CONTRIBUTIONS OF DESIGN THINKING TO PROJECT MANAGEMENT IN AN INNOVATION CONTEXT OF MULTINATIONAL AUTOMOBILES ASSEMBLERS IN KENYA

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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN ENTREPRENEURSHIP AND INNOVATIONS MANAGEMENT, FACULTY OF BUSINESS AND MANAGEMENT SCIENCE, UNIVERSITY OF NAIROBI

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DECLARATION

I declare that this project is my original work and has not been presented for a degree in any other university.

Signature _____ Date: **06th December, 2021__**

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This project has been submitted for examination with my approval as the university supervisor.

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DEDICATION

I dedicate this project to my loving family for their unwavering support towards my life success.

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ABBREVIATIONS AND ACRONYMS

CDF	Constituency Development Fund
CERN	European Organization for Nuclear Research
DT	Design Thinking
EU	European Union
FDI	Foreign Direct Investment
ICT	Information and Communication Technologies
IDEO	Institut Dominicain d'Etudes Orientales
IPMA	International Project Management Association
KAM	Kenya Association of Manufacturers
KNBS	Kenya National Bureau of Statistics
MIS	Mean Item Score
MNC	Multinational Corporation
MNE	Multinational Enterprise
OECD	Organization for Economic Co-operation and Development
PKO	Palm Kernel Oil
SME	Small to Medium Enterprise
UIC	University-Industry Collaboration
US	United States

ABSTRACT

This paper is based on the contributions of design thinking to project management in an innovation context using a case of the automobile industry in Kenya. A cross sectional descriptive research design was adopted for the study. Primary data was collected from fifteen project managers in automobile assemblers using an interview guide. Content analysis was used to analyze the data. Interview guide was preferred as the respondents are top managers in the same institution, Automobiles. On the understanding of design thinking by the project managers in the automobile assemblers, the findings showed that the project managers understood design thinking the systematic approach for creating solutions for business and a methodology and iterative process that enhance innovation for strategy initiation and risk detection. The study also found that design thinking in an innovation context contributed to project management through exploration, project strategy and shareholder involvement and management. The study concludes that design thinking as a methodology supports innovation across the project teams in automobile assemblers in Kenya. The study further concludes that design thinking enables the project managers in automobile assemblers in Kenya to solve problems and detect risks relating to the problem. The study recommends that automobile assemblers in Kenya restructure the project teams to have a multidisciplinary team form all the departments. The automobile assemblers in Kenya should encourage creativity among the project teams. They should also facilitate interaction among the stakeholders in the assembler's' projects. The automobile assemblers in Kenya should establish research departments or outsource research services that would be involved in data collection which would increase the level of knowledge among the employees especially the project teams. The study recommends A similar study is recommended in a different industry.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Researchers have long recognized that standard approaches to project management are ill-suited to address changes in the environment or business needs, particularly in innovative contexts characterized by uncertainty and complexity (Lebid & Shevchenko, 2020). Instead of being concerned with the efficient implementation of a deliberate strategy, a project in such a context becomes a process for strategy formulation. Design thinking has been highlighted by practitioners as well as academia as a novel methodology that is potentially valuable for improving innovative outcomes, whether they are products, services, or strategies (Andersen, 2020).

When adopting Design Thinking, project management leaves a clear, immediate and radical change (Wrigley, Nusem & Straker, 2020). Design can lead to higher visual impact, higher consumer satisfaction (Geebren, Jabbar & Luo, 2021), loyalty and brand equity. Design Thinking has been defined as a project approach with a whole identity, including peculiar mindset, methodology, tools and principles (Wrigley et al, 2020). On the other hand, Lebid and Shevchenko (2020) discusses innovation as a complex subject characterized by change or adoption process of new technologies or techniques. Project management as a concept is a series of planning, organizing, directing, and controlling organization resources to achieve the specific goals and objectives (Stanitsas, Kirytopoulos & Leopoulos, 2021).

This study was anchored on the design theory. The theory postulates that design thinking is a service that succeeds through rigorous creativity, critical inquiry, and an ethics informed by respect for people, for nature, and for the world we shape through design (Kelley, 1991). The theory is supported by the dynamic capability and diffusion of innovation theories. The dynamic capability theory assumes that senior managers develop strategies for seniors of successful companies to adapt to radical discontinuous change, while maintaining minimum capability standards to ensure competitive survival (Teece, Pisano & Shuen, 1997). Diffusion of innovation theory assumes that by people perceiving an idea, behavior or product as new innovation they adopt to it (Rogers, 2003).

Design thinking and project management are both evolving rapidly across the automobile industry in Kenya as transformation factors, processes in firms and the economic landscape change (Rajan & Dhir, 2020). Project management and design thinking are both highly associated with knowledge workers within the industry. Automobiles have faced challenges in project management with the increased innovation among the industry. This has created the need for design thinking for a pool of creative thinkers among the project teams. This study therefore sought to establish the contributions of design thinking to project management in an innovation context.

1.1.1 Design Thinking

Design thinking can be described as team based, user centered process, powered by a thorough understanding of what users want and need (Beckman, 2020). It is used for finding a solution for an often-ill-defined problem in any organizational or social context. The problem-solving process includes a complex inquiry phase and a suspension of

decisions and even suspension of the problem definition itself (Nakata, 2020). It originated in the last decade of the 1900's, where researchers studied the essential mental strategies of designers (Lal, 2021).

More recently, the concept of design thinking has been stretched, and has broken free from its domain limits (Hall, 2020). Today, design thinking is understood as a complex thinking process of conceiving new realities, expressing the introduction of design culture and its methods into fields such as business innovation (Morris & Reid, 2020). It is not a predefined series of orderly steps, but "a human-centered, creative iterative and practical approach to finding innovative ideas and solutions'' (Auernhammer, 2020).

Design Thinking has been defined as a project approach with a whole identity, including peculiar mindset, methodology, tools and principles. These basic principles are profoundly related to the nature of the approach itself, and they clearly characterize it (Randhawa et al, 2021). Design Thinking is empathic. It is human-centered, meaning that it considers and gives the full attention to the individual behind the problem. The solution is searched under the imperative of assuming the own perspective of the people the solution is designed for: problem solvers wear the people's lenses, they feel, sense and understand the problem as the people do. Thus, problem solvers can generate incredibly fitting solutions to the people's need, through a very careful and deeply detailing observation that lets them find solutions that others overlook.

Dell'Era (2020), explains the core of design thinking and what it could bring to practitioners and organizations in other fields. He uses a model from formal logic to describe the key reasoning patterns in design and explains how this type of reasoning is

very different from other fields. He then explains how designers adopt and create "a frame" to deal with a problem at hand. In the current study the concept was measured in terms of the innovations and the number of creative individuals within the project team.

1.1.2 Design Thinking in Project Management

Glen et al. (2014) indicated that the core of design practice lies in the ability of designers to frame and reframe a given problem. Designers use a systematic human-centered approach to explore the definition of a problem and synthesize solutions (Buchanan, 2010). In order to create a paradigm shift in project management towards applying design thinking, the project manager needs to reassess his/her mode of thinking. Applying design thinking implies a different approach to a project than the rational analytic approach that is dominant in Project Management theory and practices.

Tschimmel (2012) and Glen et al. (2014) both compare the design thinking approach to problem solving to a traditional, rational analytical, approach. The model used by Tschimmel is a list of characteristics of a design thinking manager and traditional thinking manager. First, a design thinking manager intensive focus on observation and wondering with challenging stereotypical perception while a traditional manager focuses on the immediate perception and quick interpretation of a situation. On the other hand, a design thinking manager is emotional and rational and at the same time subjective while traditional thinking manager is mainly rational and objective. A design thinking manager is abductive and inventive while the traditional thinking manager is analytical, deductive and inductive. A design thinking manager takes failure as part of the process while traditional thinking manager is always looking for 'correct' answers. A design thinking manager is comfortable

with ambiguity and uncertainty while traditional thinking manager lead by organizing and planning. A design thinking manager is empathic and human-driven, with a deep understanding of peoples' needs and dreams while traditional thinking manager is customer-driven, with deep understanding about what clients would like to have for their social status. Finally, design thinking manager is principally collaborative while traditional thinking manager is principally individual.

Glen et al. use a comparison between the rational analytic manager and a design thinking manager, and arrange the comparison into seven categories: problem formulation, criteria, method, information-processing emphasis, solution process, rationale and outcome. The descriptions of the approached in both models are very similar. To complement the characteristics of the two contrasting approaches, descriptions were added by the author of this article using the literature on design thinking and definitions from the IPMA version 3 (International Project Management Association, 2006).

1.1.3 Concept of Innovation

To innovate is to introduce something that is new or to improve that which already exists (Storey, 2009). From a business perspective innovation is typically focused on finding ways to enhance the competitiveness of a firm by converting ideas, processes, technologies and alliances to commercially valuable outcomes (Mazzarol & Reboud, 2009). Ongkittikul (2006) discusses innovation as a complex subject characterized by change or adoption process of new technologies or techniques. A classic definition of innovation is any change that is new to a social system (Rogers, 2003), such as an organization.

An innovation is new or significantly improved product that a firm first develops or those that a firm adopts from other firms or organizations which result to commercial value (profit). Product innovation therefore means introducing new products or services (Polder et al, 2010). The product must either be new or significantly improved with regards to its features or components. Product innovation can also refer to change in product design that changes how the product is used or how it looks like (its characteristics) (OECD, 2005).

Innovation is the primary means by which organizations adjust their environment super system (Mintzberg *et al*., 2008). Lees (1992) discusses innovation as an ambiguous concept, attracting multiple and often conflicting definitions, and conveying different things to different people both in the literature and in organizations. Storey (2009) suggests that the conceptualization about what innovation is, closely wrapped up with what it is for, because clearly it is not an end in itself. This study will treat innovation to relate to the number on new products and processes that the automobiles have developed.

1.1.4 Multinational Automobile Assembly in Kenya

A multinational corporation (MNC) also known as Multinational enterprise (MNE) is an enterprise that engages in foreign direct investment (FDI) and owns or controls value adding activities in more than one country (Dunning 2010). The rise and growth of MNC is traceable to the historical development of international business, where international business was expanding their trade capabilities from one location to other areas. The expansions of trade lead to the need for business organizations to coordinate activities. The MNCs have been around for a long time. Multinational corporations have grown to play a central role in the international economy. MNCs are, in many respects, the driving force

behind deepening integration of the global economy. Firms participating in international business must formulate international strategies that would enable the firm to compete in different markets. The strategy enables the firms to know the businesses to operate on, how to compete in the markets that they have chosen to enter and how to manage its functions of finance, marketing, operations, human resources and research and development.

The motor industry in Kenya has been very vibrant in the past years in that Kenya has over 20,000 new registrations annually. The country attempted to build its first car in the late 80's the Nyayo Car but not very successful. There has been entrant of many multinational companies in Kenya. Kenya's Motor vehicle assembly and components sub-sector is rapidly developing to supply to meet local content requirements. The plants assemble passenger cars commercial vehicles. This sector is very crucial in the Kenyan economy since it employs many people and according to the 2009 Statistical Abstract, formal employment in the motor vehicle assembly sector stood at 2,813 in 2008. These figures may be a bit higher when informal activities are included, but unfortunately the data is not available.

According to Kenya National Bureau of Statistics (KNBS) 5,456 vehicles were assembled in Kenya in the ten months to October 2012. Imports of parts used in local assembly are exempted from the 25 per cent import duty levied on fully built cars giving room to the assemblers to produce cheaper vehicles. The sector has 28 members in Kenya Association of Manufacturers (KAM) representing 4.17% of the Association's total membership. The Sector is regulated by Kenya Bureaus of Standards, Kenya Revenue Authority, Transport

Licensing board, and the Kenya vehicle inspection. The industry faces stiff competition from second hand vehicles, following the liberalization of the economy in 1993.

Massive importation of these vehicles may reduce the capacity utilization in vehicle assembly plants. However, the government has put up policies and regulations that restrict the importation of vehicles which are beyond 8 years since their first registration. Among the motor manufacturers in Kenya, there are nine automobile assemblers in Kenya which are all multinationals. They include Kenya Vehicle Manufacturers (KVM), General Motors East Africa (GMEA), Honda Motorcycle Kenya Ltd, Associated Vehicle Assemblers Ltd (AVA), TVS Motors Kenya, DT Dobie, Associated Motors (AM), Transafrica Motors Ltd and Tata Motors. These firms have been forced to change their strategies in order to survive in an era where innovation is a basic requirement for survival.

1.2 Research Problem

Researchers (Brady & Davies, 2004; Brady, Davies, & Nightingale, 2012; Lenfle, 2008; Loch, De Meyer, & Pich, 2006) point out that in innovative contexts where uncertainty is prevalent, such as in large and complex projects or new markets, this approach results in poor performance. In such contexts, problems are ill-structured and neither technologies nor customer requirements are necessarily known at the start. Hence, the basic assumptions of standard project management do not hold. This is particularly problematic, because in a world characterized by rapid change, intensive innovation, and increasing complexity, such uncertain contexts are becoming norm rather than the exception. Despite the growing scholarly interest in the intersection between design and innovation, relatively few studies consider design thinking as a critical activity in the field of innovation (Noble, 2010).

Both design thinking and project management are integrative approaches and both claim to enhance and improve organizational outcomes as related to innovation (Liedtka & Ogilvie, 2011). Such dynamics create opportunities for fruitful cross-learning between the two fields in terms of tools and methodologies. As project management more and more comes to address creative issues in the upstream of projects, design approaches can be mobilized. As the design field grows from being centered on individual creative tasks to engaging in collective design through small teams and incorporating more strategic innovation issues as part of organization's scope, its contribution to multi-project and firm levels develops as well (Basiouni et al, 2019).

While an extended role for designers and the design function has been studied to some extent in relation to new product development globally (Perks et al., 2015; Chiva & Alegre, 2009; Beverland, 2015), relatively few studies consider design as a critical activity in the field of innovation (Noble, 2010). However, there is growing scholarly interest in intersection between design and innovation. Locally, Koria et al (2020) studied an innovation intermediary for Nairobi, by designing student-centric services for university-industry collaboration while Kithinji (2018) studied systems approach to building project management Kenya. The local studies (Koria et al, 2020; Kithinji, 2018) have failed to bring the contribution of design thinking to project management in an innovation context. The studies put their focus on other industries (financial and education) other than the automobile assembly industries. Further, majority of the reviewed studies have been done in developed economies. This study sought to fill this gap and thus this research sought to

answer the question; what are the contributions of design thinking to project management in an innovation context?

1.3 Research Objective

The objective of the study is to establish the contributions of design thinking to project management in an innovation context using a case of the automobile industry in Kenya.

1.4 Value of the Study

The study will make recommendations for policy makers in the field of innovation management. The finding of the research will serve as a guide for policy makers in both private and public sector. The research will guide policy makers in the formulation of policies that will lead to better project management performance as a result of innovation. It will also help these policy makers explore other ways of measuring the effectiveness of innovation activities carried out by an organization. It will create an understanding on how innovation activities impact on firm performance.

The aim of this study is to contribute to the missing link between project management and design thinking. It will also give project managers insight in the application of design thinking in their approach to projects. The study reports a conceptual analysis of the concept of design thinking and its application in project management. The project managers of the automobile companies in Kenya would find this study important. It would guide them in strategy formulation for improved project management through design thinking.

The study adds value to theory. The study will form a basis upon which further research can be done on issues of design thinking and its application in project management innovations. This study will be a basis for further research on project management and design thinking based on innovations. The study will provide literature relating to design thinking in project management in an innovation context. It will therefore be of use to both students and lecturers studying and working in this area as a source of information and reference point on which to base their assignments.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the empirical and conceptual literature along key theme of the study. It intends to bring to light the state of knowledge as well as the existing gaps in the area of study. First it presents the theories underpinning the study. The chapter ends by reviewing empirical literature.

2.2 Theoretical Foundations

Kothari (2004) defines theory as ideas that have been well put together with the aim of breaking down a certain phenomenon through giving variables of the laws that aim to find a relationship of variables with each other. According to Hawking, (1996) theories are tools used for making analysis in order to generate an understanding, explanation, and as well make predictions about a given topic of study. This study was guided by design theory, dynamic capability theory and diffusion of innovation theory.

The three theories interrelate in that the theories recommends innovation as a solution to company problems. The design theory brings in the element of creativity and innovation among multidisciplinary teams in an organization. Dynamic capability theory supports this theory in that it calls for innovative strategies by the senior management to resolve issues that face organizations. The diffusion of innovation theory also supports the element of innovation as a new element that is adopted by companies. The theories will guide the design thinking among multinational assemblers on the relevance of innovation in the contributions made by design thinking to project management.

2.2.1 Design Theory

Design theory was developed at Stanford University (California) during the 1970s but adapted for business purposes by Faste's Stanford colleague David M. Kelley, who founded the design consultancy IDEO in 1991. The design theory explores strategic design as an opportunity to create value through innovative products and services. This theory assumes that design is a service that succeeds through rigorous creativity, critical inquiry, and an ethics informed by respect for people, for nature, and for the world we shape through design. The theory also assumes that design thinking helps people envision new opportunities and become comfortable with uncertainty. According to this theory innovation requires a multidisciplinary team and should be applied by regular, 'non-creative' individuals (Johansson-Sköldberg et al, 2013).

This study relates to the study in that it brings in an element of creativity and innovation among multidisciplinary teams in an organization. This would lead to improved project managers where there are creative individuals in the project teams. The theory has been criticized, the term design thinking is confusing and conflicting (Kimbell, 2009). Design thinking is articulated through different meanings, based on the different contexts within which it is applied (Johansson-Sköldberg, Woodilla & Çetinkaya, 2013). Many claim that design thinking has the ability and strategic capacity to drive innovation and transform organizations and even our society (Brown, 2009; Kimbell, 2011; Martin, 2009). In addition, there is also the belief that design thinking presents ways of "designerly thinking" (Johansson-Sköldberg et al 2013) or "designerly ways of knowing" (Cross, 2011). Herewith, Cross (2011) suggests that design thinking represents a form of intelligence that

is different from other forms of intelligence. Thus, design thinking can be viewed as a unique way of approaching problems, since the way of thinking is unique.

2.2.2 Dynamic Capability Theory

The dynamic capability theory was postulated by David Teece, Gary Pisano and Amy Shuen, in 1997 (Teece, Pisano & Shuen, 1997). The theory focuses on the capability of an organization to combine, develop and reconfigure external and internal knowledge to address changes in business environment (Breznik & Hisrich, 2014). The theory assumes that senior managers develop strategies for seniors of successful companies to adapt to radical discontinuous change, while maintaining minimum capability standards to ensure competitive survival. The theory also assumes that some firms are better positioned to successfully exploit new ideas, or that they have innovation capability for organizational competitiveness (Börjesson & Elmquist, 2011). In relevance to this study, this theory calls for innovative strategies by the senior management which would ensure successful project management among automobiles. The multinational automobiles in Kenya would be better positioned to successfully exploit new ideas through innovation which would ensure competitiveness through improved project management.

However, the kinds of changes that theory is emphasizing on are the internal capabilities rather than only looking into the external business forces (Basiouni, Hafizi, Akhtar & Alojairi, 2019). This creates a limitation as the external forces may influence the business capabilities and operations. Many scholars have argued that the dynamic capability theory is vague and tautological (Wang, 2007). This is a critical issue, and while the theory remains very helpful when addressing how to respond to business changing environment,

it may fail to describe exactly how. Further, Lawson and Samson (2001) suggest that the capabilities of the theory are difficult to identify and/or operationalize, and in some cases, those very capabilities can lead to a core capability becoming core rigidity. As such, the use of theory in its current state is difficult without being able to further specify, develop, and identify those capabilities.

2.2.3 Diffusion of Innovation Theory

The diffusion of innovation theory (Rogers, 1962). The theory assumes that by people perceiving an idea, behavior or product as new innovation they adapt to it. The theory further assumes that this adoption is not simultaneous (Rogers, 2003), with some people adopt more than others within the same social system. How people adopt innovations varies with some adopting at the onset with others adopting the innovation later. This study will guide the researcher into understanding how innovation can be diffused through the automobiles to ensure successful project management.

Like many theories, this is not without its limitations. Much of the evidence for this theory, including the adopter categories, did not originate in project management and it was not developed to explicitly apply to adoption of new behaviors or innovations (Greenhalgh et al, 2005). Further, the theory does not foster a participatory approach to adoption of a program and works better with adoption of behaviors rather than cessation or prevention of behaviours. The theory doesn't take into account an individual's resources or social support to adopt the new behavior (or innovation) (Rogers,1995).

2.3 Contributions of Design Thinking in an Innovation Context

Glen et al. (2014) indicated that the core of design practice lies in the ability of designers to frame and reframe a given problem. Designers use a systematic human-centered approach to explore the definition of a problem and synthesize solutions (Buchanan, 2010). In order to create a paradigm shift in project management towards applying design thinking, the project manager needs to reassess his/her mode of thinking. Applying Design Thinking implies a different approach to a project than the Rational Analytic approach that is dominant in Project Management theory and practices.

The literature presented in the previous sections has shown that the core of design practice lies in the ability of designers to frame and reframe a given problem. Designers use a systematic human-centered approach to explore the definition of a problem and synthesize solutions (Buchanan, 2010). In order to create a paradigm shift in Project Management towards applying Design Thinking, the Project Manager needs to reassess his/her mode of thinking. Applying Design Thinking implies a different approach to a project than the Rational Analytic approach that is dominant in Project Management theory and practices.

Schumpeter (1961) considers the concept of innovation as new products, new methods of production and new markets and sources of supply. He considers these phenomena not timed to (in the sense of being caused by) the business cycle, but a cause of change outside the business cycle, which can then shape it. The author (1961) uses the metaphor "gales of creative destruction," when he speaks of innovation, because he thinks of innovation hitting the economy with the force of a hurricane. Innovations are the economic applications of inventions and discoveries which give the desire of change to the entire economy

(Schumpeter, 1961). Development of commercially viable new products requires that technological and market possibilities are linked effectively in the product's design. Innovators in large firms have persistent problems with such linking (Dougherty, 2001). With more countries opening up and major industries being deregulated, more companies are getting exposed to global competition and as a result looking into various ways to gain or maintain their competitive advantage. To be able to differentiate and reposition themselves, the companies are stressing the need for innovation. However, one of the few hopes companies have to "stand out from the crowd" is to produce superiorly designed products for their target markets (Kotler & Rath, 1984).

Harsh competition has led to increased emphasis on creativity and innovation as a crucial dimension in more recent strategy (Perks et al, 2005). However, Von Stamm (2008) suggests that designers are undertaking a leadership role in the product development process. According to Hargadon (2005), because anyone can now develop, manufacture, distribute, and sell new products within months, design has become the last differentiating advantage available to firms, and designers have become the newest members of the corporate inner circle.

Hargadon and Douglas (2001) emphasize the interplay between innovation and design by examining a prototypical example of innovation, Edison's development of his system of electric lighting, an innovative technology that gained rapid and widespread acceptance and profoundly altered the institutional landscape. They select this case because it was not a simple story of one innovation's demonstrable technical and economic superiority over an incumbent rival. Rather, evidence suggests that for its initial success, Edison's system

of electric lighting depended on the concrete details of its design to invoke the public's familiarity with the technical artifacts and social structures of the existing gas and water utilities, telegraphy, and arc lighting. Although this familiarity provided the public with the means for quickly understanding the value of his new system and how to interact with it, Edison's system of lighting ultimately was able to displace many of those established institutions and become itself the model for successive ones. The authors further argue that the analysis of this case led them to focus on the nature of Edison's design, which exploited past understandings but also preserved the flexibility to evolve beyond them and build wholly new institutions (Hargadon & Douglas, 2001).

Kapsali (2011) studied systems thinking in innovation project management. Based on 12 case studies of two EU innovation policies, the study provides evidence that by using systemic project management, entailing providing flexibility in planning, communicating and controlling activities, innovation projects are more successful. This research refutes previous theory that claims that we need formalize to manage complexity and uncertainty. Design thinking was found to enhance creativity and innovation in project management. Abidin (2012) studied practice-based design thinking for form development and detailing. Master's students' evaluations and designers' own interpretations of their sketches – which represent the sequence of morphed forms – were considered essential aspects of empirical studies. Approaches in form development among designers vary due to their experiences, which affect their sketching abilities, activities, and implicit thinking patterns. In their sketching and form development activities, designers emphasize the most informative views, such as façade and three-quarter front views, compared to other views of the car.

Design thinking enhanced efficiency and timeliness in project completion within organizations through innovation.

Carlgren, Elmquist and Rauth (2014) studied design thinking by exploring values and effects from an innovation capability perspective. They showed that although some firms identified outcome-related values (new ideas, better products), many also underlined other benefits, more related to longer-term effects on competences, innovation processes and the mindset of company employees.

Belel and Mahmood (2012) studied risk Management in Nigerian Construction Industry. They showed that insufficient skilled staff was identified as the most important source of risk in construction, lack of risk management knowledge was ranked the most severe factor that militates against the practice of risk management while contribution to project success was ranked as the most important benefit of Risk Management. It is concluded that most of the respondents do not identify risk management to be associated with the achievement of all project objectives in terms of time, cost, quality and environmental sustainability.

Charosky, Leveratto, Hassi, Papageorgiou, Ramos-Castro and Bragós (2018) studied the challenge-based education based on an approach to innovation through multidisciplinary teams of students using Design Thinking. One example of a prototyped solution is a low-cost sensor-based system to detect malfunction in water wells in Africa, which uses SMS-based communication and cloud-based solutions to manage wells repairs. As a result, the ICT engineering students increase their awareness of user needs and the relevance of the problems to focus on when tackling a complex challenge. They also increase their ability to ideate more disruptive and high-impact solutions thanks to their understanding of the

"big picture" based on their interactions with design and business students. Ilori, Lawal and Simeon-Oke (2017) studied innovations and innovation capability in palm kernel processing industry in southwestern Nigeria. The study showed that only process, organizational and market innovations were recorded by the palm kernel processing firms. There was evidence of one or two innovation(s) available in the unit operations of these firms.

Mwanzia (2018) studied design thinking, strategy and innovation in African financial sector based on Letshego Holdings Limited in Africa. In this stud a customer centered approach on identifying the services to offer and customer needs to meet (design thinking approach), innovative capabilities to self-disrupt by differentiating their offerings and services and explore untapped markets/segments using blue ocean strategies will build sustained organization strategies. Koria et al (2020) studied designing student-centric services for university-industry collaboration. They found the importance of establishing a solid rationale for collaboration, understanding the expected value to be created, creating a neutral space for the collaboration, and planning the implementation in detail.

Kilelu, Klerkx and Leeuwis (2014) researched on how dynamics of learning are linked to innovation support services: insights from a smallholder commercialization project in Kenya. Because learning in agricultural innovation processes is dynamic, static notions of demand articulation and related support are inadequate. Supporting learning and innovation requires an understanding of how farmers' demand evolves, a flexible matching process with various innovation support services to achieve ‘best-fit’, and an awareness of sometimes competing interests of actors.

2.4 Summary of Literature and Research Gaps

The empirical studies reviewed in this study showed that design thinking plays a key role in project management. Innovation played a key role in defining the effect of design thinking on project management. The empirical studies reviewed on design thinking and project management have mainly focused on developed economies (Kleinsmann et al, 2017; Carlgren et al, 2014). The local studies reviewed focused on different concepts other than design thinking in an innovation context. For example, Mwanzia (2018) despite focusing on design thinking, he did not bring out its application to project management. on the other hand, Kilelu, Klerkx and Leeuwis (2014) looked at innovation support services other than design thinking. This shows that, conceptually, a gap exists in the area of design thinking, innovation and project management.

They focused on microfinance (Mwanzia, 2018) and University (Koria et al, 2020) other than automobile assembly industries. This shows that a contextual gap exists in the research area. Mwanzia (2018) did an exploratory study with the current research adopting cross-sectional research. He also used a semi-structured interview guide with the current research adopting an unstructured interview. Koria et al (2020) on the other hand adopted secondary and primary data sources with the current study adopting primary data sources only. This shows that methodological gaps exist in the study area. The studies showed differing results on the contribution of design thinking in project management. This study filled in the gap by exploring the contribution of design thinking to project management in automobiles. This created a research gap that this study filled.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outline the method that was used for the analysis of the data. This chapter described the research design and the population. The data collection and data analysis methods used were also indicated in this chapter.

3.2 Research Design

Research design specifies a blue print for research. According to Mugenda and Mugenda (2003), research design is the outline plan or scheme that is used to generate answers to the research problems. It is basically the structure and plan of investigation. Research design is the arrangement of conditions for collection and analysis of data in a manner that aimed to combine relevance to the research purpose with economy in the procedure.

This study adopted a cross-sectional research design so as to get an in-depth understanding of the subject. In a cross-sectional study, the researcher measures the outcome and the exposures in the study participants at the same time (Mugenda & Mugenda, 2012). The research design chosen was depending on the nature of research being conducted. A cross-sectional design is a form of research design wherein data is collected from a many different individuals, objects or companies at one time. In cross-sectional study, parameters are observed without being influenced. The design was suitable because it allowed the researcher to collect data from many different companies (multinational automobile assemblers) in Kenya and address the objective without influencing the outcomes.

3.3 Population of the Study

The study targeted multinational automobile assembly industries in Kenya. According to the KAM (2019), there are nine multinational automobile assembly industries in Kenya (Appendix I). The project managers in the automobile assemblers in Kenya formed the respondents for the study. This was because they are the people involved in innovation activities relating to the projects in the automobiles.

3.4 Data Collection

Data was collected from multinational automobile assembly industries in Kenya. The study targeted senior project managers in the automobile assemblers in Kenya. This is because they were the people involved in innovation activities relating to the projects in the automobiles. The study used primary data sources for data collection. The data was collected through interviews.

The interviews were done on 15 project managers in automobile assembly industries in Kenya. Guest, Bunce, and Johnson (2006) indicated that for a particular group, saturation often occurs between 12 and 15. Hence, the 15 interviewees were sufficient for the study. Purposive sampling was used to select the project managers that was interviewed for the study.

The interview guide was based on the variables of the study. The interview guide was used gain information from the management team. It consisted of three parts: Section A covered the general information relating to the interviewee, section B covered the questions

pertaining to design thinking and section C covered design thinking in project management based on an innovation context.

Interview guide was preferred as the respondents were the top managers in the automobile assemblers in Kenya. The interviews were done in an area convenient for the respondents while observing the COVID-19 directives by the ministry of health. The researcher used two research assistants who assisted in carrying out the interviews.

3.5 Data Analysis

The study adopted qualitative data analysis techniques. Content analysis was used to analyze the data collected. As per Creswell (2003), content analysis is a technique for making inferences by systematically and objectively identifying specified characteristic of message and using the same to relate trends. It is preferred because it gives results that are predictable, directed and comprehensive. In content analysis, different emergent themes, ideas and concepts were verified for completeness then subjected to data analysis that facilitates data interpretation and presentation. The results were presented in prose form.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter discusses the interpretation and presentation of the findings obtained from the field. The chapter presents the background information of the respondents and findings of the analysis based on the objective of the study. Content analysis was done and the data presented in prose form. The objective of the study was to establish the contributions of design thinking to project management in an innovation context based on the automobile industry in Kenya.

4.2 General Information

This section gives the general information relating to the interviewees involved in this research. It covers age, gender, education and the years of experience.

4.2.1 Age of the Interviewees

The study sought to know about the age of interviewees as presented in Table 4.1

Table 4.1: Age of Interviewees

Level	Frequency	Percentage	Cumulative Percent
Below 25 years	2	14.3	14.3
26-35 years	4	28.6	42.9
Above 35 years	8	57.1	100.0
Total	14	100.0	

Table 4.1 shows that 15 project managers in automobile industries in Kenya were interviewed. Only 14 of the managers agreed to have an interview with me. From the

interviews, most interviewees indicated that they were aged above 35 years with a small number aged below 35 years. This shows that majority of project managers in multinational automobile firms in Kenya are aged above 35 years. For a person to become a project manager they ought to have worked in project management for time enough to handle projects while leading a project team. This shows that they have to take some years to get there with majority of the people starting their careers at above 25 years.

4.2.2 Gender of Interviewees

The study sought to establish the gender of the interviewees. The findings are shown by table 4.2.

Table 4.2: Gender of Interviewees

Level	Frequency	Percentage	Cumulative Percent
Male	10	71.4	71.4
Female	4	28.6	100.0
Total	14	100.0	

From table 4.2, majority of the interviewees were found to be males with very few of them being female. This means that majority of the automobile industries in Kenya have males holding the project management positions. This is due to the automobile industry being male dominated with the females shying away from it.

4.2.3 Education of the Interviewees

The study sought to establish the level of education of the interviewees. The findings are shown by table 4.3.

Table 4.3: Level of Education

Level	Frequency	Percentage	Cumulative Percent
Diploma	2	14.3	14.3
Bachelor's degree	8	57.1	71.4
Masters and above	4	28.6	100.0
Total	14	100.0	

On the education findings shown by table 4.3, the interviewees were found to have at least bachelor's degree with just a few of them having diplomas. This is an indication that majority of the project managers in multinational automobiles in Kenya have at least a bachelor's degree. This shows that the interviewees were knowledgeable and conversant on the subject matter of research and so very useful to realization of research objectives.

4.3.4 Years of Experience

The interviewees were asked to indicate the number of years worked. The findings are shown by table 4.4.

Table 4.4: Years of Experience

Level	Frequency	Percentage	Cumulative Percent
Less than 1 year	1	7.1	7.1
1-5 years	3	21.4	28.6
6-10 years	6	42.9	71.4
More than 10 years	4	28.6	100.0
Total	14	100.0	

From table 4.4, the interviewees indicated that they had worked with the current automobile assembler for more than 5 years. This means that they had worked for time enough to understand the contribution of design thinking on project management in their firms.

4.3 Design Thinking in an Innovation Context

In order to establish the design thinking in an innovation context, the research sought to get the understanding of design thinking by the project managers in the automobile assemblers. The findings from the interviews showed that the project managers understood design thinking in different forms. For example, one of the interviewees noted that *"design thinking is related to holistic and systematic approach for creating solutions for business"*. Another interviewee said *"design thinking is a methodology and an iterative process that enables innovation and creates adaptation to change by my company. Design thinking promotes innovation in my company which improves the management of our projects"*. This shows that design thinking is critical to innovation with a different understanding on design thinking in an innovation context among multinational assemblers.

One of the interviewees added *"design thinking is a collection of tools and techniques for user research and group creativity within an organization"*. Another interviewee said "*according to me, design thinking is part of the corporate culture which define the organization structure"*. Interviewee G from Thika Motors said *"I think of design thinking as an approach to create solutions that were technological feasible and commercially viable but not a way of thinking for the assemblers"*. This shows that the project managers in the automobile assemblers in Kenya do not see design thinking as a way of thinking but a methodology that supports and allows creativity and innovation within the assemblers.

4.4 Design Thinking and Project Management in an Innovation Context

The study sought to establish the ways in which design thinking contributes to project management in an innovation context in the automobile assemblers in Kenya. In order to address this objective, the researcher asked the interviewees to indicate whether design thinking is relevant in project management in its innovation. They were also asked to give their thoughts on statements relating to the contribution of design thinking to project management.

From the interviews, one of the project managers said and I quote *"design making is relevant in project management within my company".* Another project manager noted that *"design thinking improves creativity and innovation among my project teams which enhances efficiency and timeliness in project completion within my company"*. In addition another project manager said *"design thinking has led to positive interactions across departments which has reduced the time required for approval of project budgets and logistics for my assembler's projects".*

On statements relating to design thinking, the interviewees agreed that design thinking supported deep data collection and idea generation that encouraged project managers to work with multiple options in their projects within the assemblers. One of the interviewees said *"In my company design thinking has given us multiple options to working with projects"* while another one noted *"for me, design thinking relates to generation and evaluation of multiple hypotheses and movement of various solutions into active testing within the assembly".* In addition to this, another interviewee noted that *"design thinking*

is an effective and practical approach to management of various innovative dimensions of projects within an organization".

The interviewees were also asked to state their level of agreement on the statement that design thinking provided firm-level capitalization vehicle that enabled the reuse of knowledge from one project to another. The interviewees generally agreed to a great extent on the statement. They indicated that design thinking provides a method for knowledge creation on strategic orientation. This is through research and inspiration of the project team to learn new things and stay knowledgeable on all areas of operations. One of the interviewees said "*the knowledgeable team shared such knowledge across the firm which leads to coordination and improved project performance in the assemblers*".

On the statement relating to design thinking complementing the analytical and functional perspective by putting an emphasis on the meaning of the innovative project, the interviewees agreed. They indicated that design thinking supported innovation across the management and project teams which led to ease in the management of projects. In emphasizing innovation aspect, design thinking contributed to strategy alignment to organizational needs and strategy formulation within the assemblers.

The researcher asked the project managers to indicate their agreement and views on the statement that design thinking provided an effective and practical approach for defining and articulating the project strategy. A number of interviewees agreed that design thinking is practical and effective as a methodology that defines and articulates the project strategy. One of the interviewees said *"design thinking enables the dissection of the problem and allows me as the project manager to have multiple options to addressing a project problem*

within my company". This enables the project managers to address the problem fully and from all angles which in turn contributes to effective and efficient project management.

The interviewees further agreed that by starting with a problem definition phase, design thinking contributed to the articulation of project strategy. They stated that by in defining a problem and a designing a strategy to solve the problem is a key element in project strategy articulation and implementation. They indicated that where a problem is defined at the onset, a strategy can be formulated which in turn supports project management in the automobile assemblers.

On the design thinking emphasis on a diversified team, which creates effectiveness in the management of stakeholder interactions in exploration project, ana interviewee said *"a diversified team enables the interaction of stakeholders within a project"*. Another interviewer noted *"a diversified team allows for effective dialogue and understanding to reveal the needs and expectations of the different stakeholders involved in a project"*. Another interviewee said *"a multidisciplinary project team come up with innovative ideas due to high level of knowledge combination"*.

Through the use of tools that enable rich and multiple interactions with users and favor empathy, design thinking enables the achievement of stakeholder identification and involvement in projects. For example, an interviewee noted *"design thinking allows the involvement of stakeholders in projects through multiple user interactions"*. On the basis of its strong and wide user-centered orientation an interviewer noted *"design thinking helps address stakeholder management of the project"*. The interviewees agreed on the statement and indicated that the user centeredness of design thinking enables the project managers to

involve and manage the stakeholders in projects. The stakeholders in the project would find themselves recognized and appreciated where they are involved and individually oriented.

On the statement relating to design thinking being well suited for managing projects through experimentation, the interviewees agreed to a little extent. Majority of them noted that experimentation would take time to come up with relevant strategies relating to project management. They recommended the use of innovative ideas from the project team to manage projects for the assemblers. However, a few agreed greatly that design thinking being was well suited for managing projects through experimentation as it enabled the project team to test various strategies for project management efficiency.

The interviewees also agreed that design thinking is an effective way to frontload problem and risk detection. This is due to the increased capacity to knowledge sharing and innovative ideas achieved through design thinking. An interviewee noted *"future problems are eliminated and risks detected for an effective project management strategy in my company"*.

4.5 Discussion of the Study Findings

Result findings show that design thinking contributed to the articulation of the project strategy. This was through supporting deep data collection and idea generation that encouraged project managers to work with multiple options in their projects within the assemblers. The findings also showed that design thinking provide firm-level capitalization that enabled the reuse of knowledge from one project to another. The findings concur with

the findings of Kilelu, Klerkx and Leeuwis (2014) who noted that design thinking defined a project strategy.

On the other hand, the findings showed that design thinking enhanced creativity and innovation in project management. This in turn enhanced efficiency and timeliness in project completion within organizations. In addition, design thinking leads to positive interactions across departments which reduces approval time for project budgets as well as logistics. These are same as of Kapsali (2011). Results also showed that design thinking contributed to enhanced efficiency and timeliness in project completion within organizations. The findings are similar to those of Abidin (2012) who found that design thinking enhanced efficiency and timeliness in project completion within organizations through innovation.

The research showed that the understanding of design thinking was different among the managers. Design was viewed as systematic approach for creating solutions for business as well as an iterative process enabling innovation and creating adaptation to change by the multinational assembler. Design thinking was indicated as a promoter of innovation in within the assemblers hence improving project management. The findings concur with those of Glen et al. (2014) who indicated that the core of design practice lies in the ability of designers to frame and reframe a given problem.

This paper adds more information on the contribution of design thinking to project management in the context of innovation more so among automobile assemblers. For example, the multiple options to working with projects has been indicated as a key contribution of design thinking to project management. From my view, design thinking is

critical to effective project management among automobile assemblers based on the fact that innovation has been a key source of the assembler's competitive edge in the industry.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, the conclusions and recommendations based on the study findings. The study sought to establish the contributions of design thinking to project management in an innovation context using a case of the automobile industry in Kenya.

5.2 Summary

From the interviews, majority of the interviewees were aged above 30 years with majority of them being males. The interviewees were found to be graduates with more than 5 years working for the current automobile assembler.

On the understanding of design thinking by the project managers in the automobile assemblers, the findings showed that the project managers understood design thinking in different forms. They indicated design thinking as the systematic approach for creating solutions for business, methodology tools and an iterative process that enhance innovation, and was part of the corporate culture defining the organizational structure. The project managers also took design thinking as an approach to technological feasible and commercially viable solutions but not a way of thinking.

On the contribution of design thinking contributes to project management in an innovation context in the automobile assemblers in Kenya, the study found that the project managers

stated that design making was relevant in project management within their assemblers. The findings showed that design thinking improved creativity and innovation among the project teams which in turn enhanced efficiency and timeliness in project completion.

The study found that design thinking supported deep data collection and idea generation that encouraged project managers to work with multiple options in their projects within the assemblers. The interviews found that design thinking was an effective and practical approach to management of various innovative dimensions of projects. Further, design thinking provided firm-level capitalization vehicle that enabled the reuse of knowledge from one project to another and puts an emphasis on the innovative project.

The interviewees agreed that design thinking provided an effective and practical approach for defining and articulating the project strategy. This happened through enabling the dissection of the problem and multiple options to solving a project problem. The interviewees further agreed that design thinking contributed to the articulation of the project strategy by defining a problem and a designing a strategy to solve the problem.

The study found that a diversified team allows for effective dialogue and understanding the needs and expectations of the different stakeholders in a project. They further noted that a multidisciplinary project team come up with innovative ideas. Design thinking enabled the achievement of stakeholder identification and involvement in projects. It allowed for the involvement of stakeholders in projects through multiple user interactions. Design thinking helped address stakeholder management of the project through user centered orientation. The interviewees indicated that the user centeredness of design thinking enabled the project managers to involve and manage the stakeholders in projects.

The interviewees agreed that design thinking was well suited for managing projects through experimentation. They recommended the use of innovative ideas. A few of the interviewees disagreed that design thinking being was well suited for managing projects through experimentation. Design thinking was found to be an effective way to frontload problem and risk detection.

5.3 Conclusion

Based on the findings the research concludes that design thinking is a methodology that supports innovation across the project teams in automobile assemblers in Kenya. The study further concludes that the project managers in the automobile assemblers in Kenya have different understanding to the meaning of design thinking and how it contributes to project management. The study concludes that design thinking is a methodology and creative approach that has created feasible solutions to business solutions through innovation among the automobile assemblers in Kenya.

The study concludes that design making is relevant in project management within the automobile assemblers in Kenya. Design thinking enables the automobile assemblers in Kenya to formulate project management strategy through a multidisciplinary team with different innovative ideas. The study concludes that in an innovation context, design thinking contributes to project management in automobile assemblers in Kenya. Its contribution is seen through exploration, project strategy and stakeholder management and involvement. The study further concludes that design thinking enables the project managers in automobile assemblers in Kenya to solve problems and detect risks relating to the problem.

5.4 Recommendations for Policy and Practice

The study recommends that automobile assemblers in Kenya restructure the project teams to have a multidisciplinary team form all the departments. This would lead to increased interaction across departments which would bring in innovative ideas that would lead to Automobile assemblers in Kenya improved project management strategy.

The automobile assemblers in Kenya should encourage creativity among the project teams. This would lead to a successful innovation strategy that would reduce project problems and reduce project risks. They should also facilitate interaction among the stakeholders in the assembler's' projects. This would ensure that the stakeholders support the project strategy which would lead to project success.

The automobile assemblers in Kenya should establish research departments or outsource research services that would be involved in data collection which would increase the level of knowledge among the employees especially the project teams. The knowledge will give the project management team a basis for strategy which would give them multiple options to solving project problems in an innovation context.

5.5 Limitations of the Study

Among the limitations was choice of research objectives and questions, variables of interest, alternative theoretical perspectives that could be adopted. The choice of certain variables means that the study was limited to the variables of choice. Further, the respondents were not willing to give full details in fear that the information may be used for other purposes apart from research. This was overcome by informing the respondents

that all information would be treated with utmost confidentiality. The research was only carried out automobile assemblers in Kenya which limited the generalizability of the study.

5.6 Recommendation for Further Research

The study sought to establish the contributions of design thinking to project management in an innovation context using a case of the automobile industry in Kenya. The study recommends a study based on a survey of firms in different industry to compare the results. A similar study relating to the effect of design thinking on project management is recommended based on a period of study like ten years.

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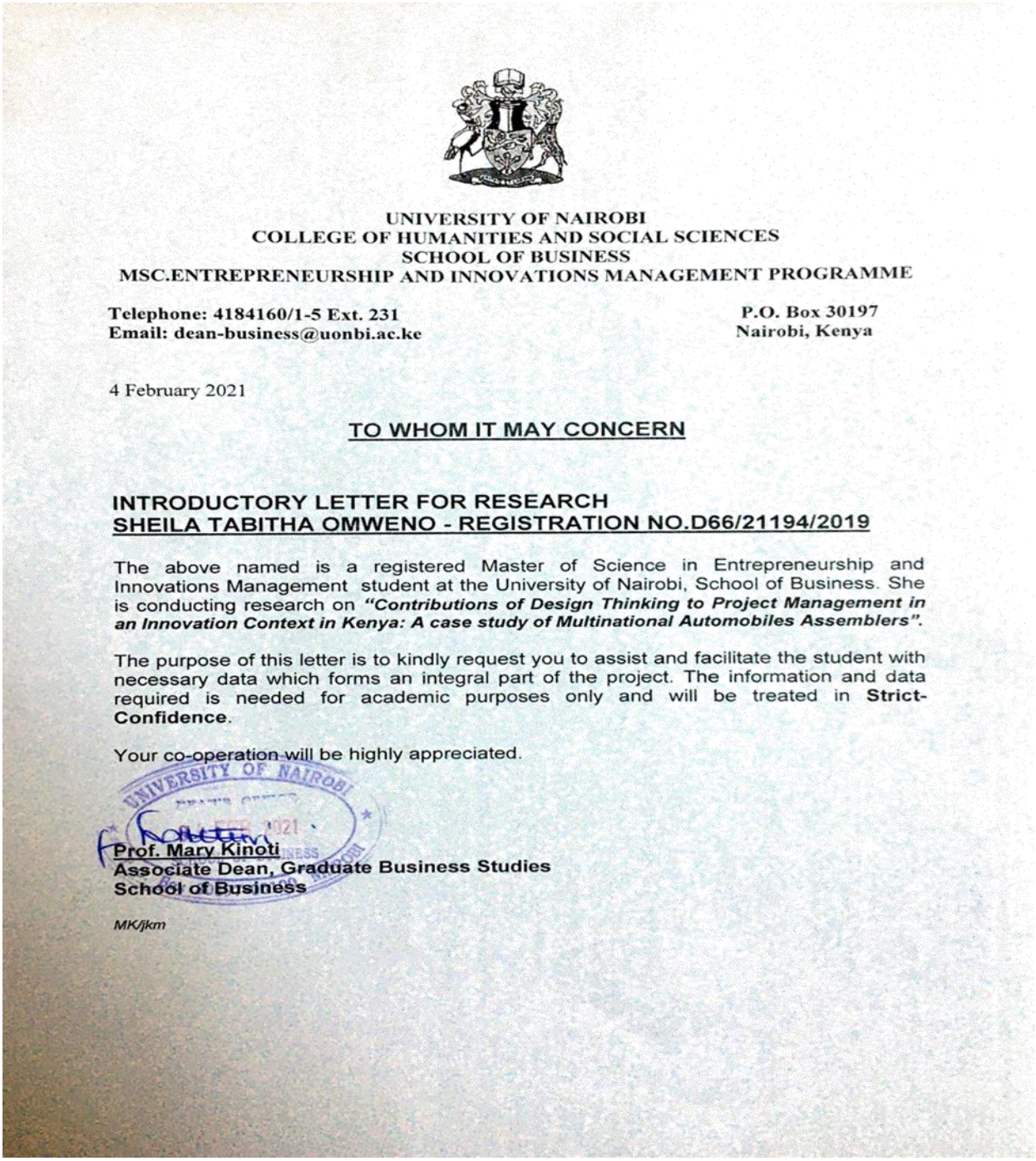
APPENDICES

APPENDIX I: INTRODUCTION LETTER



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4 February 2021

TO WHOM IT MAY CONCERN

INTRODUCTORY LETTER FOR RESEARCH
SHEILA TABITHA OMWENO - REGISTRATION NO.D66/21194/2019

The above named is a registered Master of Science in Entrepreneurship and Innovations Management student at the University of Nairobi, School of Business. She is conducting research on ***"Contributions of Design Thinking to Project Management in an Innovation Context in Kenya: A case study of Multinational Automobiles Assemblers"***.

The purpose of this letter is to kindly request you to assist and facilitate the student with necessary data which forms an integral part of the project. The information and data required is needed for academic purposes only and will be treated in **Strict-Confidence**.

Your co-operation will be highly appreciated.

UNIVERSITY OF NAIROBI

Prof. Mary Kinoti
Associate Dean, Graduate Business Studies
School of Business

MK/jkm

APPENDIX II: LIST OF MULTINATIONAL AUTOMOBILE COMPANIES IN KENYA

	COMPANIES	ADDRESS/LOCATION
1.	Kenya Vehicle Manufacturers (KVM)	Garissa Rd, Thika
2.	General Motors East Africa (GMEA)	Enterprise/ Mombasa Rd
3.	Honda Motorcycle Kenya Ltd	Enterprise Rd, Industrial area
4.	Associated Vehicle Assemblers Ltd (AVA)	Miritini Rd, Mombasa
5.	TVS Motors Kenya	Lusaka Rd, Industrial area
6.	DT Dobie Kenya	Lusaka Rd, Industrial area
7.	Associated Motors (AM)	Gilgil Rd, Industrial area
8.	Transafrica Motors Ltd	Kampala Rd
9.	Tata Motors	ICD Rd, Off Mombasa Rd

Source: Kenya Motor Industry Association (2020)

APPENDIX III: INTERVIEW GUIDE

Section A: General Information

1. What is your age? _____
2. What is your gender? _____
3. What is your highest level of education? _____
4. How long have you worked with the current assembler? _____

Section B: Design thinking

5. What is your agreement on the following what design thinking is for you?

a) A holistic and systematic approach for creating solutions _____

b) A methodology which enables innovation _____

c) An iterative process for innovation and adaptation to change _____

d) A collection of tools and techniques for user research and group creativity _____

e) A mindset i.e a way of thinking _____

f) A corporate culture which influences an institution's organizational structure_____

g) An approach to create solutions that are technological feasible and commercially viable _____

Section C: Design Thinking and Project Management

6. Do you think design making is relevant in project management?

_____

7. To what extent do you agree on the following statements?

a) Design thinking supports deep data collection and idea generation that encourage project managers to work with multiple options

_____

_____

b) Design thinking tools provide a firm-level capitalization vehicle that enables the reuse of knowledge from one project to another

_____

_____

c) Design thinking complements the analytical and functional perspective by putting an emphasis on the meaning of the innovative project

_____

_____

d) Design thinking provides an effective and practical approach for defining and articulating the project strategy through multiple options for testing

_____

_____

e) By starting with a problem definition phase, design thinking contributes to the articulation of the project strategy

_____

_____

f) Design think emphasize on a diversified team, which creates effectiveness in the management of stakeholder interactions in exploration project

_____

_____

g) Through the use of tools that enable rich and multiple interactions with users and favor empathy, design thinking enables the achievement of stakeholder identification and involvement in exploration projects.

_____

_____

h) Based on its strong and wide user-centered orientation, design thinking helps address stakeholder management within the exploration project phase

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i) Design thinking is well suited for managing exploration projects through experimentation

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j) Design thinking is an effective way to frontload problem and risk detection

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8. What would you recommend to be done to enhance the contribution of design thinking to project management?

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Thank you for your time.