



Design Thinking Skills for Senior Managers from Business and Technology Perspectives

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ABSTRACT

Design thinking is regarded as a non-linear iterative process that is applied in a bid to understand users, identify problems and develop innovative solutions to problems. The concept of design thinking has attracted interest from professionals across sectors. Although design thinking has been traditionally applied by design professionals the tool has proved effective in managing organizations. Several leading businesses have reported having applied design thinking to achieve organizational success. The strategy is emerging as a critical tool for businesses seeking to advance their competitive strategy. The paper seeks to create an understanding of the concept of design thinking and how it is applied in business management. Consequently, the paper seeks to analyze the advantages and disadvantages of design thinking in relation to enhancing business performance.

Methodology: This section outlines the techniques that will be used in collecting information. The study will make use of interviews from business leaders and professionals in the field. Questionnaire is used as a guide for undertaking the interviews. Qualitative and quantitative analysis is be used in analyzing the data obtained. Design thinking has been an instrumental strategy in promoting business success. Business leaders are benefiting from the application of this strategy in realizing success for their organizations. However, the strategy has not received much appreciation from small organizations and hence suggested as a turnaround concept in business performance. The findings successfully answer the question regarding the pros and cons of applying design thinking strategy in business. The study finds that design thinking is a contributing factor to business success and hence a concept that should be applied in facilitating business operations.

1. INTRODUCTION

The concept of design thinking emanates from the design field and has attracted significant interest from academicians and practitioners due to its capacity to provide a novel approach to problem-solving and innovation (Wilden and Gudergan, 2017). In an environment that is increasingly growing in all aspects of development including technological innovations and the existence of complexities in the field of enterprise design

thinking comes in handy to offer the solution. Design has an indispensable role to play in enhancing progress within a society by transforming the prevailing conditions to match the evolving circumstances in a complex world. Designing thinking constitutes the understanding of expertise and the component of expertise in design thinking (Foster, 2021). Additionally, design thinking constitutes the ability to equip an

individual with the requisite knowledge of developing new means to solve existing challenges. Design problems are a challenging and complex concept and consist of various challenges in the practice arena (You, 2022). Regardless of its structure and complexity designs provide creative ways of solving problems and as such creative designers are important contributors to solutions. The concept of design thinking is gradually evolving into a paradigm that is aimed at solving various problems in various sectors of the economy including business (Razzouk and Shute, 2012).

Practitioners have put across various views concerning the concept of design thinking (Al-Kassem et al., 2022). For instance, in a growing world of business design thinking has been defined as a discipline that makes use of the designer's methods and sensibility to match the needs of the consumers with a technologically feasible solution that will enhance the adopted business strategy to achieve consumer value as well as strengthen the market opportunity (Lor, 2017). Design thinking is, thus, viewed as a means of identifying people's needs and consequently providing new solutions through the use of the mindset and tools of design practitioners. Due to the massive benefits accrued to design thinking, there is a growing interest to develop design thinking skills in students at an early stage for future application. Researchers have also argued that design thinking can also be presented to non-designers as this concept proves a crucial element in solving existing life challenges (Fabri, 2015). Several projects have been launched to ensure the upcoming generation of business leaders has requisite design thinking skills (Muhammad Turki Alshurideh et al., 2022d; Colbert et al., 2016; Farrukh et al., 2023; Kassem and Martinez, 2022). The projects include incorporating design thinking as a modern learning paradigm. The objective is to ensure the students are equipped with critical thinking skills and gradually adapt to this form of thinking in solving problems from an early stage. Businesses are increasingly adopting this approach and hence a critical tool for managers in the existing world of business (M. Alshurideh et al., 2023; Elsbach and Stigliani, 2018).

Design thinking is viewed as an iterative process that seeks an understanding of the challenges, user, and assumptions and consequently redefines the

problems as a means of providing alternative strategies that may not be apparent to the initial understanding in solving the challenges (Muhammad Turki Alshurideh et al., 2022a; Khan et al., 2022; Lee et al., 2023). Due to its broad application design thinking cuts across various sectors within an economy and hence is not exclusive to designers (M. T. Alshurideh et al., 2023a, 2023c; Louzi et al., 2022a). Great innovators and business leaders have adopted the strategy of design thinking in influencing changes within the various facets of life. Design thinking portends that the work process by designers can assist in systematically extracting, teaching, learning, and consequently applying the skills to solve challenges innovatively (Abudaqa et al., 2022; Hani Al-Kassem, 2021). The domain of design has a significant impact on value creation for the users. The complexities in the evolving globalization strategy have increased competition in the business arena. Companies are struggling to adopt competitive strategies to cut a market niche. Various modern strategies have been employed by businesses in enhancing competition in the market. Design thinking has been one of the emerging competitive strategies adopted by managers in the leading world. The 20th century saw businesses adopting certain models and strategies for enhancing business such as business process re-engineering and supply chain management. The modeling of business processes has been a response to emerging challenges in the business world. However, the success of business in the 21st century which is characterized by innovation is pegged on superior uniqueness and creativity (Arshad et al., 2023; T M Ghazal et al., 2023b).

The recent decades have increased the necessity of redefining skills allowing actors to understand and respond to the rapid changes in the environment (Al-Dmour et al., 2023; Al-Kassem, 2017; Aziz et al., 2023). The world has increasingly become interconnected and complex making design thinking the best tool to solve challenges (H. M. Alzoubi et al., 2022b; Blooshi et al., 2023). Design thinking provides a means of influencing thinking change in the leadership of an organization. The process of design thinking assists designers in carrying out the right form of research in creating prototypes and testing products and services to produce new ways of meeting existing needs (R. S. Al-Marroof et al., 2021b; Alshawabkeh et al., 2021; H. M. Alzoubi

et al., 2022d; Kurdi et al., 2022; Mohammed T. Nuseir et al., 2022). Most of the leading organizations such as Airbnb, Google, and Apple are examples of businesses that have adopted design thinking as a strategy to achieve global success. The increasing technological advancement has forced the leading giant in technology to innovate to remain competitive (M. Alshurideh et al., 2022; Louzi et al., 2022b). These companies have also adopted best practices that aim at strengthening their staff through skill development. By realizing the value of employee and investing in them these companies have recognized the critical aspect of each individual to the success of an organization (Aljumah et al., 2023; Bawaneh et al., 2023). The successes achieved by these high-profile businesses have influenced the concept of design thinking to be incorporated into a learning institution (Al-Kassem, 2014; A. Al-Marouf et al., 2021; R. S. Al-Marouf et al., 2021a; E Tariq et al., 2022).

Design thinking has been valued in the adult world as well as in higher education. However, the discipline of design thinking has been introduced even to younger scholars (Al-Marouf et al., 2022; Aljumah et al., 2020). Design thinking has been introduced into k-12 education and serves as an innovative way of imparting knowledge to the younger generation (Mat Som and Kassem, 2013). For younger learners, design thinking is taught by incorporating it with other subjects such as engineering, science, and technology (Aljumah et al., 2021a; Nuseir et al., 2021). Design thinking integrated learning incorporates design thinking and is a new approach for the nonprofessional design fields aiming at enhancing problem-solving skills among students (El Khatib and Ahmed, 2020; M T Nuseir et al., 2022a). Through this approach, students are expected to grow practical and thinking capabilities. The role of design thinking in the learning process aims at developing learners' competencies critical for leadership in the 21st century (Al-Kassem et al., 2013; El Khatib et al., 2020b; Nuseir and Aljumah, 2022). The design thinking process has been used in an extensive field of education through its incorporation in various learning models such as the four-step Double Diamond Model (Discover, Define, Develop, and Deliver) (El Khatib et al., 2019; Gulseven and Ahmed, 2022; E. Khatib et al., 2022, 2021). As an innovative strategy, the model has accomplished a

lot in changing the mode of thinking and delivering change in various institutions (Ahmed et al., 2022; Al-Kassem et al., 2012; Amiri et al., 2020). Instilling the knowledge of design thinking for students at young ages prepares them to handle complex problems in future and consequently make better leaders.

1.1. The Research Problem

This research seeks to address the limited understanding of design thinking skills and how it is enacted in real practices. Additionally, the research undertakes to address the pros and cons of design thinking skills as well as the challenges and opportunities that the strategy faces. A core component in solving the research problem requires an in-depth understanding of how the different components of design thinking relate. The research problem emanates from the increasing complexity of the globalization process that has a significant influence on the performance of businesses. There is a need to undertake an evaluation of challenges faced by managers and the approaches that have been previously used to handle the challenges. Such an approach helps in unearthing the impact that design thinking strategy has in solving 21st-century management problems in enhancing decision-making.

1.2. Problem Justification

The practice of designing thinking has not been rampant among many managers as it has been left to professionals in design. However, the tool is effective in enhancing and sustaining the growth of businesses as is the case for Google and Apple among other business giants. There exists limited research that examines the concept of design thinking in applicability and hence limited information on the influence the applicability of design has on business performance. There is an increasing desire among young professionals and leading business managers to understand how design thinking can be enacted in practice. Additionally, these professionals need to understand the design's capability requirements and how they can inform the design thinking process. Having a better knowledge of design thinking tools and problem-solving as well as value creation assists in broadening economic knowledge.

1.3. Hypothesis

- 1: Design thinking brings immense benefits in turning around managers business performance
- 2: The cons in design thinking hinder business performance by managers

2. LITERATURE REVIEW

A design thinking literature review is provided in the chapter and provides an insight into the current understanding of the concept and practice of design thinking in line with the advantages and disadvantages. The literature review focuses on the design thinking tool as an approach used by large organizations to influence change in their performance (Ahmed and Nabeel Al Amiri, 2022). The chapter also provides how the concept of design thinking has achieved wider recognition and applicability by multiple organizations and how this approach has been promoted as a panacea aimed at addressing business problems. It is, therefore, critical to undertake an analysis of the design thinking concept from various perspectives and analyze the advantages and disadvantages of the same.

2.1. Perspectives on design thinking

Design thinking has been evolving over time and hence understanding the perspectives of design thinking skills is critical in appreciating the pros and cons following the applicability of the process (Alshurideh et al., 2020; H. M. Alzoubi et al., 2022c). Various perspectives of design thinking skills have been adopted and include the cognitive style, the general theory of design, and in its context as an organizational resource (H. M. Alzoubi et al., 2022a).

2.2. Cognitive style

One of the advantages of cognitive style in design thinking helps organizations to have a clear understanding on the methods and processes used by designers to solve existing challenges (Almasaeid et al., 2022; Alzoubi and Ahmed, 2019). The understanding of design thinking from this perspective assists the professionals to initiate processes that will influence positive change in the performance of an organization. According to the cognitive style the origination of design thinking emanates from a stream of research undertaken in the 1960s with its focus on understanding the methods and processes that designers use when

engaging in design (M. T. Alshurideh et al., 2023d; Taher M. Ghazal et al., 2023; Nadzri et al., 2023). This concept has grown over time to encompass investigations aimed at understanding cognitive processes used by successful and expert designers in solving problems. From the cognitive perspective, design thinking is applied in exploring the decision-making process by design experts a process termed as design thinking. The term was initially noticed by (Varma et al., 2023) while studying the thought process of designers when undertaking urban planning and architectural works (Abudaqa et al., 2021).

Another advantage of this perspective is that design thinking aims at creating an understanding and describing the thinking process by the designers in action. This assists the designers to modify the process to meet set objectives. Further (M T Alshurideh et al., 2022) termed the thought of the designers and the end product as the designer's way of knowing. (Alzoubi et al., 2020) uses the terms design-as-practice and design-in-practice in describing the various forms of practices in research design. The focus of design-as-practice is on the design, accomplishment, and embodiment of the design involving the people and artifacts. On the other hand, design-in-practice recognizes the design outcomes and acknowledges that there may be multiple solutions to addressing the desired outcomes (Muhammad Turki Alshurideh et al., 2022c). This focus offers an extension to the understanding and description of design thinking through the separation of the two components with one focusing on the designing practice while the other focuses on the process outcomes (Alzoubi et al., 2019; Sakkthivel et al., 2022).

A major disadvantage in this approach is that although the results of these designing activities are straightforward, the process in these examples is insufficient for understanding the general concept of design thinking. The understanding in this context is only for the tangible things and hence fails to explain the intangible things such as the thought process that molds human behavior and emotions. (Ahmad Ibrahim Aljumah et al., 2022b; Nuseir, 2020; Yasir et al., 2022) notes that although various studies have been undertaken in a bid to understand and offer a description of what professional designers do in designing their work it fails to yield an informed knowledge on describing design thinking (Abudaqa et al., 2020; El

Khatib et al., 2021; M. El Khatib et al., 2022b, 2022a). Additionally, the research fails to yield sufficient information to describe how the designers adopt a certain cognitive style. (H. M. Alzoubi et al., 2022f; El Khatib and Ahmed, 2018) make use of a different strategy to understand the cognitive aspect of design thinking.

2.3. *The general theory of design*

A critical advantage of design thinking as posited by the general theory of design is that it major focuses on the aspects surrounding the real problems and consequently engages in developing solutions targeting on the specific problems (M. T. Alshurideh et al., 2023b; Muhammad Turki Alshurideh et al., 2022b). Under such a strategy, the professionals are able to focus on the real problems rather than instating general strategy that may fail to address existing problems. The basis of the general theory is that the design of an idea cannot be developed without the existence of problems. The idea of liberal art makes it possible to apply design thinking to both tangible and intangible systems. (T M Ghazal et al., 2023a, 2023c; Mubeen et al., 2022) argues that several design problems are wicked problems and much creativity is needed in acquiring solutions. The nature of problems is that they tend to generate certain wicked demands that seek a solution to social problems (El Khatib, 2015; Khatib and Opulencia, 2015)(El Khatib et al., 2020a; M. El Khatib et al., 2021). The design approach must be in a position to solve complex problems in environments and ecosystems that are faced with complex problems. The design thinking approach is, thus a tool that is fundamentally engaged in solving a wicked problem. (El Khatib and Ahmed, 2019; M T Nuseir et al., 2022b) argues that various professionals have different aspects of design applicable to solving complex problems facing humanity. Every individual undertakes to innovate and create a design to solve an existing problem. As such every action is aimed at creating a better world with fewer problems and complexities (Nuseir, 2021).

Another advantage of design thinking is that it can be incorporated by organizations and by professionals who are not design professionals in enhancing success for their organization. (AlDhaheri et al., 2023; Khatib et al., 2022) cites Henry Ford and Thomas Edison as good examples of design thinkers who have employed the practice

of design thinking in their practices and are not professionals in the field. (H. Alzoubi et al., 2022; Gaytan et al., 2023) further argues that designers can incorporate design thinking in their work and this provides them with an innate capability to work systematically and to achieve their vision. There is need to undertake integration of design thinking into the curriculum by creating a connection between what things ought to be and how things are. The difference in the two aspects of how things are and how they ought to create a problem that requires a solution (Ghazal et al., 2021; Nuseir and Aljumah, 2020). Incorporating design thinking in higher education thus challenges and assists students to develop solutions to problems being realized. This idea has been reinforced by other scholars who feel that behavioral economics and artificial intelligence must be incorporated to produce a broader value that complements science and plays a useful underpinning in challenging solutions to various professions (Nuseira and Aljumahb, 2020). The argument posited by these scholars is that the domain is not an exclusive concept of designers but can be executed by individuals across disciplines to yield the desired change (Akour et al., 2021).

2.4. *Organizational Resource*

The organizational resource has emerged as a third discourse that scholars have pursued to understand the concept of design thinking. The growing business world creates significant challenges for leaders that require them to make informed choices for the betterment of their organization. Design thinking is beneficial through its integration in business performance as a means of solving an array of business challenges such as difficulties in technological integration. The 21st century places design thinking as an approach used by organizations to solve existing business challenges. Additionally, (I. A. Akour et al., 2022) identify design thinking a strategy that enhances capability across a company and contributes to enhancing the responsiveness of a business to changes. However, little information exists as to how responsiveness occurs in practice. There is a need to undertake studies to determine the relationship between design thinking and organizational models (I. Akour et al., 2022). The possibilities as well as the situation facing an organization can be explained from the perspective of design thinking (AlHamad et al., 2021). Design

thinking skills make it possible for business leaders to evaluate the root cause of a problem, develop a mechanism that can solve the problem, and consequently implement the desired strategy. Business leaders seek to maximize the growth of their companies by solving certain problems facing the market as well as by addressing the internal challenges that a company may be facing (Al-Marouf et al., 2022; Ahmad Ibrahim Aljumah et al., 2022a).

Research design appears to be complex especially for employees who do not have experience in designs. The disadvantage in this is that most organizations find it hard to integrate the concept into their operations. Additionally, although this discourse is widely discussed little is known about how it has impacted the performance of various businesses. There has been continuous research in this field with practitioners and academicians trying to define the challenge. The literature on this field draws from academic research as well as from the practitioner's point of view (A I Aljumah et al., 2022a). The information, thus, emanates from the opinion as well as experience of diverse scholars in the study. The concept of design thinking emanates from the IDEO (Discovery, Interpretation, Ideation, Experimentation, and Evolution) process model (Emad Tariq et al., 2022). The concept of design thinking under IDEO explains the work of designers and is a significant component of design thinking. The concept adds value to innovation and plays a critical role in delivering solutions to global challenges. However, its complex nature makes it difficult for small organizations to incorporate the concept in their processes.

(Akour et al., 2023; H. M. Alzoubi et al., 2022e) outlines the concept of organization resource as a revolutionary strategy in business growth. The design thinking concept has been gradually evolving as an organizational resource. Although there might be disparities in literature among various scholars there are consistent sentiments concerning the concept of design thinking as an organizational resource. One of the sentiments is that design thinking is purposed to create innovations and solve problems. Another sentiment is that design thinking is centered on humanity and hence puts the need of people first. Design thinking is, thus, viewed as an iterative and collaborative process that starts with generating insights intended for the end user, to the

generation and testing of ideas, and implementation of the same. It is, therefore, an integrated approach that has major components of engagement and participation. Although there is a congruency in the definition of design thinking there exists uncertainty as to what the tool can achieve and to what extent

(A. Al-Marouf et al., 2021) outlines lack of clarity as a disadvantage of the concept and hence not useful in influencing positive change among businesses. The article notes that although design thinking is impactful in revolutionizing business performance the process is discussed simplistically. Business leaders must change their perspective in applying the new concept in management. Design thinking is not just a tool for professionals but should be trained for people across platforms. The achievement of an organization depends on overall input by every player in an organization. The concept of design thinking has received criticism from certain quarters with certain scholars describing it as a passing cloud (Aityassine et al., 2022). This is because there is a lack of clarity on the value and the ability of design thinking to effect changes in business processes.

Various weaknesses have been identified concerning the concept of design thinking from the perspective of an organizational resource. One of the weaknesses is the presence of little empirical depth since the majority of the information is based on opinion and experience and is either semi-practitioner or semi-academic motivated. The idea of it being semi-academic and semi-practitioner provides room for authors to report positively on the concept rather than engaging in critical analysis on the value and ability of the concept to influence change. Due to these reasons, researchers tend to portray design thinking as a panacea to innovation and a tool to solve organizational problems. There is little evidence of direct input and output causation as a result of the application of the design thinking concept. The lack of consensus on the definition of the concept also creates doubt as to the impact and value of the concept (Al-Awamleh et al., 2022). However, this study adopts the definition of design thinking as a collaborative and human-centered approach that aims at solving problems and enhancing innovation.

2.5. Application of design thinking in practice

Various aspects appear under the application of design thinking in a practice in a bid to review how the process has been applied to stimulate changes in organizations. This segment starts with exploring the design thinking process, followed by a discussion on design-led professionals, and then an analysis of the environment under which the design thinking process is applied. Undertaking an analysis considering the interrelationship between the three aspects provides an in-depth understanding of the operationalization of design thinking in yielding the required results.

2.6. Design thinking methods and process

The design process according to (T M Ghazal et al., 2023a) is linear and encompasses two components. The first component is the definition of the problem. At this stage identification of various challenges that design thinking is poised to solve is undertaken. The actor at this stage outlines the various problems and considers various ways in which solutions can be obtained before arriving at a specific choice of solution. The second component of the design process is the problem solution. The solution emanates from a well-thought-out strategy that has been designed following the identification of a challenge. A major disadvantage on the methods and process is that it provides a weak overview on how it is poised to solve existing problems. Critics argue that this simplistic definition of the design process is weak and that the design process has no predefined steps and as such are no-sequential. (Arshad et al., 2023) note that the identification of problems and establishment of solutions to the problems is a representative of a practice that defines managerial duties. The critics feel that although definite stages may be identifiable in the design process there is no single agreeable sequence of the stages. The stages from the identification of the problem to the solution end are dependent on the nature of the problem. Different issues will require varied stages and sequences. (Gulseven and Ahmed, 2022) affirms the same scenario by arguing that there are no definite steps in which the various stages can be navigated.

(Nuseir et al., 2020) outlines the lack of insight as to what tool should be used at what stage in the design process to enhance innovation and business growth as a major limitation of the process. Various methods such as visual thinking, prototyping, and

brainstorming have been enumerated as perfect tools in the design process (Nuseir and Elrefae, 2022). Although the available literature agrees that a design process is a systematic approach there is a lack of agreement as to which phase should follow the other. There is also limited insight concerning the tools to be used in each stage. There is a need to have an understanding of how design-led professionals undertake certain activities in identifying with the thinking process.

2.7. Advantages of the design-led professional influencing change

The design-led professional has a certain impact on the design thinking process. Getting the right design does not entirely require a designer but the right designer who will apply a design thinking approach in establishing a solution to existing problems based on their capabilities. Given this perspective, a design-led professional can bring a significant influence on the application of the design thinking process. The design-led professional is a significant game changer in the achievement of business objectives by influencing positive change in strategy (El Khatib, 2015). Positive results can only be realized depending on the capabilities of design-led professionals. The mindset of the professional is, thus, critical in ensuring the adopted strategy realizes the projected goals.

The creation of successful design solutions requires the design-led profession to have the right mindset. The right mindset influences the processes and steps taken in addressing a certain problem. The mindset of the leader and the team where a team is involved can make or break the process of design thinking. (Khatib et al., 2016) affirms the importance of mindset after identifying that many people desired to have a mindset change following a design thinking experience. Although mindset has been described as vital in influencing the design thinking process little information is available on how the right mindset can be achieved and applied in the design process. (Aljumah et al., 2021b) argue that design mindsets can be learned but it takes discipline and encouragement to acquire full development. The capabilities of the professional are another attribute that is key in determining the effectiveness of the design thinking process. Different individuals have different understandings and professional

capabilities. While designing the solution to existing problems it is vital to consider the capabilities of the design-led professional and match them with the correct strategy. Characteristics of the individuals are another important aspect for consideration (Cooper et al., 2009). Certain individuals possess varied attributes. Some individuals accept correction in a positive manner and others will take criticism negatively. Other individuals will possess traits that allow them to change their mindset. Such individuals have an open mind to acquire knowledge and are flexible to change with changing circumstances (Alzoubi, H MALhamad et al., 2021). Achieving success in business management requires individuals open to criticism and flexible to learn new things without the feeling of being undermined. Such individuals will be proactive as they will also be able to identify problems before they arise and consequently develop the right strategies to address them.

The literature concerning who can apply the design thinking process is diverse. Although the design thinking process is recognized as part of the skills and expertise possessed by a professional designer, the knowledge can be applied by diverse professionals. The design thinking process starts with the recognition of the skills that the designers have gained over time to meet human needs through the application of available technical resources considering the constraints of a business. In this context, design thinking can never be a substitute for professional design but is rather associated with the application of a designer's method and sensibility in solving problems.

2.8. Positive and Negative impact on Environment

The environment and especially the culture of an organization have a significant influence on the value and application of the design thinking process. Cultures that have not been changing in an organization often act as a constraint to design. There is a need to have a flexible organizational culture that changes with the changing demands in the market. There are certain conditions that organizations must meet to enhance success in design thinking. A major barrier to organizational success is the presence of low tolerance for risk. Another barrier observed in the literature is the high resistance to the adoption of a human-centered approach. Other factors that may

contribute to failure include poor technology, lack of resources, and the constraint of time. All these factors determine the environment in which different facets of an organization interact to yield change. In addition to having a design-led profession organizations have to demonstrate characteristics and mindsets relevant to design thinking and integrate the same these traits into work activities. Organization leaders must apply a design attitude that will bring about transformational leadership and consequently yield positive changes to the organization.

Lack of human interactions is a major hindrance in ensuring success of the design thinking process. There is a need for organizational leaders to maximize human interactions and enhance increased cooperation and communication to work as a team to achieve the desired end. Such an approach breaks down the traditional culture where individuals are concentrated in a closed office set-up to perform duties only prescribed in their job descriptions. The traditional approach presents little opportunity for engagement and consequently minimal chances for individual growth. The results in such a scenario are poor performance by an establishment. An example of the breakdown of traditional organizational culture is explained by (Cooper et al., 2009) involving the culture of the Australian Tax Office. The office is set to undertake the integration of design thinking as well as developing the core competencies in design among the staff in the office. The Tax Office achieved this by organizing skill development programs aimed at improving the capability of individuals as well as influencing a positive change in the mindset of individuals. These programs are impactful as they challenge individuals to engage in design thinking. The aforementioned example is an indication of how the cultural environment of an organization can impact the results of the particular organization (Al Aljumah et al., 2022b; Foster, 2021). A positive environment is a catalyst for positive change in any establishment.

Sufficient literature is also lacking on the aspect of a project environment. The project environment possesses significant implications for the success of an initiative. There is a need to consider the environment in which a project is initiated and how the process and progress are affected by the environment and hence affect the outcomes. The

earlier example of the Australia Tax Office has a physical design that reflects a conducive environment for work. Environment alters the motivation of an individual and consequently the outcome of work. It is vital to have an understanding of the role an environment has on the performance of an organization and in the design thinking process. The employee composition within an organization influences the adaptability of an organization to the design thinking process. A lean staff makes it easier for the management to impart design thinking strategy to the employees. However, this is disadvantageous since a huge employee base provides an array of varying ideas which can be combined to develop prototypes. The treatment of the employees by the management also influences their motivation and consequently their willingness to fully utilize their potential for the benefit of their organization.

3. METHODOLOGY

Data for the study can either be primary or secondary data. Secondary data will be obtained from the literature review. Various scholars have raised their views on their practicability in the application of the design thinking process in the business field. Secondary data provide the research with information that has been previously verified. Secondary data is verifiable and has been subjected to analysis and criticism. The gaps in secondary data can be filled through the use of primary data. Primary data provides fresh information concerning a subject and aims at filling an existing gap in research. This study will make use of primary and secondary data in achieving the objective of the study.

3.1. Literature Analysis

The study has conducted a systematic review of the literature in a bid to identify the themes, connections, and patterns of the design thinking process. Sources that have been included in the literature have an in-depth analysis of the emergence of the concept and how it has been involved over time to be applied in various dimensions. Sources that have been included in the literature review connect the evolution of design thinking to the current application in business. Information obtained from the literature review will serve as a source of information for this study in addition to conducting interviews.

3.2. Sample

In conducting the interviews a sample of 20 business leaders was used. The selection of the sample base is based on the organizations that are applying the design thinking process in their operations. The sample is effective in obtaining relevant information concerning the importance of design thinking and the benefits and cons of the same. Information from experienced practitioners is an indication that the conclusion identified from the research is reliable. The chosen sample size consists of innovation managers who are involved in the operationalization of the activities of the business. These innovation managers are the key informant as they are involved from the designing phase through the application phase to yield the targeted outcome. The information managers selected in the study have a diverse knowledge of the various aspects of the projects that include prevailing mindsets that may be based on experience or reflection of their behavior.

3.3. Demographics

The participants selected for the study possess a minimum of ten years of experience working for the respective industry under consideration in the interview. The industries considered in the survey include finance, business services, real estate, and health care. Six of the selected respondents were females while 14 were males. The age distribution of the respondents was from the ages of 30 years to 50 years while the levels of their education ranged from undergraduate to doctorate degrees. Given their level of education coupled with their work experience, the respondents are in a position to offer verifiable information. The respondents selected from the study have been selected come from companies that are amongst the innovation leaders within the respective organizations. The sample, therefore, is capable of providing a benchmark concerning the presence of design thinking mindsets and how they are supportive in the implementation of a design approach.

3.4. Data Collection

This study makes use of structured interviews administered through questionnaires to obtain relevant information concerning application design thinking in business operations. Open-ended questions were drafted to provide an

opportunity for the respondents to give their views without limitation. The advantage of open-ended questions is that they provide the respondents with an opportunity to raise their points without being constrained to follow a certain direction. The semi-questionnaires were administered through interviews with the respective respondents. Prior consent to participate in the study had been sought from the selected sample hence making the process easier. By conducting interviews, the interviewer can read the mood and their opinions concerning a certain subject. The interview process also enables the interviewer to ask follow-up questions in the event there is no clarity. The advantage of interviews is that they involve direct contact between the interviewer and the respondents thus eliminating instances of non-responses. In conducting, the interview in these study semi-structured questionnaires is developed to act as a guide. Certain questions are prepared such that the respondents have the requisite knowledge of the subject matter and can guide the interviewer. To be certain about the object of the study, only the pre-determined questions in the questionnaire are used during the interview. The questions are set with the objective to achieve the desired objectives. The interviews using the guided questionnaire lasted for about 45 minutes for each respondent. The respondents were required to reflect on their design thinking practices concerning a certain innovation they are involved in and to also describe the mindset they have observed in others or they have practiced. The questions aimed at obtaining information regarding how design thinking has been used in the business arena and how it has influenced the specific achievement of organization-set objectives. In addition, the study sought to determine the challenges and disadvantages encountered during the application of design thinking in real practice. Probing questions were asked on issues that did not have clarity. The approach used by this study is critical in identifying the important concepts of design thinking and how they interrelate with business performance. Verbatim transcripts obtained from the interviews as well as the field notes were coded with the use of qualitative guidelines in research. The study undertaken has been cognizant of the various ethical considerations. A major ethical consideration for the study is to ensure that participants engage in the research following

written consent. This ensures that the respondents have not been coerced to give information. The signing of the consent letter served to affirm that the respondents have not been coerced. Further, the study stresses the need for anonymity. The details of the respondents were not revealed nor neither the details of the organizations they work for. This creates a conducive and relaxed environment for the respondents to provide the requisite information to assist in the achievement of the research objective.

4. RESULTS

4.1. Statistics

Various questions were set aimed at acquiring the requisite information to address the research objective. One of the answers sought by the study is to determine the extent to which the selected respondents have applied Design thinking in their practices. Of all the respondents, 3 individuals representing 16% of the respondents indicated having introduced design in their practice to a greater extent. This proportion of the respondents also noted having achieved significant success in their operations observed in the increased growth of their organization. The study also found that 2 individuals representing 10% of the total respondents indicate that although the design has assisted the company to achieve increased growth it has done so to a lesser extent. 58 % of the respondents have indicated to having their organization apply design in their operations is an afterthought having faced challenges in achieving predetermined objectives.

The majority of the business executives from the study findings indicated having applied design as well as design thinking in conducting business management operations. 84% of the respondents affirm the contribution that design has in achieving business objectives. 905 of the respondents feel that the process should be introduced to employees across departments. However, 10% of the respondents feel the exercise might be expensive, especially when having training nonprofessionals on issues to do with design and consequently the design thinking skills. As such these respondents feel that design and design thinking strategies should be introduced to relevant professionals within the various departments. Although the sample selected consisted of business leaders in the organization

that apply design and design thinking approaches in their operations, 45% of the respondents provided information that they have not applied but have observed it being applied by colleagues within the respective organization.

The general observance by the respondents on the concept of design and design thinking in various organizations but outside the organizations they work for portrayed varying information but tended to approach a common divergent. 75% of the respondents feel that most organizations in the market industry considered the design thinking process as a stylistic element that is only poised to the improvement of products. The majority of players in the various business sectors do not recognize that design needs to be applied in a broader sense in enhancing organizational performance. The expert opinion provided indicates that there is a low level of awareness of design-level applications and the value that design thinking has on organizations and consumers.

38% of the respondents argue that the major challenge of incorporating design thinking in an organization emanates from a lack of expertise. The limited number of professional leaders in an organization leaves the design thinking process to a limited number of individuals. The respondents also feel that bringing multiple people on board while developing the prototype and in the process of engaging end users may be time-consuming slowing down the activities of an organization.

The expert interview revealed that the majority of the people lack professional knowledge in design thinking hence making it difficult for them to offer top notch solutions. Business leaders feel that there is a need for an organization to engage employees through a process of knowledge and skills development in the field of design thinking.

4.2. Correlation Results

The results sought to determine the impact of design thinking skills on business managers. As such a correlation between design thinking and business growth is performed. Correlation results indicate a direct relationship between design thinking and business growth. As such business growth is directly proportional to design thinking among other variables. Incorporating design thinking skills by businesses and leaders assists in solving business problems and consequently enhances efficiency in the performance of

businesses. This leads to an increase in the growth of the business.

5. DISCUSSION

Design thinking has the capacity of influencing how people think and consequently how they act toward solving a certain challenge. The agreed-upon concept of design thinking is that it is geared towards identifying a problem and consequently finding a solution to solve the problem. By presenting an opportunity to think outside the box, design thinking presents practitioners with the capacity to invent new ways of addressing the emerging complexities in the world of business. Business leaders are presented with an ever-changing business environment that necessitates the existence of innovative ways to address emerging issues. Business leaders feel that the evolving concept of design thinking offers immense advantages to the performance of an organization. These benefits can only be enjoyed if members of an organization appreciate the emerging concept and can work as a team.

Design thinking professionals possess a creative approach to duty performance and hence display their expression and thinking. Business leaders encourage their colleagues to engage in behaviors that nurture as well as inspire the creation of new ideas. Creativity is vital in design thinking as it enables individuals to connect with the intangible aspect of organizational resources. Encouraging the development of behavior aimed at solving a foreseeable problem is a critical aspect of building an organization. A major benefit realized through the application of design thinking is the increased growth of businesses. Businesses are faced with ever-emerging complications emanating from an array of factors including globalization and growth in technology. Leaders with the ability to apply design thinking skills have the capacity of applying creative solutions to solve the expected challenges. The research findings indicate that organizations that have fully embraced design thinking in their practice realize increasing growth in their organizations. Although authors place the role of design and application on the professionals every employee of an organization is challenged to apply design thinking. Although the professionals play a leading role all members of the establishment have a role to play in building the success of an organization.

Design thinking provides a means for the organization's leadership to offer a solution for existing challenges. Design thinking functions as a structured approach and is thus able to solve different types of challenges. The thinking process involves an interactive exercise that seeks to identify creative solutions to solving various business challenges. The respondents argue that business leaders should always place themselves in the place of consumers and thus develop solutions that meet the need of end consumers. The process can also be used in the development of new products aimed at filling an existing gap within the market. The changing tastes and preferences of consumers require continuous product development that calls for the existence of an innovative solution. Design thinking provides a systematic approach that enables an organization to solve problems. Companies have been struggling to create as well as maintain an innovative culture using lean and sustainable business models. Successful integration of design thinking and sustainable business model creates a competitive advantage for organizations. The integration of design-led personalities in leading the agenda of a business is a good addition for businesses. Businesses are seeking to align their strategies with the evolving concepts of the design thinking process.

The design thinking approach aims at developing strategies and innovations from the user end. The design approach seeks to empathize with the consumers. As such the approach can capture the consumers' real problems and expectations. Creativity techniques help in generating various ideas that assist in the development of solutions that meets consumer expectation. Another advantage of design thinking is the reduced risk of launching new ideas. The focus on design thinking is on developing prototypes and outlining them to sponsors early in advance. By developing new ideas, business leaders can stay on course to address any emerging needs of an organization. Development of ideas early in advance assists in eliminating costs incurred through the development of bad ideas. Prototypes developed early in advance produce an end product that is backed by data with more confidence. A challenge that is faced by businesses is the creation of ideas that provides just incremental improvements to the existing products and services. Although such

improvements are crucial for businesses it puts the business at risk of disruption from external factors. Design thinking comes in handy to solve this challenge by providing innovative offerings and solutions. The component of creativity derived from design thinking helps businesses to establish strategies that meet the long-term needs of an organization.

There is an increasing trend by organizations to apply design thinking as an afterthought. The study found that 58% of the respondent's organizations applied the process as an afterthought. The implication is that businesses indulge in other strategies to foster growth but midway realizes that chosen strategies do not make huge progress as would have been desired. These companies are forced to resort to design thinking aimed at developing an innovative strategy that will address the challenges being faced in addition to offering long-term solutions to the challenges faced by a business. The respondents agree that design thinking creates a faster pace of learning. The outline of the design thinking process is that it attracts multiple people from varying departments to generate several prototypes. Since everything developed at this stage is a prototype, an organization can stage and test the prototypes to determine if it accomplishes the desired end. If it does not meet the objective stipulated the prototype is abandoned and another one is pursued until the right prototype is established. By having multiple people in this exercise bring varying ideas the process is quick and serves to meet the demands quickly. The result of this strategy is quick learning and the development of creative solutions to existing challenges. Enduring benefits accrue to organizations that can sustain an increasing rate of innovation and hence can quickly respond to the challenges that may arise.

The design thinking approach to solution creation yields widely acceptable results. The process includes the user's right from the process of identifying the problems facing the users. The involvement of the users makes them own the result given that their input has already been considered while developing the solution strategy. Although designs may seem like obvious innovations for organizations they serve as tools that break down the wall that separates the actual users and the leaders. The inclusion of end users in the development of creative solutions makes the

end product acceptable in addition to making a happier user.

A significant percentage of the respondents feel that most organizations use design just as aesthetics and hence the process of developing the design does not encompass multiple players or even the users of such design. The disadvantage of this form of thinking by organizational players is that design think does not yield any significant value to the performance of an organization. The critics argue that design think adds nothing new to what research and development practices have been achieving. In this light, it is good for organizations to focus on the approach of research and development in developing strategies to steer a company. However, these critics fail to understand research and development strengthens the design thinking process as the process involves the collection of data right from the users and identifying the prevailing needs which the desired solution seeks to address.

6. CONCLUSION

Design thinking needs to be conceptualized as well as its application in managing businesses. The globalization process and the advancement in technology are some of the opportunities presented in the current business world. Technology is constantly evolving forcing companies to change their operation strategy. To keep in length with the developments businesses must engage in a process that enables them to be proactive. Design thinking is a major strategy that comes in handy to offset the challenges faced by the organization. Through design, thinking leaders can conceptualize the problems that users face and consequently involve users in information gathering in a bid to create a worthy solution. Involving the end users in the development process of design thinking increases the acceptability of the end product by users. Wide acceptability means the efficient application of the products among consumers. Business leaders need to make innovations that are in tandem with solving the problems being faced by society.

6.1. Study Limitations

Previous studies did not have much focus on the application of design thinking in the business arena. Although this study sought to enumerate the concept of designing thinking for managers with a

focus on the collection of primary data, there is a lack of empirically grounded information from previous research. Selecting businesses that have fully incorporated design thinking as a management tool was a challenge given that most businesses view design as a stylistic innovation for attracting consumers. As such, the study incorporated business leaders who have professional expertise in the concept of design thinking and are working in organizations that have not fully adopted the use of the design thinking process in problem-solving.

Another limitation of the study entails the composition of the respondents. The research made use of twenty respondents who are professionals in various organizations and sectors with varying educational backgrounds. Although the respondents have a diverse knowledge of the matter theoretically and in practice, the sample size may not be sufficient to offer a real representation of an entire population in the design thinking practice. Further, from a pragmatist point of view, the study made use of convenience sampling, and hence participants were selected based on accessibility, timing, and opportunity. The expert interview in particular relied on referrals in some instances. The implication is that some of the referrals may have a common form of thinking and approach given they are colleagues in the same sector. Another study limitation concerns the distribution of respondents. The respondents were not globally distributed and hence the probability of providing information based on a given region.

6.2. Future Research

While undertaking this research recognition has been observed of the need for undertaking further research. The main aim of this research was to analyze the concept of design thinking and how the skills are intertwined in ensuring the progressive running of businesses. The study, therefore, sought to unearth the pros and cons of using design thinking in an organization. Although this has been achieved, the study was not without limitations. Undertaking further research is necessary to seal gaps within the study as well as advance the findings of this research. Undertaking validation and exploration of the various components of design thinking as well as testing of the resultant model would provide a requisite and valuable

insight into understanding each of the components and their application in real practice. Such an exercise would provide a deeper understanding of the concepts and their practicability.

Design thinking is not just a strategy for professionals and business leaders but an approach that needs to be adopted by individuals across sectors while solving arising problems. As such, further research should focus on how organizations can incorporate professional development among employees through design thinking studies. Empowering employees to be innovative in developing solutions to work challenges not only grow the professional expertise of the individual but also enhances the overall well-being of the establishment. When employees are well-versed with expertise and experience in the dynamically evolving business world businesses tend to reap growth benefits and acceptance within society. Incorporating design thinking to be part of human resource strategy needs a strong foundation that calls for further research.

6.3. Recommendation

Design thinking has created a wave among educators and practitioners. The increasing interest in this topic has enhanced concerted efforts among researchers to discuss how the phenomena can influence change and how it can be interconnected to the goals and objectives of an organization. Despite the ranging interest this concept is not properly understood by the public and the majority of the practitioners claim to have an understanding of the same. There is need to develop a framework that cuts across organizations on how successful implementation should be undertaken.

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