

**Gordon Institute
of Business Science**
University of Pretoria

**Barriers to the adoption of design thinking by leaders in
South Africa**

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Abstract

Innovation has been identified as an important driver for organisation to remain competitive. Design thinking has been touted as a practice for organisations to improve their innovation outcomes. With the proliferation of design thinking training, it is still surprising that leaders still choose not to use the practice as part of their innovation tools. This research investigates why leaders choose not to adopt design thinking as an innovation approach.

Semi-structured interviews were conducted with thirteen managers in different companies belonging to different industries in South Africa. Their opinions were analysed through the lens of the diffusion of innovation theory using the innovation-decision process. The study found that lack of influence, poor learning outcomes, existing innovation practices, organisational culture, existing work practices and the lack of change management contribute to the lack of adoption of design thinking.

This study contributes to the literature on the implementation of design thinking by investigating the adoption decision using an individual as a decision-making unit. The study proposes adding change management design thinking training and augmenting the innovation-decision process with a lot more emphasis on change management.

Keywords

Design Thinking, Innovation Diffusion, Innovation, Leaders, Influence

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.

Thambatshira Brighton Ravele

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1 Introduction to Research Problem

This research explores why leaders choose not to adopt design thinking as a problem-solving technique. Design thinking is meant to improve innovation outcomes.

Understanding the reasons leaders decide not to adopt helps inform what can be done in the process of training and integrating design thinking to enhance the likelihood of adoption.

1.1 Background: the importance of innovation

The world has become more competitive, resulting in an increased interest in innovation from companies (Boyles, 2022). In a world characterised by volatility, uncertainty, complexity and ambiguity (VUCA), innovation is seen as a way for organisations to stay competitive and sustainable in the long term (Elsbach & Stigliani, 2018; Nakata, 2020). Innovation is loosely defined as “a product, service, business model, or strategy that's both novel and useful” (Boyles, 2022).

South Africa is full of examples of organisations that have innovated to the top. Discovery Vitality has revolutionised health care and won awards (Business Wire, 2020). Naked insurance innovated by providing consumption-based insurance. Capitec, with its low-cost operations for a bank, is a business model innovation (Capitec, 2021). These are examples of breakthrough innovation. But not all innovations are breakthrough innovations. Some are incremental innovations. Some examples of incremental innovation are banks starting to offer more banking services on their mobile banking platform. These have catapulted the respective organisations to the forefront but equally added value to their customers' lives.

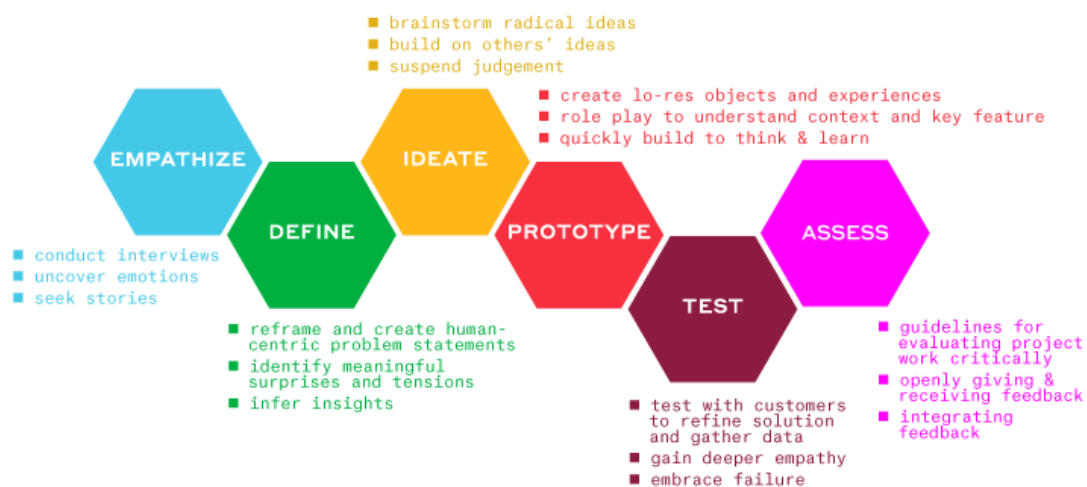
“Innovation is easier said than done” (Boyles, 2022). Up to 95% of innovation projects fail (Andriole, 2021). The high failure rate can be attributed to several factors in established organisations. For example, they are organised around successful products and services to exploit opportunities resulting from success and investment. This leads to difficulty in absorbing innovation (Viki, 2018). Innovation, therefore, requires a change

of mindset from continuing to do what has been working to challenging assumptions and biases towards an organisation's existing success. Internal organisational processes also have to be compatible with innovation. Existing organisational processes can improve or hinder innovation outcomes (Acar et al., 2018). For organisations to innovate sustainably, innovation must be embedded in how they operate and bring together cross-functional teams to use new approaches to solve problems (Ellingrud et al., 2022).

1.2 The role of design thinking in innovation

Ciric et al. (2018) pointed out that many organisations need to rethink their innovation processes in response to their business environment. A new problem-solving approach called design thinking has been proposed as a way to innovate (Coco et al., 2020; Elsbach & Stigliani, 2018) and deal with complex problems (Nakata, 2020) which typically characterise innovation. Since it provides a new way of innovating, it is an innovation. "Design thinking is a human-centred approach to innovation and draws from the designer's toolkit to integrate the needs of the people, the possibilities of technology and the requirements for business success" (IDEO, n.d.). There are various implementations of the practice as a process, with one of the popular ones being Stanford's d.school process, shown in figure 1.

Design Thinking Process Diagram*



d.school Executive Education
Hasso Plattner Institute of Design at Stanford University

*not necessarily linear, apply as needed ©2019

Figure 1 Stanford.d.School Design Thinking Process

(source: www.dschool.stanford.edu)

Organisations such as Amazon, Airbnb, Braun, IBM and Pepsico use design thinking as part of their core organisational practices (Nakata, 2020; Nakata & Bahadir, 2021). These companies are using design thinking to tackle complex problems and, in some cases, make it a core part of their strategy to enable innovation capability (Nakata, 2020; Nakata & Bahadir, 2021). Thus, design thinking is a strategic lever to make an organisation more innovative (Nakata & Bahadir, 2021). This new way of innovating is desired as companies see it as an opportunity to become more competitive (Carlgren, Rauth, et al., 2016). However, Carlgren, Elmquist, et al. (2016) argue that a lot of the documented success resulting from the implementation of design thinking has been anecdotal and calls for more empirical evidence to be presented.

For a while, companies have used the stage-gate process as a way to innovate. This process represents the current alternative to design thinking (Nakata, 2020). However, its compatibility with innovation is debatable since it is inherently designed to reduce the complexity and uncertainty associated with innovating (Carlgren, Elmquist, et al., 2016). In contrast, design thinking embraces complexity and uncertainty and is seen as a better fit for innovation. It can facilitate breakthrough and incremental innovation (Carlgren, Elmquist, et al., 2016).

1.3 The role of leaders

Leaders are essential agents in the ability of an organisation to innovate. In a VUCA context, a leader needs not just to be a visionary and architect in their organisation but should also play the role of a coach and a catalyst for change (Lurie & Tegelberg, 2019). As a coach, a leader is responsible for building team capability (Lurie & Tegelberg, 2019). They also have to allow their teams to experiment and be inquisitive. As a catalyst, a leader encourages collaboration, creates safe spaces for people to express themselves, and removes roadblocks in implementing new ideas (Lurie & Tegelberg, 2019). These characteristics are just as crucial in adopting new practices in organisations.

Leaders are responsible for setting up their organisations for innovation in the form of vision and architecture to use new practices. They also become the coaches in using new practices and catalysts for adoption. Design thinking is a new approach to innovation and therefore requires leaders to envision, architect, coach and become the catalyst for widespread use within an organisation. PepsiCo's Indra Nooyi is an example of a leader driving design thinking (Stigliani, 2017). As a chief executive, she further encourages the entire organisation to look at problems through the lens of the customer since design thinking is a human-centred approach to innovation (Stigliani, 2017). Therefore, leaders are critical to the adoption of design thinking in organisations.

1.4 Research problem

The research is concerned with understanding why some leaders choose not to adopt design thinking as a problem-solving technique. Design thinking helps improve the innovation outcomes of organisations (Liedtka & Kaplan, 2019). While there has been much research on implementing design thinking at an organisational level (Carlgren, Elmquist, et al., 2016; Carlgren & BenMahmoud-Jouini, 2021; Meinel et al., 2020; Rauth et al., n.d.), there is limited knowledge on what motivates people at an individual level not to adopt design thinking (Micheli et al., 2019).

First, to close this research gap, this research aimed at understanding the role of leaders in adopting design thinking. This is because leaders influence change within organisations (Al-Ali et al., 2017) and improve their ability to innovate through design thinking (Liedtka, 2011). The research investigated the influence of a leader's existing contextual conditions as a barrier to adopting design thinking. Thirdly, the research investigated whether leaders' training influences them not to adopt design thinking. Lastly, the research explored whether there was something about design thinking concerning the implementation environment that discouraged leaders from adopting the practice. Research has shown that incumbent organisations are more interested in exploration than exploitation (Beverland et al., 2015). This makes them less likely to adopt new practices, discouraging leaders from trying design thinking. This research was explored through the diffusion of innovation theory (Rogers, 2010).

1.5 Purpose of the Research

The purpose of this research study is to answer the following research question:

What are the factors influencing managers not to adopt design thinking?

The underlying sub-questions of the main question are: How do leaders see their role in the adoption of design thinking? How do existing practices, norms and personal innovativeness influence the decision not to adopt design thinking? How does the way leaders learn about design thinking influence their decision not to adopt the practice? What has persuaded leaders not to adopt design thinking?

1.6 Business and Theoretical Implications of the Research

1.6.1 Business need

Innovation is an important capability to ensure organisations remain sustainable and compete. Given that design thinking has the potential to improve the innovation outcomes of organisations, it is essential to understand what is causing leaders not to adopt the practice. Through this understanding, better interventions can be implemented to increase the chances of adoption. These interventions can also be integrated into teaching design thinking in MBA programmes since the practice has become part of such programmes (Stigliani, 2017) and other training programmes (Lynch et al., 2021).

1.6.2 Academic Contribution

The academic discourse on implementing design thinking focuses on organisation variables that promote or hinder success. These include mindsets, organisational culture and leadership styles (Carlgren et al., 2016; Nakata, 2020; Coco et al., 2020; Carlgren & BenMahmoud-Jouini, 2021). It is necessary to improve the understanding of how leaders view the practice and the challenges associated with adopting it. Getting a better understanding of individual views on barriers that prevent the adoption of the practice is vital for the overall knowledge of the field (Micheli et al., 2019). This research is underpinned by the diffusion of innovation theory (Rogers, 2010). This research, therefore, extends the understanding of design thinking implementation within organisations in South Africa.

2 Literature Review

2.1 Introduction

The importance of design thinking in innovation was discussed in the previous chapter. While design thinking is an important practice in promoting innovation, it was identified that there is a need to understand better the reasons why leaders struggle to adopt the practice.

In this chapter, design thinking is discussed in detail. The chapter sheds light on the components that make up the practice. This is followed by a discussion on leadership and its influence on innovation and adopting new practices. Theoretical underpinnings for the research are then discussed in the form of the innovation-decision process, which forms part of the diffusion of innovation theory. Finally, research gaps are reiterated, leading to the research questions that this research seeks to answer. Figure x illustrates the concepts that are discussed in the chapter.

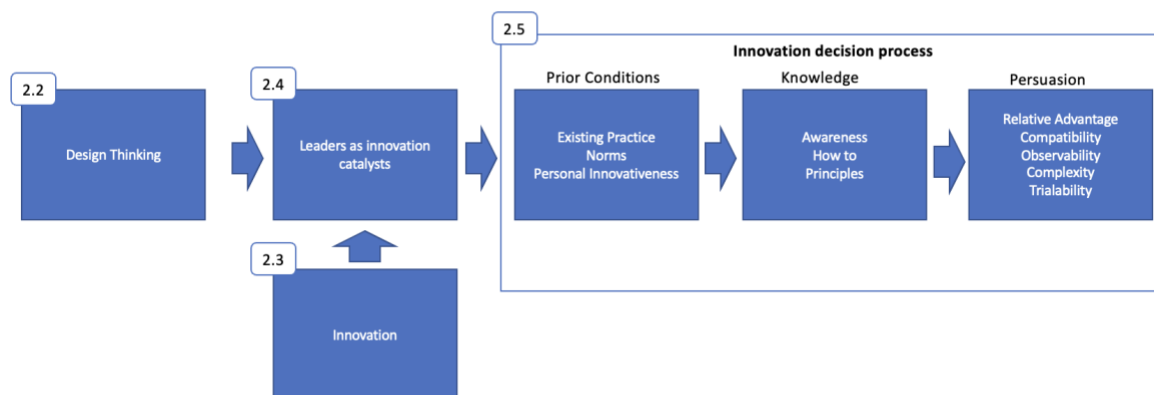


Figure 2: Layout of chapter

Source: Author's Own

2.2 Design Thinking

Design thinking evolved from the era of design science in the 1960s (Gregory, 1966). It went through a phase referred to as designerly knowing, where thinking like a designer

was proposed as a technique to solve complex or wicked problems (Buchanan, 1992). During this era, scholars took an interest in design thinking to solve management problems, specifically getting organisations to innovate and gain a competitive advantage (Brown, 2008). Brown (2008) is the seminal article that brought design thinking into mainstream management discourse. Brown (2008) argued that design thinking is an approach that can assist organisations with creating new experiences and solving complex problems for customers through employing human-centric, creative, iterative techniques.

From a theoretical perspective, what is design thinking? Verganti et al. (2021) reflect that even after twenty years of the practice in the industry, defining the concept is still challenging. There is no generally accepted definition of design thinking. Micheli et al. (2019, p. 1) define design thinking as “an approach to innovation and creative problem-solving founded on designers’ processes and practices”. It is also defined as “a human-centred innovation process that emphasises observation, collaboration, fast learning, visualisation of ideas, rapid concept prototyping, and concurrent business analysis” (Lockwood, 2009, p. xi). It has also been described in terms of its approach to problem-solving, treating problems as wicked or complex instead of well-defined phenomena (Buchanan, 1992). Generally, wicked or complex problems do not have a specific solution. Therefore they are better addressed using a design approach (Elsbach & Stigliani, 2018). While these descriptions and definitions look different, they are extensions of each other. The extensions provide more clarity on what the practice of design thinking entails. This research will therefore base the definition on Micheli et al (2019) and expand on what designers' processes and practices are.

Micheli et al. (2019) found that design thinking encompasses practices such as creativity, innovation; user-centredness, user-involvement; problem-solving; iteration; experimentation; interdisciplinary collaboration; ability to visualise; gestalt view; abductive reasoning; tolerance of ambiguity; tolerance of failure; blending rationality and intuition; design tools and methods. While the research will not explain all the listed practices, key ones will be expanded on to explain the novelty of design thinking better.

Nakata (2020) grouped design thinking practices into application, perspective, process and decision-making features of the practice. This allowed for easy comparison with another popular method of innovation called the stage gate model. Application features determine where the methodology can be applied. Nakata (2020) found that both practices can be used in any industry. Other practices exist to drive innovation, such as Agile Project Management (APM) or a hybrid between Agile and the stage gate model (Ciric et al., 2018). These have primarily been seen in software development, but they are also coming into other industries, such as manufacturing, construction and education (Ciric et al., 2018). While the methods are applicable in different sectors, there has yet to be a comparison of their relative efficacy in delivering innovation outcomes.

Perspective features allow a design thinking practitioner to get insight into the problem that stakeholders are experiencing and a stakeholder perspective of proposed solutions, leading the practice to be called human-centric (Nakata, 2020). Gestalt view, user empathy, customer centeredness and tolerance for failure are classified as perspective features. Empathised user or customer experience means the practitioner finds a way to put themselves in the stakeholder's shoes. This is where they do not just get to understand the functional features of the solutions to be developed but equally understand the context, lived experiences, thoughts and how the stakeholder feels about the problem and the potential solution (Dell'Era et al., 2020). User empathy is a feature that is generally absent from agile project management (APM). It is also not typical of the stage gate process. This makes this aspect unique to design thinking, earning the term human-centric practice. However, APM applies to structurally complex projects requiring creativity and innovation (Ciric et al., 2018).

Failing early and failing often is embracing the view that failure is a part of the learning process for what is best for the customer. Failing early allows a practitioner to gather critical insights into the problem (Nakata, 2020). Failure enables a practitioner to get the most optimal solution through the insights derived from the failure. Failing early allows

a practitioner to get insights before investing a lot of time in developing a solution that could potentially not work.

Process-centric features refer to how a design thinking initiative is carried out (Nakata, 2020). These include user involvement, iterative problem-solving, prototyping, problem discovery, abductive reasoning, and experimentation (Nakata, 2020). Iterative problem-solving ensures that the problem-solving process is not treated as a linear exercise. This iterative nature of understanding a problem, testing a potential solution and going back to the problem makes design thinking unique and positions the practice for possible breakthrough innovations (Nakata & Bahadir, 2021). The iterations are necessary because sometimes stakeholders may need help to articulate their problem or understand the root cause of a problem. Prototyping and experimentation builds a version of the solution to test it out with stakeholders. The prototypes and experiments provide a better understanding of the problem and which solutions work. Abductive reasoning is used in the process to build solutions based on the best understanding of the information available. All these process features are essential when solving complex or wicked problems, as answers are generally not straightforward. Agile project management embraces similar process-centric features, such as collaboration and iterative project plans.

The practice uses analytic and intuitive decision-making techniques (Nakata, 2020). Diverse and inclusive teams; suspending decisions as knowledge is accumulated, and using both analytical and intuitive approaches are all part of the decision-making features of the practice (Nakata, 2020). Schumacher & Mayer (2018) argue that given the turbulent times in which managers have to work, employing more than one decision-making technique could lead to better decisions. Furthermore, current management scholarship has focused heavily on the analytical side, but this is insufficient for the complex nature of problems that managers have to deal with (Schumacher & Mayer, 2018). Design thinking is the one practice that integrates both analytical and intuitive decision-making tools by intersecting feasibility, desirability and feasibility. APM leans

more towards analytical decision-making and may potentially ignore the intuitive nature of a problem being faced.

The most common version of the practice is the double diamond process. The double diamond has been so successful that the Design Council has adopted it as a way to promote innovation. It has been used in developing solutions for wicked problems such as environmental sustainability (Clune & Lockrey, 2014). In general, the process has a divergent phase, where practitioners get a better understanding of the problem by exploring divergent views. This is followed by a convergent phase where a core problem is narrowed down. The solution phase starts with diverging into different opinions on the solution to the defined problem and, through experimentation and prototyping, refining the solution until there is a convergence on one solution.

Design thinking, therefore, provides tools for business leaders to innovate their offerings and value propositions (Liedtka & Kaplan, 2019). It can be applied in multiple industries for various problems. The practice's human-centric nature gives leaders opportunities to understand customers' challenges and offer solutions that can better match customers' expectations. Creativity, prototyping and experimentation are all critical in gathering the most insights to build the best solution to address the customer challenge. It is, therefore important to understand the adoption challenge in the industry given all the advantages towards innovation that the method offers.

2.3 Innovation

Innovation is defined as implementing something new (OECD, 2005). It can be a new process, practice, product, service or even marketing (OECD, 2005). Organisations need to innovate to keep up with changes in their environment. These innovations ensure that they remain relevant to the markets they serve. Innovation has been found to lead to better business performance (Exposito & Sanchis-Llopis, 2018). For organisations to launch innovations successfully, they need to be able to implement new technologies as well as new practices (Das et al., 2018). Design thinking as a practice

has been seen as a way to improve an organisation's innovation outcomes. The practice itself can also be seen as an innovation. Some more common internal barriers to innovation are organisational leadership, culture, strategy, architecture and performance incentives (Das et al., 2018).

Change agents are needed to drive the adoption for innovations to take hold in an organisation (Rogers, 2010). Studies have highlighted the importance of middle management as change agents in ensuring that organisations adopt innovations (Al-Ali et al., 2017; Balogun, 2003; Buick et al., 2018). It is, therefore, important to understand the role of leaders in the context of innovation.

2.4 Leaders as innovation catalysts

Studies have been conducted on the influence of leadership on innovation. Such studies have focused on the effect of leadership styles on innovation (Alblooshi et al., 2020; Khalili, 2016; Kim & Yoon, 2015; Slåtten & Mehmetoglu, 2015). For example, strategic leaders have been found to shape innovation through how they interact with people and can potentially maximise innovation outcomes (Cortes & Herrmann, 2021). Transformational leadership has been found to encourage a culture of innovation (Kim & Yoon, 2015). All leadership styles have some form of contribution to innovation and consequently emphasise the impact of a leader on innovation.

Rogers (2010) highlighted the importance of opinion leaders and change agents in the spread of innovative ideas. Rogers (2010, p. 27) defines opinion leadership as “the degree to which an individual can informally influence other individual's attitudes or overt behaviour in the desired way with relative frequency. Based on their position, leaders have both informal and formal influence over the people they lead”. Leaders embody this definition since part of their job is influencing people. Therefore, leaders have an essential role to play in determining what innovation an organisation adopts or rejects based on their ability to influence members of an organisation.

Change agents are also important in the process of adopting innovations. Change agents assist an organisation in initiating and implementing change as well as monitoring the impact of change (Rogers, 2010). Leaders influence emergent and planned change (Al-Ali et al., 2017). They are also interested in the measurements of the impact of the change.

This research seeks to understand leaders in relationship to design thinking. Liedtka (2011) explores this relationship and its effect on innovation, but the research falls out of the permissible period. However, given that papers that have studied this topic are spread over a long period, it is worthwhile to discuss the merits of the research conducted. Liedtka (2011) found that managers can improve their likelihood to innovate by adopting design thinking practices. The generalisation of the insight is questionable, given that the insight was based on experimental research with two managers who work for American firms. The generalisability limitation of the research opens the door for more research.

Given the leadership styles' impact on innovation and the role of leaders as change agents and opinion leaders, it is important to get empirical evidence of how leaders see their roles concerning the adoption of design thinking. It is, therefore important to understand how leaders see their role in adopting design thinking in their organisations.

Both the Legitimising Theory and Theory of Planned Behavior cover aspects that are important to the adoption of innovation but miss out on the elements of context. In light of this, the research turned to the diffusion of innovation theory discussed in the next section.

2.5 Innovation Decision Process

This research is grounded on the innovation-decision process, which forms part of the diffusion of innovation theory. Rogers (2010) conceptualised the diffusion of innovation theory to explain how innovation is spread among individuals and within organisations. van Oorschot et al. (2018) state that innovation and organisational attributes predict

individual adoption of innovation. The diffusion of innovation theory was seen as appropriate since design thinking can be seen as an innovative practice. Carlgren & BenMahmoud-Jouini (2021) posited that design thinking is a management innovation and recognised that compatibility could affect adoption decisions. The theory contains the innovation-decision process, which explains how individuals or decision-making units adopt or reject innovations (Rogers, 2010). The process consists of initial conditions and five steps: knowledge, persuasion, decision, implementation and confirmation. Figure 2 shows a visual representation of the process. In this research, design thinking is regarded as an innovation since it would be a practice that a leader has not used before. The practice may have been used by other institutions or leaders before, but in the context of that leader who has not used it before, it can be considered an innovation.

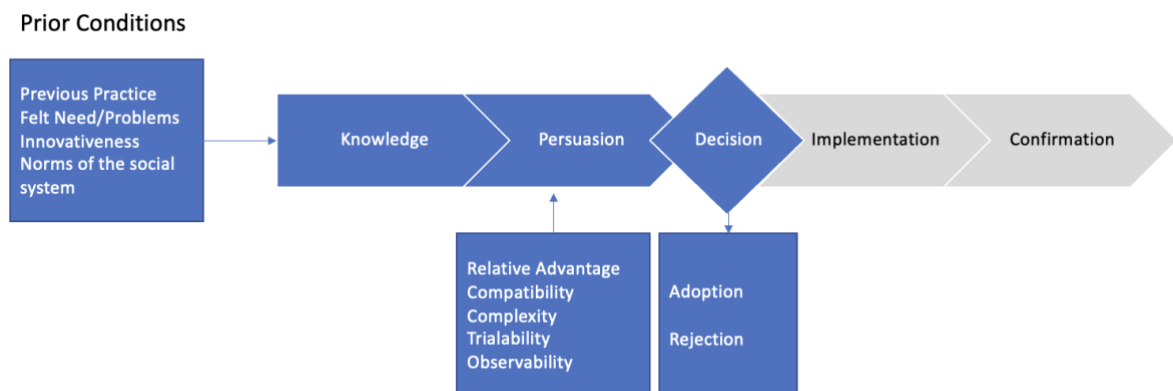


Figure 3 Innovation-Decision Process

Source: Rogers, E. M. (2010). *Diffusion of Innovations*. In Free Press (4th Edition). Free Press.

2.5.1 Prior Conditions

Prior conditions for the decision to adopt an innovation include an understanding of previous practices, the felt needs or problems that need to be addressed, the innovativeness of the individual and the norms of the social system in which the innovation will be introduced (Rogers, 2010).

Previous practices can include routines and processes that an individual or decision-making unit is using or has been exposed to. Existing routines have been identified as potential barriers to adopting design thinking (Carlgren, Elmquist, et al., 2016). Some leaders have been exposed to the stage-gate process as a practice used to innovate in new product development (Nakata, 2020). An individual can find such a formalised process to hinder the adoption of new ways of doing things as the new way could potentially conflict with existing practices (Acar et al., 2018; Nakata & Hwang, 2020).

The norms of a social system are the established behaviour patterns of a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal (Rogers, 2010). A social system could be a company, department, team, or just a group of individuals. Norms, including culture, can both hinder or promote innovation adoption. Cultural fit has been found to pose issues with adoption (Carlgren & BenMahmoud-Jouini, 2021). Some evidence suggests that design thinking has been resisted by people from professional or non-design backgrounds, such as accountants and finance staff (Elsbach & Stigliani, 2018). However, it is recommended that future research focus on why non-designers resist design thinking and what could be done to overcome the resistance (Elsbach & Stigliani, 2018).

Innovativeness measures how early an individual adopts new ideas (Rogers, 2010). There are five categories of adopters: innovators, early adopters, early majority, late majority and laggards (Rogers, 2010). These individuals can take risks and try new things more than others (Thakur et al., 2016).

This has led to asking how existing practices, norms and the level of personal innovativeness influence the decision not to adopt design thinking.

2.5.2 Knowledge

Knowledge is when an individual becomes aware of an innovation and obtains an understanding of how the innovation works (Rogers, 2010). Knowledge starts with awareness and can happen in both formal and informal ways. Understanding comes from engaging with the innovation to appreciate how it functions. Old mindsets can be a barrier to adopting design thinking (Carlgren, Elmquist, et al., 2016). Carlgren, Elmquist, et al. (2016) also reflect that design thinking skills are hard to acquire and apply after learning. Coco et al. (2020) showed that students struggle with learning design thinking and questioned whether the short periods spent training on the practice are effective in building skills. In a study where participants saw a positive effect in building dynamic capabilities, managers developed better abilities to sense and seize opportunities (Kurtmollaiev et al., 2018). This led to asking the question about whether the way leaders get to know about design thinking influences their decision not to adopt it.

2.5.3 Persuasion

In the persuasion phase, an individual forms an opinion about an innovation (Rogers, 2010). This opinion could either be favourable or unfavourable. This opinion is formed by assessing what existed before implementation and the knowledge gained from understanding the innovation. There are five characteristics used to evaluate the potential of an innovation. These are the relative advantage gained by adopting, compatibility with values, needs and experiences of the adopter, complexity of the innovation, trialability of the innovation for purposes of assessment and the innovation's observability. These attributes led to the formulation of the fourth research question which asks what has persuaded leaders not to adopt design thinking.

2.5.3.1 Relative Advantage

The relative advantage of an innovation is defined as how an innovation is seen to be better than an existing idea (Rogers, 2010). There are existing methods of innovation that organisations apply, such as the stage gate model (Carlgren, Elmquist, et al., 2016; Nakata, 2020). Cano et al. (2021) highlight agile methods such as Scrum for use in new

product development. Evaluating the advantage of design thinking relative to existing methods is an important step in deciding whether to adopt the practice.

2.5.3.2 Compatibility

Rogers (2010) defines compatibility as the degree to which an innovation is consistent with the adopter's values, experiences and needs. Nakata & Hwang (2020) posit that design thinking requires different mindsets. Carlgren, Elmquist, et al. (2016) highlight that design thinking mindsets may clash with those of the adopting organisation. Motivational, cognitive and social variables are mediating variables for innovation (Acar et al., 2018). Jahanmir & Cavadas (2018) also highlight that attitudes towards an innovation can affect its adoption. Mindsets, motivation and social variables need to be evaluated for compatibility with the leader's values, needs and experiences.

In addition to the aspects of compatibility organisation is the balance between exploration and exploitation. March (1991) defined exploitation as the leveraging of existing capabilities. These could be competencies, technologies or paradigms within the business. Generally, profits in an area where businesses exploit are guaranteed. Areas where a business will be exploring are less understood and, therefore may lead to less profit. These are areas where an organisation is experimenting (March, 1991).

2.5.3.3 Observability

Observability refers to how easily observable the value of the innovation is to others (Rogers, 2010). Prior research has highlighted that the value added by design thinking is difficult to prove (Carlgren, Elmquist, et al., 2016). Observability is essential in organisations where tracking key performance indicators are important. Therefore, the ability to observe design thinking legitimises it as a practice in an organisation.

2.5.3.4 Complexity

Complexity refers to the ease with which an innovation can be comprehended and utilised (Rogers, 2010). Rogers (2010) highlights that innovations that are easy to

understand are also quickly adopted. Innovation is generally a complex endeavour (Carlgren, Elmquist, et al., 2016). Design thinking is also a complex practice, consisting of perspectives, processes and decision-making features interacting to produce value for the practitioner (Nakata, 2020). It is, therefore important to investigate the role of complexity in the decision not to adopt design thinking.

2.5.3.5 Trialability

Carlgren, Elmquist, et al. (2016) say finding resources to execute design thinking is challenging. This can impact the trialability of the practice. Incumbent organisations are typically interested in exploitation and less so in exploration (Beverland et al., 2015), and this could have an influence on the ability of an adopter to take on design thinking as a practice. Dell'Era et al. (2020) also reflected that managers must consider how the practice fits into their environment and the problems they are trying to solve as the practice has different implementations.

2.6 Conclusion

In conclusion, this research will determine what factors influence leaders not to adopt design thinking. The innovation-decision process frames the study by investigating the effect of prior conditions, knowledge accumulation about design thinking and persuasion factors. Figure 4 illustrates a high-level view of how the concepts raised in the literature related to the research question in a framework. The next chapter discusses the research questions to provide more clarity.

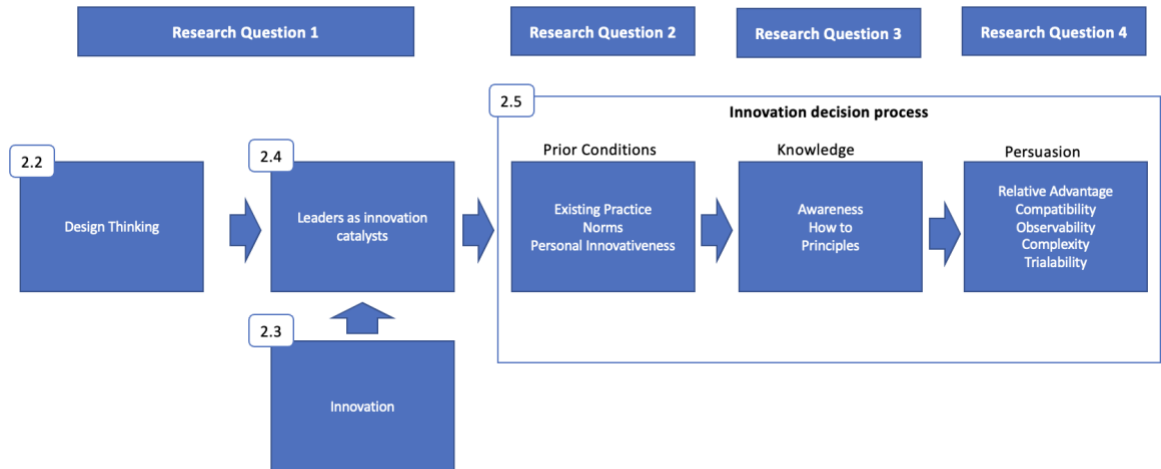


Figure 4 Framework of the study

Source: Author's Own

3 Research Questions

The literature has shown the importance of innovation for organisations. It has also demonstrated the importance of leaders in driving innovation in their organisations. Design thinking has been described as a possible practice to improve the innovation outcomes of an organisation. However, the individual motivations related to the adoption decisions of the study have been identified as a gap (Micheli et al., 2019). Specifically, motivations not to adopt design thinking need to be better understood. Therefore, this research study sought to answer the following research question:

What are the factors influencing leaders not to adopt design thinking?

Four sub-questions were devised to answer this research question informed by Rogers's (2010) diffusion of innovation theory. The theory consists of the innovation-decision process, which seeks to explain how decision-making units, such as individuals or organisations, decide on adopting an innovation. In this research, design thinking is regarded as the innovation individuals have to decide about adopting. It is essential to understand how leaders, as a decision-making unit that has the power to influence change in an organisation, view their role in introducing innovative practices such as design thinking. Therefore the first research question is:

RQ1: How do leaders see their role in adopting design thinking?

The innovation-decision process considers existing practices, norms and innovativeness of the decision-making unit as a start of the adoption process. Therefore the second research question is:

RQ2: How do existing practices, norms and personal innovativeness influence the decision not to adopt design thinking?

The innovation-decision process then considers how the decision-making unit acquires knowledge about an innovation. This includes how the unit becomes aware of the innovation, knowledge of how to use the innovation and any important associated principles related to the innovation. Therefore the third research question is:

RQ3: How does the way in which leaders get to know about design thinking influence their decision not to adopt the practice?

The next step in the innovation-decision process considers elements that persuade the decision-making unit whether to adopt the innovation or not. These include the relative advantage of the innovation compared to existing solutions. It also considers the ability to test the innovation, referred to as trialability. The ability to observe the benefits of an innovation is important. The innovation has to be evaluated for complexity and compatibility with existing values and needs. Therefore the last research question is:

RQ4: What has persuaded leaders not to adopt design thinking?

The next chapter will outline the methodology followed to collect and analyse data to answer this research question.

4 Research Methodology

4.1 Introduction

The research question focuses on identifying and analysing the factors hindering leaders' adoption of design thinking. This question was explored through the context of leaders who have been trained in design thinking using a qualitative approach. Exploratory studies are a way to gain insights into a particular topic (Saunders & Lewis, 2018). A qualitative method was seen as appropriate as this area requires a deeper and richer understanding of the drivers hindering the adoption of the practice.

The data were analysed using a thematic analysis approach. Conclusions were drawn from the results of the themes that emerged from the analysis. Questions of validity and reliability were explored, and strategies for mitigating the associated risks have been outlined.

4.2 Choice of Methodology and Design

The main research question focused on understanding why leaders do not adopt design thinking as an innovation practice. An exploratory qualitative research approach was chosen to gain insights into the research question. Researchers choose qualitative methods as a way to gather insights into complex problems (Bansal et al., 2018) or explore areas where more research is needed (Saunders & Lewis, 2018). Previous studies on studying design thinking at an organisational level (Carlgren, Elmquist, et al., 2016; Carlgren & BenMahmoud-Jouini, 2021; Nakata & Bahadir, 2021; Rauth et al., n.d.). While the context in which the practice is used is essential, individual factors are also crucial in understanding adoption decisions. This study will be used to gain insights into adopting design thinking. The decision to adopt is complex since it could be informed by many factors, requiring a more profound understanding.

Research philosophy is the beliefs and assumptions about the development and nature of knowledge (Saunders & Lewis, 2018). To gain insight into this question, leaders were interviewed so that the researcher can better understand their context, and the

information gathered was interpreted through the researcher's lens. Participants were therefore interpreting the research question from their own experiences. This research, therefore, follows an interpretivist philosophy because of the complex nature of the relationships being investigated inside a business context (Saunders & Lewis, 2018).

Given that the research is qualitative, the development of the theory is inductive. Insights drawn from qualitative research can add to theory and open up new research avenues (Bansal et al., 2018). Inductive theory development builds theories that generalise specific observations that have been made (Saunders & Lewis, 2018). This method is appropriate for areas with little research (Bansal et al., 2018). Design thinking adoption research needs more input and therefore the technique is appropriate for this study. Semi-structured interviews will constitute specific observations, providing insights into the manager's decision-making process. These insights will then be used to create general findings.

The research was conducted as a mono-method study, using semi-structured interviews. It will be a qualitative, point-in-time study, and no other approaches will be used as it is deemed unnecessary. Additionally, the time constraints allow only one method to be used in the research.

This study was a cross-sectional, point-in-time study; therefore, no data from the past or future will be referenced as part of the study (Saunders & Lewis, 2018). Participants were interviewed at a point in time to give input into the research question as a point in time during 2022. The research results obtained represent this specific point in time.

4.3 Proposed research methodology

4.3.1 Population

Innovation is a challenge for every industry. Carlgren et al.(2016) pointed out that established companies struggle with innovation. Business schools and other

educational training providers run courses that expose leaders to design thinking in the hopes that they can improve the innovation outcomes of organisations. Design thinking, as an innovation, applies in every industry. Lundblad (2003) opined that the challenge of diffusion of innovation is prevalent in every industry. Therefore, adopting the practice affects leaders from every industry as they attempt to innovate within their businesses. The research population was, therefore leaders in organisations within South Africa.

4.3.2 Unit of analysis

The individual leader was the unit of analysis for this study. As the theory underpinning the research, the innovation-decision process can be applied to an individual or a decision-making unit (Rogers, 2010). This research focuses on the leader's decision-making process. Therefore, the unit of analysis is an individual. Managers are proxies for leaders since they generally have decision-making authority within organisations.

4.3.3 Sampling method and size

A non-probabilistic sampling method was followed. This sampling technique is used when the probability of each member of the population participating in the research is not known (Saunders & Lewis, 2018). In this research, the population's size is unknown, so a random sample is not possible. Purposive sampling, based on defined criteria, was used. The researcher chose people from their network who fit the required sample criteria.

Rocco (2010) and Saunders & Lewis (2018) recommend that the criteria for the chosen sample must be defined upfront for a good qualitative study. Participants in the sample for this research were people trained in design thinking. Formal training ensures that participants have been exposed to the practice in a consistent way. This limited the ambiguity on how the practice works and increased the likelihood of having deeper discussions about the contextual factors leading to their decision not to adopt the practice. Additionally, participants were managers that have some decision-making authority in their organisation. Occupying a position of management was chosen as a

criterion since managers represent leaders in organisations and have the capacity to effect change. The last criterion is that participants must work in a company within South Africa. This is to ensure that the sample is homogenous. Therefore, the research's criteria are that they must be formally trained in design thinking, occupy a managerial position and work for a South African company.

Table 1 Summary of participants

Number	Position	Industry	Alias
1	Manager	Manufacturing	P1
2	Change Manager	Financial Services	P2
3	Business Analysis Manager	Telecommunications	P3
4	Sales Manager	Mining	P4
5	Manager	Mining	P5
6	Business Analysis Manager	Broadcasting	P6
7	Manager	Broadcasting	P7
8	Consulting Manager	Agriculture	P8
9	Relationship Manager	Fintech	P9
10	Relationship Manager	Financial Services	P10
11	Audit Manager	Financial Services	P11
12	Manager	Financial Services	P12
13	Manager	Mining	P13

Source: Author's own

Though Sim et al. (2018) argue that sample size cannot be determined beforehand in qualitative studies, this research targeted 12 participants or until the data collection reached saturation. The number 12 was chosen because Boddy (2016) and Saunders & Lewis (2018) found that saturation is reached after 12 interviews among homogenous groups in qualitative research. Guest et al. (2006) also found that it takes 12 interviews to reach saturation. Saunders & Lewis (2018) also suggest that between 12 and 30 participants are required in heterogeneous groups.

4.3.4 Measurement Instrument

The measurement instrument chosen was a semi-structured interview using the interview guide in Appendix C. Saunders & Lewis (2018) recommend semi-structured interviews as a way of conducting exploratory research. They are used as a data-gathering mechanism when requiring participants to give answers from their point of view on a specific phenomenon or gain more insights into a person's experiences (Saunders & Lewis, 2018). An interview guide was developed based on the research objectives, research questions and literature review. This was composed of open-ended questions (how, why, what) that allowed participants to explain their experiences with design thinking and provided an opportunity for further probing. Questions were formulated to ensure that very little jargon was used to enhance the quality of the data gathered, as per the guidance by Tosey et al. (2014).

4.3.5 Data gathering process

The semi-structured questionnaire was tested with one participant as a pilot to ensure that the language was appropriate. The output from the pilot was used to make adjustments to the questions where necessary. This resulted in adding clarifying probing questions were added to the interview process. After appropriate adjustments were made to the interview questions, interviews were conducted with identified research participants. The researcher reached out to participants by email, explaining the research's purpose. Based on the response, the researcher asked probing questions to determine if the candidate met the criteria required. There were quite a few candidates that were not interviewed because it was found that they were active users of design thinking.

Interviews ranged between twenty-five minutes and one hour and nine minutes. Most interviews averaged thirty-five minutes. The intent was to conduct interviews until saturation is reached, which is twelve participants (Boddy, 2016; Guest et al., 2006). Saturation was reached by interview eleven, as illustrated in figure 5. All interviews were conducted using Microsoft Teams to manage the risk of still being in a pandemic and the potential logistics challenges of meeting in person. Conducting the interviews virtually also made it easy to record the interviews. Each of the interview recordings was

transcribed and then analysed. The next section explains more about the process followed in the transcription and analysis.

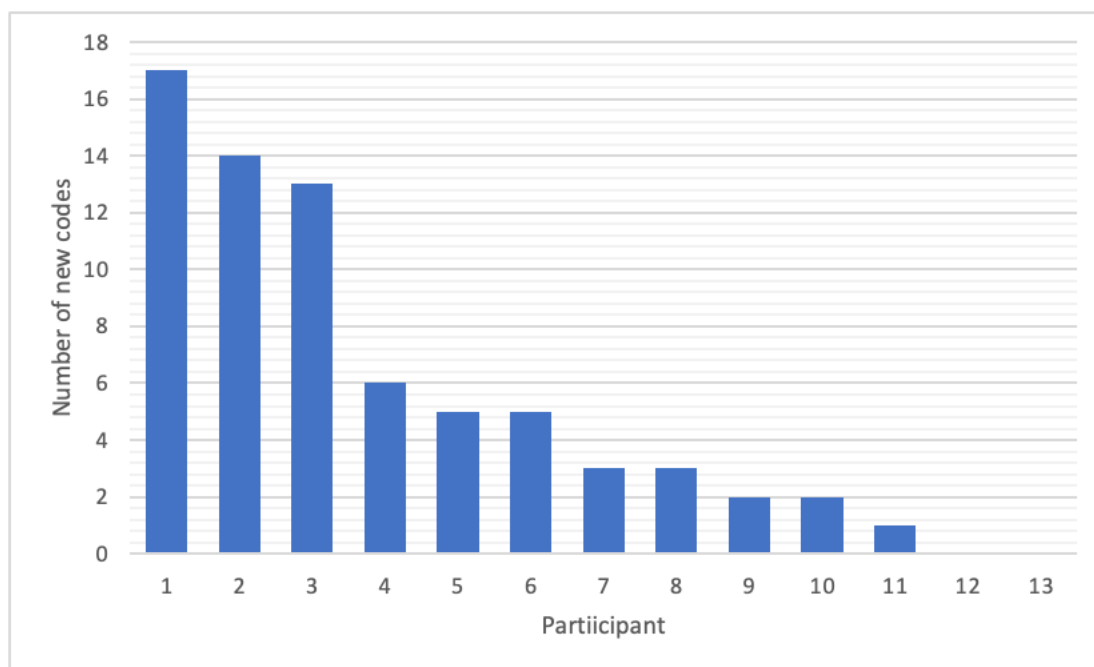


Figure 5 Saturation of codes

Source: Author's Own

4.3.6 Analysis approach

A thematic analysis approach was followed. A theme captures something important concerning the research question (Braun & Clarke, 2006). Thematic analysis identifies patterns in qualitative data and interprets the resulting thematic structures (Mills et al., 2012). Saunders & Lewis (2018) describe the process of analysis as requiring the ability to manage the data, integrate the data from the interview transcripts, identify themes and patterns from the data, develop theories to explain the relationships and then draw and verify the conclusion. Braun & Clarke (2006) expand this process into six phases. Each of the phases is further explained below. It is important to note that the data analysis was not a linear process but iterative, as indicated by Braun & Clarke (2006).

Interview recordings were transcribed into scripts as a form of data organisation. This was done using Otter, a cloud-based transcription tool which offered better results than

the transcription produced by Microsoft Teams. Microsoft Teams was used to record interviews and provide the initial transcription. All thirteen transcripts generated by Otter were further reviewed to ensure that they accurately transcribed what the interview participants were saying. Some edits were made to the transcripts where inaccuracies were found. The review involved listening to the recording simultaneously following the transcription and editing. During this phase, the researcher made notes of some key points coming out of the interviews. This exercise corresponds with phase one of thematic analysis, described by Braun & Clarke (2006) as familiarisation with the data. Each of the transcripts was then re-read to gain a deeper familiarisation while making notes of important points and recording the researcher's observations from the data.

The second phase of the analysis involved generating initial codes from the data (Braun & Clarke, 2006). All transcripts were loaded onto ATLAS.ti for the coding process at the same time. A deductive approach was followed to develop the codes. This initial coding process produced 76 codes. The codes were reviewed for potential overlaps. This second iteration reduced the codes to 64, as some were consolidated. A view of these codes is found in Appendix F.

The next phase of the analysis was to identify themes from the codes that had been generated. Appendix D shows the process of moving from categories to themes. Candidate themes were developed and reviewed for appropriateness. Braun & Clarke (2006) propose that data within themes should be coherent and themes should be distinct. The identified themes were reviewed to ensure that they represent the data. This reflects the iterative nature of the thematic analysis approach.

The next phase was to define and name the themes. In this phase, themes were checked for coverage, diversity of what they cover and complexity by reviewing them against the underlying data as recommended by Braun & Clarke (2006). Themes were refined as part of this process. They were also given names that are easy to identify for readers of the research, as recommended by Braun & Clarke (2006).

The final phase of the process is producing an analysis. A semantic level of analysis was applied to the data. This means that once the themes were identified, interpretation followed to theorise the significance based on existing research (Braun & Clarke, 2006). The innovation-decision process formed part of the literature used to interpret the themes.

4.4 Quality controls

Lester et al. (2020) argued that there is no general agreement on all the quality criteria that qualitative data analysis should follow. Techniques suggested to improve the quality of research include communication of methodological awareness, member checking procedures, triangulation and debriefing (Lester et al., 2020).

Triangulation is an important technique to establish the credibility of the research (Golafshani, 2003; Saunders & Lewis, 2018). A heterogeneous sample was used for triangulation. This study ensured that participants were from different industries. The sample considered participants from the services industry and the mining/manufacturing industry.

Reliability in research is the ability to employ the same methods and analysis techniques described in the research and get the same result (Saunders & Lewis, 2018). To ensure that the research is repeatable, the process followed in collecting and analysing the data collected was described in detail. This should improve the confidence in the findings of the research.

4.5 Research Ethics

The researcher used the University of Pretoria's Ethical Clearance process to obtain ethical clearance before data collection commenced. Once ethical approval was granted (Appendix E), data collection began. Participants were sent an email beforehand, which briefed them on the purpose of the interview and important contact information and assurance of the interviews' confidentiality. Participants signed a consent form (Appendix B) as part of the interview process.

4.6 Limitations

The following limitations have been identified:

4.6.1 Researcher Bias

This research study intended to draw out insights from participants by asking questions to get opinions. The insights were from the perspective and interpretation of the researcher. This constitutes a limitation to the research as there is a potential for bias from the researcher. Personal bias is an inherent challenge of qualitative research as the researcher is viewed as the measurement instrument (Fusch & Ness, 2015). Personal bias can impact the listening process in data collection, the decision of what constitutes saturation, and the overall analysis of the data collected (Fusch & Ness, 2015). The statement below is intended to declare the researcher's potential biases through the reflexive technique:

The researcher has been trained in design thinking and has been attempting to implement it from the vantage point of various managerial roles. They are therefore, passionate about design thinking and could potentially introduce bias into the study. These potential biases were reflected upon while conducting the research.

4.6.2 Time Constraint

The research was time-constrained and therefore introduced several limitations on how the study could be conducted. The research participants were primarily based in Gauteng, South Africa, and were in the researcher's network. This limits its applicability across the country. The study was only cross-sectional, meaning it was viewed that were expressed at a point in time in 2022. No longitudinal study was possible. This is important as views change with exposure to new information.

4.6.3 Generalisability

In general, findings from qualitative studies are not generalisable as the focus is the depth of insight to develop or augment existing theory (Saunders & Lewis, 2018). The conclusions of this study cannot be generalised to the population.

4.7 Conclusion

An exploratory study using qualitative techniques was designed and executed to answer the research question. A semi-structured interview was constructed based on the literature. Thirteen managers were interviewed until saturation was reached. The data collected was then analysed using a thematic analysis technique to produce codes, categories and themes that help answer the research question. Limitations that were highlighted are the time constraint, the cross-sectional nature of the study and potential bias that may emerge from the study based on the researcher's interest in the topic. Overall, the process produced results that are presented in the next chapter.

5 Results

5.1 Introduction

This chapter presents key findings from the 13 participants of the research. The chapter starts by giving a view of the participants' demographic information. Themes are presented first since a theme can apply to multiple research questions. Each of the categories that fall within a theme is described in detail. Key quotations are used to support the themes and categories identified from the data collected. The chapter concludes by giving an overview of the implications of each theme and category to the research question.

5.2 Description of the sample

As described in the methodology chapter, non-probability sampling was applied to the research. The chosen sample represented leaders from a variety of industries within South Africa. Table 2 shows the specific demographic variables of the participants in the research.

Table 2: Participant Demographics

Participant Code	Participant Position	Industry	Years in industry	Age range
TL	Manager	Manufacturing	11 Years	30 - 40
KP	Change Manager	Financial Services	10 Years	40 - 50
SY	Business Analysis Manager	Telecommunications	2 Years	40 - 50
AP	Sales Manager	Mining	10 Years	40 - 50
KN	Manager	Mining	14 Years	30 - 40
RM	Business Analysis Manager	Broadcasting	8 Years	40 - 50
SM	Manager	Broadcasting	18 Years	40 - 50
RS	Consulting Manager	Agriculture	8 Years	30 - 40
DM	Relationship Manager	Fintech	4 Years	40 - 50

MM	Relationship Manager	Financial Services	13 Years	30 - 40
SR	Audit Manager	Financial Services	6 Years	30 - 40
AM	Manager	Financial Services	6 Years	20 - 30
JM	Manager	Mining	17 Years	30 - 40

Source: Author's Own

Focus went into ensuring that participants met the research criteria as mentioned in the methodology chapter. This ensured that participants occupied a leadership position within a company in South Africa. Participants also belonged to both the services and manufacturing sectors. Experience in the industry ranged from as little as two years in their industries to as much as 17 years.

5.3 Themes

Table 3: Themes and Codes

Theme	Category	Number of Codes
Innovation Context	Existing Methods	9
	Perception of innovation	6
Personal Attributes	Innovativeness	2
	Ability to influence existing practices	2
Perceptions on Design Thinking	Design Thinking Understanding	4
	Identified Design Thinking Attributes	11
	Perceived Advantages and Disadvantages	3
Organisational Context Barriers	Organisational culture (implementation climate)	8
	Organisational Work Practices	2
	Organisational Change Management	5
Design Thinking Learning	Straightforward Practice	6
	Mixed Learning Perceptions	4
	Mixed Execution Confidence Levels	2

Source: Author's Own

The data gathered in the process from the methodology chapter produced themes illustrated in Table 3. Each of the themes and associated categories is discussed in detail in the following sections.

5.4 Innovation Context

The first theme that was identified is the participants' views on innovation. This theme is defined as the perception of the individuals' innovation and what exists in the environments in which innovation needs to be applied. This section highlights opinions by participants on their perceptions of what innovation is and their reflections on existing methods used for innovation in their organisations.

5.4.1 Perceptions on innovation

Participants saw innovation as a way of creating something new or bringing about change. This view was presented using other words, such as doing things differently and viewing it as addressing a user's problem.

So as invention would create a new thing, but innovation may create a new thing or even take the existing and repurpose it to make sure that resolve problems. – SY

So, innovation, to me is something that's, you know, something that helps your user or helps a customer or helps a dependent on a stream of, you know, information or activities such to better their life or you know, give them something that that they can use to simplify the, their lifestyle, their requirements or commitments as such. – AP

it's new ways of doing things or a way of coming up with new ways of doing things, especially in in a digital in a digital space or in a technological space – KN

Other participants were quick to emphasise that innovation is not only about bringing technological change but different types of change as well.

It's new ways of doing things and new ways of thinking of things. Or not, not even new, but different ways of thinking of how to, you know, necessarily solve the same issue, but just new ways of doing things. And it doesn't have to be kind of technology involved. But it's, it's just better ways. It's, for me, a lot of it is improvement, but it can also be new things that are brought about.”- KP

Participants also identified the importance of a customer in the process of innovation.

So, innovation, to me is something that's, you know, something that that helps your user or helps a customer or helps a dependent on a stream of, you know, information or activities such to better their life or you know, give them something that that they can use to simplify the, their lifestyle, their requirements or commitments as such. – AP

It's about understanding pre-emptively and proactively what the needs of your customer base is, and be able to respond appropriately with the right, with the right products with the right services – JM.

Participants generally saw their role in innovation as being assigned a problem to innovate around. Participants will then apply their skills to solve the problem and, in turn, producing an innovative solution.

But from a project point of view, what happens is that you are assigned in a project that will solve a certain problem, and that is very creative, per se, you basically are doing your job, it's an innovation, because maybe it brought about a change that was needed in the organisation, or in the society – SY

So in terms of how we do things, so someone from business comes to us with a business problem, what's this an opportunity that they wanna take advantage of right. Then you will actually try to come up with different ways in terms of how they can go about addressing that problem, or taking or leveraging on that opportunity – RM

However, one participant mentioned that their role is more focused on problem identification, leaving the development of solutions to other people within their organisation.

I think I think in my space and my role, I would say, my role would be more of identifying the challenges within the mining space – KN

There is a view that innovation should be a creative process, and any practice enabling the process should not constrain creativity.

I think innovation to me is creative ways to either solve a problem or introduce a new way of doing things either into your internal processes or your external offering. - SM

So I think, I think innovation should be more creative. Most of the times, to innovate, we need to think out of the box, to create, to try and solve people's problems need to think out of the box.– SY

5.4.2 Existing innovation practices

Participants were mixed on organisational practices related to innovation. Several mentioned that there need to be guidelines for innovation. This means that organisations do not provide a formal practice or process that the participants need to follow when pursuing an innovative solution:

if you have an idea, it just needs to make sense to your manager and then you run with it. – TL

I don't. To be honest, I don't really think there are any formal innovation practices. – RS

But I think on a more day to day basis, not so much, you know, it's a, you know, a more a live, loose, loose process. – SM

However, traditional project management approaches, such as the stage gate model, apply in some instances. This approach takes an idea through stages of evaluation, starting with an idea and conducting a feasibility study as the first stage. The outcome of a feasibility study goes into an approval process where the idea is allowed to proceed if it is considered feasible. The idea then goes into a business case stage, where a business case related to the idea is developed. The business case typically outlines the benefits and costs related to the idea. The business case goes into an approval process where the idea goes into the implementation stage if it is considered favourable to the organisation. Once implementation is completed, the organisation will then go into benefits tracking. Agile was also mentioned as an approach typically followed by the IT function. Agile is an approach to software development that divides the process of developing a set of software functions into iterations of functionality delivered for the customer.

I mean, I mean, we do that as part of our projects, on project way model. So that's how we execute projects. So we do go through the whole, pre Fs, the whole concept pre Fs, one, PFS two, or a feasibility, feasibility. – JM

I'm trying to remember is that the innovations would go through and the gates, different gates. And I remember one of the biggest milestones was that, for it to be logged as an innovation it will have to be implemented – SY

So we go through business case, and then approval of the business case, we get funding, we would do, obviously, feasibility before that. - KP

In general, where innovation is a priority, basic guidelines are set up for what constitutes innovation, and people are allowed to be creative.

But even if you had the greatest idea, in terms of the quote unquote, rules that you're given, you literally have not even my departmental head has any saying on it. – TL

each business unit would be encouraged to then also come up with something new in time for September. So they would, you know, they push for it and the

processes would also support that by not creating these, you know, lengthy processes of back and forth. - AM.

5.5 Design Thinking Perceptions

The second theme that was identified is design thinking perceptions. This is defined as the participants' views on what design thinking is. This is composed of how participants defined design thinking, its attributes, and its advantages and disadvantages.

5.5.1 Design thinking understanding

There were mixed views on the definition of design thinking. Participants focused on attributes of design thinking that seemed to resonate with how they think about innovation. Some participants defined the practice as a process of innovating with the customer in mind.

It's the design of solutions with the user or customer in mind, and how they interact with the product, whether it's software or whatever it is, how they would interact with the process, but not only that, but ever, not just us thinking, sitting and thinking that this is how a person would interact with it, but also, after having an experience and seeing how people interact with this thing, or maybe something similar in design from an empathetic point of view. – SY

Hmm, maybe I don't know what design thinking is. So I think, for me, design thinking is something where you understand what what your your user needs, or what your customer needs are, right. And then we bring that as an as a as a problem – DM

My view is basically design thinking revolves having the user or the customer in mind, right? So whatever new services or product features you want to introduce basically seeks to address the customer or their users' needs. Right? So, you will then have to engage with your customer or you user side to understand what the issues are or their various pain points in relation to your

products and services and whatever improvements that are trying to introduce then basically is informed by that. – RM

Others focused on the problem that design thinking is meant to address. They added that design thinking provides the ability to understand a problem richly. It was also viewed as a way to solve complex problems.

So design thinking, the way that I understand it is to take the principles of designing to try and answer a complex problem. – TL

I'd say it's basically just a process that you go through in terms of saying what identify trying to fully understand what the problem is, within whatever space. - KN

Yet others defined it as a complete process of moving from an idea to a product with different flavours of what the end product is. Some viewed it as a minimum viable product, others viewed it as a pilot, and others viewed it as having something to test. Because it was explained as a process, steps in the process were sometimes expressed as well.

But it would be a structured approach, creating a proof of concept, you know, doing a pilot. – KP

design thinking is just a process of developing an idea into a product or a thing when output which you want – RS

So it's about failing fast failing forward, trying to get to a minimum viable product, so that you do not have to spend too much time and resources on what might not actually be an innovation. - JM

5.5.2 Identified design thinking attributes

Participants' understanding of design thinking as a practice came to bear as they shared views on some of the attributes they think are important. There needed to be more consistency between the attributes that participants identified as important to them and their industry. One participant mentioned that an attribute of using iterations to solve problems has remained in their organisation.

There's, there's a, there's a huge shift towards doing iterations during kind of pilots. Okay. You know that whole iterative way of thinking now, especially in terms of our programmes and projects, that's definitely coming through, although in smaller forms. – KP

Another participant mentioned the issue relating to prototypes based on their work in the heavy machine industry.

There is, there are certain types of prototypes that that people buy into, but these are specifics and its very narrow. So prototypes that are linked to simulations, and very realistic simulations sell, sell ideas in our space. So so not this model wireframed, you know, cutting boxes and papers and whatnot and hoping you can sell an idea of that. But simulations with very strong algorithms that aim to mimic the real environment because obviously they take away risk from the environment, especially, to innovate in in a high in an environment where there's high where there's a number of hazards. You don't want to risk loss of life or injury by going to pilot something physically in the environment. So so definitely simulations and models, dynamic models sell. - JM

A different participant focused on empathy as an important attribute related to their leadership style.

here's always an element of empathy. There's always an element of being in the shoes of the problem so you can find the solution. Not even, not, even if it's not

my problem, but if somebody's brings a problem slash opportunity to me, or to anyone, the only thing I've seen was people trying to find the solutions to really understand what that person is going through, or what the challenges, what the outcome.- MM

Yet another participant focused on the problem identification aspect of the practice as this is the area where their job is mainly focused on.

Okay, so for me design thinking is about, firstly, trying to understand what is exactly the need that we're trying to solve for. So, you know, it's really getting down to the root cause of what's this problem? - SR

5.5.3 Perceived advantages and disadvantages

There needed to be a clear agreement on what the advantages of using design thinking are. Participants had customer-centricity, empathy and the ability to produce better solutions as some of the clear advantages.

And we always say in businesses, that "customer is king." So whatever we're designing, or whatever we're designing, if it doesn't meet the customer needs, then we as good as you know, that our business is not the. So there's always a benefit in it, always having the customer in mind, and not just designing to get into the market. – SY

I think that is part of design thinking. Because when you say gonna have a KPI that measures that that measures if customers feel well, I guess we're going to have a survey with a customer to say, "How did you feel using this product?" – SY

Defining, but it comes from empathy. So it's all part of the understanding. Yes, empathy and defining, which is all part of understanding the problem. But also, I think the prototype piece, the piece where you come up with, and, and you tested and all of that, that's also quite important, I think. – MM

So design thinking actually helps you to model those ideas for you to develop, you know, better solutions to dynamic problems. – RS

Other participants highlighted having a process to guide on how to innovate as an advantage. Other advantages highlighted include the ability to understand the problem better, speed of innovation, collaboration and creativity in the process.

I'd say is, for one, you can, if you've got a team of people who understand the concept together, you've got, you've got speed to ground – AP

So I think when, when using design thinking there are benefits in doing it in a in, in collaboration with another person or other people just to make that ideation process and bias maybe I can use that word – AM

So going through the design thinking process will then afford you the opportunity to take into consideration all those technical challenges if you were to design a different load and haul route for your trucks. – KN

I get the sense that it's a really neat system to get creativity going, you know, because a lot of the times at the, in the, in the office, creativity lands on the shoulders of your senior members of staff – TL

So design thinking actually helps you to model those ideas for you to develop, you know, better solutions to dynamic problems. – RS

A disadvantage highlighted was the amount of time it could take to run a design thinking project. Participants noted this as an issue when working in organisations that are delivery driven and generally seem to spend less time than what design thinking requires in problem-solving.

disadvantage can also be that if you take too much time trying to figure out what the problem is – DM

Yeah. So if it's not that clear, if it's not upfront, with with the user or the consumer that, then the design process, it could be iterative, into into forever, you understand it could go on and on and on and on. – AP

other disadvantage is that it requires a lot of time, and obviously, something that is a bit technical. - RS

Another disadvantage that was highlighted was the resource requirements to run a design thinking project. Resources refer to the number of people and the skill requirements to run a project.

The disadvantage is you can, you can, if you are design thinking, especially by yourself without, like, multidisciplinary team, you can, you can almost start creating things that people don't really care or want. – AM

I suppose, you know, one of the difficult parts of this is defining the problems that you want to solve. Okay. And, and the scope of stakeholders, especially in our space, you know, I mean, our corporate, it's about circa about 5000 people. Now trying to brainstorm stuff in such a large organisation, it's a problem. It's a big problem getting the right people in the table that know enough about anything. – JM

Other participants highlighted the potential to focus on the wrong thing if the process is not run correctly. The process also needs the person running the project to take people along with them on the journey, which may be off-putting to people that need help understanding the process.

Negative, maybe, maybe that, that is sometimes too, it may be too narrow, if not, if not supported with the right macro or mass research, you know. If you, if you happen to focus on a on a unique subset of user, you could then ultimately be designing a solution for you know, that, that alienates a large population of your users, right. - SM

Where the drawback is, I think is that because design thinking is so, I don't say rigid, but it's almost like people have to understand what you're trying to do with design thinking. So you almost got to upskill the people with you in terms of what design thinking is and what we're trying to do here. – SR

5.6 Learning Outcomes

This theme is related to how participants learned about design thinking. This theme contains their perceptions on the process of learning design thinking and how confident they feel about running the practice independently.

5.6.1 Straightforward practice

The participants viewed design thinking as a practice as not a complicated thing. The phrase “It’s not a new thing” stands out from one of the participants explaining how uncomplicated the practice is.

No, I don't think so. I think it's quite straightforward. – SR

But design thinking for me was very, it was the best part, when I first came across it and it just like I said, it felt intuitive, it resonated. It was very easy for me to, to grasp. And, and it was great that something that felt intuitive had been given a language and a framework, to clean it up, you know, just to kind of, like, have a sense of where you are in the process and all of that. – MM

I don't think that the method itself is complex – KN

However, others felt the method was too abstract and complicated.

Design thinking? It's, it's a very, in my, in my head, you know, a very abstract kind of thing where you take, they say, you take the concept of designing, like designing, be it an outfit, be it a car, whatever the case is, you take the concept of design, and you try to solve a problem. – TL

You know, it was it wasn't a straightforward space. You had to have, you had to have a number of things that are happening. – AP

I think it was structured in a sense that in a formal learning environment, you knew what you needed to do, but very theoretical in nature, when it came to the application part of it. That's where I was so hella confused. - SR

5.6.2 Mixed Learning Perceptions

Participants found the design thinking learning process easy.

I was doing it and knowing I didn't know that I was actually practising design thinking. – RS

You know, before I even knew that it was a formal framework. I just think that there's something very intuitive about it. Where, like I said, for you to solve any problem, you need to have an understanding, and sometimes to understand, you need that empathy, you need to kind of like, try and see how that person is experiencing whatever it is. – MM

I look, it was too simple to be true. Some of us are used to algorithms in big spreadsheets, and that's not what this process is about. It's actually in the tool. - JM

Others indicated they struggled with the learning process. They mentioned that it did not make sense or resonate with them.

Um, look, I think it's, it's an experience that can be daunting, because you, you don't have, it's kind of like you haven't structured? What's the you know, what, you haven't defined what the problem is. – DM

I didn't, it didn't make sense to me, it just didn't land. – TL

One of the participants gave for the practice not making sense because the introduction was not detailed enough.

5.6.3 Mixed Execution Confidence Levels

There were mixed views on whether participants were comfortable running design thinking projects independently. One group of participants mentioned that they were comfortable.

Oh, like, I can. I felt like oh, my gosh, give me the problems. – AM

So, so yeah, I think we could definitely implement it. - KP

Oh, yeah. So yeah, initially, it may, it may seem a little challenging, but I don't think it's, it's I don't think it's complex, once you understand the process, and what tools to use, but also it does also, I think it appeals to certain people. - AM

Another group mentioned that they were not comfortable.

I wouldn't feel comfortable saying, you know, I, I know how to use design thinking – SM

I didn't feel that I could do that, just because there's so many complex structures, and it's layered, and all sorts of things at work. But in terms of the understanding of the concept, and being able to explain it to someone if need be, I'm quite comfortable, because I thought it was, it was thoroughly covered in class, there were other things around innovation, honestly, but this is the one thing that stuck. - MM

5.7 Personal

This theme captured the personal attributes of the participants related to innovation. Two key categories of codes identified were the innovativeness of the participants and the level of influence they felt they had in their organisations.

5.7.1 Innovativeness

Participants recognised their innovativeness. They indicated their innovativeness by sharing anecdotes of innovation projects that they have participated in. The role of the individual was also important in relation to innovation.

I spotted a gap in the market for fresh news, new news, published early in the morning, but that had been written published having written and edited and produced the day before. – SM

Okay. So, in my company, we have come up with, we have realised that there is a gap in terms of information sharing when it comes to the roles that are available internally for people, and not necessarily just a portal for people to go in apply for internal roles, but a space where they can understand what some of the roles mean, or where people can go, let's say, for example, I found a role and I'd like to develop into that role, there isn't a space where I can go find out how I develop into that role, or what I need to study or any of that. So in and then you know, how to get somebody to champion that for you or sponsor that development path for you. So we got together and formed a subcommittee to try and, you know, put ourselves in that position and see how we can come up with a system slash platform slash, whatever it is to make what exists now much better so that people are able to, you know, be inspired to, to see that the bank actually is a space of opportunity. – MM

I have. So we actually trying to innovate our internal audit process, and we're trying to actually digitise the environment. - SR

5.7.2 Influence

Participants felt that they needed more influence to change things in their organisation.

So the reason I don't have that much confidence in my ability to be able to influence everyone to take this on, or to guide them through this type of process is because, look, it might be my own belief, but it's, it's also been through experiences, see that It's very difficult, you know, the growth mindset is not as much because everybody's just so used to doing things one way and to try and push them to do it another way, you know, would be quite complex, and you'd have to jump through a lot of hoops, bureaucracy. – MM

But even if you had the greatest idea, in terms of the quote unquote, rules that you're given, you literally have not even my departmental head has any saying on it. - TL

Other participants felt that other ways to influence the rest of the organisation in doing things differently.

But, but, you know, when you keep on saying it, keep on saying it to different audiences, until it lands on the ears of someone with power and it makes sense. They think so the power that would be meant to just keep on mentioning and keep on mentioning, keep on mentioning until it lands, right? – SY

Researcher: All right. That's, that's, that's actually really interesting. So how do you see your role in the adoption of kind of new innovations? Do you see your role as one that pushes innovations to be adopted? And all of that?

SM: Yeah, I think so. I think so. A lot of, mostly because of my role, but also in terms of understanding the, the need to constantly have momentum in business, and move forward.

5.8 Organisational context barriers

The last theme that was identified is organisational context barriers. This theme captured all the categories of codes related to attributes of the organisation in which a participant worked that did not promote the use of design thinking. This includes organisational culture, existing work practices and organisational change management capability.

5.8.1 Organisational culture

Participants highlighted the risk averseness of their organisations as a potential barrier to the adoption of design thinking. This can be seen through the fear of failure in using design thinking or potentially the reputational risk, even if it is internal of trying out a process that does not work out.

It does take a while to get people into the iterations, because I guess there's a lot of perfectionists in this world, and they want a perfect product to go out to market. They're not okay with putting out a little bit and then working on it. – KP

So the reason I don't have that much confidence in my ability to be able to influence everyone to take this on, or to guide them through this type of process is because, look, it might be my own belief, but it's, it's also been through experiences, see that it's very difficult, you know, the growth mindset is not as much because everybody's just so used to doing things one way and to try and push them to do it another way, you know, would be quite complex, and you'd have to jump through a lot of hoops, bureaucracy. – MM

Another organisational culture issue that participants highlighted is the lack of collaboration, which design thinking requires as part of executing a project.

I think I think on paper, that's ideally what's suppose happen, okay. In reality doesn't happen. Like in the operation, that doesn't happen, we know that if you are to solve for that, fall of a phase you to fault, you most likely need to have an engineer involved, a geologist involved, a safety person involved but like, it doesn't happen like that. It I think, I think in most cases, you find that I think again, it also depends on the industry, you know, our industry is driven by safety – KN

But that is because of the nature of the organisation, you have to be in specific circles where that conversation is happening, but in the broader ecosystem, and I'd like to call a company ecosystem, in the broader ecosystem, it doesn't matter. So agents of, to your question agents of innovations are too few and too far. - JM

Some participants also highlighted that the short-term perspective with which goals are set up could also be why their organisations are unwilling to gamble on trying out design thinking.

because some added challenges, you have to come up with a solution like as soon as possible, because remember, we are under pressure for production, right? - KN

You can spend so much time sitting and trying to figure out what the problem is how to solve the problem. And before you know it, you've spent a whole month and you've lost weeks without actually implementing anything. – DM

Another organisational issue that participants pointed out was the influence of an organisation's industry. Examples were provided about the mining industry as not being innovative.

5.8.2 Organisational Work Practices

One participant remarked that design thinking might be different from their work practices as they work in a highly regulated environment. This means that there are processes they have to follow in doing the work they do.

And, and to be honest, in the mining space, it's, it's a majority of results, I want to see visual results. I don't want to see airy fairy, you know, things things that are in the air or something I can't conceptualise, or I can't. – AP

The understanding was that people do things the same way they have done for years. Therefore this does not inspire the participants to be innovative and equally apply design thinking.

We're not that exposed to innovation, we are not embracing innovation, we believe even in if something is broken now, if prior to that, there was a way in which we solve that specific problem, we still going to apply the same ways of solving it without even trying to fully understand the effects or the causes of that specific problem. – KN

I've pretty much traditional departments, you know, you made the point about processes, you know, people still follow processes that we put in place many years ago. You meet people who tell you, Oh, are you guys still doing resource and reserves estimates this way? Are you still using this method? You say yeah. They said you know, the guy who actually developed that method used to work at this mine. And this, this was a genius 40 years ago. So So, so it's that type of that type of issue. – JM

But the biggest challenge is, is around, is around the aspect of getting across, the you can call it chasm, in terms of getting that to replace the status quo, okay, which is, which is this aspect of, you know, we've been doing it like this for 20 years, you know. - JM

A second process issue is related to the prototyping attribute of design thinking. While design thinking emphasises the need for low-fidelity prototyping, something other than this seems to work in mining. In their case, the prototype becomes the actual product, otherwise, people will not be able to relate to it.

There is, there is certain types of prototypes that that people buy into, but these are specifics and its very narrow. So prototypes that are linked to simulations, and very realistic simulations sell, sell ideas in our space. So so not this model wireframed, you know, cutting boxes and papers and whatnot and hoping you can sell an idea of that. But simulations with very strong algorithms that aim to mimic the real environment because obviously they take away risk from the environment, especially, to innovate in in a high in an environment where there's high where there's a number of hazards. You don't want to risk loss of life or injury by going to pilot something physically in the environment. So so definitely simulations and models, dynamic models sell. - JM

5.8.3 Organisational change management

Participants expressed the need to take people along when implementing a design thinking project as a hindrance. Otherwise, people get trained, and there is no follow-through and it ends up not being used. One of the participants highlighted the need for a champion to ensure that implementation happens.

So what I'm saying is that at least if we can get buy-in from the senior leaders in the organisation to say, in each and every project that we undertake, we need to use design thinking – RS

Where the drawback is, I think is that because design thinking is so I don't say rigid, but it's almost like people have to understand what you're trying to do with design thinking. So you almost got to upskill the people with you in terms of what design thinking is and what we're trying to do here. – SR

But then, in terms of making sure or having someone to champion that process. Because I mean, what's this, the way I understand that it's more like, if I were to say it's basically, rather try something that not try at all. - RM

5.9 Implications for research questions

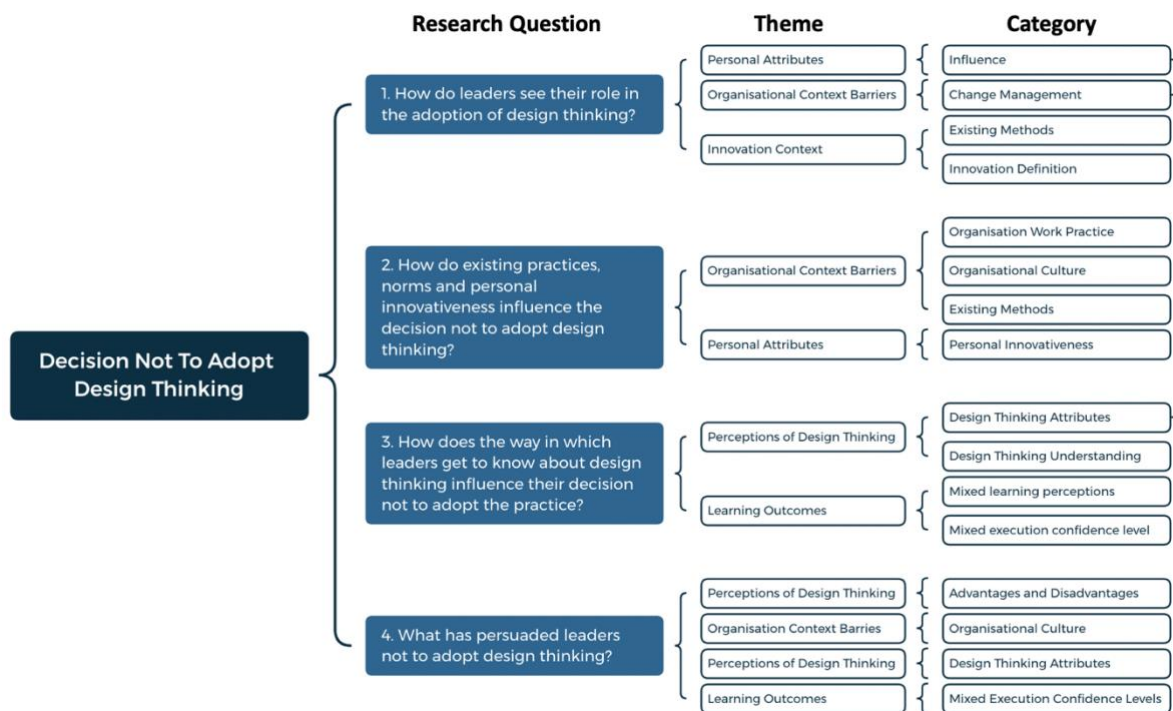


Figure 6: Research questions linked to themes and associated categories

Source: Author's Own

5.9.1 Implications for research question 1

How do leaders see their role in the adoption of design thinking?

Leaders exert a significant influence on the direction of their organisations. The leadership of an organisation is meant to set direction and marshal resources in relation to the chosen direction to achieve the organisation's goals. The first research question explores important constructs that leaders view as important.

Influence is one of the categories that has come out as important in relation to a leader's role in adopting design thinking. Participants highlighted the lack of influence as an essential contributor to them not adopting design thinking.

The second category is change management. Change management is defined as the way changes are introduced to an organisation. Participants felt this was not strong in their organisation and, therefore, could impact their adoption of design thinking.

5.9.2 Implications for research question 2

How do existing practices, norms and personal innovativeness influence the decision not to adopt design thinking?

The second research question deals with prior conditions as highlighted in the innovation-decision process. The theory identified important conditions in an environment that can influence the adoption of an innovation. These include existing practices, norms as well as personal attributes related to innovation. The research identified five such attributes that affect the adoption of innovation.

Participants highlighted existing practices as firmly entrenched in their organisations. In some cases, there is no formal practice followed to innovate within the organisation, even though it is seen as important. These existing practices such as the stage gate model and agile, impact the adoption of design thinking.

Participants were asked to provide anecdotal evidence that shows that they have participated in innovation initiatives. Most participants were able to articulate instances where they have participated in innovation. This shows the participants' appetite for innovative ideas.

The research highlighted that organisational culture is an important category related to the adoption of design thinking. Organisational culture was described in various ways, such as the level of collaboration and the way participants do things. Each of the examples of culture impacts the adoption of design thinking differently.

The last category is organisational work practices. Participants shared that some work practices within organisations may differ from design thinking. This would therefore hamper the adoption of design thinking.

5.9.3 Implications for research question 3

How does the way in which leaders get to know about design thinking influence their decision not to adopt the practice?

This research question examined the innovation-decision process aspect of acquiring knowledge about an innovation. This research considers design thinking as an innovative practice. The research focused on what participants know about design thinking and whether what they know gives them the confidence to use design thinking. Two themes emerged from the responses that are important to this research question, learning outcomes and perceptions of design thinking. Learning outcomes contain two categories: mixed learning perception and mixed execution confidence. Perceptions of design thinking include two categories, namely design thinking understanding and design thinking attributes.

The first category that was identified is the participants' understanding of design thinking. Participants provided their views on what they believe design thinking is, with some emphasising its customer-centric approach to innovation. Some highlighted its applicability to complex problems.

The second category was design thinking attributes that participants identified as important. The list of important attributes includes understanding problems deeply, empathy with customers and users and the ability to prototype solutions. Participants highlighted that these attributes have mixed results in adopting design thinking.

Design thinking training, therefore, produced different feelings related to its adoption. While in some instances participants mentioned that it was intuitive and provided them

with a way to innovate, others found it complex and abstract. This leads to the third category, which is mixed learning perceptions.

There were mixed views on the ability to use the practice after the training. Some participants expressed that they could lead teams through a project and were confident of the method. Others highlighted that given the abstractness and complexity of the practice, they need more confidence in running a project in their organisations. This leads to the last category identified, which is mixed execution confidence.

5.9.4 Implications for research question 4

What has persuaded leaders not to adopt design thinking?

The last research question is related to the part of the innovation-decision process that evaluates an innovation in the context in which it will be applied. This is the last stage that informs whether an individual is going to adopt an innovation or not. Critical to this stage is the ability to determine the advantages that come with an innovation, the ability to test an innovation, the ability to observe someone using the innovation, how complex the innovation is and its compatibility with the environment in which it is going to be implemented (Rogers, 2010).

Participants were able to articulate some advantages and disadvantages of using design thinking. Therefore, a category that impacts this research question is the relative advantages and disadvantages of design thinking.

Organisational culture was identified as an important barrier. Participants highlighted organisation culture attributes that go against the ability to test design thinking. In cultures where there is already limited collaboration, it may not be worth it to adopt design thinking.

Some design thinking attributes, such as prototyping, were identified as difficult in certain industries. Mining was given as an example. Participants highlighted that low-fidelity prototypes might not be suitable for the environment. Therefore, the practice may not be completely suitable for their environment.

The limited confidence in executing a design thinking project. Some participants highlighted that the practice is too complex and, therefore, they do not have the confidence to use the practice as part of their work. This impacts the decision to adopt.

5.10 Conclusion of findings

The research findings revealed several themes on the drivers that impact the decision not to adopt design thinking. This includes innovation perception, personal attributes, perceptions of design thinking, organisational context barriers, and learning outcomes.

Innovation perception consisted of existing methods to innovate within an organisation and the perception of innovation from participants. Participants highlighted a mix of existing practices and, in some instances, reflected on the absence of guidance on how innovation should be performed in their organisations. They perceived innovation as bringing change, which does not necessarily have to be technological.

Personal attributes include the ability to influence and personal innovativeness. Participants were seen as innovative but lacked the influence to get their organisation to adopt design thinking.

Perceptions of design thinking include how participants defined design thinking, what attributes it contains and its advantages and disadvantages. Participants defined design thinking as a customer-centric problem-solving technique. Participants expressed other variations of definitions, but this view was the most dominant. Several attributes of design thinking were highlighted, including the ability to get insight into a problem, working with empathy and prototyping. It was found that prototyping does not work in every industry. Design thinking advantages and disadvantages contributed to the relative excitement about the practice.

Organisational context barriers include the organisational culture and organisation work practices. Organisation cultures where collaboration is not a norm were found to be a

hindrance. Work practices that fail to evolve with time also hinder the adoption of design thinking.

Learning outcomes include the perceptions of how complex the practice is, mixed learning perceptions, and mixed execution confidence levels. There were mixed views on how complex design thinking is; some viewed it as intuitive while others viewed it as too abstract. Views on the learning process were also mixed, with some finding it very easy and some saying they struggled. This has led to mixed confidence levels in the ability to run a design thinking project. Some participants could not wait to do one, while others felt not too confident with the practice.

In the next chapter, these themes are analysed for the possible reason they are important, and this is contrasted against existing research. This will give deeper insight into the reasons why these are important.

6 Discussion of Results

6.1 Introduction

This chapter discusses the results from chapter 5 obtained from the semi-structured interviews. The discussion is framed using the design thinking adoption research questions from chapter 3 with the literature review from chapter 2 as a backdrop. The discussion aims to provide insights into design thinking adoption.

6.2 Discussion of results for research question one

Research Question 1: How do leaders see their role in adopting design thinking?

The first research question sought to understand how leaders see their role in adopting design thinking. Several studies have examined leadership styles and their influence on innovation (Alblooshi et al., 2020; Cortes & Herrmann, 2021; Khalili, 2016; Kim & Yoon, 2015; Slåtten & Mehmetoglu, 2015). Liedtka, (2011) found that managers can improve their likelihood to innovate by adopting design thinking practices. The discussion of the results of this research question focuses on two themes which are influence and the importance of change agents.

The discussion of this question is grounded in the innovation-decision process as a theory that anchors the research. The research uncovered three themes in how leaders see their role in adopting design thinking. These are their innovation context, personal attributes and the organisational context barriers where they want to introduce the practice.

6.2.1 Innovation Context

In order to understand how leaders see their role in the adoption of design thinking, it was important to understand their view of innovation. This is because design thinking can be considered an innovative practice. It is also a practice that is used in developing innovations. Innovation is an important part of the innovation-decision process.

6.2.1.1 Innovation Definition

The research found that participants defined innovation in the introduction of change. It was further found that it is important not to constrain innovation to implement new

technology. The study also highlighted the importance of having the customer in mind when innovating.

Literature defines something innovative as something new to a unit of adoption (Rogers, 2010). A unit of adoption can be an individual or an organisation. Something new could be an idea or a practice. This is consistent with the view of innovation being related to change, as found in the research. Literature does not also constrain innovation to technological innovation, consistent with the findings in the research. Literature provides a more succinct view of what innovation is, confirming and expanding this research's findings (OECD, 2005).

6.2.2 Personal Attributes

A second theme that applies to research question one is the personal attributes of the leader. In this theme, the leaders' ability to influence their organisation in adopting an innovation.

6.2.2.1 Influence

As highlighted in the literature, opinion leaders within a social system are an important part of how quickly innovation permeates through a social system, such as an organisation (Rogers, 2010). They influence which innovations an organisation takes up and which ones are rejected, and how quickly this decision is made. Opinion leadership is about influence. Managers were assumed to be opinion leaders by virtue of their influence on the team based on the legitimate power they possess. Given that participants were leaders and had a level of legitimacy based on their participation in innovation projects, they would be considered opinion leaders in their organisations.

The research findings showed that managers have very little influence on what is adopted and what is not. One of the key inhibitors of the influence is the environment in which managers operate. It was found that organisational contexts where compliance with rules is an important part of how an organisation operates are difficult contexts to influence. When leaders work in environments like these, it is difficult to influence the

process followed unless the leader becomes one of the people that sets the rules. An example of such that came up in the research is in food manufacturing and audit, where the rules of how things get done are quite strict.

The research also found that leaders' lack of influence is affected by the need to collaborate with people from other teams to execute a design thinking project. Leaders do not have formal influence over people from other teams. An influence tactic in the research is continuously communicating the relevance and benefits of design thinking in different forums to co-opt other people into adopting the practice.

These two findings confirm what has been previously found in other studies. Elsbach & Stigliani (2018) and Nakata (2020) previously found that design thinking adoption is difficult in industries where siloed productivity, siloed specialisation, and performance are important. In these environments, structured arrangements using rules are valued to direct resources and procedures to ensure that goals are achieved (Nakata, 2020). It may be that a different approach needs to be developed for design thinking in these types of environments.

From the literature presented, the research assumed that all leaders are opinion leaders. Rogers (2010) and Thakur et al. (2016) characterise opinion leaders as influential across a spectrum based on their knowledge of a subject matter. Since participants were trained in design thinking, it was expected that their opinions on the subject matter would have commanded respect from members of their organisation and therefore led to better influence outcomes. However, the findings seem to contradict this view.

6.2.3 Organisation Context Barriers

Change management is the last theme related to a leader's role in adopting design thinking. Leaders must lead change to introduce new practices into their organisations.

6.2.3.1 Change Management

Change management is important in introducing new practices and processes into the organisation. Change management is an organisational renewal process in response to change inside or outside an organisation (Moran & Brightman, 2000). Introducing design thinking for innovation can be considered such a change. The Managers as leaders, are change agents.

The research found that as part of managing an organisation, participants recognised the importance of leaders in introducing new practices. Literature confirms that managers influence emergent and planned change and are an essential part of the change process (Al-Ali et al., 2017; Balogun, 2003; Buick et al., 2018). This confirms the finding that leaders are important in introducing new practices.

However, the research also found that leaders felt that there was no organisational buy-in into the introduction of design thinking. This is critical for them to adopt design thinking as a practice since the key to using the practice is collaborating with others. To improve the potential for organisational buy-in, they would also need to ensure that everyone in the organisation is trained in the practice. This is something that the participants did not express the ability to do. This finding is consistent with Buick et al. (2018), who found that while sometimes management was entrusted with change, they did not feel like they had all the tools to implement the change. The change management process of introducing design thinking into organisations is typically not part of the training.

Participants suggested that such changes should be paired with a change champion. A change champion can become a change agent. This is consistent with the recommendation made by Rogers (2010) on the diffusion of innovation. In Rogers (2010), change agents are an important part of the diffusion of innovation. Buick et al. (2018) specifically recommend using middle managers as agents to drive change in a change initiative. Participants of this research may not have felt confident in expressing

newfound knowledge in their organisational context, given the finding of mixed execution confidence.

The research also found that when introducing the method, it is important to use examples relevant to the context in which they work. Contextual examples assist when managers need to sell the idea of using design thinking as a practice. They are also helpful in relaying the message to others on how they must execute design thinking projects. The research highlighted that examples used in training are skewed towards problems solved with software. These types of innovations are typically easy to prototype using paper sketches. Other industries are not fairly represented in the presented examples, such as mining or other heavy equipment industries and food manufacturing. This is similar to other literature. Carlgren, Elmquist, et al. (2016) highlighted the communication challenge when implementing design thinking. Communication of the concepts needs to be adapted to the industry, as highlighted in the literature.

6.2.4 Summary

Leaders' role is to ensure that they understand innovation, can influence the organisation and be change agents in their organisation. Leaders generally understood what innovation is consistent with previously done studies. However, they seem to have limited influence in their organisations, especially where productivity and specialisation are important in how work gets done. This is consistent with existing literature. While the idea that leaders are meant to lead change was consistent with the literature, they struggled to translate the change into their organisations. One of the key challenges with design thinking is that it challenges existing ways of communicating, which is consistent with existing literature.

6.3 Discussion of results for research question two

How do existing practices, norms and personal innovativeness influence the decision not to adopt design thinking?

The second research question focuses on the conditions of the context in which design thinking is being introduced. Organisational context barriers and personal attributes emerged as two themes influencing the decision not to adopt design thinking. Each of these is discussed in more detail in the sections that follow.

6.3.1 Organisational Context Barriers

Organisational context barriers identified through the research were the impact of existing methods and organisational culture. These two barriers are discussed in detail in the sections that follow.

6.3.1.1 Existing Methods

Organisations have existing practices that they use to manage innovation. These are implemented to manage both radical and incremental innovation. Popular examples in the literature of such practices include the stage gate model (Carlgren, Elmquist, et al., 2016) and agile. The stage gate process is a linear process with stages that an idea goes through, typically starting from pre-feasibility, feasibility, business case, implementation and benefits tracking. In each stage, a project would need to be signed off to move to the next stage until the project is completed. This process has been criticised for not being suitable for innovation as it is designed to reduce uncertainty and ambiguity, both of which are characteristic with innovation (Carlgren, Elmquist, et al., 2016).

The research found that some participants use the stage gate model as their innovation process. Innovation initiatives are run as projects and follow the normal project management process. This practice is popular in enterprises as it provides a structured process for everyone concerned with innovation to participate in the implementation process. This is consistent with other literature that has found the stage gate model as the most common alternative to design thinking (Nakata, 2020).

The research also found agile as an alternative method. This is a process where problems are developed in increments of customer value. Participants mentioned that

this practice is primarily popular in the IT community as it originated from the software development discipline. Its use only in IT contradicts the existing literature, as other industries use agile approaches such as Scrum in their product development process (Cano et al., 2021). Literature shows that it is particularly important in new product development processes.

The research also found that there is no practice around innovation in some instances. If participants have an innovative idea, they must make up their process to implement and test it. In this instance, it would have been expected that participants would lean on design thinking to assist them in implementing their ideas, but this was not so. This finding was unexpected.

The existence of other practices, or lack thereof, presents a challenge to managers that have been trained in design thinking. Existing practices are typically institutionalised within an organisation, and changing them is a difficult challenge. This is consistent with existing literature. Carlgren, Rauth, et al., (2016) confirm this finding and further propose that organisations should investigate adapting and merging design thinking with existing practices. Nakata (2020) highlighted that there is little guidance for managers regarding how to adopt new practices in contexts where there is already something in place.

6.3.1.2 Organisational Culture

Design thinking has three key mindsets constitutes of three key mindsets, which are human-centeredness, abductive reasoning and learning by failing (Nakata & Hwang, 2020). Carlgren, Rauth, et al. (2016) identified restrictive mindsets as a barrier to adopting design thinking. Participants were cognisant of the human-centredness of the practice. A few of them confirmed that is an inherent part of design thinking. However, they talked to their contexts as being risk averse and fearing failure. This is not compatible with the mindset of learning by failing that is highlighted in the literature. It would further explain why the practice is not given a chance, as this would mitigate the possibility of failure and ensure that what is done is not questioned.

The research found that working in an environment where fear of failure is one of the cultural attributes hinders the implementation of design thinking. This also holds leaders back as they embrace the mindset and never try design thinking. This limitation is consistent with existing literature. The ability to try things out even if they fail is a vital part of design thinking, as identified by Nakata & Hwang (2020) and Elsbach & Stigliani (2018). This feature of the practice is meant to improve solutions offered to the customer, as every failure offers insights into what the customer wants (Nakata, 2020). Sandberg & Aarikka-Stenroos (2014) note that such fear leads to overly conservative and restrictive decision-making. Therefore, environments that promote a culture of fear of failure would struggle with adopting design thinking.

A closely related finding uncovered in the research is the need to be perfect when releasing solutions for customers. This is related to a risk aversion mindset within organisations. Existing literature has shown that the stage gate process reduces risk in the solution development process (Nakata, 2020). This is achieved by theorising the solution initially and waiting for the launch to test whether the solution meets the customer's requirements (Nakata, 2020). This is typically too late in the process and could lead to products and services that have gone through a long development pipeline and still do not meet customer requirements. The risk-averse mindset is also consistent with the exploitation investment approach in established organisations (March, 1991). Literature has also highlighted the tension between exploration and exploitation as a hindrance to design thinking adoption (Carlgren, Elmquist, et al., 2016; Carlgren & BenMahmoud-Jouini, 2021).

Carlgren & BenMahmoud-Jouini (2021) found in their study that the design thinking perspective of time and those of organisations are sometimes in conflict, and this can lead to adoption issues. Participants in the study highlighted that planning horizons for organisations are typically short, and there is a need to show results quickly. Carlgren & BenMahmoud-Jouini (2021) highlighted that organisations relate time to value creation

and how progress is judged. Participants highlighted that design thinking might require some involvement in understanding the problem, which may be more than what the organisation is willing to give. They also stressed that in the prototyping stage, if there is no clear timeline of how many iterations will be implemented, it could be perceived as time-wasting. Organisations have quarterly and annual goals that they must achieve, and doing design thinking may not be perceived as not supporting them.

A third closely related finding in the research was the lack of collaboration as a hindrance to adopting design thinking. Literature has shown that collaboration is an important part of design thinking (Carlgren & BenMahmoud-Jouini, 2021; Liedtka, 2015; Nakata, 2020). Collaboration generally reduces biases in the design thinking process (Liedtka, 2015).

Internal collaboration is required during the entire design thinking process, but two key phases are related to generating new ideas and implementing the selected idea after prototyping. Ideation requires diverse views in generating ideas. Solution implementation requires diverse skill sets. It is also important to collaborate with potential users of a solution in the process of developing a solution. Literature states that collaboration with people from diverse functions, experiences and perspectives is core to the practice (Carlgren & BenMahmoud-Jouini, 2021; Liedtka, 2015).

Collaboration is crucial for need finding in the design thinking process. Potential users and customers of solutions are consulted to determine the actual need. This is done through ethnographic techniques. The result of such activities is typically journey maps and personas that help a team working on a project to understand the customer better. Customers are also consulted in the prototyping stage. After prototypes are developed, they need to be tested with actual customers to determine the parts of the problem they address and what deficiencies still exist for refining the solution. Literature has shown that this avoids the planning fallacy, where leaders tend to have an overly optimistic view of how well their ideas will be received (Kahneman & Tversky, 1979). These two stages show the importance of collaboration between a team and the customers or users of a

solution. Design thinking may flourish if collaboration is not a strong focus in an environment.

6.3.1.3 Organisational Work Practices

The research also found that existing work practices conflict with design thinking and hinder adoption. Existing work practices are ways of work that have been established over several years and have continued to produce results for organisations. These could be borne out of industry standards or continuous improvements of operations over time. The research found that people defer to what they know when they fail to understand design thinking. Organisations have established problem-solving processes based on the industry they are in. Industry standards may prescribe existing processes to mitigate risks, such as regulatory risks. For example, based on past experiences, mines may have processes that they follow in case of an incident. These processes are prescribed by the regulatory framework that governs the mining industry. These processes are put in place to protect both employees and employers. Having these constraints becomes a hindrance when managers want to introduce new problem-solving processes.

The research also found that, in some instances, organisations form special teams that solely focus on innovation. These teams are responsible for coming up with innovations for the whole organisation. Such a team within an organisation presents challenges when a manager wants to introduce an innovation practice to their team. The team feels it does not have the autonomy to innovate as another team has been specifically designated to innovate. This specially designated team is sometimes staffed with consultants. This presents challenges for the organisation because sometimes the consultants are too removed from the problem that a manager is trying to solve. They subsequently present solutions that may not be fit for purpose and are ineffective.

6.3.2 Personal Attributes

The research found one personal attribute influencing the decision to adopt design thinking. The personal innovativeness of a leader is an important characteristic of an individual intending to adopt an innovative practice. The following section discusses the finding in more detail.

6.3.2.1 Personal innovativeness

Literature defines personal innovativeness as the propensity to take risks that arise in some people and not in others (Agarwal & Prasad, 1998). Generally, innovative people cope better with ambiguity and can cope with change (Rogers, 2010). They are, therefore, likely to try new ways of doing things, such as design thinking. Innovative people generally seek out information new information and ideas around them and are willing to take on risks(Rogers, 2010).

The research found that participants need new information by attending design thinking training to get new innovative tools. Participants also demonstrated their ability to innovate through examples inside and outside their work environment. Through these examples, participants showed that they could identify problems and develop solutions with the help of others. This makes them have personal innovativeness and is consistent with existing literature (Agarwal & Prasad, 1998).

The challenge is that managers inherently are meant to solve problems in the processes they manage. This is done within the guidelines of the organisation. These guidelines constrain what managers can and cannot do and therefore could constrain the effort invested in adopting design thinking. Thus, it is likely that managers may be innovative, but the context in which they have to apply design thinking may have more challenges than they are willing to take on. These challenges include the organisational culture and work practices, as highlighted in the previous section.

6.3.3 Summary

The research found that while leaders are encouraged to use design thinking as demonstrated by their own personal innovativeness, there are organisational issues that hinder them from doing so effectively. Organisation cultures that are risk-averse, perfectionist and not collaborative are not conducive to implementing design thinking. These cultural attributes directly contradict how design thinking works, which is consistent with existing literature. Organisations' work practices also hinder leaders from adopting design thinking by constraining what cannot be changed about how work is carried out and the unwillingness to change existing work practices.

6.4 Discussion of results for research question three

How does the way in which leaders get to know about design thinking influence their decision not to adopt the practice?

The third research question explores how training and knowledge gathering influences the decision to adopt design thinking. Two themes were identified as influencing the adoption of design thinking: perceptions of design thinking and learning outcomes.

6.4.1 Perceptions of design thinking

This theme discusses the research finding through two categories: design thinking understanding and design thinking attributes. This provides a view of how participants in the research thought about design thinking. Their views are a direct consequence of the knowledge-gathering activities in the practice. The next two sections will discuss this in more detail.

6.4.1.1 Design thinking understanding

The research found that participants defined design thinking in various ways emphasising aspects of the practice that resonated with them, including viewing it as a need-finding, human-centric or customer problem-solving approach. The ability to solve a problem with the customer in mind came out strong. This is consistent with the literature on the definition of design thinking (Nakata & Hwang, 2020). Participants may have just focused on the aspects that resonated most with them in the design thinking

practice. This finding also speaks to what participants see as an important aspect of the design thinking practice.

Participants learned design thinking as part of an attempt to stimulate innovation. This was generally through a course they attended at school or some other initiative from their company. This means that sometimes the learning was not focused primarily on design thinking. In some instances, this framing created a negative perception of the participants' view of design thinking as a practice. In other instances, the framing around innovation created the correct context. The differing perspectives and learning outcomes are consistent with the literature. Coco et al. (2020) showed that learning design thinking is difficult because it challenges existing ways of doing things.

6.4.1.2 Design thinking attributes

The research found that participants understood what comprises design thinking. This was because they had an aspect of design thinking that they related well to. Literature has given different perspectives on what makes up design thinking (Micheli et al., 2019; Nakata & Hwang, 2020). It can be viewed as consisting of mindsets and tools.

The research found that participants focused mostly on the mindsets related to design thinking highlighted in the literature. This includes customer-centricity, combined with the need for empathy for the customer. One highlight was the view that customer-centricity must be connected to a business problem. Therefore, whatever customer problem is being worked on must drive organisational key performance indicators.

The research also found collaboration as an important attribute that participants related to. This confirms what is in literature as an important mindset in design thinking (Micheli et al., 2019; Nakata & Hwang, 2020). This attribute is what brings diversity into design thinking and problem-solving. An important characteristic of design thinking is the

reduction of bias in executing a design thinking project. Collaboration, especially with a diverse set of stakeholders, can assist with the reduction of bias.

The research found that participants also expressed what design thinking is based on the attribute they related with the most. This is important in design thinking training as it allows framing the training with what the trainees are most likely to relate with. This could currently be a hindrance to the adoption of the practice.

6.4.2 Learning Outcomes

This theme relates to learning outcomes of design thinking. It constitutes two attributes: mixed learning perceptions and mixed execution confidence.

6.4.2.1 Mixed Learning Perceptions

The research found that participants that described the practice as “abstract” and “complicated” highlighted the varied attributes of design thinking. A remark was made about the practice having too many things going on. This is consistent with existing literature. Carlgren, Elmquist, et al. (2016) found that design thinking relies on a wide variety of skills such as visualisation, analysing qualitative data, prototyping and the general mindsets required to engage in a design thinking project highlight what participants of this research were concerned about. Kurtmollaiev et al. (2018) also confirmed that while participants in design thinking training left the training excited and ready to make changes in their organisations, the training alone is not enough to translate into meaningful changes.

Others found the practice intuitive, not new and not complex at all. Some participants even went further to suggest that people make implementing the practice complicated. The challenge highlighted refers to the context in which participants needed to implement the practice in their organisation. Participants realised that they must contend

with environments with different mindsets and cultures. This implements design thinking a change management effort.

6.4.2.2 Mixed Execution Confidence

Rogers (2010) views the learning process as consisting of the awareness stage, understanding the principles of the innovation and then subsequently having the implementation knowledge of an innovation. In this research, the innovation is design thinking. While participants were all aware of design thinking, there was a split in the understanding of the principles and the confidence to apply the practice in their organizational context.

This further translated into participants not being confident about applying the practice in their contexts once leaving the training. This view is consistent with the literature. Carlgren, Elmquist, et al. (2016) found that it was difficult for trainees to apply design thinking in their contexts once they completed the training.

6.4.3 Summary

The research found that participants understood what design thinking is and its composition. Even with that understanding, it was still perceived as a complex method consistent with existing literature. This means that there was a mix of views on how participants understood design thinking which subsequently impacted the confidence that participants felt they could execute design thinking projects. Therefore, the knowledge of design thinking excited some participants into trying it out as it was seen as intuitive and scared some from trying it out as it was seen as complex.

6.5 Discussion of results for research question four

Research Question 4: What has persuaded leaders not to adopt design thinking?

The fourth research question investigates barriers that have persuaded leaders not to adopt design thinking. This research question aligns with the innovation-decision model's persuasion stage (Rogers, 2010). This process stage concerns an innovation's

relative advantage, compatibility, complexity, trialability and observability. There are four themes that the research uncovered that persuade leaders not to adopt design thinking. These include perceptions of design thinking, organisation context barriers and learning outcomes.

6.5.1 Perceptions of design thinking

Perceptions of design thinking relate to how participants of the research viewed design thinking. The research found one aspect of perceptions of design thinking that was important: the advantages and disadvantages of design thinking. This is consistent with the innovation-decision process at the persuasion stage, which assesses the relative advantage of an innovation. At this stage of the innovation-decision process, a leader would be deciding to adopt design thinking based on the relative advantage of design thinking. Relative advantage refers to whether an innovation is better than whatever came before it (Rogers, 2010). It also impacts the complexity attribute of the innovation-decision process. Complexity refers to how easy an innovation is to comprehend and utilise (Rogers, 2010).

6.5.1.1 Advantages and disadvantages

According to leaders, the research found that ability to solve complex problems was an advantage of design thinking. This is consistent with existing literature. As far back as 1992, Buchanan (1992) highlighted the importance of design thinking in developing solutions for wicked problems. This would imply that some existing methods are not great at solving complex problems.

A second advantage found in the research was the potential to deeply understand a problem, specifically using empathy in the process. Literature has highlighted design thinking as having good need-finding tools. Customer journey maps, jobs to be done, and other ethnographic tools have been proposed in the literature as a way for practitioners to understand problems better (Carlgren & BenMahmoud-Jouini, 2021;

Elsbach & Stigliani, 2018). This has been highlighted as superior to some existing methods, such as the stage gate model.

A third advantage that was highlighted was the ability of the practice to give a structured process on how innovation should be carried out. This makes the process of innovating less ambiguous. It provides something that people involved in developing an innovation can follow, which is typically important in established organisations.

While these three advantages made design thinking appealing, they did not seem enough to convince leaders to adopt the method. The research also found two critical disadvantages consistent with literature that challenge adopting design thinking.

A disadvantage in the research is that the practice spends much time understanding a problem. This may be a general incompatibility with cultures driven by deadlines and short-term key performance indicators. The same issue was highlighted in the prototyping stage. The time disadvantage is consistent with existing literature (Elsbach & Stigliani, 2018; Liedtka, 2015). This seemingly time-consuming aspect of design thinking is also meant to deal with biases introduced in the current way innovation is conducted within organisations (Liedtka, 2015).

The second disadvantage of the research is that design thinking requires collaboration from a large set of stakeholders. It is meant to bring a large set of stakeholders together to solicit a diverse set of inputs and leverage a diverse set of skills to implement a solution. Therefore, a number of people have to understand the practice for it to be useful inside an organisation. Ensuring that a large number of people understand the practice to add value to it is a challenge for leaders. They are therefore discouraged by the change management effort required to bring people along on the journey. This is because it would then require contending with existing practices and cultures in an organisation. The excessive resource requirements are consistent with existing

literature. Carlgren, Elmquist, et al. (2016) highlight that one of the challenges with design thinking is that it is considered a resource heavy.

6.5.2 Organisational Context Barriers

The second theme that affects the leader's adoption of design thinking is organisation context barriers. Two key barriers were identified namely organisational culture and organisation work practices. This impacts the innovation-decision process in the persuasion through the impact on trialability and compatibility. Trialability is the ability to test design thinking on a limited basis (Rogers, 2010). Compatibility is the degree to which design thinking is values, past experiences and needs of adopters (Rogers, 2010).

6.5.2.1 Organisational Culture

The research found that they do not have much influence in their contexts, they context with existing strong cultures within their organisation, and there are entrenched, existing practices. The ability to trial the method inside their organisation would have created legitimacy for design thinking. This view is consistent with Angelidou et al. (2022). A risk-averse culture does not see the need to test new ideas.

6.5.2.2 Organisation Work Practices

The research found that design thinking is compatible with how leaders work but conflicts with how their organisations want to work. Existing ways of doing things are so entrenched that people generally defer to what they know works in the organisation without giving design thinking a chance. This conflict with their implementation context has led to them not using the method. There are instances where participants have picked up some of the tools of design thinking and used them as part of their work. This process of integrating the practice into existing practices needs to be evaluated. Participants spoke of other pressures within their organisations that do not allow them to properly integrate design thinking, such as time and performance pressures related to their jobs.

6.5.3 Learning Outcomes

Learning outcomes is the last theme that was identified as impacting leaders' decision not to adopt design thinking. This is composed of two impediments: mixed learning and execution perceptions. This impact two innovation-decision process attributes in the persuasion phase. These are complexity trialability. Complexity refers to how easy design thinking is to comprehend and utilise (Rogers, 2010). Trialability is the ability to test design thinking in a limited setting (Rogers, 2010).

6.5.3.1 Mixed Learning Perceptions

The research found that there were mixed views on the complexity of the practice. Some participants viewed the method as abstract and complicated. This seemed to stem from the way the practice was introduced to them. Other participants viewed the practice as not complicated and easy to grasp. This is consistent with the literature.

6.5.3.2 Mixed Execution Perceptions

The research found mixed views on participants' confidence to execute a design thinking project. Those participants with a low level of confidence were less willing to execute a project and those who were confident were more willing to use the practice in a project. Even though there were mixed confidence levels, there was very limited evidence that participants had tried to use design thinking and failed.

6.5.4 Summary

Using the innovation-decision process as a backdrop, the research investigated why leaders do not adopt design thinking. The research found that in the perception of design thinking, the disadvantages outweighed the advantages of the practice. Organisational context barriers such as the organisational culture and work practices hampered the adoption of the practice. Lastly, design thinking learning outcomes reveal that while there were mixed views on whether the practice is complex or not, leaders were not

testing the method. It seems the context of their implementation is a primary reason they would choose not to use the method.

6.6 Conclusion

This chapter presented a discussion of the research findings of the research. The findings were presented in the context of the four research questions that the study sought to answer. The research questions were answered in the context of the innovation-decision process.

The first research question found that leaders understood innovation and their role in influencing an organisation to innovate. This was found to be consistent with existing literature. However, leaders felt they had limited influence on adopting design thinking. This is equally consistent with some existing literature. Contradicting literature exists as well that has shown that leaders also lead change. One of the key challenges with design thinking is that it challenges existing ways of communicating as it comes with its language.

For the second research question, the research found that existing practices, norms and individual innovativeness have influenced leaders not to adopt design thinking. Leaders demonstrated personal innovativeness and encouraged them to adopt design thinking. However, organisation cultures that are risk-averse, perfectionist and not collaborative are not conducive to implementing design thinking. Organisations' work practices also hinder leaders from adopting design thinking by constraining what cannot be changed about how work is carried out and the unwillingness to change existing work practices. Existing practices such as the stage gate model and agile are deeply entrenched in organisations, making it difficult to adopt something else.

The third research question investigated how knowledge-seeking affected the decision not to adopt design thinking. The research found that participants understood what

design thinking is and what it is composed of. Some leaders perceived the practice as complex, while others found it intuitive. This means that there was a mix of views on how participants understood design thinking which subsequently impacted the confidence that participants felt they could execute design thinking projects. Therefore, the knowledge of design thinking excited some participants into trying it out as it was seen as intuitive and scared some from trying it out as it was seen as complex.

The last research question investigated reasons why leaders do not adopt design thinking. The research found that the disadvantages outweighed the advantages of the practice. Tied to the disadvantages, organisational culture and organisation work practices hampered the adoption of the practice. The mixed views on the complexity of the practice and confidence in execution also impact the decision to adopt.

The next chapter will use the results to present recommendations on what can be done to improve the adoption as well as highlight the contribution of the research.

7 Conclusions and Recommendations

7.1 Introduction

The importance of innovation to organisations was discussed in chapter 1. While organisations are encouraged to innovate, innovation efforts fail, and it is important to have practices that improve the innovation outcomes of organisations. Design thinking has been proposed as a way to improve organisations' innovation outcomes. While there has been training invested in design thinking for leaders to cope with the complex nature of problems that they encounter, some leaders seem not to be adopting the practice. This research explores why leaders are not adopting design thinking more to take advantage of the innovation potential of the practice.

This chapter presents research findings and discusses the contribution to academia and business. It also highlights the limitations of the research and recommends avenues for future research.

7.2 Principal Findings

The research sought to understand why leaders do not adopt design thinking. This was the primary research question that the research needed to answer. A component of diffusion theory named the innovation decision process was used to answer the research question. This gave rise to four sub-questions to the primary research question.

7.2.1 Lack of influence

The first research sub-question sought to understand how leaders see their role in adopting design thinking. The research found that leaders understood innovation and their role in influencing an organisation to innovate. This was found to be consistent with existing literature. However, leaders felt they had limited influence on adopting design thinking. While contradicting literature states that leaders are the best people to lead change, there was supporting literature that showed that with design thinking, the ability to influence change is a challenge. Therefore, while leaders want to influence the adoption of design thinking, it is not an easy task.

7.2.2 Limiting Organisational, existing practices

Through the second research question, it was found that while leaders demonstrated personal innovativeness and wanted to adopt design thinking, organisational culture and existing practices stood in the way of adopting. Organisation cultures identified as risk-averse, perfectionist and not collaborative hindered the adoption of design thinking. Therefore, when managers saw that they could not go against these cultures, they gave up. This was found to be consistent with existing literature. Existing innovation practices, such as the stage gate model, were found to be deeply embedded in organisations and not easy to displace.

7.2.3 Poor learning outcomes

The third research question found that participants understood design thinking, but the training left participants with mixed feelings. Some perceived it as complex, while some perceived it as intuitive. This variation of perceptions also carried through into the ability to execute the practice outside the training environment. This, therefore, led to mixed views on the decision to adopt the practice.

7.2.4 Recommendation

It is therefore recommended that the innovation-decision process include change management as part of transitioning between acquiring the knowledge and testing the practice out in an organisation. This should ensure that resistance to the use of the practice is minimised.

7.3 Implications of research

7.3.1 Management Implications

The research found that managers sent on design thinking are excited about the prospect of developing innovation in their organisations but are hampered by the inability to influence their organisations to test out the practice for eventual adoption. It is, therefore important for organisations to review how they want the design thinking knowledge acquired by managers to be integrated into the rest of the organisation to maximise the benefit of the training.

Two important findings from the research noted that organisational culture and organisational work practices hinder the adoption of design thinking. It is, therefore important to understand the organisational mindsets and ways of working that can potentially impede design thinking adoption. This can help design specific interventions in the organisation to ensure that it is better received as managers start introducing design thinking.

7.3.2 Academic Implications

This research has helped extend the literature on implementing design thinking within organisations.

7.4 Limitations of research

This research was an exploratory study and, therefore subject to limitations. The following limitations are recognised due to the research design and scope:

- **Generalisability:**
The research was exploratory in nature, so the generalisability of the results is impossible.
- **Bias:**
The research study's exploratory nature makes it prone to bias. The researcher declared their bias regarding their interest in the as part of the methodology. There is also inherent bias in how the results are interpreted, as this is reliant on the researcher's perspective.
- **Time:**

The research was conducted as a point-in-time cross-sectional study observing to understand a phenomenon. Over time these opinions change. Therefore no inferences can be made about other periods.

- Participants:

The research participants were within the Gauteng area and sourced from the researcher's network. A majority of these participants are students of GIBS.

7.5 Recommendations for future research

Based on the findings of the research study, there are a few avenues of further research are proposed:

- Focus on a specific industry:

This research cut across industries in South Africa. There are possible nuances that exist within each industry that require focus as some of the literature has shown, industries where specialisation is an important struggle with implementing design thinking.

- Focus on design thinking learning outcomes and intention to adopt:

Learning outcomes of design thinking were identified as an important theme in this research. Participants in design thinking training seemed to come out with mixed views on whether they could implement the practice on their own or not. This needs to be further understood to identify other factors that affect the ability of someone to execute a design thinking project. These factors could be both organisational and personal. This insight can be used to improve the learning outcomes of design thinking training.

- Focus on the impact of change management to design thinking adoption:

The research revealed that part of the reason why leaders struggle with design thinking is the poor change management processes that happen in their organisations. A follow on research would be to understand the types of change management interventions that help adopt design thinking. It would also be important to investigate whether giving design thinking trainees change management training as a core part of the training improves the likelihood of adoption.

- Focus on the role of industry-specific design thinking training and adoption:

One of the insights gleaned from this research is that different industries view the attributes of design thinking differently. For example, participants highlighted that examples provided in design thinking training are focused on software-related problems. This makes it easy to prototype but difficult to relate to when in a different industry. Therefore future research can focus on whether industry-tailored design thinking training improves adoption.

7.6 Conclusion

This research has provided insights into the adoption of design thinking by leaders. 13 managers were interviewed using questions framed by literature and the diffusion of innovation's innovation-decision process. The findings revealed that the lack of influence, poor learning outcomes, organisational culture, existing work practices, and existing innovation practices hindered the adoption of design thinking. It was therefore recommended that change management be added as part of the innovation-decision process to improve adoption. This research extends the literature on the implementation of design thinking. It also helps trainers and organisations understand why trainees could be struggling with adopting design thinking.

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9 Appendices

9.1 Appendix A: Consistency Matrix

Research Question	Literature	Data Collection	Data Analysis
How do leaders see their role in the adoption of design thinking?	(Micheli et al., 2019); (Nakata, 2020); (Liedtka & Kaplan, 2019); (Alblooshi et al., 2020); (Khalili, 2016) ; (Kim & Yoon, 2015) ; (Slåtten & Mehmetoglu, 2015); (Cortes & Herrmann, 2021).	Semi-structured questionnaire	Thematic analysis
How do existing practices, norms and personal innovativeness influence the decision not to adopt design thinking?	(Carlgren & BenMahmoud-Jouini, 2021); (Carlgren, Elmquist, et al., 2016a); (Nakata, 2020); (Acar et al., 2018); (Nakata & Hwang, 2020); (Elsbach & Stigliani, 2018); (Rogers, 2010).	Semi-structured questionnaire	Semi-structured questionnaire
How does the way in which leaders get to know about design thinking influence their decision not to adopt the practice?	(Carlgren, Elmquist, et al., 2016a); (Coco et al., 2020); (Meinel et al., 2020); (Rogers, 2010).	Semi-structured questionnaire	Semi-structured questionnaire
What has persuaded leaders	(Nakata & Hwang, 2020); (Acar et al., 2018);	Semi-structured questionnaire	Semi-structured questionnaire

not to adopt design thinking?	(Carlgren, Elmquist, et al., 2016a); (Beverland et al., 2015); (Dell'Era et al., 2020).		
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9.2 Appendix B: Consent Form

**Gordon Institute
of Business Science**
University of Pretoria

Dear Participant,

My name is Brighton Ravele, and I am currently a student at the University of Pretoria's Gordon Institute of Business Science, completing my research in partial fulfilment of an MBA.

Innovation is an important topic for all leaders. Design thinking has been identified as one of the best practices to improve innovation outcomes. However, evidence suggests that leaders are struggling to adopt the practice as a problem-solving technique. For this reason, I would like to ask you questions to better understand why, as a leader, you have struggled with adopting design thinking.

I have prepared questions that I will use to facilitate the conversation. The session should take no more than 60 minutes. Your participation is voluntary, and you can withdraw anytime. Your answers will be treated confidentially, and therefore you will not be specifically cited in the final report. The final report will be used to advance studies in the field of innovation and design thinking.

To analyse your answers, will you allow me to record the interview (YES. / NO)?

Signature of Participant: _____ Date: _____

Should you have any questions or queries, please feel free to contact myself or my supervisor on the contact details below.

Brighton Ravele
14418178@mygibs.co.za
083 332 7624

Hugh Myers
Myresh@gibs.co.za
083 302 3802

9.3 Appendix C: Semi-structured interview guide questions

No.	Question Guide
1.	<ul style="list-style-type: none"> a) What is your age range? 20-30, 30-40, 40-50, >50 b) What industry are you in? c) How long have you worked in your field?
2.	<p style="color: red;">How do you understand innovation?</p> <ul style="list-style-type: none"> a) How do you see your role in the adoption of new innovation practices? b) What are your thoughts on how innovation should be carried out? c) What are some of the innovations that you have participated in driving in the last three years? d) What have been some of the innovation practices you have been using before encountering design thinking? <p style="color: red;">Describe design thinking?</p>
3.	<ul style="list-style-type: none"> a) How did you find the learning process of design thinking? b) To what extent do you feel competent that you can guide people through the execution of a design thinking project?
4.	<ul style="list-style-type: none"> a) Please describe where you have seen other people execute design thinking. b) To what extent have you used design thinking outside of the training? c) Are there advantages that you see to using design thinking and what are they? d) Do you believe design thinking is compatible with the way you work? e) Do you think the method is complex? Please give reasons for your answer. f) What would encourage you to use design thinking more?

Appendix D: Code to theory model

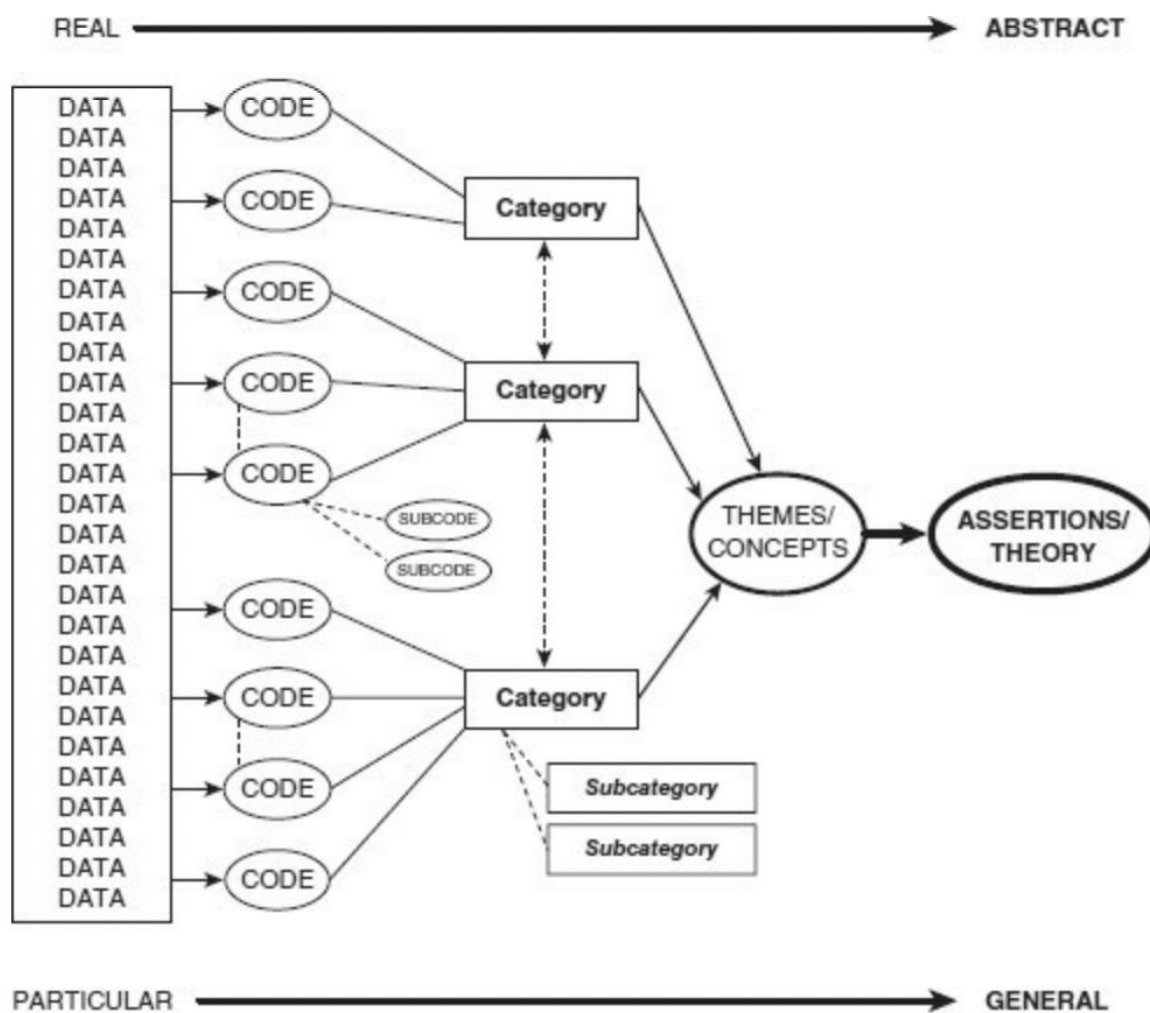
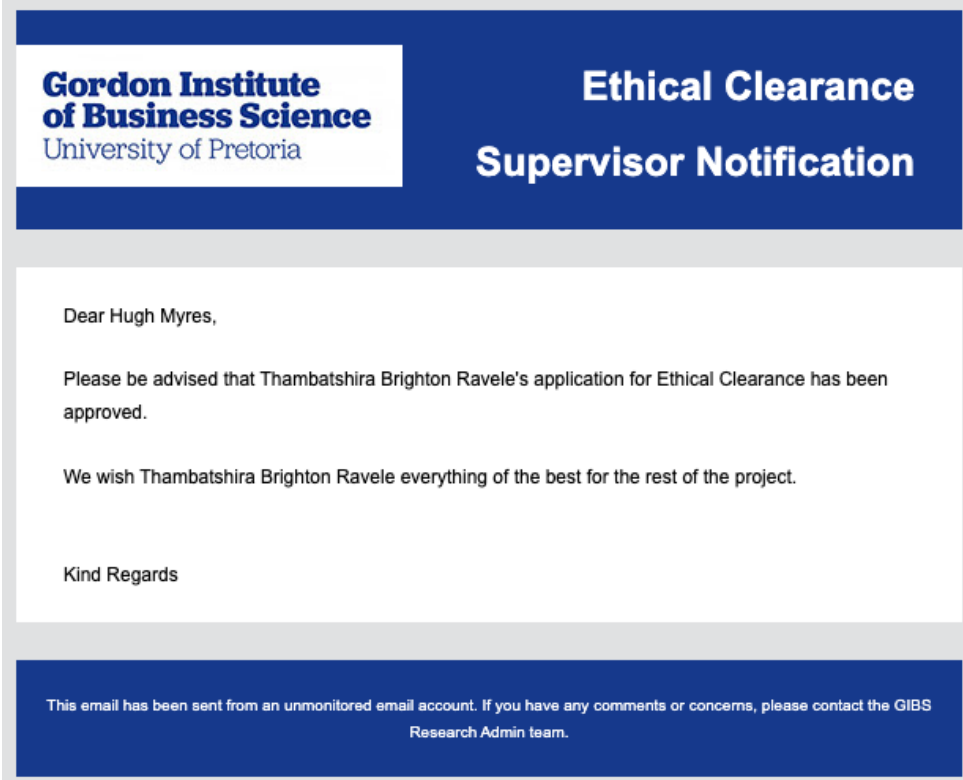


Figure 7 Code to theory model

Source: (Saldana, 2016)

Appendix E: Ethical Clearance Confirmation



The image shows a template for an email notification. It features a dark blue header with the Gordon Institute of Business Science logo on the left and the title 'Ethical Clearance Supervisor Notification' on the right. The main body is white with a light grey border, containing a salutation, a confirmation of approval, a well-wish, and a sign-off. A dark blue footer contains a disclaimer about the email account.

**Gordon Institute
of Business Science**
University of Pretoria

**Ethical Clearance
Supervisor Notification**

Dear Hugh Myres,

Please be advised that Thambatshira Brighton Ravele's application for Ethical Clearance has been approved.

We wish Thambatshira Brighton Ravele everything of the best for the rest of the project.

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

Appendix F: Themes and codes List

Theme	Category	Code
Innovation Perception	Existing Methods	Agile Waterfall method Stage gate model Innovation process Issue with not having a process Similar to design thinking Prescribed innovation guidelines No prescribed guidelines Process should not be too prescriptive
	Perception of innovation	Problem identification responsibility Assigned a problem Creativity in innovation Deferring to a special group of people Freedom to innovate Bandwidth to innovate
Personal Attributes	Innovativeness	Personal innovativeness Positive role relationship to innovation
	Ability to influence existing practices	Influence No influence
Perceptions on Design Thinking	Design Thinking Understanding	Design thinking definition Innovation definition Interest in the design thinking Human computer interaction
	Identified Design Thinking Attributes	Complex problem solving Design thinking attribute Collaboration Challenging assumptions Customer experience driver

Theme	Category	Code
		customer centricity Iterative Empathy Connecting with a user and business problem Diversity advantage Design thinking to KPI
	Perceived Advantages and Disadvantages	Design thinking advantage Design thinking disadvantage Speed to market
Organisational Context Barriers	Organisational culture	Fear of failure in adoption Risk averseness in adoption No collaboration Culture issues Short-term perspective Reputational risk fear Time constraint No industry innovation
	Organisational Work Practices	Deferring to the familiar Concrete outcomes required
	Organisational Change Management	Organisational buy-in Educate workspace more on design thinking Championing adoption No follow through More practical examples
Learning Outcomes	Straightforward Practice	Abstract method
		Complicated practice Not complex People make it complex

Theme	Category	Code
		Not a new thing Thinking modes
	Mixed Learning Perceptions	Undetailed introduction
		Not difficult to learn Daunting practice Not make sense
	Mixed Execution Confidence Levels	Not confident
		Confident of method