



Addis Ababa University

College of Business and Economics

**The Impact of New Product Success Factors on Organizational
Performance in the case of AHFA PLC**

*A Project work Submitted to the School of Graduate Studies of Addis Ababa
University in Partial Fulfillment of the Requirements for the Award of the Degree
of Masters of Arts in Project Management*

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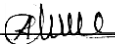

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Addis Ababa, Ethiopia

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
Statement of Declaration

I hereby declare that this research work entitled “The impact of new product success factors on organizational performance: the case of AHFA PLC” is my original work, prepared under the guidance of Teklegiorgis A. (PhD). All the sources of the materials utilized in this research have been properly acknowledged, and the researcher further witnesses that no other higher education institution has received the research, in whole or in part, with the intention of awarding a degree.

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Letter of Certification

This is to certify that Hanan Oumer has conducted this project work entitled “The impact of new product success factors on organizational performance: the case of AHFA PLC”. This project work is original and suitable for the submission in partial fulfillment of the requirements for the award of the degree of Masters of Arts in project management.

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List of acronyms

CRs	-	Customer Requirements
ECs	-	Engineering Characteristics
FRs	-	Functional Requirements
NPD	-	New Product Development
OP	-	Organizational performance
PD	-	Product Design
PLC	-	Private Limited Company
PQ	-	Product Quality
PSS	-	Product-service system
R&D	-	Research and Development
SD	-	Standard Deviation
VIF	-	Variance Inflation Factor

Abstract

Despite the fact that creating new goods or services might contribute to the growth of the company, it could also be the trigger that brings the business to an end if the process of product development is not managed properly. Aim of this study is to assess the impact of new product success factors on organizational performance in the case of AHFA PLC. The study employed quantitative research approach, descriptive and explanatory research designs and cross-sectional field survey. Data were collected from the entire target population of 42 management staff cited at different functional levels from various departments, including sales and marketing, quality control, and production, via self-administered structured questionnaire. The collected data were analyzed using SPSS V.21 software, employing both descriptive (i.e., mean and standard deviation) and inferential statistics (i.e., Pearson correlation and multiple linear regression analysis). Findings of the study revealed that even if product quality, design, and marketability have a moderately significant positive relationship with regard to organizational performance, the impact of product design on organizational performance is insignificant while the impact of product quality and marketability is significant. Hence, the case company should take into account the need for developing new products with maintained quality along with a strategy that would make the product appealing to buyers in order to enhance performance and remain competitive in the fast-paced business world. As this study focused on three dimensions with regard to NPD it is recommended to encounter other dimensions in future studies.

Keywords: *New product, Product quality, Product design, Product marketability, Organizational performance*

Chapter One

1. Introduction

1.1. Background of the study

Manufacturing companies are under pressure to introduce new products, variations, or innovations into the market more frequently due to fierce global competition. The objective is to quickly introduce new, affordable items with the best features and quality to the market. Businesses who are able to effectively manage these demands stand to gain a significant competitive edge Carrillo and Franza (2006).

According to Chang and Taylor (2016), product development, also known as new product development, is the process of converting a market opportunity and a set of technological presumptions into a commercially viable product. Developing a high-tech product necessitates the integration of numerous players with varying levels of knowledge and experience (Chux, 2010). Product development is an ongoing series of research activities pertaining to quality control, packaging, technical production aspects, nutritional labeling, raw materials, necessary technology, and marketing, in addition to issues with the core product itself (McIlveen, 1994).

Product development is a "success factor for new product development efforts," according to Troy et al. (2008). When carried out correctly, it can benefit an organization's long-term survival, profitability, and market share. This suggests that product development includes methods that assist businesses in producing high-quality, marketable items that satisfy consumer demands and increase the worth of the company as a whole. Furthermore, it was proposed by Namusonge et al. (2017) that behaviors related to product development significantly improve financial performance. Poor market analysis, inadequate product design, regulatory concerns, weak and unproven market assumptions, and delays in reaching the market are all reasons why many products fail too soon.

Ethiopia's food industry is one of the most important industrial sectors. The majority of this sector's raw materials are farm products, which makes it closely tied to the agriculture industry and a major source of revenue for the government (Sharon, 2019). The majority of new food items, especially those made by small and medium-sized businesses, are developed using models taken from other

industries or company-specific new product development processes (Pinna et al., 2018; Rossetti et al., 2014; Rudolph, 2007).

Cooper and Kleinschmidt (2010) state that a company's ability to successfully create, launch, and market a new product could determine the future of the entire enterprise. Product development can be a complex and risky business activity, but it's essential for gaining a competitive advantage and expanding the product market. However, the success of a new product depends on a variety of factors, many of which remain elusive because different scholars use different methods and criteria to measure success (Gao and Bernard, 2018; Kam Sing Wong and Tong, 2013).

Academic researchers in developing countries have paid less attention to studies in the field of new product, according to Udegbe & Udegbe (2013). This study therefore attempts to look into how success factors of a newly developed product affect the performance of a company in the case of AHFA PLC.

1.2. Company background

AHFA PLC is a fast-growing company located in the southeastern part of Addis Ababa, Ethiopia, engaged in both manufacturing and trading sectors for more than 25 years of combined industry. Since its founding in 1992 E.C., it has grown to be an important player in the trade and manufacturing sectors. It is involved in the manufacturing and distribution of premium OCHE macaroni, pasta, shortening, vegetable ghee, margarine, and wheat flour. Additionally, the business distributes OCHE sunflower oil. In 2023 G.C., the company expanded its business by establishing a tomato ketchup processing plant with a capacity of 12 tons per day. The company sells tomato ketchup under the OCHE brand.

In addition to satisfying its clients by offering premium and reasonably priced products through its expert teams that collaborate perfectly, AHFA PLC aims to expand into new export markets with a broad range of products. Its workforce comprises more than 200 highly qualified and experienced employees. The company places high value on its interactions with suppliers, customers, and workers.

To further highlight its dedication to quality, safety, and operational excellence, the company also holds certifications for its food management system (ISO 22000:2018), quality management

system (ISO 9001:2015), and occupational health and safety management system (ISO 45001:2018).

1.3. Statement of the problem

In order to survive in the constantly changing business environment and attain targeted objectives concerning profitability, substantial sales volume, and substantial market share, a company must persistently innovate its products and product lines to meet the constantly changing demands and preferences of customers (Grundiche, 2004). According to Nwokah et al. (2009), these organizational changes in reaction to changing consumer preferences may even necessitate the modification, introduction, or termination of undesired products. Companies need to develop an entrepreneurial and creative organizational culture in order to manage, communicate, and encourage staff members to generate new, creative concepts in order to improve or maintain innovative performance (Kenney et al., 2010; Fry, 1987).

According to Kotler and Keller (2009), new product development refers to the process of creating unique products, improved products, modified products, and new brands using the company's internal product development resources. It has proven to be difficult for many companies to find an effective and successful approach for highly innovative types of R&D projects, where there is a great deal of uncertainty. As a result, many choose low risk, low value R&D projects instead of having an effective and efficient new product development process (Brettel et al., 2011; Perry et al., 2011; Cooper, 2009). In addition, some individuals take shortcuts in order to save time. For instance, they may create a poorly designed launch plan or conduct a quick market study rather than an in-depth one. In such cases, a long time to market and poor launch performance are the ultimate results (Cooper, 2009).

Studies show that over 45% of new goods fail during the technical stage, and 35% fail due to customer in-acceptance soon after they are launched (Louch and Kavadias, 2008). Kotler and Armstrong (2012) offer a number of reasons why so many new product development attempts fail, yet there are clear instructions for effective new product development. The first is that overestimating the size of the market will lead to overproduction and lost profits. The second argument is that a new product with poor design won't appeal to potential buyers as much. The third reason is that manufacturing for the incorrect market segment, like selling a luxury good in an area that is experiencing economic hardship. The fourth factor is introducing a new product into

the market at the wrong time. An example of this would be developing a high-tech product that people can use during a recession, when people are reluctant to spend money on items that are not essential for everyday living. The fifth reason is that incorrect pricing i.e., either too high or too low, which would result in a loss of profits. The sixth argument is that ineffective advertising will keep a new product from becoming known by the appropriate target market.

Ethiopia's manufacturing industry supports the country's output, employment, and exports. The largest subsector in the manufacturing sector is agro processing, which includes the food and beverage subsector. It contributes 36% of the gross value of production and 38% of the value added at basic price to the large and medium-sized manufacturing industry (CSA, 2014). Even though companies in this sector develop new products from time to time, eventually the product may not succeed due to several reasons, including those mentioned earlier. The need to address this issue led to conduct this study, which looked at how performance indicators of new product development affect company performance.

The success of new products is influenced by several factors. According to a study by Cooper and Kleinschmidt (2010), there are 13 fact-based success criteria that have been proven to boost project success rates for new products and improve the overall performance of new products for the company when they are effectively applied. Apart from a study by Daniel (2022), academic studies in this field appear not to have stimulated interest among Ethiopian researchers, though it is the largest subsector of manufacturing. Unlike Daniel, who has encountered success factors like product quality and design in line with Nwokah et al. (2009), this study take into account dimensions such as product marketability practices which have an influences in the success of new products. Thus, this research provided valuable information and knowledge to the case company as well as enhanced the body of knowledge concerning the impact of new product success factors on the performance of food complexes in developing countries.

1.4. Research questions

- ✓ What is the effect of product design on organizational performance?
- ✓ What is the effect of product quality on organizational performance?
- ✓ How does product marketability affect organizational performance?

1.5. Objective of the study

1.5.1. General objective

The general objective of this study is to assess “The Impact of New Product Success Factors on Organizational Performance In the Case of AHFA PLC”.

1.5.2. Specific objectives

- ✓ To investigate the effect of product design on organizational performance.
- ✓ To identify the effect of product quality on organizational performance.
- ✓ To find out the effect of product marketability on organizational performance.

1.6. Significance of the study

This study will contribute to knowledge, especially for countries under development, by addressing the empirical gap in the field of new product success factors with regard to organizational performance. It may also serve as a basis for upcoming studies by offering recommendations on potential study subjects. Moreover, it could be used as an input by other manufacturers who wish to expand their operations in a similar industry. Additionally, it could provide the case company with an insight into success factors that need to be considered in the process of creating and launching new products. Furthermore, the study's findings could be helpful in developing guidelines that enhance businesses' performance.

1.7. Scope of the study

This study has an objective of assessing the impact of new product success factors on organizational performance in the case of food complex named AHFA PLC located at southeastern part of Addis Ababa, Ethiopia. Despite a number of manufacturers develop new products, this study focused on a single industry engaged in food processing.

Different studies have identified various performance indicators for new products. Since different studies use different techniques and standards to measure success, Wong and Tong (2013) claim that the factors that determine the success of new products remain elusive. In light of this, the dimensions of this study are based on the work of Cooper and Kleinschmidt (2010), who focused on evidence-based success factors that, when properly implemented, have been shown to enhance

new product project success rates as well as the business's overall performance. However, this study is limited to just three factors: product design, quality, and marketability due to a number of limitations. On the other hand, organizational performance can also be measured in different aspects. For the purpose of this study, it was measured in terms of profit margin and customer loyalty, considering the work of Kamau and Thoronjo (2022).

This study employed a cross-sectional field survey as it enables measurement of independent and dependent variables at the same point in time by means of questionnaire adopted from previous studies.

1.8. Limitation of the study

This study was aimed to be conducted on a single manufacturing company engaged in the sector of agro - processing hence, its findings may not be applicable to other sectors. Also, there are success factors that may have potential impact on company performance but disregarded in this study due to time and cost constraints however, they are indicated for further study.

1.9. Definition of terms

New Product: as defined by Crawford it is ‘a product for which the company needs a new marketing, and in which the substantial changes are conveyed but excludes any changes that may require simple promotions’ (Kim et al., 2016)

Product design: is a collection of all the elements that influence a product's appearance, feel, and functionality (Dirisu et al., 2013).

Product quality: is defined as “conformance to customer requirements” (Crosby, 1979).

Marketability: is the ability of a product to attract consumers and make a profit at a particular price point (Chron, 2020).

Organizational performance: is defined as a measure of how well a company has performed financially, in the product market, and in terms of shareholder return. It represents the extent to which a company has achieved its aims and objectives (Richard et al., 2009).

1.10. Organization of the study

This study is organized in five chapters: the first chapter gives insight on background of the study, background of the company, problem statement, objective, significance, scope, limitation and organization of the study. The second chapter is about reviewed literatures on the sector of new product development in respect of theoretical and empirical literatures regarding processes, challenges, success factors, impact on company performance and finally ended up with conceptual frame work of the study. The third chapter deals with the research methodology that has been employed by the researcher to address the aim of the study. It includes research approach, research design, sampling design, data collection and analysis, testing for reliability and validity, and finally ethical consideration. The fourth chapter is related to the study findings, their interpretations, and discussions. At last, the fifth chapter deals with a summary of the major findings, conclusions, and recommendations of the researcher, along with implications for future areas to be investigated by others.

Chapter Two

2. Literature review

2.1. Theoretical reviews

2.1.1. Definition

Over the years, numerous definitions of new product development have been proposed. According to Morgan and James (2002); Antony et al. (2006), new product development is the process of introducing a new product into an established market. In another way, new product development is the tactic used by businesses to introduce new items into their current markets. On the other hand, Atuahene–Gima and Li (2000) described new product development as “procedure of conceptualizing ideas, designing, developing and eventually introducing a new product or service in the market so that it not only outshines competitors but also earn huge revenues for the organization”. The introduction of new products on the market certainly raises consumer expectations, as they anticipate finding something that satisfies their needs. Also, according to Daniel (2022), new product development is the entire process of introducing a new product to the market, which includes systematic approaches of designing, creating, and releasing the product. On the other hand, Levitt (1966) described new product development as a strategy for enhancing sales and prolonging the lifespan of existing products by incorporating new characteristics, designs, packaging, and pricing.

2.1.2. Background

Empirical researches of new product developments began in earnest of 1960s with the “grand approach” focusing on revealing the general success criteria by means of a comprehensive examination of project profiles that had demonstrated success. The "focus approach" emerged in the 1970s, when analysis of particular topics in product development was the main focus. The "process approach," which examined the in-depth connection between performance and product development process management, became the main focus in the later part of the 1980s (Kuwashima, 2012).

2.1.3. New product classifications

Researchers such as Cooper (2001), Crawford and Benedetto (2003), and Kumar and Phrommathed (2005), classified new product into several categories: the first is new-to-the-world products which are unique and establish an entirely new market (Cooper, 2001) or “Revolutionize existing product categories or define wholly new ones” (Crawford and Benedetto, 2003, p.12). For instance, computer, internet

The second is new category entries, which are imitations of existing products (“me-too”). It provides opportunities for a company to enter new markets. Despite existence of the product in the market, it might be regarded as a new product since it is new to the firm (Cooper, 2001). For instance, Microsoft’s entry into the video gaming system market with their Xbox

The third category is addition to product lines, which consists of newly developed items of the company that complement a previously-existing range of products that the company already manufactures (Cooper, 2001). These are new products that supplement the company's current product lines, some of which are line extensions (Kumar and Phrommathed, 2005). For instance, expanding product line within the same product category like an expansion from body lotion to moisturizer

The fourth category is product improvements. These "not-so-new" products may replace items that are currently in a company's product range. But compared to the previous product, they offer better performance or a higher perceived value (Crawford and Benedetto, 2003). For instance, software updates

The fifth category is repositioning i.e., choosing a new market, resolving a new problem, or meeting an entirely distinct customer need (Cooper, 2001). For instance, aspirin was re-positioned as blood thinner although it was also used to relieve headaches

The final or the six category is cost reduction. New products that reduce costs while maintaining performance and benefit levels similar to those of the line's existing products and can replace them with at a lower cost (Cooper, 2001). For instance, generic medications (offer the same active ingredients as branded drugs but at a lower cost)

2.1.4. Models of new product

The intense competition in the global market forces companies to put emphasis on satisfying the needs of their clients. Businesses find it extremely challenging to succeed in the global market by relying solely on cheap, high-volume production. In fiercely competitive markets, maintaining a desirable position needs diligent effort to provide goods that fulfill and satisfy consumer needs. According to Wang and Ji (2010), a number of models have been developed to help organizations better understand the needs of their customers. The models are as follows:

- i. **Product-service system (PSS):** Goedkoop et al. initially introduced this concept to maximize the advantages of combining the development of new products with related services. It is described as an integrated system of goods, services, player networks, and auxiliary infrastructure that operate together to meet consumer demands, maintain competitiveness, and have less of an impact on the environment than conventional business models. Technical PSS and industrial PSS are two examples of the specialized PSS versions that were also developed. The following describes the design of PSS (Zhu et al., 2015):
 - ✓ **Customer analysis:** After obtaining the CRs, PSS designers evaluate the CRs to determine the functional requirements (FRs) and engineering characteristics (ECs) of both the product and the service. Mapping can be used to model how CRs, FRs, and ECs interact with one another.
 - ✓ **PSS conceptual design:** Case-based reasoning, knowledge reasoning, and other CRs, FRs, and ECs are used to develop conceptual ideas. For each of the individual CRs, the conceptual ideas that are most semantically comparable will be mentioned.
 - ✓ **PSS detailed design:** After defining the referred ideas, PSS designers distribute chosen ideas within a detailed structure. To further comprehend PSS, the details of its specifications are then explained.
- ii. **The Kano model:** This approach groups a new product's qualities based on how those attributes affect customer satisfaction. Five categories are used to group attributes (Szymczak and Kowal, 2016; Rafinejad, 2007). These groups are:

- ✓ **(M) Must-be:** These traits address the fundamental requirements that, when satisfied, customers won't notice. However, in the event that they are not met, they will have a significant impact.
 - ✓ **(O) One-dimensional:** Customers will sense satisfaction if the product has these features. If not fulfilled, clients will not be happy. Products must have these features at a level where their absence won't negatively impact consumer pleasure (neutral point). Further qualities might be added after this to satisfy customers.
 - ✓ **(A) Attractive:** These characteristics are referred to as "bonuses," because their inclusion in the product raises customer happiness; however, their exclusion has no appreciable impact.
 - ✓ **(I) Indifferent:** There is no connection between these qualities and client happiness. Whether or not they are included won't affect the customer's decision to make a purchase.
 - ✓ **(R) Reverse:** These characteristics should be avoided since they have a negative impact on consumer satisfaction.
- iii. **Conjoint analysis:** Using a multi-attribute preference analysis, this model is used to assess the relative importance of consumer needs in relation to product features and attributes. Knowing where a new product will stand in relation to products currently sold in the market by competitors is helpful. To do this, every feature and price combination available for a certain product is first listed. Secondly, these combinations are ranked by a sample of prospective buyers. Third, a statistical analysis is performed to determine which combination is the best and to decide whether to produce it by ranking and weighing the combinations based on the responses. This model is typically utilized for high-consuming products and is employed in market research (Rafinejad, 2007).
 - iv. **The product value matrix:** Using this model, product development tasks are prioritized and a market requirement specification (MRS) is created for each new product. It guarantees that the demands of all parties such as suppliers, retailers, and so on involved in the supply chain of new products are satisfied. According to Rafinejad (2007), this model makes the assumption that the sales and marketing staff is aware of every participants and their needs in the supply chain of the given product.
 - v. **Quality function deployment (QFD):** This model attempts to make new products affordable for customers by including their requirements into the specifications and design of the product. QFD reduces development time and costs while increasing quality. Instead

of focusing on business management, QFD advises using resources to produce innovative products that meet client demand. The product development team must have a thorough understanding of three categories of client requirements (Vonderembse and Raghunathan, 1997). These groups are:

- ✓ **First group:** Fundamental needs of consumer base are determined using market research techniques including focus groups, surveys, and interviews. These specifications, like "a fast car," are typically ambiguous or vague, thus they need to be further defined to include quantifiable features. Typically, during market research, certain characteristics of the product like the "safety specifications of car" are disregarded or left unspoken because it is assumed that the buyers have already requested them to be included. The product must have great performance and meet all stated and unstated fundamental needs in order to have a high customer satisfaction rating.
- ✓ **Second group:** These are fundamental needs of the client, ascertained by evaluating how the customer uses the items and their behavior. For example, clients can need banks to operate outside of the 9–5 shift. This request can be fulfilled by working extra hours or by using phone and online banking.
- ✓ **Third group:** These needs are referred to as "new features" and are characterized as "delight" since they are not explicitly stated, and frequently unknown to customers, but excite them when they discover them unexpectedly in the product. Customers may not be aware of these items' technological capabilities or may be accustomed to more conventional products, which is why they are not familiar with them. While technical advancements make certain new features possible, some features can only be achieved by doing market research and developing new products while also understanding consumer behavior and product applications.

2.1.5. Processes of new product development

A new or updated product is introduced to the market through a series of actions that constitute the new product development process. This procedure entails the creation of opportunities, their selection, and incorporation into a tangible product that is made available to consumers (Loch and Kavadias, 2008).

i. Idea Generation

The first stage in creating a new product is to look for innovative ways to improve the functionality of current items or create brand-new ones. Many sources exist for generating ideas, including staff input, competitors' new services and products, customer feedback, and trends and patterns of consumer requirements (Judson et al., 2006).

ii. Idea Screening

In this phase of the new product development, the product concept is assessed and the evaluation calls for the output of the concept generation phase to be accepted both internally and externally (Ulrich, 2003). It is likely that the company will come up with multiple concepts during the idea generation phase, but before moving forward with a particular concept, it will need to address a number of questions. For example, company must assess if the concepts produced are feasible to meet the needs of the client (Katila and Ahuja, 2002). As a result, this stage may discover a number of concepts that satisfy customer wants, opening the door for radical developments.

iii. Concept Development & Testing

This phase of the new product development process encourages the change from concepts to completed products. Project managers, technical specialists, and marketing specialists work together to translate the ideas from design drawings into tangible goods throughout this stage of the process (Krishnan and Loch, 2005). The chosen concept should evaluate three inputs: the product's form, the technology employed in production, and the benefits that buyers will receive. To summarize, the concept development step entails combining client information with the designers' own ideas for the new product.

iv. Marketing Strategy

Concept development is followed by the creation of a marketing strategy, during which the product manager creates a plan for launching a new product into the market (van Hoek and Chapman, 2006). The strategy plan is divided into three sections: the first describes the market's size, structure, and behavior; the second section shows the marketing budget and the intended pricing distribution technique. The final section presents the long-term sales targets and profit objectives (Krishnan and Ulrich, 2001).

v. Business Analysis

During the business analysis phases, the expenses, sales, and profit projections related to the new product are reviewed to determine whether these components meet the organization's objectives (Judson et al., 2006). According to Lettice et al. (2006), the management makes decisions at this stage about the newly launched product's technical viability, potential for gaining market share, and financial contribution to the company.

vi. Product Development

This step demands an intensive technical examination to determine whether the product is being produced at a cost that will enable the final price to be economically desirable to the buyer (Lewis, 2001). To do this, a working model, or prototype, of the product is created in order to determine all of its tangible and intangible characteristics. The R&D department is given a product protocol that outlines all the specific features to be anticipated in the product and can be used to create the prototype.

vii. Market Analysis

Following successful development and pretest phases, the product is tested in the market if it continues to appear profitable (Wheelwright, 2010). This is a costly but essential phase in the worldwide development of products, and those who pass the pretest in the lab ought to undergo comparable testing in international test markets so that the viability of their development could be confirmed.

The target market can be reduced in size by excluding markets where it is determined that the product is not practical (Lilien et al., 2002). Consequently, doing a market test in each representative market eventually aids in lowering substantial possible long-term losses. Following are market tests according to Shalabi and Bach (2016):

- ❖ Physical prototype
- ❖ Testing the product and packaging in normal usage situations
- ❖ Conducting a focus group to obtain primary customer reviews or introduction at trade shows
- ❖ Making necessary adjustments
- ❖ Producing and selling in a test market to explore customer acceptance

viii. Commercialization

The last stage of developing a global product is deciding whether to launch the product in every area that is being explored (Lovelace et al., 2001). This global marketer believes that it should be evident if the product should be launched and which markets to focus on in light of engineering's involvement in the process development. However, if the corporation wants to optimize the product's contribution to the entire company portfolio, it must be continuously monitored when new products are introduced into a variety of markets (Millward and Lewis, 2005). In cases where a product finds acceptance and gains popularity, enhancements to the production and distribution procedures must follow product's launch.

2.1.6. Success factors of new product

Due to varying techniques and criteria used by scholars to measure success, new product success factors continue to be illusive (Wong and Tong, 2013). According to Mahmood and Fatima (2014), for the success of many competing firms in the global marketplace quality has become a key competitive priority and a prerequisite. The need for greater quality at cheaper prices is one of the main factors driving the global consumer movement toward quality. Kotler (1984) emphasized that customers' perceptions of quality are crucial, and that quality must begin with their requirements and finish with their perceptions.

Cooper (1979) described quality as "the superiority or uniqueness of the product." The primary factor influencing success and profitability is a superior and unique product, whose success rates are said to be three to five times higher than those of "me too" products (Cooper, 2001; Cooper and Kleinschmidt, 1996). Cooper's (2001) study highlights the significant influence of superior products over those with the lowest level of uniqueness:

- Their remarkable rate of commercial success is 98.0%, whereas that of undifferentiated ones is only 18.4%.
- Their market share of the specified target market is 53.5%, whereas that of new "me too" products is only 11.6%.
- Their profitability rating is 8.4 out of 10, which is significantly higher than that of undifferentiated items (where 10 represents extraordinary earnings that greatly exceed the company's minimal hurdle).

- They also meet the company's sales and profit objectives to a larger extent than undifferentiated products do.

Chang and Fong (2005) pointed out that only companies with advanced quality systems achieve outstanding organizational performance and maintain their competitiveness in the market. Quality has grown to be a significant component of corporate strategy. According to Prajogo and Sohal (2003), an organization's success is also impacted by how much emphasis is placed on quality throughout all of its systems and procedures. Furthermore, research by Carter et al. (2010), Chin and Sofian (2011), Yusof and Aspinwall (2000), Sousa and Voss (2002), and Almansour (2012) has also shown that quality positively affects organizational and business performance.

A well-designed product can also make a difference in the market, helping to gain consumer acceptability, giving the company a competitive edge, and developing into an effective marketing instrument (Joy et al., 2013). According to Morris (2009), an organization's entire functional spectrum is impacted by product design. Because enough information must be produced to properly identify client wants, operations and marketing should be involved. This needs to be communicated to the people in charge of creating, promoting, and manufacturing a particular service or product. Additionally, Pullman and William (2011) noted that data from sales representatives, marketing managers, and other organization decision-makers must be used to clearly define the market demand for a product and its usage during the process design.

Product form has a significant impact on consumers' perceptions of the brand and the product (Bitner, 1992; Solomon, 1983). Organizations must focus on creating a manufacturing system that can meet all demand requests within deadlines at a reasonable cost in order to survive in the global market (Malhotra, 2008). Product design has been used to increase market share more strategically and creatively since the 1930s (Berkowitz, 1987; Nussbaum, 1988).

According to Cooper and Kleinschmidt (2010), a new product's ability to succeed depends critically on having a deep grasp of the needs and desires of the market, the competitive landscape, and customer behavior. Nearly every research study on product success factors supports this conclusion. Incorporating feedback from the market and customers early in the project considerably increases its chances of success, even for technology-driven novel products (when the idea originates from a technical or laboratory source). On the other hand, poor product innovation strategy, a lack of a strong market orientation, a refusal to conduct necessary market

research and incorporate consumer feedback, and excluding customers from the product development process all portend disaster. Common drawbacks identified in nearly all studies on the reasons why new products fail include poor market research, inadequate market analysis, weak or nonexistent market studies, test markets, market launches, and insufficient funding for marketing initiatives. To be successful, a strong market orientation needs to be incorporated into all phases of the new product process, including concept generation, product design, development, post-development, and launching stage (Cooper, 2001).

Moreover, fact-based success factors that are proven and when applied proficiently, lead to higher success rates at the new-product project level as well as higher overall new-product performance for the business were identified by Cooper and Kleinschmidt (2010). Here are:

- a) Project team organization: Development of new products needs to be managed as a cross-functional, multidisciplinary endeavor. A project with good organizational design means:
 - Members come from several departments, such as operations, marketing and sales, engineering, R&D, and so on, working together as a cross-functional team rather than each one performing its own task separately.
 - Teams are committed and focused, they allocate a significant portion of their time to one project rather than dividing it across other projects or other tasks.
 - Where team members communicate with each other frequently through brief meetings, updates on projects, and even colocation
 - Team is accountable for the project from start to finish (as opposed to accountability for only one stage of the project).
 - There is a strong project leader or champion who leads and drives the project
- b) Resource commitment: Far too many projects just fail due to a lack of time and money commitments. In this context, the following facts are listed:
 - The usual new-product project lacks a strong market orientation, and a large portion of this shortcoming may be traced back to the limited marketing resources available for the project.
 - Another major mistake is the failure to complete front-end homework. Again, a large portion of this shortfall is due to a lack of resources i.e., there is just not enough cash, manpower, or time to complete the task.

However, compared to other businesses, best-practice organizations devote a lot more of their resources to developing new products (American Productivity & Quality Center, 2003; de Brentani and Kleinschmidt, 2004).

- c) According to Cooper (2001), de Brentani and Kleinschmidt (2004), Kleinschmidt et al. (2007), and Cooper (2001), top management support is a crucial component of product innovation and is closely associated with the company's success in product development. But the proper kind of help is required. Instead of taking center stage in the product development process, senior management's responsibility is to facilitate the process.
- d) The right organizational culture: A strong innovation culture has a positive effect on performance, as demonstrated by numerous studies. According to de Brentani and Kleinschmidt (2004) and Kleinschmidt et al. (2007), features of this culture include:
 - Managers and employees who think that new products are essential to the company's growth both locally and globally
 - A mindset that inspires staff members to fully support the idea of inventing novel products
 - Conducting businesses in a way that is adaptable to new concepts and change
 - An environment that promotes and rewards risk-taking and entrepreneurship
 - People or groups are penalized intentionally when new products fail to produce the desired outcomes
 - Preferred ways of functioning include thinking outside the box, openness and informal communication and involvement, and adaptability to change

Furthermore, Hart and Beker (1994) noted that in order to secure a substantial profit share from a new product before competitors enter the market, a new product must be introduced and produced quickly. This is because past experience has shown that the first company to enter the market at the early stages of the life cycle of a new product gains the majority of its profits, with others sharing the remaining portion. To prevent errors, companies should exercise caution when introducing and producing new products quickly.

2.1.7. Benefits of developing new product

In order to properly respond to the changing needs of the customer as well as the pressures imposed by competitors, new ideas are essential. Product development is not a new phenomenon; rather, it

has been around for many years and has changed people's lives (Saban et al., 2000). Creating new items has a number of advantages, and its value can be assessed by looking at the earnings and sales that result from its creation. The development of new products increases manufacturing efficiency and returns on investment while also significantly decreasing production time and expenses overall (Ayağ and özdem, 2007).

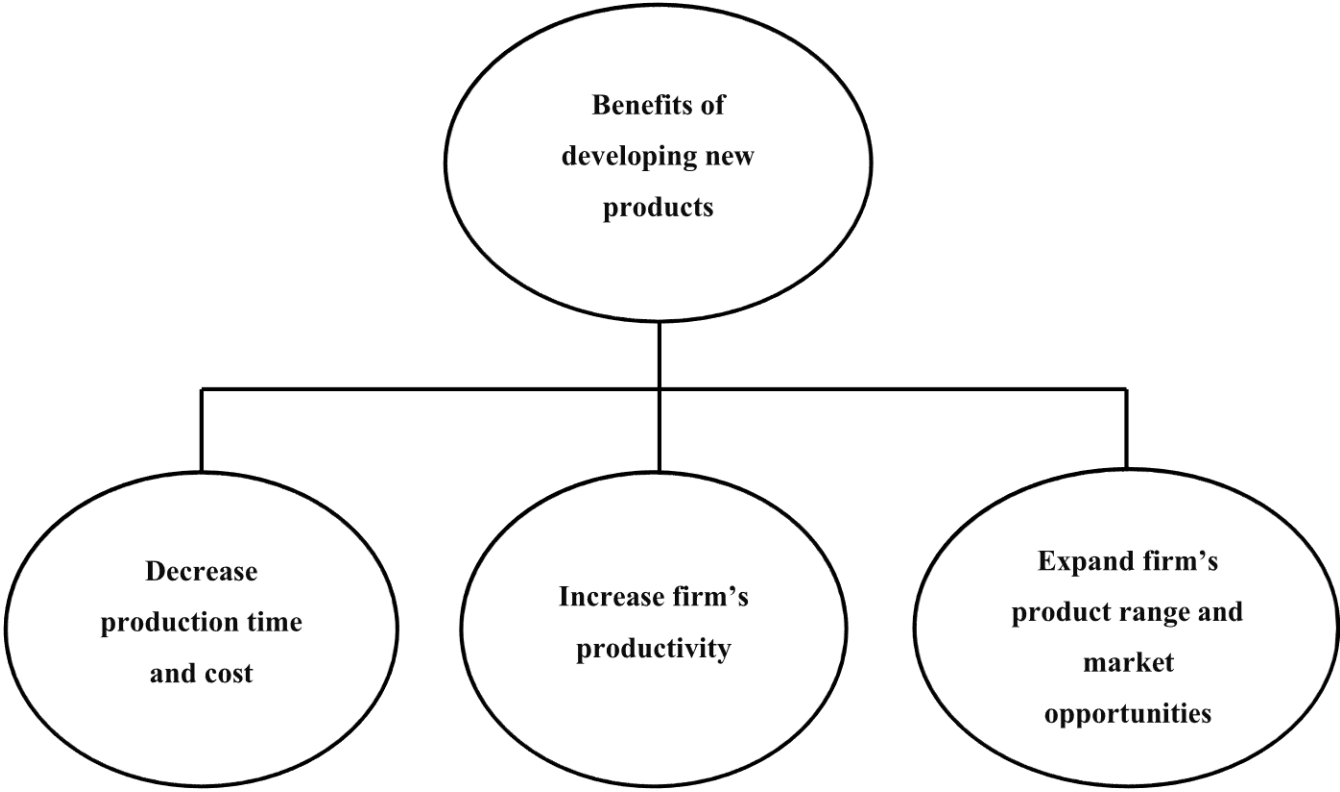


Figure 1.1: Benefits of new product development

Source: Shalabi and Bach (2016)

The literature provides strong evidence that the company's profitability and sales are significantly impacted by new products, which is the main justification for investing in their development. According to Sahay and Riley (2003), successful development of new products creates consumer loyalty, expands business opportunities, and opens up new markets. Successfully implementing new product development processes also improves already-existing processes, goods, and services, which raises productivity, reduces costs, and creates jobs. According to Siu et al. (2006), companies that consistently strive to launch new goods have been shown to get a larger market share worldwide, exhibit higher rates of profitability and growth, and have higher market

valuations. Customers now have more options for better products because to the phenomenon of new product development.

Technological advancements and intense international competitions have made it comparatively easier for businesses to learn about and communicate with their clients about their products (Belassi et al., 2007). It has become crucial for businesses to innovate both their current product lines and create new ones that successfully meet consumer needs if they want to achieve a competitive edge in the market and surpass their competitors.

2.1.8. Challenges in new product development

There are a number of obstacles that prevent businesses from innovating and creating new products. Businesses may run across internal and external obstacles when creating new products. The lack of market demand for innovations, challenges in procuring raw materials, and laws and policies are examples of external difficulties to the development of a new product. However, internal obstacles such as a lack of expertise, staff opposition to change, a lack of managerial time, and a lack of financial or technological resources hinder a company's ability to innovate (Carbonara and Scozzi, 2006).

Shalabi and Bach (2016) listed six possible obstacles that could hinder the creation of a new product:

i. Global Competition

International competition is generally seen as the key factor influencing the creation of new products (Sivadas and Dwyer, 2000). Given the size and diversity of the global market, it can be challenging for businesses to obtain competitive intelligence. Even if a company may spend a lot of money developing new products, it may still suffer significant losses if it fails to analyze the innovation that consumers release in such products (Carlile, 2002).

ii. Time

In the modern era, time is seen as a possible constraint for the development of new products. Because of this, it is now crucial for businesses to make sure that new products are released into the market when they are needed (Connell et al., 2001).

iii. Market Potential

It is imperative for companies gain knowledge about both their domestic and international competitors. A new product can only succeed in the current economic environment if it outperforms than the one created by its competitors. As a result, firms need to regularly carry out in-depth market research (De Toni and Nassimbeni, 2003).

iv. Technological Change

Rapid technological advancement presents another possible challenge to the development of new products and could put product creators in a risky and unclear position. Furthermore, the company may suffer from a failed product if it chooses to produce new products using outdated technology.

v. Concept

One major obstacle firms may face while creating new products is choosing the appropriate concept. According to Connell et al. (2001), regulatory constraints, production challenges, and expenses may make an innovative concept impractical in some situations.

vi. Financing

The development of new products is an expensive and risky process. As a result, the company funding the creation of new products must ensure that the return matches the level of risk taken (Connell et al., 2001).

2.1.9. Organizational performance

Organizational performance was defined by Tomal and Jones (2015) as an organization's actual production compared to its intended output. It includes the following three distinct categories of company outcomes: product market performance (sales, market share, etc.), shareholder return (total shareholder return, economic value added, etc.), and financial performance (profits, return on assets, return on investment, etc.) (Richard et al., 2009). Also, it can be measured in an economical aspect that looks at the profits, sales, return on investment for shareholders, and other financial metrics where the operational performance is centered on observable indicators such as customer satisfaction and loyalty, the firm's social capital, and competitive edge derived from capabilities and resources (Tahir, 2020).

According to Jauch and Glueck (1999), both quantitative and qualitative factors can be used to assess a company's performance. A company's quantitative performance can be evaluated by comparing its accomplishments to those of the past or by evaluating it against its rivals in a variety of areas, including net profit, market share, market share growth, market share, stock price, dividend rate, share earnings profit, return on capital, equity returns, number of working days missed due to labor strikes, production cost, and efficiency. Qualitative inquiries are used to determine whether or not a company's goals, strategies, and plans are fully integrated, appropriate, and effective.

As per Hult et al. (2004), organizational performance is associated with the firm's capacity to generate profit and growth in order to accomplish its overall strategic goals. It is dependent on a number of variables, including employee productivity, the effectiveness with which businesses achieve their goals, the efficiency of business processes, and the degree to which business operations are aligned with the organization's strategy, climate, and culture. How well an organization succeeds in the marketplace is influenced by all of these elements (Smith, 2019).

2.2. Empirical reviews

Several prominent studies focused on the development of new products. Product quality and speed to market were found by McNally et al. (2011) to be dimensions of new product development that significantly affect profitability; its impact on operational performance was observed by Liu et al. (2014); its effect on financial performance was observed by Heather (1990); and its effect on market share was observed by Chux (2010). A positive correlation has also been shown between the development of new products and organizational performance by researchers like Nwokah et al. (2009), Udegbe et al. (2013), Mbithi et al. (2015), Udegbe (2014), Onikoyi (2017), and Masaku (2017).

Liu et al.'s (2014) study employed a quantitative questionnaire survey to investigate how product development affects operating performance in Taiwan's textile sector. A total of 450 copies of questionnaires were given out to supervisors, employees, and customers; 347 of those copies were valid, achieving a 77% retrieval rate. For the purposes of this investigation, every copy that had been recovered was regarded as a valid sample. ANOVA was used to discuss the effects of demographic variables on the relationships between product development and operating performance, while regression analysis was used to understand the relationships between product

development and operating performance. The results demonstrated that successful product development could improve the textile industry's operational performance. Moreover, the operating performance was significantly improved by technical, functional, and marketing innovation.

Chux (2010) carried out research to determine the relationships between growing market share through product development and innovation. Samples were taken from direct sellers of commodities, marketers, advertising practitioners, product developers, and salespeople in organizations. It was necessary to visit both organization salespeople and direct sellers. To find out the relationship between increased profitability and the launch of a new product, direct sellers were interviewed. Methods of data gathering for this study included questionnaires, interviews, and direct observation (when new products are brought to the attention of salespeople and direct sellers). Direct sellers were seen expressing their happiness or dissatisfaction with new products. The results of the survey were interpreted using the Likert model through SPSS analysis. Results indicated that market share was positively impacted by product quality, customer influence, and promotion; hence, companies reported substantial sales volumes. The study came to the conclusion that there is a significant relationship between improving product promotion and innovatively produced high-quality products, as well as between these two factors and customer involvement.

Nwokah et al. (2009) investigated product development and corporate performance in the Nigerian brewing industry. Through the use of questionnaires, data had been collected from 32 officials of the marketing, R&D, and production departments of four breweries situated in the south-south and south-east regions of Nigeria. The spearman rank order correlation coefficient was used to evaluate the data. The results showed, among other factors, that the corporate performance aspects of profitability, sales volume, and customer loyalty were positively and significantly correlated with the product development aspects of product quality and product lines / product mix. The study also showed that there was no substantial correlation between product size and design and profitability, sales volume, or customer loyalty.

Mbithi et al. (2015) studied the effect of product development strategy on performance of Kenyan sugar industry. They used development of new product and improvement of existing products as an independent variable and total output turnover, profitability, sales volume and capacity utilization as a measurement tool for performance/ dependent variable. Using a non-probability

sampling technique, 120 senior and middle-level managers from nine sugar companies - both public and private were given questionnaires. A cross-sectional survey research design was used to examine the data, which had a 60% response rate when gathered. Profitability after taxes produced inconsistent outcomes, although overall output turnover, sugar sales volumes, and capacity utilization all performed well. Performance responded pretty well to improvements in product processes and procedures but poorly to the introduction of new goods, indicating a weak correlation between the strategy of product development and all aspects of performance.

Udegbe (2014) investigated the process of developing new products and how it affects the performance of Nigerian businesses. 180 Nigerian manufacturing industries make up the research sample. Two copies of the questionnaire were distributed to each of the 180 manufacturing industries that made up the study's sample, which was selected using the convenience sampling approach. 230 valid questionnaires were returned out of the 360 total samples, yielding a 63.89% response rate. The collected data were analyzed employing statistical techniques including factor analysis, correlation analysis, and reliability analysis. The result of the analysis showed that personnel competence, culture, and strategies all had an impact on the business's performance as well as the business plan for developing new products.

The purpose of the 2013 study by Udegbe et al. was to look at the relationship between innovative product development and organizational performance. The managers that have been heavily involved in the process of product development and innovation, such as marketing managers and operation managers, provided the data. Using a survey sample of 120 Nigerian enterprises, 185 usable Likert-scaled questionnaires were completed. The SPSS program was used to analyze the study's results and apply suitable statistical techniques, including factor analysis, regression analysis, and reliability analysis. . The results demonstrated that in Nigeria, product development had a greater effect on organizational performance. The development of new products and organizational performance are positively impacted by the quality of the innovation process.

The purpose of Onikoyi's (2017) research was to look into how product innovation affects organizational performance. Market share, competitive advantage, and profitability were used to measure an organization's performance. The departments in charge of production, marketing, sales, research and development, and quality assurance and control provided the data. Population of this study was made up of the entire staff of Nestle Plc., Agbara Lagos which were 2294 staff.

Through stratified random sampling, 340 copies of valid questionnaires were completed. Analysis of correlation and regression was carried out using the SPSS software. The results demonstrated that when customers view product innovation as stronger, more advantageous, and more distinctive, it has a greater impact on organizational performance within the company. The performance of the product and the organization is positively impacted by the creativity and quality of the innovation process.

Masaku's (2017) primary objective was to ascertain how new product development affects growth in the context of Kenya's Keroche Breweries. The study employed a cross-sectional design, and to determine the sales volume from 2002 to 2012 G.C., data were gathered through questionnaires and document analysis. 43 managers and supervisors at Keroche breweries made up the target population. Information was gathered from the 43 managers using a census method. With the use of SPSS V22, data was examined using descriptive (mean and standard deviation) and inferential statistics (regression and correlation analysis). Results indicated that the development of new products has a positive and significant effect on sales.

Marcus et al. (2017) evaluated how Nigerian deposit money banks' profitability was affected by the development of new products. On the connection between product innovation, product availability, and marketing strategies, hypotheses were created. The target population consisted of all 24 major licensed commercial/deposit money banks in Nigeria and their employees. 100 respondents were chosen using judgmental random sampling from the Nigerian cities of Abuja, Lagos, Kaduna, and Benin, giving a response rate of 82%. This study is a survey that used primary data from questionnaires as well as secondary data from text books, journals, and periodicals. Chi-square analysis and a basic descriptive percentage based on the Kendall coefficient of concordance were used to analyze the data. The results showed that the development of new products and profitability in Nigerian deposit money institutions are related, and that the low rate of profit maximization in banks can be caused by lack of awareness about the advantages associated with new product innovation.

Cusumano and Nobeoka (1991) reviewed recently conducted or published empirical studies on the development of automotive products. Their goal was to determine what has been learned and what more needs to be learned regarding the efficient administration of this activity. The core framework utilized to compare the research looked at characteristics linked to product strategy, project

structure or organization, and project as well as product performance. The study concentrated on 22 companies from Japanese manufacturers. Based on specific structures and processes, Japanese automakers have shown the highest levels of productivity in development and overall sales growth, according to the study's evidence.

2.2.1. Empirical studies in Ethiopia

Etsegenet (2018) conducted a study with the aim of determining how new product development affects customer satisfaction in Ethiopia's commercial banks. Five characteristics (independent variables) of new product development were proposed and developed: relative advantage, perceived usefulness, trust, reliability and perceived ease of use. This study encompassed mobile banking, internet banking, and point-of-sale (POS) equipment as new products. Research designs that were both explanatory and descriptive were applied. Out of the 360,008 total population, 400 samples were chosen using a non-probability sampling strategy, specifically convenience sampling method. Questionnaires were used to gather primary data, which were then analyzed using both inferential (Pearson correlation and multiple linear regressions) and descriptive (mean and standard deviation) methods. The results showed that every independent variable had a significant effect on customer satisfaction.

Selam (2019) investigated customer satisfaction at Horizon Addis Tyre S.C. in relation to new product development success variables. Customer satisfaction was the dependent variable, whereas top/senior management commitment, new product quality, and customer involvement were the independent variables. Using a questionnaire, primary data were gathered from Addis Ababa clients as part of the quantitative research approach. 134 respondents were chosen from a total of 200 participants using a non-probabilistic sampling technique called judgmental sampling. Regression analysis and correlation testing were used to analyze the gathered data. The results of the study revealed that the performance of the case company is highly impacted by each of the three previously described new product success variables, and that all of them are positively correlated.

Ermias (2019) found that market orientation, knowledge management, new product development team composition, new product development process, product attributes and features, delay in launching time, technological advancement, and support from top-level management all had an impact on Nefas Silk Paint Factory's performance.

Study by Daniel (2022) assessed the effect of new product development on organizational performance in the case of four biscuit manufacturing companies located in Addis Ababa: Horra food complex, Kality food s.c, KOJJ food complex and NAS foods PLC. A Quantitative research approach, descriptive and explanatory research design, and cross-sectional field survey were employed. Probability sampling technique specifically the stratified random sampling method was applied in order to select sample respondents from the total population of 268. Primary data were collected using a structured questionnaire and analyzed using both descriptive statistics (mean and standard deviation) and inferential statistics (Pearson correlation and multiple linear regression) with the help of SPSS Version 20.0. The result indicated that three of the independent variables such as product quality, product size, and product design have a moderate and positive relationship and significantly affect organizational performance. Whereas, a product line which is the fourth independent variable has a weak relationship and insignificant effect on the performance of target organizations.

2.3. Conceptual framework

A study's conceptual framework, which is presented in figure form, establishes a link between the predictor and outcome variables (Kumar, 2019). The conceptual model of this study presents the relationship between independent variable i.e., success factors of new product such as product quality, product design and product marketability and dependent variable which is organizational performance measured in terms of profit margin and customer loyalty.

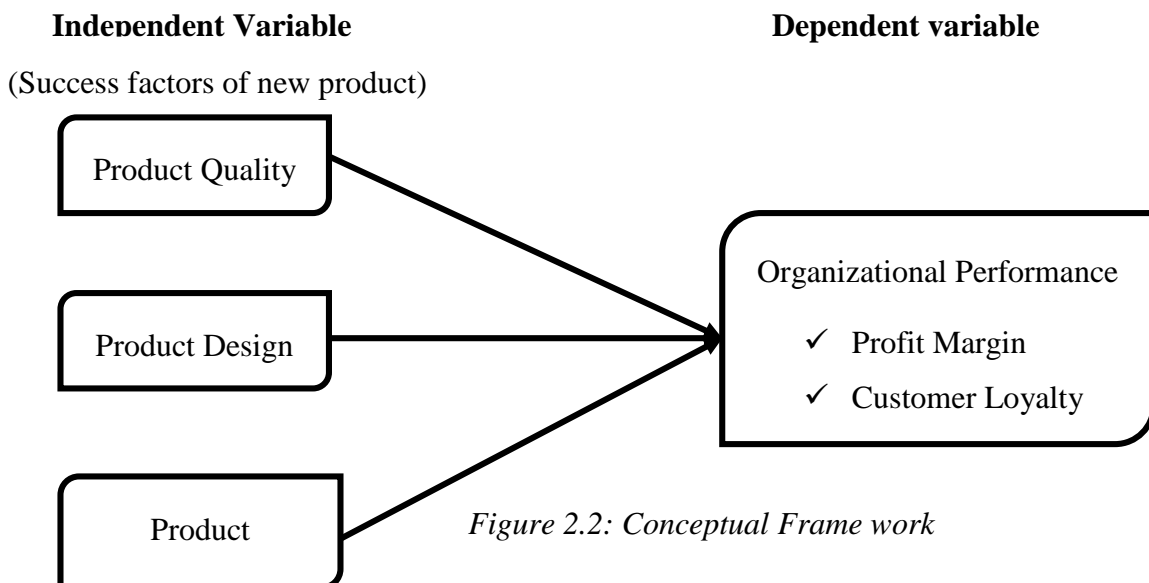


Figure 2.2: Conceptual Frame work

Chapter Three

3. Methodology

3.1. Introduction

This chapter deals with research, approach, design, sampling design, data gathering tools and collection method, data analysis technique, and ethical consideration.

3.1. Research approach

A research approach is a systematic approach to addressing the research topic. It could be viewed as a science that studies scientific research methodology (Kothari, 2004). It makes the assumption that the researcher must follow a given order of logic in order to arrive at a particular conclusion (Jonker & Pennink, 2010). Three distinct categories of research approaches exist: mixed, qualitative, and quantitative approaches. The objective of the quantitative research approach is to quantify the data gathered in order to analyze and determine the best course of action. Mostly as an exploratory design but also as a descriptive design, qualitative research plays a significant role in assisting decision-making. In order to address problems of this study quantitative research approach was utilized using close ended questionnaires with five-point Likert scale. This method is more appropriate to answer questions more objectively without being influenced by the personal opinion of the researcher in representing the phenomena.

3.2. Research design

Research design are plans and procedures for study that range from broad assumptions to specific techniques for gathering and analyzing data (Creswell, 2009). An appropriate research design is essential as it dictates the kind of data, data collection method, sampling strategy, and budget (Hair et al., 2003).

The aim of this study was to assess the impact of new product success factors on organizational performance in the case of AHFA PLC, where both descriptive and explanatory designs were adopted in order to observe, describe and examine the relationships between different elements of the topic being examined.

According to Shajahan (2018) data can be gathered using descriptive design by measuring central tendency, variance, and correlation. It involves gathering information that describes events, organizing, tabulating, displaying, and summarizing the information gathered. Conversely, explanatory research designs are employed to identify and document some relationships between different elements of the topic being examined (Tesfaye, 2018). As this being the case, the association and correlation between the three new product success factors and organizational performance was examined using a cross sectional field survey since it measures both dependent and independent variables simultaneously by using a single questionnaire (Creswell, 1994). This approach has the advantage of being less expensive and time-consuming than a longitudinal design.

3.3. Population and Sampling

3.3.1. Target population

A population is any collection of people, things, or events that share a certain observable feature (Mugenda & Mugenda, 1999). It must share at least one characteristic (Kombo and Tomp, 2006). According to Cooper and Schindler (2006), target population is particular population from which information is gathered. Target population of this study encompassed top, middle and lower management staff from various departments, including sales and marketing, quality control, and production department of AHFA PLC. Thus, a total population size of 42 was targeted to collect all the necessary information.

3.3.2. Sampling technique

Sample technique is a method used to choose the sample's entities (Cooper & Schindler, 2006). There are two types of sampling techniques: probability and non-probability sampling techniques. It is very important to choose a sample that is truly representative of the population so that the conclusion derived from the sample can be generalized back to the population of interest. As the population size of this study was found to be small, a census survey was employed, referring to Singh and Masuku's (2014) saying researchers may decide to use “census” for small populations.

3.3.3. Sample size

Sample size is defined by Cavana et al. (2001) as a subset of the population with characteristics similar to those of the total population. According to Malhotra and Peterson (2006), a study's data will be more accurate if it has a larger sample size. Further, Mugenda and Mugenda (2003) stated that a sample size should be as large as possible in order to produce the prominent characteristics of the available population to a satisfactory degree. They've also said that a minimum of 30% of the population should be included in a descriptive study.

The United Nations Statistical Commission (2010) defines censuses as surveys that are carried out on a complete set of observation objects that are a part of a certain population or universe, and since this study employed census surveys, the entire target population, i.e., 42 management staff members of the case company were taken into consideration as the sample size of the study.

3.4. Data collection

There are two sources of data; primary and secondary sources. According to Biggam (2008), primary data is information that the researcher independently discovers about a topic. The main advantage with this type of data is that it is collected with the research's purpose in mind with an implication that the information resulting from it is more consistent with the research questions and objectives (Etsegenet, 2018). Thus, Primary data was utilized as a part of this study.

Research instruments are tools for gathering data that a researcher uses to get the information needed (Gray, 2009). According to Kothari (2004), a questionnaire is the most suitable tool because it can gather a lot of data in a cost-effective and timely manner. It also ensures standardization and source confidentiality by guaranteeing anonymity. Thus, for the purpose of this study a close-ended standard questionnaire with five-point Likert scale was used as measuring instrument. It was adopted from previous studies of Daniel (2022) and Kamau and Thoronjo (2022).

The questionnaire consisted of total 27 questions, of which 21 with five point Likert scale (i.e. 1=strongly disagree, 2=disagree, 3= Neutral, 4=agree, and 5=strongly agree) to indicate their degree of agreement or disagreement with each of statements since opinions can be captured best with five to seven-point scales (Malhotra, 1999). It is structured in three parts: part one has 6 questions dealing with the general information of the respondents. Part two is comprised of 15

questions on new product development dimensions and part III consists 6 questions on organizational performance.

The questionnaire was subjected to pilot testing in order to confirm that the participants understood the question similarly. According to Jacob and Furgerson (2012), pilot testing is crucial because it allows researchers to determine whether or not their questions cause discomfort for respondents, if the language used in the questionnaire needs to be changed and estimate how long it will take to complete the survey in real time. The pilot test allowed the researcher to ensure that the scale was reliable and internally consistent.

In order to manage the survey, the "drop-and-get later" technique as well as a Google Form link were used because the survey questions covered a wide range of disciplines in the company. To ensure a high response rate, a representative was selected who was contacted via telephone, text messages, and other reminders to follow up on the status.

3.5. Data analysis

Following data collection analysis comes. The collected data were tabulated systematically and analyzed with the help of Statistical Package for Social Sciences (SPSS) Version 21. To fulfill the stated objective of the study, descriptive statistics (mean and standard deviation) and inferential statistics (Pearson correlation coefficient and multiple linear regression) were applied in order to ascertain whether there is statistically significant relationship exist between new product development and organizational performance and determine the joint relationship between independent variables on dependent variables.

The regression model of the study was:

$$Op = \beta^{\circ} + \beta_1PQ + \beta_2PD + \beta_3PM + \varepsilon$$

Where; Op = Organizational performance

PQ = Product quality, PD = Product design and PM = Product Marketability

β° = Constant or intercept

β_1 – β_3 = Regression Coefficient for each independent variable

ε = error term

3.6. Validity & reliability test

3.6.1. Validity

Validity of instrument is the extent to which it measures what it intended to measure. According to Kothari (2004), validity assesses how well an instrument anticipates data that could be used to achieve the study's objectives. Cooper and Emory (1994); Zikmund (2000), expressed validity as the accuracy of measurement tool and represents the ability of a scale to measure what it is designed to measure.

There are several ways of establishing validity such as content validity, convergent validity, concurrent validity, predictive validity, construct validity and convergent validity. This study addressed content validity by adopting valid instruments from previous studies conducted in similar sectors.

3.6.2. Reliability

Kothari (2004) states that reliability is the degree to which a research instrument gives consistent results after multiple trials. Nunnaly (1978) also stated that reliability is the consistency of a test, survey, observation, or other measuring tool. The level of reliability of the instrument indicates the consistency of the variables. Cronbach's alpha is a reliability index that is linked to the variance that explained the actual score of the underlying construct. It is only applicable to variables that have multiple measurement questions. Therefore, the reliability of the questionnaire was analyzed by using Cronbach's alpha statistics. Cronbach's alpha value of 0.5 is a sufficient value but 0.7 is a more reasonable and widely accepted value.

The value of Cronbach's Alpha for each variable is depicted in Table 3.1. The value ranges from 0.745 to 0.784 for each variable and 0.706 for overall. This indicated that the instrument of this study was reliable enough to proceed with.

Table 3.1: Summary of Cronbach’s alpha

S. No	Variables	Cronbach’s Alpha value	No of items
1.	Product Quality	0.764	6
2.	Product Design	0.784	4
3.	Product Marketability	0.745	5
4.	Organizational performance	0.750	6
5.	Overall	0.706	21

Source: Survey data result (2024)

3.7. Ethical Considerations

Ethics is an integral part of the research process. It is essential to respect participants' rights and privacy requirements in order to create an open environment during the data collection process. Hence, before the questionnaire was distributed to the company, the researcher formally requested permission from human resource and administration departments of AHFA PLC to conduct academic research in their company. After permission was granted by the company, a research letter by AAU, College of Business and Economics, was delivered to further confirm the conduct of the survey, which is strictly for academic purposes.

Every person involved in the study was entitled to privacy and dignity of treatment, and no personal harm was caused to subjects in the research. Information obtained was held in strict confidentiality by the researcher, and all assistance, collaboration, and sources from which information was drawn were acknowledged.

Chapter Four

4. Data Analysis and Interpretation

This chapter presents the data analysis using both descriptive and inferential statistics and their interpretation including discussion of the research findings.

4.1. Response rate

A total of 42 questionnaires were distributed to the case company but in order to enhance the response rate of respondents a goggle form was also sent out via telegram as an alternative. Eventually, the study managed to receive 100 % response rate.

4.2. Demographic information of respondents

This part emphasizes on the respondents' biographical details, which aid in characterizing them. Table 4.1 below presents demographic information of respondents.

Table 4.1: Demographic information of respondents

Category		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	34	81.0	81.0	81.0
	Female	8	19.0	19.0	100.0
	Total	42	100.0	100.0	
Age	18 up to 30	14	33.3	33.3	33.3
	31 up to 45	26	61.9	61.9	95.2
	46 up to 60	1	2.4	2.4	97.6
	Above 60	1	2.4	2.4	100.0
	Total	42	100.0	100.0	
Marital status	Single	20	47.6	47.6	47.6
	Married	20	47.6	47.6	95.2
	Widower	2	4.8	4.8	100.0
	Total	42	100.0	100.0	
Educational level	High school	3	7.1	7.1	7.1
	Diploma	5	11.9	11.9	19.0
	University degree	28	66.7	66.7	85.7
	Master Degree and above	6	14.3	14.3	100.0
	Total	42	100.0	100.0	

	Total	42	100.0	100.0	
Work experience	2 to less than 5 years	14	33.3	33.3	33.3
	5 to less than 10 years	13	31.0	31.0	64.3
	10 years and above	15	35.7	35.7	100.0
	Total	42	100.0	100.0	
Position	Top management	8	19.0	19.0	19.0
	Middle management	15	35.7	35.7	54.8
	Lower management	19	45.2	45.2	100.0
	Total	42	100.0	100.0	

Source: Survey data result (2024)

As shown in table 4.1 above, 34 respondents (81%) were males and the remaining 8 respondents (19%) were females indicating that most of management staffs are males. Regarding age of respondents, 14 respondents (33.33%) were at the age of 18 - 30 years, 26 respondents (61.9%) were at the age of 31 – 45 years, 1 respondent (2.4%) was at the age of 46 – 60 years and the remaining 1 respondent (2.4%) was at the age of above 60 years. This indicates that above 95% of the management staffs are below the age of 46 such that energetic and creative staffs are involved in NPD process.

The marital status of respondents indicated that an equal number of respondents were single and married, each covering 20 respondents (47.6%) and the remaining 2 respondents (4.8%) were widowers. This implies that most of the respondents are socially stable and active. Concerning the educational level of respondents, 6 respondents (14.3%) were master degree holders, 28 respondents (66.7%) were bachelor degree holders, 5 respondents (11.9%) were diploma holders and the rest 3 respondents (7.1%) were high school graduates, indicating that the majority of the management staff are educated and highly qualified.

In regard with work experience of respondents, 15 respondents (35.7%) had an experience of 10 years and above, 13 respondents (31%) had an experience of 5-10 years and the rest 14 respondents (33.3%) had an experience of 2-5 years. This indicates that experienced staff who have gained adequate training, exposure and experience in the field are involved in NPD process. In terms of respondents' positions, 8 respondents (19%) originated from upper management, 15 respondents (35.7%) from middle management, and the remaining 19 respondents (45.2%) from lower management. This implies that information was acquired at both the functional and strategic levels.

4.3. Descriptive statistics

In this section, the mean and standard deviation - two measures of descriptive statistics are presented. New product development has a number of factors that can impact an organization's performance. Consequently, the information gathered via the questionnaire is described and explained in this descriptive analysis. As stated in chapter three, five-point Likert Scale was utilized to measure the degree of agreement and disagreement on each question. Here scales were reassigned based on the Sözen and Güven (2019) classification as: 1 - 1.8 = Strongly Disagree, 1.81 - 2.6 = Disagree, 2.61 - 3.4 = Neutral, 3.41 - 4.20 = Agree and 4.21 - 5 = Strongly Agree in order to rate the mean value of respondents.

4.3.1. Descriptive statistics for Product quality

According to Table 4.2, the degree of agreement among respondents regarding how the new product characteristics affect the company's product quality gave a mean score of $M = 3.40$, meaning that respondents were neither in agreement nor in disagreement. The standard deviation for this statement was $SD = 1.061$, showing that there are disagreements among respondents. Regarding the feature of the new product in improving the quality of the company product, a mean value of $M = 3.93$ and a standard deviation of $SD = 0.867$ were obtained, indicating the respondents agreement with slight variation in responses. A mean value of $M = 3.93$ and a standard deviation of $SD = 0.640$ were recorded concerning the consistency of new products in improving the quality of company products, implying respondents agreement with slight variation in responses. The highest mean value of $M = 4.21$ was recorded in regard to whether the new product conforms to the standard specifications set by the organization, indicating strong agreement among the respondents. The standard deviation for this statement was $SD = 0.750$, showing that there is slight variation in responses.

Moreover, a mean value of $M = 4.17$ and a standard deviation of 0.660 indicated respondents agreement that the shelf life of the new product makes the company's product preferable, with slight variation in response. Further, a mean value of $M = 3.83$ and a standard deviation of 0.730 indicated respondents agreement that the new products frequently launched by the company meet customers perceived quality, with slight variation in response.

The average response from the respondents regarding the overall value of product quality was $M = 3.9127$. Given that Sözen and Güven (2019) placed the mean score between 3.41 and 4.20 in the range of "Agree, it is likely that respondents considered product quality as an important contributor to their organizational performance. The standard deviation, $SD = 0.48729$, suggests that the respondents' responses were not much more varied from the mean. This indicates that the replies from the participants were uniform and did not deviate significantly from the mean.

Table 4.2: Descriptive statistics for Product Quality

Items	N	Mean	Std. Deviation
The new product characteristics affects the quality of the company product	42	3.40	1.061
The new product feature has improved the quality of the company products	42	3.93	.867
The consistency of the new product improved the quality of the new products	42	3.93	.640
The new product conforms with the standard specification of the company	42	4.21	.750
The shelf life of new products makes company's product preferable	42	4.17	.660
The new products frequently launched meets customers perceived quality	42	3.83	.730
Product quality	42	3.9127	.48729

Source: Survey result (2024)

4.3.2. Descriptive statistics for Product design

According to Table 4.3, responses with a mean value of $M = 4.10$ and a standard deviation of $SD = 0.431$ indicated respondents agreement with slight variation in response regarding the new product composition, making the company's product preferable. This implies that the new product is gaining acceptance in the market. A mean value of $M = 3.93$ and a standard deviation of $SD = 0.558$ were recorded concerning the company's new packaging design preference in the market. This indicates respondents' agreement with slight variation in responses. Moreover, respondents agreed with slight variation in response regarding the new product labeling improving communication with customers, as indicated by the mean value of $M = 4.10$ and the standard deviation of $SD = 0.617$. Further, a mean value of $M = 3.98$ and a standard deviation of $SD =$

0.749 indicated respondents agreement on the overall design of the new product has acceptance through its ease of use, with slight variation in response.

The average response from the respondents regarding the overall value of product design was $M = 4.0238$. Given that Sözen and Güven (2019) placed the mean score between 3.41 and 4.20 in the range of "Agree", it is likely that respondents considered product design as an important contributor to their organizational performance. The standard deviation, $SD = 0.3613$, suggests that the respondents' responses were not much more varied from the mean. This indicates that the replies from the participants were uniform and did not deviate significantly from the mean.

Table 2.3: Descriptive statistics for Product design

Item	N	Mean	Std. Deviation
The new product composition makes companies product preferable	42	4.10	.431
The company's' new packaging design is preferable in the market	42	3.93	.558
The new product labeling improved the communication with customers	42	4.10	.617
The overall design of the new product has acceptance through its ease of use	42	3.98	.749
Product design	42	4.0238	.36127

Source: Survey result (2024)

4.3.3. Descriptive statistics for Product marketability

According to Table 4.4, responses with a mean value of $M = 3.90$ and a standard deviation of $SD = 0.759$ concerning whether the new product meets end-customer needs through product availability and responsive on-time delivery indicated respondents agreement with slight variation in response. A mean value of $M = 3.81$ and a standard deviation of $SD = 0.994$ were recorded regarding the company's employment of cost-efficient production methods so as to manage competitive delivery, implying respondents agreement with variation in responses.

Respondents neither agreed nor disagreed with significant variation in response regarding strive of the company to improve its current services continuously through the introduction of easy-pay partners like Telebirr or M-Pesa, as indicated by the mean value of $M = 3.24$ and the standard deviation of $SD = 1.055$. In regard to the ability of the new product to fill customer orders faster

and more efficiently than its competitors, a mean value of $M = 3.69$ and a standard deviation of $SD = 0.867$ were obtained, indicating respondents agreement with slight variation in responses. Further, a mean value of $M = 3.79$ and a standard deviation of $SD = 0.782$ indicated respondents agreement with the company's effort to modify service delivery channels alongside customer demands, with slight variation in response.

The average response from the respondents regarding the overall value of product marketability was $M = 3.6857$. Given that Sözen and Güven (2019) placed the mean score between 3.41 and 4.20 in the range of "Agree", it is likely that respondents considered product marketability as an important contributor to their organizational performance. The standard deviation, $SD = 0.55549$, suggests that the respondents' responses were not much more varied from the mean. This indicates that the replies from the participants were uniform and did not deviate significantly from the mean.

Table 4.4: Descriptive statistics for Product marketability

Items	N	Mean	Std. Deviation
The new product meets end-customer needs through product availability and responsive on time delivery	42	3.90	.759
The company uses cost efficient production methods so as to manage competitive delivery	42	3.81	.994
The company strives to improve its current services continuously through introduction of easy pay partners like telebirr or M-pesa	42	3.24	1.055
The new product is able to fill customer orders faster and more efficiently than the competitors	42	3.69	.897
The company modifies its service delivery channels alongside the customer demands	42	3.79	.782
Product marketability	42	3.6857	.55549

Source: Survey result (2024)

4.3.4. Descriptive statistics for Organizational performance

According to Table 4.5, responses with a mean value of $M = 3.81$ and a standard deviation of $SD = 0.671$ concerning the company's sales turnover improvement indicated respondents agreement with slight variation in response. A mean value of $M = 4.00$ and a standard deviation of $SD =$

0.663 were recorded regarding the company, which has recorded positive attitudes by its employees. This indicates respondents' agreement with slight variation in responses. Moreover, respondents agreed with slight variation in response regarding the company's operational cost improvement, as indicated by the mean value of **M = 4.02** and the standard deviation of **SD = 0.604**. In regard to the company's improvement in its revenue, a mean value of **M = 3.93** and a standard deviation of **SD = 0.745** were obtained, indicating respondents agreement with slight variation in responses.

A mean value of **M = 3.95** and a standard deviation of **SD = 0.623** were obtained concerning the company's improvement in market share, indicating respondents agreement with slight variation in responses. Further, a mean value of **M = 3.88** and a standard deviation of **SD = 0.861** indicated respondents agreed that the company has recorded a decrease in customer complaints, with slight variation in response.

The average response from the respondents regarding organizational performance was rated as **M = 3.9325**. Given that Sözen and Güven (2019) placed the mean score between 3.41 and 4.20 in the range of "Agree", it is likely that respondents considered that the practice of new product development improves profit margins and customers' loyalty to the respective organization. The standard deviation, **SD = 0.43564**, suggests that the respondents' responses were not much more varied from the mean, indicating that the replies from the participants were uniform and did not deviate significantly from the mean.

Table 4.5: Descriptive statistics for Organizational performance

Items	N	Mean	Std. Deviation
The company has recorded an improvement in its sales turnover	42	3.81	.671
There has been recorded positive attitude by the employees.	42	4.00	.663
The company has recorded an improvement in its operational costs	42	4.02	.604
The company has recorded an improvement in its revenue	42	3.93	.745
The company has recorded an improvement in its market share	42	3.95	.623

The company has recorded a decrease in customer complaints	42	3.88	.861
Organizational performance	42	3.9325	.43564

Source: Survey result (2024)

4.4. Inferential statistics

Inferential statistics are used in research to make judgments of the probability or inferences from the data to more general conditions that extend beyond the immediate data alone. This study employed bivariate correlation analysis through Pearson and multiple linear regression analysis to identify the relationship and effect of new product development on company performance.

4.4.1. Correlation analysis

Correlation is a word which describes the statistical measure of association or the relationship between two phenomena or continuous variables in terms of how strong the relationship is and in what direction the relationship goes. According to Field (2009), correlation is a very useful means to summarize the relationship between two variables with a single number that falls between $r = +1.00$, a perfect positive (direct) relationship and $r = -1.00$, a perfect negative (inverse) relationship whereas, $r = 0$ indicates no relationship. The general symbol for the correlation coefficient is “ r ”. In this study, Pearson correlation was employed since it is most commonly used analysis when one wants to find a linear relationship between two variables. According to Schober et al., (2018) a correlation coefficients are interpreted as: $\pm 0.9 - \pm 1.0$ very strong correlation, $\pm 0.70 - \pm 0.89$ strong correlation, $\pm 0.40 - \pm 0.69$ moderate correlation, $\pm 0.10 - \pm 0.39$ weak correlation and $\pm 0.00 - \pm 0.10$ negligible correlation. Accordingly, a Pearson correlation analysis was performed to determine the degree to which the dependent and independent variables were related after the researcher verified that the data were normally distributed. Results are shown in Table 4.6 below

Table 4.6: Correlation analysis

		Product quality	Product design	Product marketability	Organizational performance
Product quality	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	42			
Product design	Pearson Correlation	.364*	1		
	Sig. (2-tailed)	.018			
	N	42	42		
Product marketability	Pearson Correlation	.305*	.342*	1	
	Sig. (2-tailed)	.050	.027		
	N	42	42	42	
Organizational performance	Pearson Correlation	.482**	.450**	.491**	1
	Sig. (2-tailed)	.001	.003	.001	
	N	42	42	42	42

Source: SPSS output (2024)

As shown in Table 4.6, the Pearson correlation value for the relationship between product quality and organizational performance was found out to be moderate significant positive relationship as indicated by r value of 0.482 and P value < 0.01. This relationship also holds true for product design (r = 0.45 and P value < 0.01) and product marketability (r = 0.491 and P value < 0.01).

4.4.2. Multiple Linear Regression analysis

The cumulative effect of independent variables (i.e. product quality, product design and product marketability) over dependent variable (i.e. organizational performance) was analyzed by using multiple linear regression analysis. Regression analysis is a statistical technique used to find a statistical relationship between two or more variables and predict the values of the dependent variable given the values of the independent variable (Kothari, 2004).

Thus, multiple linear regression was employed in this study to investigate the cumulative effect of independent variables over the dependent variable. The assumptions were checked to verify if they held true before the multiple regression analysis was conducted. The multiple linear regression analysis's underlying presumptions are listed below.

i. Normality test

A normality test is used to ascertain whether sample data has been drawn from a normally distributed population. The normal distribution of the variables is required for the multiple linear regression models. To check whether the data was normally distributed, the skewness and kurtosis tests were performed.

The measurements of kurtosis and skewness have to be as near to zero as possible. Yet data are frequently kurtotic and distorted. Therefore, as long as the measures don't exceed their standard errors, a slight deviation from zero is acceptable. According to George and Mallery (2010), skewness and kurtosis values in the range of ± 2 indicate the distribution of data is normal.

Table 4.7: Normality - Skewness and Kurtosis test

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Product quality	42	.456	.365	-.726	.717
Product design	42	-.225	.365	-.387	.717
Product marketability	42	.299	.365	-.402	.717
Organizational performance	42	.493	.365	.007	.717

Source: SPSS output (2024)

As shown in Table 4.7, skewness and kurtosis value is within the acceptable range indicating normal distribution of the data.

ii. Multi-collinearity test

Multi-collinearity test is used to determine if any of the independent variables in the model have a strong correlation with one another. Strong correlations between independent variables indicate that they are essentially measuring the same matter, which may have an impact on how accurately the multiple regression model fits out in the end. Thus, for the multiple regression analysis to be considered valid, the multi-collinearity test result should indicate either no multi-collinearity at all or very little multi-collinearity among the independent variables.

Collinearity is measured in terms of variable's tolerance and variance inflation factor (VIF) value. A tolerance value greater than 0.1 and VIF value less than 10 indicates low multi-collinearity (Tabachnick and Fidel, 2001; Almaquist et al., 2014).

Table 4.8: Multicollinearity test

Model	Collinearity Statistics	
	Tolerance	VIF
Product quality	.831	1.204
Product design	.808	1.237
Product marketability	.846	1.183

Source: SPSS output (2024)

As shown in Table 4.8, the tolerance and VIF values of the independent variables indicate the existence of low multi-collinearity with reference to Tabachnick and Fidel (2001); Almaquist et al. (2014), who stated that a tolerance value > 0.1 and a VIF value < 10 indicate low multi-collinearity. With this, one of the requirements to perform regression analysis was fulfilled.

iii. Homoscedasticity

Homoscedasticity refers to constant variance of the errors. This is performed through plotting residuals (differences between predicted and observed values) against the predicted values. It is required that roughly the same dispersion across the range of prediction in order to fulfill homoscedasticity.

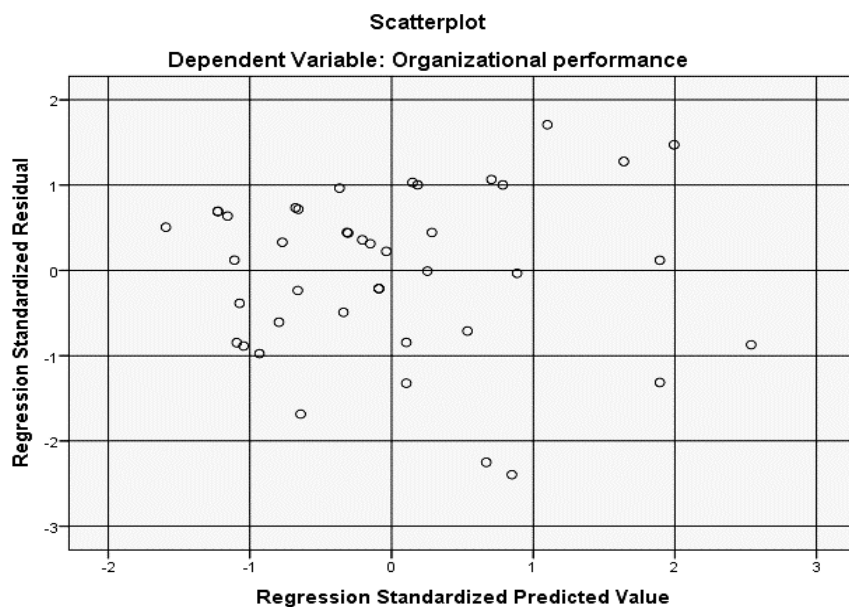


Figure 3.1: Scattered Plot.

Source: SPSS output (2024)

As shown in figure 4.1, the plot is scattered enough, indicating that the variance of error in the dependent variable is considered constant and hence the assumption of homoscedasticity is met.

Model summary

The degree of overall change in the dependent variable caused by the independent variable is measured by the regression model summary, one of the outputs of multiple regression analysis. Coefficient of determination (R^2) explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable that is explained by all independent variables (product quality, product design and marketability). The summary table provides the R, R^2 , adjusted R^2 and the standard error of the estimate which can be used to determine how well a regression model fits the data.

As shown in Table 4.9, this study recorded an R-squared value of 0.406 implying that new product development accounts for 40.6% of the total variance in the performance of AHFA PLC leaving 59.4% unexplained. Whereas adjusted R^2 indicates true variation in the outcome variable thus, 35.9% of real variation was accounted by new product dimensions considered in this study.

Table 4.9: Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.637 ^a	.406	.359	.34868

a. Predictors: (Constant), Product marketability, Product quality, Product design
Source: SPSS output (2024)

ANOVA Test

Analysis of Variance (ANOVA) was performed to verify the goodness of fit of the regression model. According to Saunders et al. (2012), a result is considered statistically significant if its probability is less than 0.05 and its F ratio is high. The regression model recorded a significance level of 0.000. This implies that the model had goodness of fit and was very ideal for determining how new product development affects the performance of the organization. The regression model in the Table 4.10 below has a significance value (p-value) of less than 5% and F - value of 8.667 which is greater than the critical value at F (3, 38). This indicated that the model was statistically acceptable and the value of the variation explained by the model is not due to chance.

Table 4.10: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.161	3	1.054	8.667	.000 ^b
	Residual	4.620	38	.122		
	Total	7.781	41			

Source: SPSS output (2024)

Regression coefficients

Beta-coefficient basically measures the variation of dependent variable caused by independent variable in the model. As it is shown in the table 4.11, there is a positive association between all independent variables and organizational performance. Beside this, the last column designated by “sig.” shows the p-value of product quality and product marketability is below 0.05 implying that the association between the product quality and organizational performance is statistically significant and the same holds true to product marketability. Whereas product design has p-value above 0.05, ($p = 0.106$), meaning that there is no significant association between product design and organizational performance in the case company.

Table 4.11: Regression coefficients

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.836	.662		1.262	.215
Product quality	.269	.123	.301	2.191	.035
Product design	.278	.168	.230	1.656	.106
Product marketability	.252	.107	.321	2.363	.023

Dependent variable: Organizational performance

Source: SPSS output (2024)

As the results of multiple linear regressions revealed in Table 4.11, product quality and product marketability have positive and significant effect on organizational performance with unstandardized beta values of $\beta = 0.269$ and $\beta = 0.252$ respectively at 95% confidence level ($p < 0.05$). This implies that, a unit increment in product quality will increase the organizational performance by 26.9% while a unit increment in product marketability will increase the

performance by 25.2%. Whereas, product design has positive insignificant effect as its p value indicate in table 4.11 implying its contribution to organizational performance is insignificant.

Standardized beta coefficients are useful metrics for classifying the predictor variables according to how much they contribute, regardless of sign, to the explanation of the outcome variable. Following this, product marketability (0.321) is the highest contributing predictor to explain organizational performance and product quality comes next (0.301).

The statistical regression equation of the model

$$Op = \beta^{\circ} + \beta_1PQ + \beta_2PD + \beta_3PM + \varepsilon$$

Becomes

$$Op = 0.836 + 0.269PQ + 0.278PD + 0.278PM$$

Where; Op - Organizational performance is dependent variable

PQ - Product quality

PD - Product design

PM - Product Marketability

} are independent variables

4.5. Discussion of findings

In accordance with the study's findings, all variables' arithmetic mean value falls within the range of agreement, and their standard deviations are uniform, providing outcomes that are not significantly different from the mean. This implies that the new product's quality, design, and marketability practices are getting positive acceptance from the customer side.

Also, the study revealed that there exists a moderate significant positive relationship between product quality and organizational performance ($r = 0.482$ and $P \text{ value} = 0.001$), implying that when customer-requirement conforming products are manufactured by the firm, its performance maximizes. Further, regression analysis results showed that product quality has positive statistically significant impact ($P \text{ value} < 0.05$) on organizational performance. These findings are in line with Yusof and Aspinwall (2000), Sousa and Voss (2002), Carter et al. (2010), Nwokah et al. (2009), Chin and Sofian (2011), Almansour (2012) and Udegbe and Udegbe (2013) among

others. As stated by Cooper (1979), quality means “product superiority or uniqueness” and in fact, differentiated and unique products that meet market needs appeal to customers buying power, resulting in high sales volume, market share, customer loyalty, and profitability for firms.

The relationship between product design and organizational performance was found to be moderate significant positive relationship as Pearson’s coefficient of $r = 0.450$ and p value of 0.003 indicates. This finding is in agreement with Joy et al. (2013) and Daniel (2022). On the other hand, the impact of product design on organizational performance was not statistically significant (p value > 0.05) according to the findings of regression analysis. In this regard, it is against Joy et al. (2013) and Daniel (2022) but in line with Nwokah et al. (2009) who discovered insignificance between product design and organizational performance metrics like profitability, sales volume, and customer loyalty. Variations in result could have arisen from the fact that the implementation of NPD practices varies depending on the nature of the product, cultural factors, and the environment in which a business works (Echeveste et al., 2017).

As the finding with regard to product design indicates its insignificance in impacting organizational performance, the researcher agreed with the justification given by Nwokah et al. (2009), who performed their study in beverage industries located in the south-south and south-east of Nigeria, in explaining such a scenario. A consumer may be attracted to a product's packaging design or be persuaded to try it at first sight, but his repetitive purchase will depend on how satisfied he is with the product because that alone cannot promote customer loyalty if the product quality is not esteemed by the customer; thus, content is more important than the container.

Product marketability has been found to have a moderately significant positive relationship ($r = 0.491$ and p value = 0.001) with organizational performance as well as impact it positively and significantly (P value < 0.05). This finding is in line with the work of Kamau and Thoronjo (2022), who performed their study in a Kenyan Power Company located at Kiambu County. Thus, engagement in practices like addressing customers need faster and effectively than competitors and modifying service delivery channels alongside customer demand enhances profit margin as well as customers’ loyalty which in turn improve organizational performance.

Overall cumulative effect of independent variables over depend variable is expressed by the model summary. The model was statistically significant as its P value was < 0.05 . It indicates that the independent variables explain 40.6% of change in dependent variable. While 59.4% of variation

is caused by other factors not included in this study. Moreover, F - value of the model (i.e. 8.667) was greater than the critical value 2.85 at F (3, 38) confirming significance of the regression model.

Product marketability is the highest contributing predictor to explain organizational performance, and then product quality comes next, as standardized beta coefficients indicate. Thus, these two are significant predictors that change the organizational performance of AHFA PLC.

By showing that these dimensions (i.e., product quality and product marketability) are among the key tools that a company can use to boost its profit margin and, consequently, enhance organizational performance, the study's findings validated or confirmed the body of existing knowledge, literature, and empirical data.

Chapter Five

5. Summary, Conclusion and Recommendation

This chapter comprises summary of major findings, conclusion, and recommendations drawn from the findings. The chapter additionally presents recommendations for topics that need more investigation to provide a deeper comprehension of the subject matter.

5.1. Summary of study findings

This research study was designed to examine the impact of new product success factors on organizational performance of a manufacturing company so called AHFA PLC, as a case study. Three independent variables (such as; product quality, product design and Product marketability) were identified as success factors of new product. Whereas the dependent variable i.e., organizational performance was measured in terms of profit margins and customer loyalty.

The descriptive statistics result showed that respondents are in agreement that product quality, product design, and product marketability affect customer loyalty as well as profit margin, which in turn affects a firm's performance.

On the other hand, findings of Pearson's correlation indicated that there exists a moderately significant positive relationship between product quality and organizational performance. This relationship also holds true for product design and product marketability, with the implication that there exists a significant relationship between independent and dependent variables.

After verifying assumptions are fulfilled, a model was created using multiple linear regression to address the study's objectives. The overall fitness of the model was tested using the model summary and ANOVA table. Findings revealed that all independent variables have statistically significant values ($P < 0.05$) and positive beta values, except for product design, which was found to be statistically insignificant. The cumulative effect of these variables accounts for 40.6% of the total variance in the firm's performance, implying that there are other factors affecting performance that are not included in this model.

5.2. Conclusion

This study has analyzed the impact of new product success factors on organizational performance in the case of AHFA PLC and came up with the following findings: All three independent variables (i.e., product quality, product design, and product marketability) have a significant positive relationship with the dependent variable (i.e., organizational performance). In regard to regression analysis findings, both product quality and marketability have a significantly positive impact on organizational performance, while product design has a positive but insignificant impact on organizational performance, with the implication that the satisfaction a customer gets from consuming a product is what attaches him to the brand rather than the product's design in terms of shape, size, or color because these alone cannot promote customer loyalty if the product quality is not esteemed by customers.

From this, it can be concluded that any change in these two dimensions (product quality and marketability) will directly affect the profit margins and customer loyalty of the case company, which in turn affects the overall performance of the organization. Thus, the strive of the case company toward meeting customer needs through the development of new products with perceived quality and practices like maximizing product availability, responsive on-time delivery, and filling customer orders faster and more efficiently than competitors will enhance its performance.

5.3. Recommendation

The following actions are advised for the case company based on the study's major findings:

- In order to improve its organizational performance, the company needs to focus on enhancing new product quality dimensions like consistency, compliance, and durability through planning, implementing, monitoring, and evaluating the process and products in a continuous manner.
- Also, to improve organizational performance, the company should keep differentiating its business by modifying its service delivery channels alongside customer demands and filling customer orders faster and more efficiently than competitors, since differentiation is one means of staying competitive in the business environment.
- Moreover, it is strongly recommended that the company pay attention to cost-efficient production methods in order to manage competitive delivery.
- Further, the company should persist in developing new products while keeping in mind the success factors, as they are essential in responding to the demands created by competitors and suitable for meeting the constantly changing requirements of customers.

5.4. Future area of investigation

The impact of new product success factors on organizational performance can be better demonstrated in longitudinal studies than in cross-sectional ones, as the progress is assessed over a period of time. In this way, the progressive status of the new product on the market can be observed. In addition, there are a number of success factors with regard to new product other than the three aforementioned independent variables. Thus, future studies may consider these areas as potential topics for their studies.

As the sample size of this study is considered to be very small, it's recommended that future researchers conduct the study with a larger and more representative sample so that the findings can be generalized to others.

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Appendix

Questionnaire

Addis Ababa University

School of commerce

MPM Program

Topic: Request for Participation in Research Study

Dear respondents:

This questionnaire is designed to collect data from AHFA PLC in order to study “The impact of new product success factors on organizational performance.” in partial fulfilment for the award of Master of Arts in Project Management. The survey questions expected to take 5 to 10 minutes. Kindly answer all the questions to the best of your knowledge. Your genuine and honest response are valuable and will have a paramount importance for the successful accomplishment of the study. The information you will provide is intended purely for academic purpose and will remain confidential. The identity of those completing the questionnaires will not be divulged.

Finally, I would like to extend my gratitude and appreciation in advance for spending your valuable time in filling out the questionnaire and highly appreciate your timely response.

Regards

Hanan Oumer

Part I: General Information

Instruction: Please put a tick (√) mark in the boxes corresponding to your responses

1. Gender:

- Male Female

2. Age:

- 18 up to 30 31 up to 45 46 up to 60 Above 60

3. Marital status:

- Single Married Divorced Widower

4. Education level:

- Primary School High school Diploma University degree Master Degree and above

5. Work experience:

- Less than two years 2 to less than 5 years 5 to less than 10 years 10 years and above

6. Position:

- Top management Middle management Lower management

Part II: Impact of New Product Success Factors on Organizational Performance

In reference to your answer to the following questions about the impact of new product success factors on organizational performance, please indicate the extent to which you agree or disagree with the statements on how each success factor of a new product affects organizational performance. Guideline; 1 = Strongly Disagree, 2=Disagree, 3 = Neutral, 4=Agree, 5=Strongly Agree.

S. No	New Product Success Factors	1	2	3	4	5
A. Product quality						
1.	The new product characteristics affects the quality of the company product					
2.	The new product feature has improved the quality of the company products					
3.	The consistency of the new product improved the quality of the new products					

4.	The new product conforms with the standard specification of the company					
5.	The shelf life of new products makes company's product preferable					
6.	The new products frequently launched meets customers perceived quality					
B. Product Design						
7.	The new product composition makes companies product preferable					
8.	The company's' new packaging design is preferable in the market					
9.	The new product labeling improved the communication with customers					
10.	The overall design of the new product has acceptance through its ease of use					
C. Product Marketability						
11.	The new product meets end-customer needs through product availability and responsive on time delivery					
12.	The new product is able to fill customer orders faster and more efficiently than the competitors					
13.	The company uses cost efficient production methods so as to manage competitive delivery					
14.	The company modifies its service delivery channels alongside the customer demands					
15.	The company strives to improve its current services continuously through introduction of easy pay partners like telebirr or M-pesa					

Part III: Organizational Performance

This section contains statements on measuring organizational performance. Please indicate the extent to which you agree or disagree with the statement on each dimensions of new product development towards improvement of organizational performance of your company. Guideline; 1 = Strongly Disagree, 2=Disagree, 3 = Neutral, 4=Agree, 5=Strongly Agree.

S. No	Organizational Performance	1	2	3	4	5
1.	The company has recorded an improvement in its sales turnover					
2.	There has been recorded positive attitude by the employees.					

3.	The company has recorded an improvement in its operational costs					
4.	The company has recorded an improvement in its revenue					
5.	The company has recorded an improvement in its market share					
6.	The company has recorded a decrease in customer complaints					