uncertainty does not moderate the relationship between the transformational leadership style and firm business model innovation

Alternate hypothesis 2: Environmental uncertainty does moderates the relationship between the transformational leadership style and firm business model innovation

To test the hypothesis 1 that the transformational leadership style (TLS) positively impacts firm business model innovation (BMI) hierarchical multiple regression analysis was used. Moderated regression was used to test hypothesis 2 that environmental uncertainty moderates (EU) the relationship between the transformational leadership style and business model innovation. To test hypothesis 1 the researcher conducted the first step of the hierarchical regression analysis using the TLS and BMI variables and considered the output which excluded the interaction term (TLS*EU). The overall model for hypothesis 1 was significant, F (4,108) = 4.121, p < 0.01 with transformational leadership accounting for a significant amount of variance in business model innovation (R^2 =0.118). To avoid potential multicollinearity challenges with the interaction term the variables were centred and an interaction term between transformational leadership and business model innovation was created. Table 23 shows that TLS significantly positively impacted BMI, β = 0.783, p < 0.05.

To test hypothesis 2 of whether environmental uncertainty moderated the relationship between transformational leadership and business model innovation, the significance of the regression output which included the interaction term (TLS*EU) was considered and the process procedure by Hayes was then used to conduct a moderated regression (Hayes, n.d.). The interaction between environmental incertainty (EU) and TLS fell short of statistical significance, F (1, 108) = 1.83, p = 0.179, ΔR^2 = 0.015. Environmental uncertainty did not, therefore, significantly moderate the relationship between transformational leadership and business model innovation since both the coefficients of EU and the interaction term (TLS x EU) were statistically non-significant. Firm size did not significantly control the relationship between TLS and BMI.

Table 23: Support for BMI Predicted from TLS and EU

Predictor	*B*	*β*	*P*	95% CI	
Constant	-.746(1.797)		.679	-4.308,	2.816
TLS*	.1.017(.444)	.783	.024	.136,	1.897
EU	.792(.522)	.837	.132	-.243,	1.827
TLS x EU	-.174(.129)	-.782	.179	-.429,	.081
Size	-.106(.083)	-.119	.203	-.271,	.058

***p* ≤ .05 NB Values in parenthesis are standard errors**

The R-square for the regression showed that the transformational leadership style explains 13.2% of the variability of the business model innovation process. Based on the collected data, the firm's business model innovation process would be improved by 1.017 units for every unit increase in the leader's transformational leadership style. The regression coefficient is significant with a p-value less than 0.05. Therefore, null hypothesis 1 was rejected at the 5% level of significance. The interaction term (TLS*EU) represents the moderation effects of environmental uncertainty. The interaction term's regression coefficient was not statistically significant at the with p-values greater than 0.05. Null hypothesis 2 was therefore not rejected at the 5% level of significance. The business model innovation prediction equation for the relationship was identified as Firm BMI = -0.746 + 1.017 TLS + Ɛ.

Null hypothesis 1a: Leader vision does not positively impacts firm business model innovation processes

Alternate hypothesis 1a: Leader vision positively impacts firm business model innovation processes.

Null hypothesis 2a: Environmental uncertainty does not moderate the relationship between leader vision and firm business model innovation

Alternate hypothesis 2a: Environmental uncertainty moderates the relationship between leader vision and firm business model innovation

To test the hypothesis 1a that leader vision (TL_V) positively impacts firm business model innovation (BMI) hierarchical multiple regression analysis was used. Moderated regression was used to test hypothesis 2a that environmental uncertainty moderates (EU) the relationship between the leader vision and business model innovation. To test hypothesis 1a the researcher conducted the first step of the regression analysis using the TLS and BMI variables and considered the output which excluded the interaction term (TL_V*EU). The overall model was significant, F (4,108) = 3.948, p < 0.01 with the variables in the model accounting for a significant amount of variance in BMI, R^2 =0.128. To avoid potential multicollinearity challenges with the interaction term the variables were centred and an interaction term between transformational leadership and business model innovation was created. Table 24 shows that TL_V significantly positively impacted BMI, β = .763, p < 0.05.

To test hypothesis 2a of whether environmental uncertainty moderated the relationship between transformational leadership style dimension of vision and business model innovation, the significance of the regression output which included the interaction term (TL_V*EU) was considered and the process procedure by Hayes was then used to conduct a moderated regression (Hayes, n.d.). The interaction between EU and TLS fell short of statistical significance, F (1, 108) = 1.40, p = 0.239, ΔR^2 = 0.011. Environmental uncertainty did not therefore moderate the relationship between TL_V and BMI since both the coefficients of EU and the interaction term (TL_V*EU) were statistically non-significant. Firm size did not significantly control the relationship between TL_V and BMI.

Table 24: Support for BMI Predicted from TL_V and EU

Predictor	*B*	β	*P*	95% CI	
Constant	-.140(1.661)		.933	-3.432,	3.153
TL_V*	.802(.390)	.763	.042	.029,	1.575
EU	.653(.472)	.690	.170	-.283,	1.589
TL_V x EU	-.133(.112)	-.645	.239	-.355,	.089
Size	-.071(.083)	-.079	.395	-.235,	.093

***p ≤ .05 NB Values in parenthesis are standard errors**

The R-square for the regression showed that the transformational leadership style explains 12.8% of the variability of the business model innovation process. The test

results showed that the regression coefficient (b) was 0.802 which signalled that the transformational leadership style dimension of vision positively impacts the firm's business model innovation practices. The firm's business model innovation process improved by 0.802 units for every unit increase in the leader's transformational leadership vision. The regression coefficient is significant with a p-value less than 0.001. Therefore, null hypothesis 1a was rejected at the 5% level of significance. The interaction term (TL_V x EU) represents the moderation effects of environmental uncertainty. The interaction term's regression coefficient was not statistically significant at the with p-values greater than 0.05. Null hypothesis 2a was not rejected at the 5% level of significance. The business model innovation prediction equation for the relationship was identified as Firm BMI =-0.14 + 0.802 TL_V + Ɛ.

Null hypothesis 1b: Inspirational communication does not positively impact firm business model innovation.

Alternate hypothesis 1b: Inspirational communication positively impacts firm business model innovation.

Null hypothesis 2b: Environmental uncertainty does not moderate the relationship between inspirational communication and firm business model innovation.

Alternate hypothesis 2b: Environmental uncertainty moderates the relationship between inspirational communication and firm business model innovation.

To test the hypothesis 1b and 1c that the inspirational communication and intellectual stimulation (TL_IC) positively impacts firm business model innovation (BMI) hierarchical multiple regression analysis was used. Moderated regression was used to test hypothesis 2b and 2c that environmental uncertainty moderates (EU) the relationship between inspirational communication and intellectual stimulation and business model innovation. To test hypothesis 1b and 1c the researcher conducted the first step of the regression analysis using the TL_IC and BMI variables and considered the output which excluded the interaction term (TL_IC*EU). The overall

model was significant, F (4,108) = 5.599, p < 0.01 with the variables in the model accounting for a significant amount of variance in BMI, R^2 =0.172. To avoid potential multicollinearity challenges with the interaction term the variables were centred and an interaction term between transformational leadership and business model innovation was created. Table 26 shows that TL_IC significantly positively impacted BMI, β = .879, p < 0.05.

To test hypothesis 2b and 2c of whether environmental uncertainty moderated the relationship between transformational leadership style dimension of inspirational communication and business model innovation, the significance of the regression output which included the interaction term (TL_IC*EU) was considered and the process procedure by Hayes was then used to conduct a moderated regression (Hayes, n.d.). The interaction between EU and TL_IC fell short of statistical significance, F (1,108) = 2.795, p = 0.098, ΔR^2 = 0.021. Environmental uncertainty did not therefore moderate the relationship between TL_IC and BMI since both the coefficients of EU and the interaction term (TL_C*EU) were statistically non-significant. Firm size did not significantly control the relationship between TL_IC and BMI.

Table 25: Support for BMI Predicted from TL_IC and EU

Predictor	*B*	β	*P*	95% CI	
Constant	-.927(1.515)		.542	-3.930,	2.077
TL_IC**	1.077(.381)	.879	.006	.321,	1.833
EU	.861(.473)	.910	.071	-.076,	1.797
TL_IC x EU	-.199(.199)	-.908	.097	-.435,	.037
Size	-.093(.082)	-.104	.256	-.255,	.069

****$p \leq .01$ NB Values in parenthesis are standard errors**

The R-square for the regression showed that the inspirational communication and intellectual stimulation explain 17.2% of the variability of the business model innovation process. The test results showed that the regression coefficient (b) was 1.077 showing that inspirational communication and intellectual stimulation positively impact the firm's business model innovation practices. The firm's business model innovation process improved by 1.077 units for every unit increase in the leader's transformational leadership. The regression coefficient is significant with a p-value less than 0.001. Therefore, null hypotheses 1b and 1c were rejected at the 1% level of

significance. The interaction term (TL_IC x EU) represents the moderation effects of environmental uncertainty. The interaction term's regression coefficient was not statistically significant at the with p-values greater than 0.05. Null hypothesess 2b and 2c were not rejected at the 5% level of significance. The business model innovation prediction equation for the relationship was identified as Firm BMI = -0.927 + 1.077 TL_IC + Ɛ.

Null hypothesis 1d: Supportive leadership does not positively impact firm business model innovation processes.

Alternate hypothesis 1d: Supportive leadership positively impacts firm business model innovation processes.

Null hypothesis 2d: Environmental uncertainty does not moderate the relationship between supportive and firm business model innovation.

Alternate hypothesis 2: Environmental uncertainty moderates the relationship between supportive leadership and firm business model innovation.

To test the hypothesis 1d that the supportive leadership (TL_SL) positively impacts firm business model innovation (BMI) hierarchical multiple regression analysis was used. Moderated regression was used to test hypothesis 2d that environmental uncertainty moderates (EU) the relationship between supportive leadership and business model innovation. To test hypothesis 1d the researcher conducted the first step of the regression analysis using the TL_SL and BMI variables and considered the output which excluded the interaction term (TL_SL*EU). The overall model was non-significant, F (4,108) = 0.667, p = 0.616, R^2 = 0.024. As shown in Table 25, none of the coefficients were significant.

Table 26: Support for BMI Predicted from TL_SL and EU

Predictor	*B*	*β*	*P*	95% CI	
Constant	2.693(1.327)		.045	.063,	5.324
TL_SL	.203(.335)	.223	.546	-.461,	.866
EU	.149(.387)	.158	.701	-.619,	.917
TL_SL x EU	-.029(.097)	-.149	.766	-.222,	.164
Size	-.101(.088)	-.113	.255	-.275,	.074

The hypothesis test results for the impact of supportive leadership on a firm's business model innovation practices showed that the supportive leadership does not significantly positively impact the business model innovation practices of a firm. The regression coefficient was not statistically different from zero. The interaction term's (TL_IS x EU) regression coefficient was also not statistically different from zero hence null hypotheses 1b and 2b could not be rejected at the 5% level of significance. A leader who exhibits the ability support his/her followers will not significantly positively impact the firm's business model innovation process to achieve competitive advantages.

Null hypothesis 1e: Personal recognition does not positively impact firm business model innovation practices.

Alternate hypothesis 1e: Personal recognition positively impacts firm business model innovation.

Null hypothesis 2e: Environmental uncertainty does not moderate the relationship between personal recognition and firm business model innovation

Alternate hypothesis 2e: Environmental uncertainty moderates the relationship between personal recognition and firm business model innovation

To test the hypothesis 1e that personal recognition (TL_PR) positively impacts firm business model innovation (BMI) hierarchical multiple regression analysis was used. Moderated regression was used to test hypothesis 2e that environmental uncertainty

moderates (EU) the relationship between personal recognition and business model innovation. To test hypothesis 1e the researcher conducted the first step of the regression analysis using the TL_PR and BMI variables and considered the output which excluded the interaction term (TL_PR*EU). The overall model was non-significant, F (4,108) = 3.367, p = 0.185, R^2 = 0.111. As shown in Table 27, none of the coefficients were significant.

Table 27: Support for BMI Predicted from TL_PR and EU

Predictor	*B*	*B*	*P*	95% CI	
Constant	1.281(1.555)		.412	-1.801,	4.363
TL_PR	.498(.374)	.418	.185	-.242,	1.239
EU	.227(.458)	.240	.621	-.680,	1.135
TL_PR x EU	-.035(.111)	-.163	.753	-.255,	.185
Size	-.089(.083)	-.100	.285	-.254,	.075

The hypothesis test results for the impact of the personal recognition dimension of transformational leadership on a firm's business model innovation practices showed that the transformational leadership dimension of personal recognition does not positively impact the business model innovation practices of a firm. The regression coefficient was not statistically different from zero. The interaction term's (TL_IS x EU) regression coefficient was also not statistically different from zero hence null hypotheses 1e and 2e could not be rejected at the 5% level of significance. A leader who exhibits the ability to personally recognise his/her followers will not significantly positively impact the firm's business model innovation process to achieve competitive advantages.

5.8 Conclusion

The findings of this chapter based on the participants of the research survey were summarised as follows:

- The transformational leadership style has a positively influence on the firm's business model innovation outcomes.
- The transformational leadership style component of vision has a strong influence on a firm's business model innovation practices.
- Inspirational communication positively impacts a firm's business model innovation practices.
- Intellectual stimulation positively impacts a firm's business model innovation practices.
- The results on the other hand showed that supportive leadership negatively influences a firm's business model innovation practices.
- The results also showed a negative influence of personal recognition on a firm's business model innovation practices.
- The results suggested that environmental uncertainty does not moderate any of the investigated relationships and firm size does not control any of the relationships as well.

6 RESEARCH RESULTS DISCUSSION

6.1 Introduction

This study investigated how leadership styles impact the business model innovation process for firms seeking to create sustainable competitive advantages. The study investigated how the transformational leadership style and its components' impact on the firm business model innovation process of firms seeking to achieve sustainable competitive advantages. The study' data collection exercise achieved a response rate of 6.59% from 1,715 views of the survey link on LinkedIn and WhatsApp social media platforms. A total of 113 questionnaires were filled in through a Google form of which all items had a 100% response rate for all 113 participants over four weeks. The 100% response rate to the questions on the questionnaire signals that the instrument's design gave respondents adequate time to respond to the questions, and the subject captured their interest. The measuring instrument was tested for validity and reliability to assess whether all the items formulated from literature to measure the constructs achieved this objective consistently. This chapter served to discuss and reconcile the findings of the study from chapter five with the literature reviewed in chapters one, two, and three. All inferences made from the findings were based only on data collected in this study. The study therefore assessed whether the findings supported, disputed, or added to the proposed relationship in extant literature on how transformational leadership influences business model innovation.

The chapter discussed the respondents' demographics to enable the reader to get a clearer understanding of the characteristics of the respondents in the study. The demographics analysis was used to determine and highlight any potential sampling biases that could have arisen in the process. The hypothesis tests aided the researcher in understanding whether the transformational leadership style positively impacted firm business model innovation practices. The constructs under study were transformational leadership; business model innovation; and environmental uncertainty which was suggested to be a potential moderator of the relationship between the two constructs. The chapter discusses the hypothesis test results other since the tests were done concurrently. A diagrammatic representation of the test

results for the hypothesised relationships from chapter 3, together with the supporting literature, is presented.

6.2 Respondents' demographics

The study's respondents sample comprised of 113 individuals working in various industries in South Africa. The participants were required to be professionals working in different sectors in South Africa. All the 113 respondents belonged to firms in different industries; hence their responses were valid for the study. The sample comprised mostly of senior and executive managers (41%), middle managers (35%}, and CEOs/owners constituted 10%. The remainder of the participants in the sample were junior managers (10%) and administrative staff (5%). The composition of the sample was relatively adequate since the study sought to assess firm-level constructs. The construct descriptive statistics showed that all the means were above 3; signalling more positive disposition on the part of respondents. Respondents were generally disposed towards affirming that their firms had engaged in some of business model innovation. The high mean scores for the constructs also suppose that subordinates perceived their immediate superiors to be possessing transformational leadership traits.

6.3 Business model innovation

As noted at the introduction of this study, firms engage in either modular or architectural business model innovation resulting in business models that are new to the firm or their industries (Foss & Saebi, 2016, 2018). Firms with transformational leaders are more likely to engage in business model innovation in times of environmental uncertainty (Ograjenšek & Buhovac, 2016). The data showed that most of the firms represented in the sample had high mean scores for transformational leadership. Therefore the firms represented by the sample are likely to innovate their business models. The study measured business model innovation through the items that measured its dimensions of value creation innovation, value delivery innovation and value capture innovation. The sample also showed relatively high scores for all dimensions of business model innovation. The scores for value delivery innovation

showed that firms in the sample did not innovate the value delivery functions. Value delivery innovation is related to creating new ways of delivering value to clients. The finding may suggest that firms find this form of business model innovation more difficult implement. Foss and Saebi (2018) argued that the dimensions of business models are linked through complementarities. Some linkages like value distribution channels may be more difficult to change hence to low mean score. Value creation innovation had the highest mean score, followed by value delivery innovation. Firms, therefore, find it easier to innovate along product lines than in modular ways that architecturally. Zott and Amit (2015) and Bashir and Farooq (2019)argued that this form of business model innovation creates less sustainable competitive advantages.

An understanding of how the transformational leadership style, as measured through its dimensions, impacts a firmwide activity of business model innovation is the subject of this study. The study set out to analyse the impact of transformational leadership on business model innovation in times of environmental uncertainty and determine if environmental uncertainty moderated the relationship between TLS and BMI.

6.4 Transformational leadership, business model innovation and environmental uncertainty

H1: The transformational leadership style positively impacts firm business model innovation practices.

Transformational leadership was treated as an independent variable in the formulation of hypothesis 1 in this study. The hypothesis test results for the investigation to show whether the transformational leadership style positively impacts the business model innovation process confirmed the hypothesis (β =0.783, $p<0.05$). The regression coefficient was significantly positive at b = 1.017 (Table 23). This finding showed that leaders with higher levels of transformational leadership traits are more likely to positively influence their followers to engage in activities that will result in the innovation of existing business models (Ograjenšek & Buhovac, 2016). The finding was consistent with other research findings which showed that transformational

leadership is influences organisational activities such as innovation and driving organisational success (Rowold & Heinitz, 2007; Tepper et al., 2018). Research had shown that the is limited understanding of how different leadership styles influence the business model innovation process (Amit & Zott, 2015; Foss & Saebi, 2018). The outcome of the test for hypothesis 1 showed that the transformational leadership style has a positive impact on the business model innovation process. This finding presents additional insights into the understanding of how transformational leadership impacts firm business model innovation.

The study sought to answer the question of how transformational leadership impacts business model innovation. The study, therefore, answers research question 1 and supports the finding by Ograkesek and Buhavoc (2016) that the transformational leadership style fosters business model innovation. The ability of transformational leadership to support business model innovation also stems from the fact that its associated with promoting firm-level innovation (Ojha et al., 2018). Transformational leaders can motivate followers to rally around firm related objectives (Hughes et al., 2018).

As noted at the beginning of this study, transformational leadership promote positive and organisational outcomes related to innovative cultures, organisational adaptability and learning, increased profitability and creating competitive advantages (Carreiro & Oliveira, 2019; Dess & Picken, 2000; Sarros et al., 2008). In the context of this study, the leaders of the firms in the sample strong transformational leadership style traits based on the high mean scores achieved for the construct (Table 22).

Transformational leaders are known to challenge the status quo in the firm, create visions of a promising future, and rally followers to join in their pursuit of a better organisational future (Yahaya & Ebrahim, 2016). Teece (2018) refers to the ability by transformational leaders to create visions of the future, explore new opportunities and shape the organisations to adapt to the anticipated future in the dynamic capabilities literature as sensing, seizing and configuration capabilities. Borrowing from this filed oif study sheds more light on why transformational leaders positively impact a process like business model innovation.

H2: Environmental uncertainty moderates the relationship between transformational leadership and the firm business model innovation process.

The results for the hypothesis on the moderating role of environmental uncertainty on the relationship between transformational leadership and business model innovation was not significant ($p>0.05$, see Table 23). This finding was, therefore not consistent with past studies' findings that reported that the relationship between leadership and organisational success, including business model innovation is moderated by environmental uncertainty (Waldman et al., 2001). The study's results show that in the context of the sample studied environmental uncertainty was not significant in influencing the business model innovation process. Milliken (1987) and Vecchiato (2015) reported that organisational activities take place in an environment in which the firms' leadership will not be able to predict outcomes with certainty.

The developments in a firm's operating environment due to changing customer needs, increased competition and advanced technological developments have created an environment filled with uncertainty (Bocken & Geradts, 2019). For an activity like business model innovation to occur, the leader needs to have some form of clarity about the future hence the expectation that environmental uncertainty moderated the process.

The study went on to investigate the impact of the individual components of the transformational leadership style on the business model innovation process by determining how the individual components of transformational leadership, as highlighted Rafferty and Griffin's (2004) and Carreiro and Oliviera's (2019) studies, impact the business model innovation process.

6.4.1 Leader vision and business model innovation

H1a: Leader vision positively impacts firm business model innovation processes.

The results for the hypothesis test showed that leader vision significantly positively impacts the business model innovation process (β = 0.763, p<0.05). The regression coefficient for the vision component was significantly positive (b = 0.802, see Table 24), showing that leader vision has a positive impact on business model innovation. The findings were consistent with existing literature findings that vision does significantly positively influence organisational success (Bednall et al., 2018; Carreiro & Oliveira, 2019). The data showed that the respondents believed that their leaders were good at articulating their organisation's future and knew where the organisation was going. One of the questions, TLV_B17 (My supervisor has a clear understanding of where we are going), had 92 (81%) out of the 113 respondents agreeing and strongly agreeing with the view that their leaders had a clear understanding of where the organisation was going. The finding was consistent with Zhang et al.'s (2015) and Strange and Mumford's (2005) findings that a clearly articulated vision will give followers the drive to recognise and create new opportunities for the firm. This understanding is also synonymous with creating new business models or improving existing ones. The innovation of the business model was found by Birkinshaw et al. (2016) to be linked to assisting firms in creating and sustaining competitive advantages.

The study's finding is also consistent with Sarros et al.'s (2008) views that, visionary leaders create organisations that foster innovation by providing the resources and environments that stimulate follower creativity hence firm innovation. Business model innovation depends on the firm's ability to anticipate future consumer needs and how the organisation will meet these needs to remain competitive and relevant. Leader vision is, therefore, in line with Priem et al.'s (2018) findings, a critical facet in successfully achieving business model innovation. Leader vision had the second-highest significant impact (β = 0.763, p<0.05) on business model innovation among the transformational leadership components which impacted the business model

innovation significantly positively. This result was consistent with extant literature's views that vision is a key component of the transformational leadership style that helps drive innovation (Antonakis, 2012; Antonakis & House, 2014; Sarros et al., 2008).

Business models are an expression of the leader's dominant logic which need to and these become the firm's way of thinking and doing business. Leaders need to clearly articulate the business model to the rest fo the organisation (Bouncken & Fredrich, 2016). The leader, therefore, needs to be able to influence all members of the firm to visualise the firm's objective how they play crucial role in driving business model innovation (Markides, 2013; Spieth et al., 2016). Transformational leaders like Jeff Bezos of Amazon, Reed Hastings of Netflix, Lou Gerstner former IBM CEO, Alan Mulally former Ford CEO all used leader vision to stimulate their firms' business model innovations (Chatman & O'Reilly, 2020).

H2a: Environmental uncertainty moderates the relationship between leader vision and firm business model innovation.

The results for the hypothesis test for the moderation effect of environmental uncertainty on the relationship the vision component of transformational leadership and firm business model innovation processes was not statistically significant ($p>0.05$, see Table 24). Despite environmental uncertainty being a critical factor in the firm's drive to achieve competitive advantages (Cortimiglia et al., 2016; Rhisiart et al., 2015), the test did not prove its significance. Circumstances in the South African operating environment from firms from which this study's participants, therefore, did not influence the firms' business model innovation practices. The differences in findings may have been a result of different leadership practices relative to those of the firms in which the earlier studied were conducted (Harzing, 2000).

6.4.2 Leaders inspirational communication (inspirational communication and intellectual stimulation) and business model innovation

H1b: Inspirational communication positively impacts firm business model innovation.

H1c: Intellectual stimulation positively impacts firm business model innovation.

The hypothesis test results for the component confirmed that inspirational communication (inspirational communication and intellectual stimulation) has a positive impact on business model innovation practices. The combined components had the highest positive impact on business model innovation ($\beta = 0.879$, $p<0.05$). The combined component had a significant positive regression coefficient of 1.077, suggesting that leaders who exhibit the attributes in these two components will positively impact business model innovation processes. The finding was not consistent with previous research which had found vision to be the most significant driver of innovation from a transformational leadership perspective (Carreiro & Oliveira, 2019; Chen et al., 2019). The confirmatory factor analysis process showed that the two components of inspirational communication and intellectual stimulation for the sample from which the data was collected were highly correlated ($r = 0.99$, see Figure 8). The researcher resolved to combine these two components into one and called it inspirational communication.

Inspirational communication relates to those transformational leadership behaviours that allows the leader to appeal to the emotions of their followers. This was found to be largely biased communication meant to inspire confidence in the organisation by the leader (Darwish et al., 2020; Hughes et al., 2018; Koh et al., 2019). This component also refers to those leadership practices that result in the communication of the firm's vision positively. This positive communication motivates followers to achieve the goals that benefit the firm (Podsakoff et al., 1990; Zhang et al., 2015).

Intellectual stimulation, on the other hand, refers to leadership behaviours that stimulate followers to think about problems and look for new ways of solving them (Rafferty & Griffin, 2004). Intellectual stimulation gives leaders the ability to question the status quo. Leaders that exhibit intellectual stimulation are bent on looking for solutions (Ojha et al., 2018). The finding that intellectual stimulation positively impacts

business model innovation supports the notion that for new business models to be crafted the firm should experiment and explore new ways of creating value (Chesbrough et al., 2018; Clauss et al., 2020; Saebi et al., 2017). Saebi, et al. (2017) argued that successful business model innovation is the result of exploratory innovation and experimentation on the part of the firm. Intellectual stimulation therefore meets the criteria of leaders that promote new ways of looking at things. Leaders with intellectual stimulation abilities will find ways of innovating all dimensions of the business models and are or affected by organisational inertia (Chesbrough, 2010).

H2c: Environmental uncertainty moderates the relationship between inspirational communication and firm business model innovation

H2b: Environmental uncertainty moderates the relationship between intellectual stimulation and firm business model innovation.

The test for hypotheses 2b and 2c for the moderating role of environmental uncertainty on this relationship showed that environmental uncertainty does not significantly influence the relationship between leader inspirational communication and intellectual stimulation and the business model innovation processes. Environmental uncertainty according to Milliken (1987) stems from leadership's inability to predict accurately something that is part of the surrounding environment. Environmental uncertainty in the study was believed to emanate from the business operating environment which would require firms to respond by innovating their business models (Haarhaus & Liening, 2020). The firm's ability to address declining competitive advantages was therefore believe by the researcher to be moderated by environmental uncertainty. The test to the contrary failed to support or dispute the proposed hypothesis,

6.4.3 Leader intellectual stimulation and business model innovation

H1d: Supportive Leadership positively impacts firm business model innovation processes.

The results of the study showed that supportive leadership had no significant positive impact on the firm's business model innovation process ($p>0.05$, see Table 25). The results were consistent with Pierce and Aguinis' (2013), finding that excessive leader support had the potential to impact the performance of followers negatively. Negatively affected followers will end up not assisting the firm in meeting its goals, including innovating the business model. The researchers refer to this adverse effect of high levels of supportive leadership is the 'too much of a good thing effect'. The finding was also consistent with Van Knippenberg and Sitkin's (2013) findings that leader supportive innovation does not significantly influence positive follower outcomes, including innovating and changing business practices for firm competitiveness and survival.

Supportive leaders were found to influence firm performance by creating capabilities within followers that increase the capacity of the firm to innovate its business model. The study, however, showed a contradictory outcome from Carreiro and Oliveira (2019) who found a significant influence on firm performance by leaders who provide supportive leadership. The study showed that supportive leadership did not significantly positively impact business model innovation processes.

H2d: Environmental uncertainty moderates the relationship between supportive leadership and firm business model innovation.

The hypothesis tests carried out failed to produce statistically significant evidence to reject the hypotheses that the relationship between supportive leadership and firm business model innovation is moderated by environmental uncertainty ($p>0.05$, see Table 25). According to Cortimiglia et al. (2016) the environmental uncertainty arises from unpredictable changes in environmental factors like technology, customer tastes and preferences and increased competition. These factors were also found to be critical divers of the business model innovation process (Hamelink & Opdenakker, 2019; Schoemaker et al., 2018) and hence the proposition that environmental uncertainty was moderator of the business model innovation process. The moderated regression results where however not significant enough to support the proposition that environmental moderated the relationship between the two constructs.

6.4.4 Leader personal recognition and business model innovation

Personal recognition is also called individualised consideration and focuses on those leadership behaviours that focus on and values follower personal needs, recognises individual efforts and rewards individual performance (Bednall et al., 2018; Carreiro & Oliveira, 2019; Hughes et al., 2018; Rafferty & Griffin, 2004). The results from this study showed that leader personal recognition does not positively impact firm business model innovation processes. The differences between the findings of other studies and this study could be due to different socio-cultural factors and leadership practices (Harzing, 2000). The cultural practices in South Africa may result in different outcomes for results that were significant in a developed market case like in the Australian study in Carreiro and Oliveira (2019).

H1e: Personal recognition positively impacts firm business model innovation.

H2e: Environmental uncertainty moderates the relationship between personal recognition and firm business model innovation

The hypothesis test conducted for the proposed relationship in this study failed to statistically confirm that leader personal recognition plays a significant part in the business model innovation practices of the firm. Contrary to hypothesis 1d, the findings were consistent with Carreiro and Oliviera (2019) and Pierce and Aguinis (2013) who found that the other reason why personalised consideration may not significantly influence followers to engage if practices like business model innovation is the overwhelming effect of too much attention. Contrary to hypothesis 1d, when firm leaders show their followers that they are concerned about them this does not always lead to increased firm performance including positive business model innovation practices. Hypothesis 2d was not statistically significant showing that the relationship between leader personal recognition and business model innovation is not moderated by environmental uncertainty. Contrary to the transactional leadership setting in Waldman's et al's (2001) case where the relationship was moderated by

environmental uncertainty in this study the moderation was not significant. This could be the result of different organisational practices in different geographical locations.

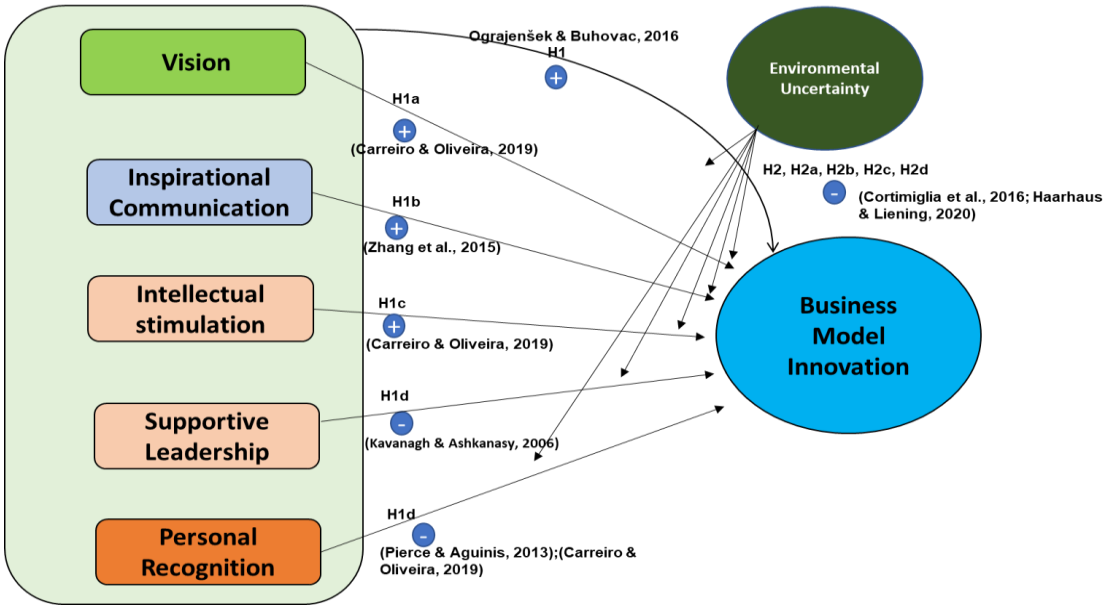
In light of these findings businesses in which leaders take time to clearly articulate their vision to their followers are more likely to benefit from the results of a team that has bought into the mission of the organisation. Such firms are likely to be more inclined to allocate resources to innovation activities focused on business model innovation. The findings suggest that leader vision can positively impact business model innovation practices of firms seeking to achieve and create competitive advantages. Followers are likely to aid and advance business model innovation practices because the leader would be demonstrating exemplary behavior which followers can imitate through business model innovation activities like exploring new ways of creating value for their stakeholder. Such firms are also more likely to explore new and unique ways of delivering the value to their stakeholders by developing new distribution channels, new partnerships with suppliers and other stakeholders in their value chain. Firms whose leaders exhibit higher levels of leader vision are also likely to be better placed at profitably capturing value from the goods and services the firm uses to create value for satisfying different customer needs. (Pierce & Aguinis, 2013)

The presence of leader inspirational communication was found to be likely to improve a firm's business model innovation. Leader inspirational communication leads to improved follower capabilities that will in turn benefit the firm through increased human capital resource capabilities. The improved human capital resources can give firm increased potential to create and sustain competitive advantages through increased business model innovation expertise.

6.5 Summarised findings

To summarise the findings of this study, Figure is a diagrammatic representation of the relationships, based on sample used, that were identified. The diagram also shows the key literature that supports the identified relationships. The research set out to understand the nature of the relationship between the transformational leadership style and the business model innovation process.

Figure 14: Summary of research findings



7 CONCLUSION

7.1 Revisiting the research objectives

The study set out to address the gap in the literature relating to how the transformational leadership style impacts the business model innovation process. Teece (Teece, 2010, 2018); Foss and Saebi (Foss & Saebi, 2016, 2018); Bocken and Geradts (2019); Cortimiglia et al. (2016); and Hamelink and Opdenakker (2019) all stressed the importance of leadership in business model innovation. Key among these authors' findings is the role business model innovation plays in giving firms an edge in today's competitive business landscape. Achtenhagen et al. (2013) and Spieth et al. (2014) further refined the understanding in business model innovation by not the significance of leadership styles. Ograjensek and Buhovac (2016) later reported, in a qualitative study, that transformational leadership contributes to successful business model innovation. This study, therefore, advanced the research on the transformational leadership's role in business model innovation. The study answered the question of how transformational leadership impacts the business model innovation process by establishing that transformarional leadership significantly positively influences the process ($\beta = 0.783$, $p < 0.05$).

The study also confirmed earlier studies findings on the role of the transformational leadership components of vision, inspirational communication, and intellectual stimulation in organisational success. Significantly positive relationships were established between leader vision, inspirational communication and intellectual stimualtion and firm business model innovation processes. Business model innovation assist firms in achieving sustainable value creation abilities when compared to ordinary product and process innovation which has been the practice in the past decades (Bashir & Farooq, 2019). Because of the importance of business model innovation to firm success there was a need to understand how firms can effectively engage in this activity. This study, therefore, added to the firms' understanding of how they can successfully achieve business model innovation (Hamelink & Opdenakker, 2019).

Today's increased requirement for adaptive and learning organisations added to the importance of achieving this study' objective as it shed additional light on how firms can create adaptable organisations (Bocken & Geradts, 2019). The study's findings were also consistent with Chatman and O'Reily's (2020) report that organisations such as Netflix, IBM and Apple were evidence of the role transformational leadership has played in growing successful businesses through innovating business models. In these firms, transformational leadership's impact on the business model innovation process was evidenced by exponential growth that acquired these firms positions in the prestigious Fortune 500 list of companies (Birkinshaw et al., 2016; Schneckenberg et al., 2017; Spieth et al., 2016).

A key finding of the study was the positive impact of leader vision on firm business model innovation (β = .763, $p<0.05$). This finding was consistent with earlier studies that showed that in transformational leaders, vision gives the leader the ability to articulate their ideal futures that firms can aspire to effect successful business model innovation (Carreiro & Oliveira, 2019). Inspirational communication, on the other hand, is the means through which transformational leaders articulate their visions that lead firms to imagine new and better ways of profitably satisfying customer demand (Hughes et al., 2018). Thes study's findings with regards to inspirational communication are also consistent with existing literature (β = 0.879, $p<0.05$). Inspirational communication is associated with leaders' use of motivational communications in driving firm collective actions like business model innovation (Cortimiglia et al., 2016).

Whilst Achtenhagen et al (2013) suggested that leadership styles had a positive relationship with business model innovation, Carreiro and Oliviera (2019) and Ograjensek and Buhovac (2016) found that the transformational leadership style is likely to have a positive impact on the firm's business model innovation process. Thi study's findings confirmed existing literature's findings further highlighted that transformational leadership achieve successful business model innovation by their ability to inspire confidence(2019)ca in the firm.

The finding that intellectual stimulation positively impacts business model innovation (β = 0.879, p<0.05) confirmed Carreiro and Oliveira (2019) and Sarros et al.'s (2008) findings on intellectual stimulation in leaders. The researchers noted that transformational leaders promote organisational success in by intellectually stimulating their followers to think about problems and search for new ways of solving the problems facing the firm. The literature reviewed in this study showed that for a firm to engage in business model innovation, it requires the ability to explore and experiment with new ways of creating, delivering, and capturing value. This ability to engage in experimental designs and experiment is the result of being stimulated to consider new ways of solving customer challenges.

Leader personal recognition and supportive leadership did not prove to impact the business model innovation significantly positively (p>0.05). Whilst consistent with existing literature that personal recognition does not significantly influence firm success, the finding showed that business model innovation is not the result of leadership just being concerned about their followers. Pierce and Aguinis (2013) associate this negative effect on firm processes when leaders are too concerned about their followers the case of 'too much of a good thing'. Supportive has also been found to negatively impact firmwide processes like the adoption of new ways of doing business. The study's finding, therefore, shows that when firms are seeking to create responsive and adaptive organisations in the form of business model innovation, they will need to avoid overly supporting their employees (Carreiro & Oliveira, 2019; Pierce & Aguinis, 2013).

Existing literature identified that personal recognition supports organisational success (Hughes et al., 2018; Ograjenšek & Buhovac, 2016; Ojha et al., 2018), this study noted that, in the context of South African firms, personal recognition does not significantly positively impact business model innovation (p>0,05). The study's findings, however, confirm Kavanagh and Ashkanasy (2006) and Van Knippenberg and Sitkin's (2013) findings that not all facets of the transformational leadership style are beneficial fo firms. In the context of this study, personal recognition and supportive leadership in transformational leaders do not significantly positively influence firm business model innovation.

In light of research question 2, the study's findings showed that environmental uncertainty does not moderate the business model innovation process ($p>0.05$). Waldman et al. (2001) in their investigation of how leadership styles influence organisational success found that environmental uncertainty moderated the relationship between transformational leadership and organisational performance. The differences between the outcomes in these scenarios may be the result of differences in environmental settings and leadership practices (Harzing, 2000). Research in the dynamic capabilities literature has proved environmental uncertainty to have a moderating influence of firm processes including developing dynamic capabilities (Haarhaus & Liening, 2020; Teece, 2018). This study, however, could not ascertain this in the business model innovation practices of South African firms.

The study's research questions, hypotheses and findings are shown in Table 28. The formulated testable research hypotheses and sub-hypotheses in chapter three, are restated below:

H1: The transformational leadership style positively impacts firm business model innovation processes
H1a: Leader vision positively impacts firm business model innovation
H1b. Inspirational communication positively impacts business model innovation
H1c. Intellectual stimulation positively impacts business model innovation
H1d. Supportive leadership positively impacts business model innovation
H1e. Personal recognition positively impacts business model innovation
H2. Environmental uncertainty moderates the relationship between transformational leadership and business model innovation.
H2a. Environmental uncertainty moderates the relationship between leader vision and business model innovation.
H2b. Environmental uncertainty moderates the relationship between inspirational communication and business model innovation.
H2c. Environmental uncertainty moderates the relationship between intellectual stimulation and business model innovation.
H2d. Environmental uncertainty moderates the relationship between supportive leadership and business model innovation.

H2e. Environmental uncertainty moderates the relationship between personal recognition and business model innovation.

Table 28: Summarises hypothesis test results

Research Question	**Hypotheses Tested**	**Hypothesis Test results**
RQ1: How does transformational leadership impact firm business model innovation processes?	1, 1a, 1b, 1c	**Siginficant ($p < 0.05$)**
	1d, 1e	Not significant ($p > 0.05$)
RQ2: Does environmental uncertainty moderate the relationship between transformational leadership and business model innovation.?	2, 2a, 2b, 2c, 2d, 2e	Not significant ($p > 0.05$)

As organisations seek to build adaptive, learning, responsive, and innovative organisations, the study through meeting its objectives, contributed to assisting firms to achieve their goals. An understanding of leadership practices and styles that foster firm-wide innovations like business model innovations could prove to be useful not only to the business fraternity but also to academics' quest to broaden their understanding how leadership influences business processes.

7.2 Recommendations and implications

The increase in the significance of sustainable value creation and achieving competitive advantages in the face of changing customer needs and technological advances have proved business model innovation abilities critical in most managers' toolkits (Bashir & Farooq, 2019; Teece, 2018; Wirtz et al., 2016). Understanding how leadership influences the business model innovation process therefore become critical for firms. Establishing an explanation of how leadership styles also impact this process has been cited by existing research as a vital milestone (Foss & Saebi, 2018; Ograjenšek & Buhovac, 2016). To be able, therefore, to recommend to organisations a leadership style that positively impacts the business model innovation process would be of great benefit.

In the same vein adding to the understanding of the nature of the relationship between the transformational leadership style and the business model innovation process will benefit the academic fraternity. This study form part of the beginning of a response to extant literature request for an investigation into how leadership and leadership styles influence business model innovation. An explanation of the leadership-business model innovation phenomenon lacks adequate explanations (Achtenhagen et al., 2013; Foss & Saebi, 2018; Ograjenšek & Buhovac, 2016; Teece, 2018).

The importance of leadership behaviours in influencing organisational success has been noted as an area of growth in leadership research (Darwish et al., 2020; Lord et al., 2017; Stone & Gandolfi, 2018). This study will benefit business schools by recommending adding additional findings to their curriculum offerings in leadership behaviour education. The research findings also make a case for identifying transformational leaders to lead future organisational. Hiring transformational leaders could serve as a strategy for incumbent firms to ensure they grow their adaptiveness and responsiveness to changes in the operating environment. Incumbent firms can also use the study's findings to achieve sustainable value creation in the face of growing competition, fast-paced technological advances, and continuously changing consumer needs as product life cycles continue to shorten.

7.2.1 Organisational benefits

Whilst the 'what' of leadership and leadership styles have been extensively researched and the findings documented, there remains a case for investigating the 'how' of leadership styles in aiding organisational success (Achtenhagen et al., 2013; Chatman & O'Reilly, 2020; Darwish et al., 2020). Criticisms of the benefits of the transformational leadership style have been made by some researchers (Andersen, 2015; Bartram & Casimir, 2007; Castro et al., 2008; Nir & Hameiri, 2014; Van Knippenberg & Sitkin, 2013; Yukl, 1999), but the style has been confirmed to be still relevant in effectively fostering innovative cultures in organisations (Bednall et al., 2018; Carreiro & Oliveira, 2019; Hughes et al., 2018; Ograjenšek & Buhovac, 2016; Ojha et al., 2018; Zhang et al., 2015). This study's findings further confirmed the

significance of transformational leadership in building resilient organisational success. The study also highlighted to organisations the benefits of encouraging transformational behaviour, like positively impacting the business model innovation practices.

Firms should, therefore, consider establishing hiring processes that acquire transformational leaders to lead innovative processes like value creation, value delivery, and value capture activities. Leaders that can clearly articulate firm visions can influence firm business model innovation initiatives (Schoemaker & Day, 2019). Firms also need to groom their leaders to be able to communicate with their followers in inspiring ways and be prepared to challenge firms to develop new capabilities intellectually. This intellectual stimulation of followers by transformational will increase the firm's ability to innovate its business model. Organisations that successfully innovate their business models achieve more sustainable in value creation (Chesbrough et al., 2018; Foss & Stieglitz, 2014). The findings of this study could also prove to be useful for organisations in developing and emerging economies like South Africa.

7.2.2 Academic benefits

Business model innovation is a growing field of study, and several gaps in how the field relates to other facets management and strategic research are still present. Past studies noted that understanding how leadership styles influence firms remain under-researched. This study's findings contributes to the closing of the gap in the understanding of the relationship between leadership styles and business model innovation (Achtenhagen et al., 2013; Cortimiglia et al., 2016; Foss & Saebi, 2018; Foss & Stieglitz, 2014; Ograjenšek & Buhovac, 2016; Wirtz & Daiser, 2017). The is study identified confirmed that in the context of South Africa the transformational leadership style positively impacts business model innovation. The study confirmed the vision, intellectual stimulation, and inspirational communication to impact the business model innovation process significantly positively. This finding, therefore, sets up a basis for future research into the transformational leadership, business model innovation and environmental uncertainty constructs.

7.3 Limitations and suggestions for future research

This study made use of online surveys as highlighted in chapter four, and these have the disadvantage of failing to capture sufficient details from respondents hence reduced the quality of the findings (Saunders & Lewis, 2018). Most of the respondents, for example, were overly optimistic in most of their responses of their leaders' abilities which left the researcher not sure whether the respondents clearly understood all the questions. If they understood the items on the measuring instrument, maybe they were not confident the information would be kept confidential.

The study quantitatively investigated to nature of the impact that the transformational leadership style has on the business model innovation process. A qualitative investigation of the same research questions may yield more insights for leaders and academics alike. Business model innovation and transformational leadership are dynamic processes and using a cross-sectional study, as was done in this study, failed to capture these dynamic aspects of the measured variables thereby reducing the depth of the findings (Quinian et al., 2019).

The limitations provide a basis upon which additional future research into the nature of the relationship between the transformational leadership style and business model innovation can be done. The study was done in a single country setting of South Africa and it will be critical in the future to assess if the results will be consistent in other jurisdictions.

The study supports the call from extant literature for further investigation into the nature of the vision component of transformational leadership style and how it relates to communication (Carreiro & Oliveira, 2019; Van Knippenberg & Sitkin, 2013). A gap in the understanding of how different leadership styles influence the business model innovation process, this study opens the avenue for investigations to be made into the role of other leadership styles influence on the business model innovation.

The sample collected in this study was small of 113 participants made the study prone to type II errors when testing the proposed hypothesis. Future researchers are encouraged to consider a larger sample to explain the proposed relationship better. To fully explore the nature of this relationship, a mixed methods approach should be considered as opposed to the mono-method used in this study. This may improve the quality of the findings from the survey. Methods like in depth structured interviews and discussion groups can be explored.

The majority of the participants in the study belonged to the financial services industry making it difficult to make generalisable conclusions about business model innovation practices in the economy. Future studies in which samples with different industry group representations are necessary to assess whether the findings of this study will be substantiated.

The confirmatory factor analysis produced a result that led to the combination of the inspirational communication and intellectual stimulation components of the transformational leadership style construct. This finding was consistent with the Van Knippenberg and Sitkin (2013) and Carreiro and Oliviera (2019) finding in which they proposed to introduce a new transformational leadership style component called leader vision communication. Future research into the nature of the components and how they independently influence the business model innovation process maybe required.

Whilst this study found that the transformational leadership style positively impacts the business model innovation process, it does not mean that all transformational leaders in organisations will result in firms that successfully engage in the business model innovations. The findings only suggest that there may be a relationship.

7.4 Concluding remarks

This study investigated the transformational leadership and the business model innovation constructs. Both constructs are essential for organisational success. The findings of the study suggested that the transformational leadership style has a

positive impact on business model innovation. The study found that vision, inspirational communication, and intellectual stimulation impact the business model innovation process significantly positively. The study also found that this relationship is not moderated by environmental uncertainty. Hence the findings assisted the researcher in answering the research questions established at the beginning of the study and meet the set objectives.

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9 APPENDICES

APPENDIX A SURVEY QUESTIONAIRRE

Preamble

Dear Respondent

In partial fulfilment of my MBA studies with the University of Pretoria's Gordon Institute of Business science I am conducting a research on the role of leadership in helping firm achieve a competitive advantage in the face of increased competition. The study aims to understand the role of transformational leadership components on business model innovation. The research will help both practitioners and academia to understand the role transformational leadership plays in business model innovation. By understanding this relationship, the study will make recommendations on whether organisations need to promote transformational leadership traits in their bid to remain competitive in their respective industries. Your assistance is therefore being solicited by completing a survey on a set of questions. The questionnaire is expected to take no more 10 minutes of your time to complete. Your participation is voluntary, and you can withdraw at any time without penalties. All the information collected is anonymous and the responses provided will not be used to identify any participant. Data collected will therefore be kept confidential. By completing the questionnaire, you indicate that you voluntarily participate in this research. Should you have any concerns, please do not hesitate to contact me or my supervisor.

Our details are as follows:

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Supervisor: Dr Manoj Chiba
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Section A

Please indicate the applicable option for you using a tick symbol (√)

1. Gender:
    - Male
    - Female
    - Prefer not to answer
2. Age group:
    - 21-29
    - 30-39
    - 40-49
    - 50+
3. Highest level of education completed:

- Matric/A level
- Certificate/Diploma
- Bachelor's Degree
- Postgraduate Diploma
- Master's/Doctorate
- Other: Please Specify ……. ……..

4. How do you classify your role in the organisation? If other, please specify your role in the organisation.
    - Administrative/Supporting
    - Junior Management/Supervisory
    - Middle management/Professional
    - Senior Management/Executive Management
    - Chief Executive Officer/Owner
    - Other: Please Specify……..
5. What is the size of your organisation?
    - Micro (less than 10 employees)
    - Small (11-50 employees)
    - Medium (51-250 employees)
    - Large (251+ employees)
6. How long have you been with your organisation?
    - Less than 1 year
    - 1-5 years
    - 6-10 years
    - 11-14 years

- 15+

7. Which industry best describes the one your organisation belongs to? If other, please specify
   - Fast Moving Consumer Goods
   - Financial Services
   - Food and Beverages
   - Healthcare
   - Information and Communications Technology
   - Industrial and Manufacturing
   - Mining
   - Professional Services
   - Public Service
   - Tourism and Hospitality
   - Other: Please Specify……

Section B (Tick the most appropriate for you)

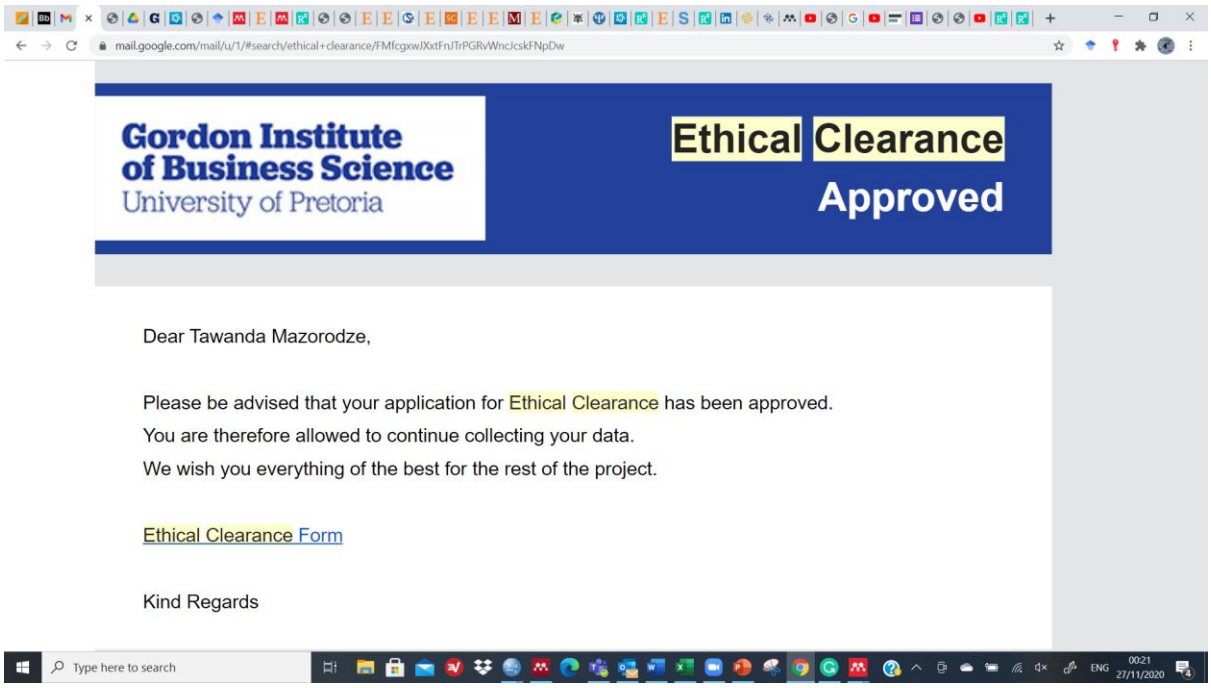
Your Organisational Practices in the last 5 Years							
8	My firm overall achieved dramatic cost advantages		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
9	Relative to our direct competitors, our employees have very up to date knowledge and capabilities		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
10	We constantly reflect on which new competencies need to be established in order to adapt to changing market requirements		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
11	My firm added a completely new product or service range		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
12	My firm captured a new market segment we never used to serve before		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
13	My firm now has completely new significant sales and distribution channels		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
14	As a business we significantly improved customer satisfaction of desires and requirements		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
15	Our business is now more efficient in resources uses like in HR, Finance, technologies etc)		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
16	Our firm now has new suppliers and more profitable ways of		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

	dealing with external counterparties						
How your immediate supervisor conducts themselves							
17	My supervisor has a clear understanding of where we are going		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
18	My supervisor has a clear sense of where he/she wants to be in 5 years		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
19	My supervisor has no idea where the organisation is going		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
20	My supervisor says things that make employees proud to be part of this organisation		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
21	My immediate superior says positive things about the work unit		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
22	My immediate superior encourages people to see changing environments as situations full of opportunities		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
23	My immediate superior challenges me think about old problems in new ways		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
24	My immediate superior has ideas that have forced me to rethink some things that I have never questioned before		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
25	My immediate superior has challenged me to rethink some of my basic assumptions about my work		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
26	My immediate superior considers my personal feelings before acting		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
27	My immediate superior behaves in a manner which is thoughtful of my personal needs		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
28	My immediate superior sees that the interests of employees are given due consideration		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
29	My immediate superior commends me when I do a better than average job		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
30	The top management executive acknowledges improvement in my quality of work		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

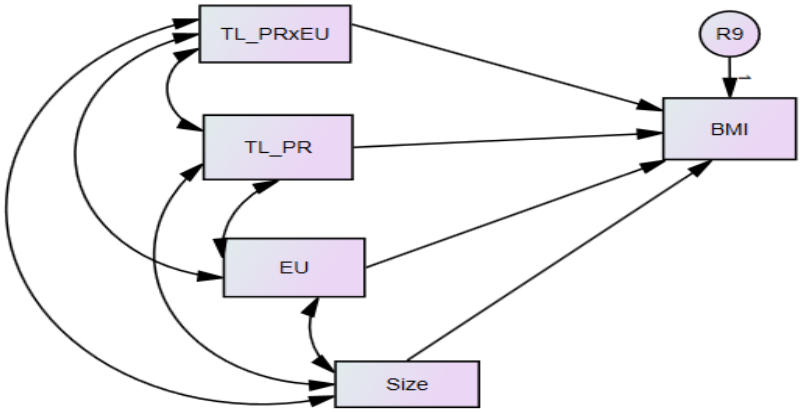
31	My immediate superior personally compliments me when I do outstanding work		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
32	It is impossible to foresee today how our business segment is going to change over the next 10 years.		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
33	It is not possible to make exact predications about our business segment's development over the next 10 years.		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
34	How our market is going to change over the next 10 years is unpredictable.		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
35	Over the next 10 years, there can be changes that represent a major threat to the competitiveness of our company.		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

Thank you for your patience in completing this questionnaire. Should you be aware of any individuals that are suitable for completions the completion of this questionnaire and are interested in taking part in this study, kindly forward them this questionnaire or forward their details to me.

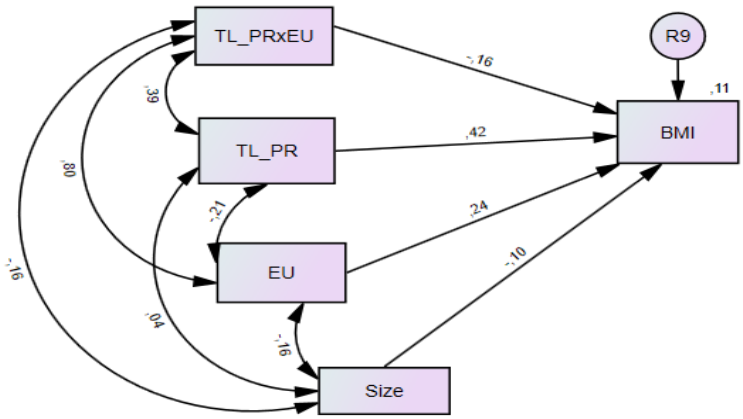
APPENDIX B: ETHICAL CLEARANCE



APPENDIX C1: MODERATION PATH DIAGRAM BMI, TL_PR AND EU



APPENDIX C2: MODERATION PATH DIAGRAM WITH REGRESSION RESULTS



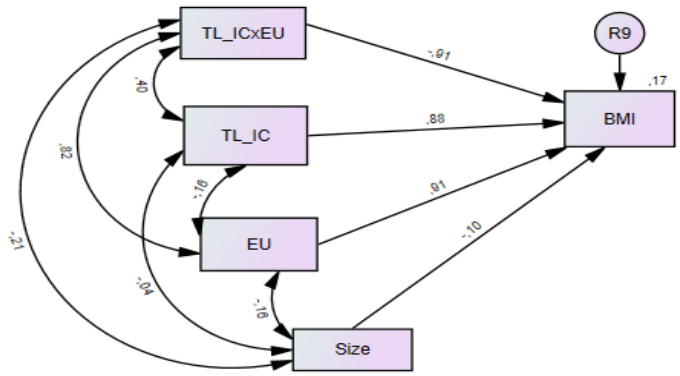
APPENDIX C3: REGRESSION WEIGHTS:(GROUP NUMBER 1-DEFAULT MODEL)

			Estimate	S.E.	C.R.	P Value
BMI	<---	EU	,227	,450	,506	,613
BMI	<---	TL_PR	,498	,367	1,358	,175
BMI	<---	TL_PRxEU	-,035	,109	-,321	,748
BMI	<---	Size	-,089	,082	-1,095	,273

APPENDIX C4: STANDARDIZED REGRESSION WEIGHTS:(GRP NO1-DEFAULT MODEL)

	Estimate
BMI <--- EU	,240
BMI <--- TL_PR	,418
BMI <--- TL_PRxEU	-,163
BMI <--- Size	-,100

APPENDIX C5: PATH DIAGRAM RESULTS FOR TL_IC MODERATION ANALYSIS



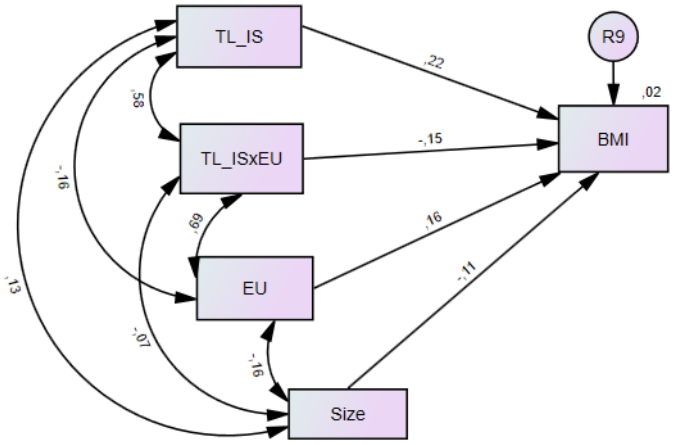
APPENDIX C6: REGRESSION WEIGHTS: (GROUP No 1 - DEFAULT MODEL)

	Estimate	S.E.	C.R.	P	Label
BMI <--- EU	,861	,464	1,855	,064	
BMI <--- TL_IC	1,077	,374	2,875	,004	
BMI <--- TL_ICxEU	-,199	,117	-1,703	,089	
BMI <--- Size	-,093	,080	-1,163	,245	

APPENDIX C7: STANDARDIZED REGRESSION WEIGHTS: (GROUP No 1 - DEFAULT MODEL)

	Estimate
BMI <--- EU	,910
BMI <--- TL_IC	,879
BMI <--- TL_ICxEU	-,908
BMI <--- Size	-,104

APPENDIX C8: PATH DIAGRAM RESULTS FOR TL_IS MODERATION ANALYSIS



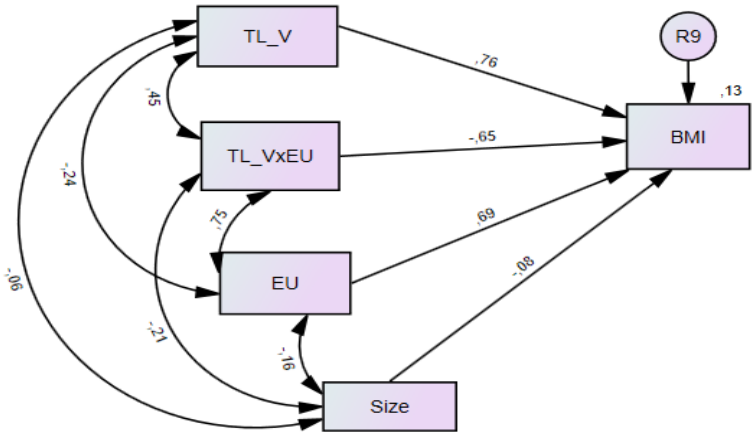
APPENDIX C9: REGRESSION WEIGHTS: (GROUP No 1 - DEFAULT MODEL)

	Estimate	S.E.	C.R.	P	Label
BMI <--- EU	,149	,380	,392	,695	
BMI <--- TL_ISxEU	-,029	,096	-,304	,761	
BMI <--- TL_IS	,203	,329	,617	,537	
BMI <--- Size	-,101	,086	-1,165	,244	

APPENDIX C10: STANDARDIZED REGRESSION WEIGHTS: (GRP No 1 - DEFAULT MODEL)

	Estimate
BMI <--- EU	,158
BMI <--- TL_ISxEU	-,149
BMI <--- TL_IS	,223
BMI <--- Size	-,113

APPENDIX C11: PATH DIAGRAM RESULTS FOR TL_V MODERATION ANALYSIS



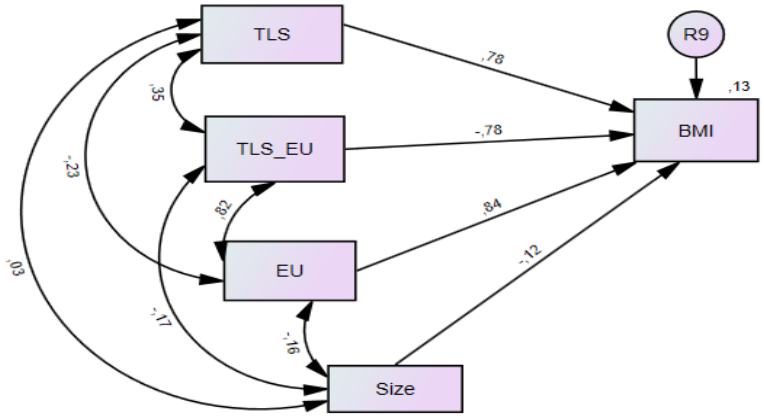
APPENDIX C12: REGRESSION WEIGHTS: (GROUP NUMBER 1 - DEFAULT MODEL)

	Estimate	S.E.	C.R.	P	Label
BMI <--- EU	,653	,464	1,408	,159	
BMI <--- TL_VxEU	-,133	,110	-1,207	,227	
BMI <--- TL_V	,802	,383	2,094	,036	
BMI <--- Size	-,071	,081	-,871	,384	

APPENDIX C13: STANDARDIZED REGRESSION WEIGHTS: (GROUP NUMBER 1 - DEFAULT MODEL)

	Estimate
BMI <--- EU	,690
BMI <--- TL_VxEU	-,645
BMI <--- TL_V	,763
BMI <--- Size	-,079

APPENDIX C15: STANDARDIZED REGRESSION WEIGHTS: (GROUP NUMBER 1 - DEFAULT MODEL)



APPENDIX C16: REGRESSION WEIGHTS: (GROUP NUMBER 1 - DEFAULT MODEL)

	Estimate	S.E.	C.R.	P	Label
BMI <--- EU	,792	,513	1,544	,122	
BMI <--- TLS_EU	-,174	,126	-1,378	,168	
BMI <--- TLS	1,017	,436	2,331	,020	
BMI <--- Size	-,106	,082	-1,304	,192	

APPENDIX C17: STANDARDIZED REGRESSION WEIGHTS: (GROUP NUMBER 1 - DEFAULT MODEL)

	Estimate
BMI <--- EU	,837
BMI <--- TLS_EU	-,782
BMI <--- TLS	,783
BMI <--- Size	-,119