



**ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE
DEPARTMENT OF MARKETING MANAGEMENT**

**EFFECT OF NEW PRODUCT DEVELOPMENT ON CUSTOMER
SATISFACTION: THE CASE OF HORIZON ADDIS TYRE S.C.**

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Declaration

I, the undersigned, declare that this Thesis entitled “Effect of New Product Development on Customer Satisfaction: The Case of Horizon Addis Tyre S.C” is my own work. It has not been submitted for award of any Degree Program in this or any other University and all sources of information in the study has been appropriately acknowledged.

By: Selam Desalegn

Signature _____

Date _____

Letter of Certification

This is to certify that Selam Desalegn carried out her project on the topic of “Effect of New Product Development on Customer Satisfaction: The Case of Horizon Addis Tyre S.C.”. This work is original in nature and is suitable for submission for the award of Master of Art in Marketing Management.

Mesfin Workineh (PhD)

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LIST OF ACRONYMS/ABBREVIATIONS

CI	Customer Involvement
CS	Customer Satisfaction
HATSC	Horizon Addis Tyre S.C
NP	New Product
NPD	New Product Development
NPDS	New Product Development Strategy
NPQ	New Product Quality
NPDSF	New Product Development Success Factors
QMS	Quality Management System
TMC	Top Management Commitment

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ABSTRACT

In today's dynamic and highly competitive market, new product development has become one of the primary activity towards survival of any businesses. The main purpose of the research was to identify which new product success factors (customer involvement, Top/senior management commitment and new product quality) affect the customer satisfaction of the case company. The research used questionnaire distributed to the case company's business customers, which are found in Addis Ababa, as the primary data collection method. It used quantitative research analysis method. From the total population of 200 a sample of 134 respondents was selected using a non-probabilistic sampling technique which is judgemental sampling. The data collected was analyzed and tested by using correlation and regression analysis. There are various NPDSF but the research focused only on three factors. The research finding is significant to those companies who are involved in NPD to help them focus on specific NPDSF to increase customer satisfaction. The research finding indicate that all the three above mentioned new product success factors, customer involvement, top management commitment and new product quality positively correlate with and also significantly affect the customer satisfaction of the case company.

Key words/phrases: NPD, NPDSF, Customer Involvement, Top management Commitment, Product Quality, Customer Satisfaction, HATSC

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

The dynamic technological advancements, the continuous change of consumers demand, globalization and the highly competitive environment are leading organizations and industries to focus on innovating and developing new products contentiously. Organizations must develop new product because new products are key source of growth (Kotler and Armstrong, 2012).

Kotler and Keller (2009), defined a product as anything that can be offered to a market to satisfy a want or need. And New Product Development (NPD) as the development of original products, product improvements, product modifications, and new brands through the firm's own product development efforts. Booz, Allen & Hamilton(1982) clearly identified new product in six categories as New to the world, New product lines, Additional to the existing lines, improvement and revision of existing products, Re-positioning and cost reductions.

Research done in NPD agree that it is one of the riskiest, but most critical strategies in any competitive industry (Owens & Cooper, 2001; Baker, 2003; Schimmoeller, 2010; Ownes, 2009; Cooper, 1990; Kotler and Armstrong, 2012). It was first developed as one of the four Ansoff Matrix, product-market strategies of company growth, which involves extensive research and development and expansion of the product range (Loch & Kavadias, 2008). And it has become an important strategy to survive in the ever-changing and highly competitive market.

NPD practice research shows that the rate of product failure is very high, products ranging from 50%-80% of the product developed fail or under-performed (Awwad and Akroush, 2016; Ebarefimia, 2014; Ownes, 2009; Cooper, 1990; Schimmoeller,

2010). Therefore, identifying what constitute success of NPD is an important issue to minimize the risk of failure as well as to be successful in the development.

According to Wong and Tong (2013) new product success factors remain elusive as different scholars use different methods and criteria to measure success and managers success factor perception differ based on their area of expertise. According to Awwad & Akroush (2016), assessing factors that predict new product success still remains a big challenge. However, various studies identified lists of success factors that makes a product development successful. And from the list the once which are relevant to this research are new product quality(NPQ) (Ebarefimia, 2014, Gonzalez & Palacios, 2000; Ruggieri & Silvestri, 2014), Top management support/Commitment, Customer Involvement/Market research and New Product Quality (Schimmoeller, 2010; Aziz et al, 2014; Ernst, 2002; Page, 1993; Akroush, 2012; Awwad & Akroush, 2016; Cooper, 1990)

Previous empirical studies done on NPD focuses on finding out what the success factors of NPD, best practice of NPD and on NPD process. However, According to Schimmoeller (2010), there is lack of analysis on which key successful factors contribute to which product performance. And also insufficient study done regarding the relationship success factors have with company performance measurement especially with customer satisfaction. Especially focus of researchers on innovation, in developing countries like Ethiopia, is low (Zenebech, 2017).

Firm performance is a multidimensional concept. it is how well an organization achieves its market oriented goals as well as its financial goals (Yamin et al. 1999). one of the dimension of firm performance measure is customer satisfaction (Aziz et al, 2014; Selvam et al, 2016; Santos & Brito, 2012). Measuring performance of new product development is one critical task for supporting decision making and achieving the company's objectives.

Customer Satisfaction is analysis of feedback of customer after they purchased goods or service (Razak & Nirwanto, 2016). According to Kotler and Keller (2012), "Customer satisfaction is a person's feelings of pleasure or disappointment that result from comparing a product's perceived performance (or outcome) to expectations".

Therefore, this research tried to identify the relation between selected NPD success factors and customer satisfaction in the case of Horizon Addis Tyre S.C.

1.2. Background of the company

Horizon Addis Tyre S.C (HATSC) is sole tyre manufacturing company in Ethiopia. It has been in the market for the past 42 years. It was first established by Ethiopian Government and it was called Addis Tyre. Then it created Joint Venture with Matador (Slovakia) company and was called Matador-Addis Tyre. And in 2011 the company was purchased by local company and it was Named Horizon Addis Tyre S.C. Since the ownership transfer the name of the company changed to Horizon Addis Tyre S. C. and currently the Horizon plantation P.L.C owns 100% share of the company. The company is ISO 9001:2008 certified and the top management is committed to implement and continue to maintain a quality management system(QMS).

Vision of the company is to be a leading brand in Ethiopia, to secure and ensure 60% market share in the local market and 10% of its production volume export to the COMESA region in the year 2025.

Tyres are highly technical products, which requires sophisticated heavy machinery, qualified and experience personnel and strong process control system. To that end, a technical Assistance Agreement has been signed with continental AG that enabled Horizon Addis Tyre S.C. to acquire technology know- how and capacity building. Major competitors of the company are Chinese and Indian products.

The case company staying on the market for more than 42 years, didn't have an intensive NPD projects history. However, recently with limited manufacturing plant capacity and with shortage of well qualified employees, it took the highest risk of developing five additional tyre categories, which comprises around 26 tyre sizes, invested on improving existing products to the market, and still working on various new product developments.

The case company invested huge amount of dollars on purchasing know how, technical support, importing machinery and employing expatriates to develop more than 26 new Tire sizes to the existing market(Horizon Addis Tyre S.C, 2017). And it is also planning to expand more.

In addition to the aforementioned investment, the company invested a huge amount of money to research the market. It also involved various customers and received feedback and comment from them before new product development. The involvement of customers was done through questionnaire, by visiting major and potential customer by sales and marketing team, by sending integrated team from various departments (like sales and marketing, NPD department, Production, R&D and Product design, which includes Top/Senior management team members) to customer site, by preparing product market testing before introducing the product to the market, by arranging training and factory visit program for employees of the customers and by celebrating customer day in various cities of the country.

The case company, being a large and sole tyre manufacturing company, depended its new product development on various international standards. Because of that even though they did not have a formal new product development strategy at the beginning of their new product development practice, they were able to develop strategies for the new product developments being done at this time. On the other hand, the case company followed various types of new product development processes for different products they developed. For some of the product they used sequential NPD process as like BAH model, which is the most basic and traditional approach to NPD, While for other product developments they used stage-gate new product development model, which groups steps into stages and then place gates between every stages.

The case company also used various type of team integration and organizational structure that was used through out the new product development practice. For some product development done, the case company set up a committee that works on developing new products while on other times the case company uses new product development department of the company. Some times the functional team was responsible for new product development, while on the other times the company arranges for cross-functional teams to work together for new product development. Regarding leadership, as the team integration and organizational structure, the company leadership of the new product development varies from one project to the other.

Therefore, based on the practice of the case company, the researcher considered top management commitment, customer involvement and new product quality as

independent variables and did not consider the other four most influential new product success factors.

The four NPDSF were not include in the study because the practice of the company shows that the company used different process for product development and also used difference team integration and organization structure while developing new products. In addition, the case company used formal strategy for some development projects and used informal strategies for the others. The variation in the four factor used through out the new product development of the case company will make the research's scope too wide, too complicated that needs too much time, additional manpower and investigations.

1.3. Statement of the problem

As indicated on the background of the company, the case company invested huge amount of money on NPD and it is also planning to expand more.

Even though performance measurement plays an important role in ensuring the success of any project (Chen, Yeh,& Yang, 2006), performance of NPD is often under measured (Putzer & Macheill, 2015). Accordingly, those company that sets customer satisfaction as one goal urges managers to identify which NPD factors crucial to customer satisfaction (Awwad & Akroush, 2016). However, there is no research on the case company regarding the NPDSF and NPD performance of the company.

According to Awwad & Akroush (2016) keeping customer satisfied is the major driver of launching new products to the market. The case company, being ISO certified company, views customer satisfaction as major factor for its existence and achieving customer satisfaction is one of its major objective (QMS manual, 2015). So far, beside profitability and sales volume analysis. The company didn't identify the satisfaction of the customers regarding the new product developed.

The case company, as per ISO requirement of maintaining QMS, collects overall customer satisfaction survey every six month. The recent Customer Satisfaction survey indicate that the overall customer satisfaction level decreased in current year compared to previous year survey(CSS, 2018).

Therefore by identifying the relationship between the selected NPDSF and customer satisfaction, the research provided factors that are crucial for improving the customer satisfaction level of the case company in their future NPD.

1.4. Research Question

The basic research question is identifying the effect of selected NPDSF on customer satisfaction in the case company. the research questions are:

1. How does the customer involvement in new product development affect Customer Satisfaction, in the case of Horizon Addis Tyre S.C.?
2. How does the Top/Senior management commitment towards new product development affect Customer Satisfaction, in the case of Horizon Addis Tyre S.C.?
3. How does the new product quality affect Customer Satisfaction, in the case of Horizon Addis Tyre S.C.?

1.5. Objectives of the Study

1.5.1. General objective of the study

The general objective of the study is to find out the effect of New product development success factors on customer satisfaction of the case company.

1.5.2. Specific objectives of the study

The specific objectives of the study are:

1. To determine the effect of customer involvement on customer satisfaction of the case company new product development
2. To determine the effect of Top/Senior management commitment on customer satisfaction of the case company new product development.
3. To determine the effect of new product quality on customer satisfaction of the case company.

1.6. Significance of the study

For the growth and development of a company, developing new product is as crucial as measuring performance properly (Kotler and Armstrong, 2012). One of the reason for the assessment of NPD practice is for continual improvement (Panizzolo et al., 2010).

This research attempts to identify the effect NPDSF on customer satisfaction . Based on the research finding, the case company as well as other similar companies will take lesson from the practice. And it will also support management to give more attention and focus to NPDSF and increase the performance of new product developments in terms of customer satisfaction, which the case company as well as other product developing companies can use in the future.

1.7. Scope of the study

The conceptual scope of the research is that even through there are various NPDSF, it only considered three variables of NPDSF (Customer Involvement, Top management commitment and NPQ), which are selected based on the experience of the case company.

The case company operates throughout Ethiopia, However, this research has focused only on potential customers of the case company which is found in Addis Ababa.

Methodologically, the research used only quantitative method and used questionnaires distributed to customers of the company.

1.8. Limitation of the study

Since tyre purchase in every company involves various customer employees like purchasing, technical department and drivers it was difficult to get the right person to respond for the questionnaire. Therefore, utmost care have been taken in the time of questionnaire distribution and included questions on the questionnaire to measure respondent knowledge level of HATSC new product development.

The research focused only on three NPDSF, which are identified on the literature review. Others factors were not considered and the remaining success factors, which are not included in this research, are indicated in chapter five, for further study.

1.9. Organization of the Study

The research is organized in five chapters, the first chapter gives introduction about the research including the background of the study, background of the company, statement of the problem, research questions, aim and objective of the study, significance of the study, the scope, limitation and definition of terms of the study. The second chapter is review of related literature of the subject matter. The third chapter is about the methodology that the researcher used in the study. The fourth chapter will be data analysis, interpretation and discussion of the result and the last chapter gives summary of the findings, conclusion and recommendation.

1.10. Definition of terms

- **Product:** Anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a want or need.
- **New Product:** A good, service, or idea that is perceived by some potential customers as new.
- **New Product Development:** The development of original products, product improvements, product modifications, and new brands through the firm's own product development efforts.
- **Product Quality** The characteristics of a product or service that bear on its ability to satisfy stated or implied customer needs.
- **Customer Satisfaction:** The extent to which a product's perceived performance matches a buyer's expectations.
- **The Case company: Horizon Addis Tyre S.C**

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2. 1. Theoretical Review

2. 1. 1. New Product Development

NPD is one of the four Ansoff Product-Market growth strategy matrix. Product development is concerned with supplying new product to the existing market for the purpose of company growth (Loch & Kavadias, 2008). According to Kotler (2000) existing products of a company will be vulnerable to changing customer needs, technological advancement and increased competition and through time and companies that fail to develop new products are putting themselves at great risk. NPD is the risk but most important tool to gain competitive advantage and sustainable growth (Owens & Cooper, 2001; Baker, 2003; Schimmoeller, 2010; Ownes, 2009; Cooper, 1990; Kotler and Armstrong, 2012).

New product development practices are the overall activities companies over take to develop new product and the NPD process are the basic issue in the new product development (Chen, Yeh & Yang, 2006). New product development process is the most frequently researched and written about aspect of new product development (Page, 1993). various studies also focus on identifying best new product development practices to distinguish those practice which are associated with higher degree of success (Page, 1993; Griffin and Kahn, 2009)

According to Baker (2003. p.327), “The NPD process is idiosyncratic to each individual firm and to the new product project in question”. However researchers have developed various models which can help process NPD effectively.

The BAH model of NPD is one of the traditional, well known and widely utilized product development process model developed by Booz, Allen and Hamilton (Baker, 2003; Page, 1993)

BAH model of NPD

Even though risk is inherent in NPD, it can be lessened by adopting a systematic framework for managing new product activities (Booz, Allen and Hamilton, 1982). The model provides an indication of the total number of tasks that might require in order to develop and launch a new product (Baker, 2003). According to model, it is believed that companies will be successful in product development if they followed the sequential step and complete all activities in the process.

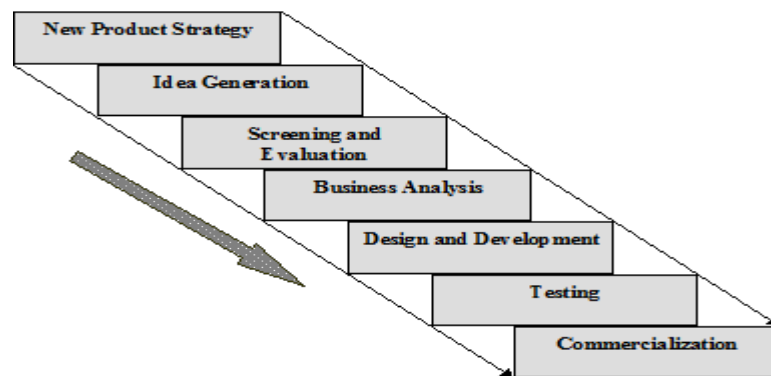


Figure 1: The BAH model of NPD stages

Source: Bhuiyan (2013:P.749)

BAH Model of NPD stages includes new product development strategy, idea generation, screening & evaluation, business analysis, development, testing, commercialization. The drawback of the model is that the complete process activities lead to prolonged product development time and and late market introduction (Baker, 2003).

The model relate with this research because the process of NPD is the basic part of of NPD. According to Owens & Cooper (2001) models are idealized process not developed for any specific, real instance of.

2. 1. 2. New Product Development Success Factors

Critical success factors (CSFs) refer to dimensions that ensure organizations successful competitive performance (Ahmed et al, 2013). According to Awwad & Akroush (2016) firms with more focus on critical success factors of NPD were able to show quick response to change in the environment.

Various research have been conducted regarding NPDSF and have identified various lists of the success factors (Page, 1993; Cooper & Kleinschmidt, 2000; Aziz et al, 2014; Ahmed et al, 2018; Gonzalez & Palacios, 2002). Even if there is extensive research on success factor of NPD firms continue to deliver products that fail and NPD success is still a critical challenge (Bhyiuan, 2013, Awwad & Akroush, 2016). However, from the list of new product development success factors, there are six NPDSF which have been identified by various researches as most influential towards new product development success (Page, 1993; Cooper & Kleinshmidt, 2000; Aziz et al, 2014; Ahmed et al, 2018; Gonzalez & Palacios, 2002, Griffin, 2009, Schimmoeller, 2010, Akrosh, 2012; Awwad & Akroush, 2016). The factors are the use of formal new product development process, the use of formal new product development strategy, using cross-functional team integration, top management commitment, customer involvement and new product quality.

Cross-functional team integration is defined by Holland et al. (2000) as “ a group of people who apply different skills, with a high degree of interdependence, to ensure the effective delivery of a common organizational objective”. it indicates how individuals involved within the NPD are organized (Baker, 2003; Griffin, 2009, Lwu, 2010). According to Loch & Kavadias (2008) developing a new product is a complex process that typically involves various department contributions. According to Page (1993), the four departments mostly involved in NPD are Marketing, R&D, Engineering and Manufacturing. New-product development is most effective when there is teamwork among R&D, engineering, manufacturing, purchasing, marketing, and finance (Kotler, 2000; Lwu, 2010). Ernst (2002) indicated that cross functional team has indirect and direct influence on the success of NPD. In addition according to Griffin (2003) best performing new product developing companies uses formal cross-functional approach to NPD.

New product development strategy directs and integrates the entire new products team and activities (Page, 1990). It links the NPD process to company objectives and provides focus for idea/concept generation and guidelines for establishing screening criteria (Bhuiyan, 2013) NPD firms should have a clear and well communicated new product development strategy. various study indicate that those company that uses formal strategy have a better chance for success(Ernst, 2002; Page, 1993; Griffin & Kahn, 2009).

According to Page (1999) the most frequently researched and written about aspect of new product development is the actual process itself. New product development consists of the activities carried out by firms when developing and launching new products (Bhuiyan, 2013). The use of formal new product development process . Various study indicate that those company which uses formal process have a better chance of succeeding in NPD than those that doesn't use formal process (Page, 1993, Griffin, 2009; Ernest, 2002). Two of the most used new product developments are the stage-gate model and BAH model. The stage-gate model developed the process into various stages and between two stages their is a gate that serves as a check point. There are a set of deliverable inputs and exit criteria at every gate. If the previous stage out put doesn't fulfil the criteria it will not pass to the next stage (cooper, 1990). On the other hand, BAH model used a sequence steps from beginning to the end of the new product development activities.

Since the remaining three most influential factors, which are top management commitment/Support, customer involvement and new product quality are our independent variables, the detailed discussions are presented as follows.

a. Customer Involvement

Customer involvement also has been shown to improve the effectiveness of the development process (Gonzalez & Palacios, 2002). Developing successful new product need to match technology with Market relevance and specific reason for innovation comes from the market place (Baker, 2003).

According to Hellman et al. (2014) several studies have shown that importance of involving users in the NPD Process to increase success rates. According to Felix(2015) knowing the customer is critical for a firm's superior performance and

long term success in today's highly competitive business environment. However, intense concentration on new product development on a few customers have a negative influence on success (Baker, 2003). According to Hellman et al. (2014) firms cannot involve all its customers in product development. A firm has to make a selection based upon what it wants to achieve. According to Baker (2003) the appropriate level of involvement depends on organizational strategies and organizational factors. Customer involvement also depends on customer relationship (Lagrosen, 2005).

According to Kotler and Armstrong (2012), today's innovative companies work closely with customers and customer centered new product development begins and ends with understanding customers and involving them in the process. One source of new product ideas are customers (Baker, 2003).

Baker (2003) and Hellman et al. (2014) reported that better-performing companies make more frequent use of research tools like customer site visits, in depth interviews with customers, beta site testing, field test markets, creativity sessions for idea generation, concept tests, lead user analysis and concept engineering.

According to Baker (2003) testing the physical products, resulting in a final design is more attuned to the voice of the customer. Some categories of product are more amenable to customer testing than others. Test marketing, consists of small-scale tests with customers. In addition, processing of market information (defined as market size and customer needs and wants) is also associated with superior new product performance (Baker, 2003).

b. Top/Senior management commitment/Support

According to Loch & Kavadias (2008) NPD encompasses a large number of topics and challenges in a firm such as strategy formulation, resource allocation, and coordinated collaboration monitoring, and control. Management commitment provides organizational support for change, generates enthusiasm, provides a clear vision of the product concept (Gonzalez & Palacios, 2002), assures sufficient allocation of resources (Banczak, Griffin & Kahn, 2009; Gonzalez & Palacios, 2002; Ernst, 2002). According to Kotler (2000), top management is ultimately accountable for defining business domain and the most important roles which top

management have to play is that of incorporating NPD as a meaningful component of an organization's strategy and culture (Baker, 2003). According to Lester (1998) top management commitment is a key prerequisite for success of new product. He also indicated that setting vision, strategy and sponsorship were areas of top management support and commitment. The other point in top management commitment is the leading by example where other employees learn to give their commitment towards continuation improvement (Mokhtar & Yusof, 2010).

c. **New product quality**

Various experts have defined quality as fitness for use, conformance to requirements and freedom from variation and defined also quality as features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs (Kotler and Keller, 2012).

As reported by Loch & Kavadias (2008) many times benefits to end users are obvious from the physical attributes or the some needs creativity to translate the derived benefits into physical attributes or features. Customers often are uncertain about the level of less tangible attributes before using a new product, so suppliers use price and advertising relating to the less tangible attributes to signal product quality (Thomas, Shane, and Weigelt, 1998).

A new product is deemed a success from the firm's standpoint if enough end consumers choose to buy it over competitors offer. Developing the right new products is critical to the firm's success and key to sustainable competitive advantage (Loch & Kavadias, 2008). and higher quality products creates higher customer satisfaction (Kotler and Keller, 2012)

Kotler and Keller (2012) thought that the quality of the product consists of several indicators, namely performance, features, reliability, compliance, durability, service ability and perceived quality.

2. 1. 3. Measuring New Product Development Performance

Measuring overall development programs is key to understanding a firm's position regarding new product development (Griffin and Page, 1993).

Loch & Kavadias (2008) regarding NPD Performance Measure said that:

‘NPD performance measurement is a surprisingly expansive and elusive subject. Because of multiplicity of meanings associated with performance measurement; NPD performance measurement is further complicated by the inherent intangibility, non-routineness, uncertainty, and multi-functionality that make up contemporary new product development efforts. There is also confusion over what can be, versus what should be, measured and why. A performance measure appropriate for one project may be inappropriate for another. In addition, NPD is not monolithic – no single measure is ever fully appropriate because it cannot tell the full story. ‘performance measurement’ is ambiguous since it means so many different things to different players in different contexts at different times. It can imply a specific performance measure given all this, NPD performance measurement in practice is a significant and almost daunting challenge. However, it is a challenge that must be overcome to achieve higher levels of organizational effectiveness.’(P.199)

Measuring performance of a new product development is important. Performance of a NPD can be assessed or reviewed while in-progress or when it is completed (Loch & Kavadias, 2008). Various researchers identified various performance measurement dimensions. Most of the researchers indicated customer satisfaction as measurement of performance as one dimension.

Awwad & Akroush (2016), developed a model of NPD performance measures with five types of dimensions and NPD Market performance is one dimension which includes customer satisfaction as determinant. While Page (1993), identified two most used types of measuring NPD performance which are financial (ROI, various profit measurements & Sales and Sales growth are most used) and Other measures (Sales performance, Market share and Customer satisfaction).

On the other hand, Griffin and Page (1993) identified five type of performance measure of which customer acceptance is one of them and customer satisfaction is the most used measure of customer acceptance and Santos & Brito (2012), identified six determinants of firm performance as, profit, growth, market value, customer satisfaction, employee satisfaction and environment.

2. 1. 4. Customer Satisfaction

Kotler and Keller (2012) reported that "satisfaction is a person's feelings of pleasure or disappointment that result from comparing a product's perceived performance (or outcome) to expectations". While Kotler and Armstrong (2012) defined that "customer satisfaction is the extent to which a product's perceived performance matches a buyer's expectations."

Satisfying customers while making profit is one of the main objectives of every business (Seith, 2000; Lwu, 2010; Atiyah, 2016; Ruggieri & Silvestri,2014). According to Kotler and Keller (2012) "For customer-centered companies, customer satisfaction is both a goal and a marketing tool". The economic success of firms also depends on their ability to identify the needs of customers and to quickly create products that meet these needs. (Lwu, 2010)

New product development must be customer centered because it create more customer satisfying experiences (Kotler and Armstrong, 2012). And keeping customer satisfied is the major driver of launching new products to the market (Awwad and Akroush, 2016).

There are different indicators of customer satisfaction and they are staying loyal longer, repurchase interest, buy more when new product introduced, small desire to make a complaint, the willingness to recommend the product, less sensitive to price, pay less attention to competing brands, offer product service ideas and the reputation of the company (Kotler and Keller, 2012; Atiyah, 2016)

2. 2. Empirical Review

Various research have been done regarding NPDSF identification. However, there is lack of sufficient research regarding effect of NPDSF relation with company performance especially with one of the company performance measure which is Customer satisfaction. And the researcher was not able to find any research done in Ethiopian context.

In addition, empirical research done regarding NPD and company performance focus on finding collective company performance measure rather than focusing on specific

performance measures like profitability, customer satisfaction, sales volume etc. Accordingly, the researcher reviewed various empirical researches based on the variable selected for this research. The summary of the review are as follows:

2. 2. 1. Customer Involvement and Customer Satisfaction

According to Kotler and Armstrong (2012) customer involvement has a positive effect on the new-product development process and product success. According to Bhuiyan (2013), a relatively high rate of success is achieved for project ideas that originated from marketing and customers as compared to ideas originating from R&D, suppliers, and management. In addition, Abdolmaleki & Ahmadian (2016) find out that there is a positive relationship between customer involvement and new product development. And companies that listened to their customer achieved higher level of new product acceptance by customer (Lwu, 2010). According to Walter and Chijindu (2015) there is a statistically significant strong relationship between customer involvement and satisfaction in manufacturing industry.

On the other hand, According to Lin et al.(2013), customer involvement yield a conflicting result regarding its relation with new product performance. And Gonzalez and Palacios (2000) also indicated that Customer involvement had no effect on performance.

H1: customer involvement in NPD positively affects Customer Satisfaction

2. 2. 2. Top Management Commitment and Customer Satisfaction

According to Aziz et al.(2014) top management commitment/support is positively related with company performance where company performance was measured through profitability, customer satisfaction and market share. Gonzalez and Palacios(2000) finding of their research also indicate that top management have the greatest impact on product success where the product success measures were market share, profitability and customer satisfaction. Mokhtar & Yusof (2010) reported the

statistically significant association exists between top management and new product performance.

On the other hand, Maidique and Zirger (1990) found new product successes to be characterized by a high level of top management support but they found less proof of top management influence, discovering that many new product failures often have as much top management support. In addition, according to Ernst (2002) senior management have an impact on the success of NPD process not directly to the performance of the company.

H2: Top Management commitment towards NPD positively affects customer satisfaction

2. 2. 3. NPQ and Customer Satisfaction

According to Kotler and Keller (2012) a company that satisfies most of its customers' needs most of the time is called a quality company and higher levels of quality result in higher levels of customer satisfaction. The research finding of Gonzalez and Palacios (2000) also indicated that product quality had the greatest impact on product success where the product success measures were market share, profitability and customer satisfaction. Various studies found out that product quality influences customer satisfaction (Jahanshahi et al. , 2011; Razak & Nirwanto, 2016), Which indicates that there is a positive significant relation between new product quality and customer satisfaction. Similarly Scholastica & Maurice (2013) finding also indicate that product quality have significant effect on company performance, which includes customer satisfaction.

On the other hand the finding of Januako et al.(2018) study indicated that product quality doesn't have any effect on customer satisfaction.

H3: NPQ positively affects customer satisfaction

2. 3. Conceptual Frame work

The below conceptual framework shows the relationship of the selected NPDSF (Independent variables) with customer satisfaction (Dependent Variable) developed based on the literature review.

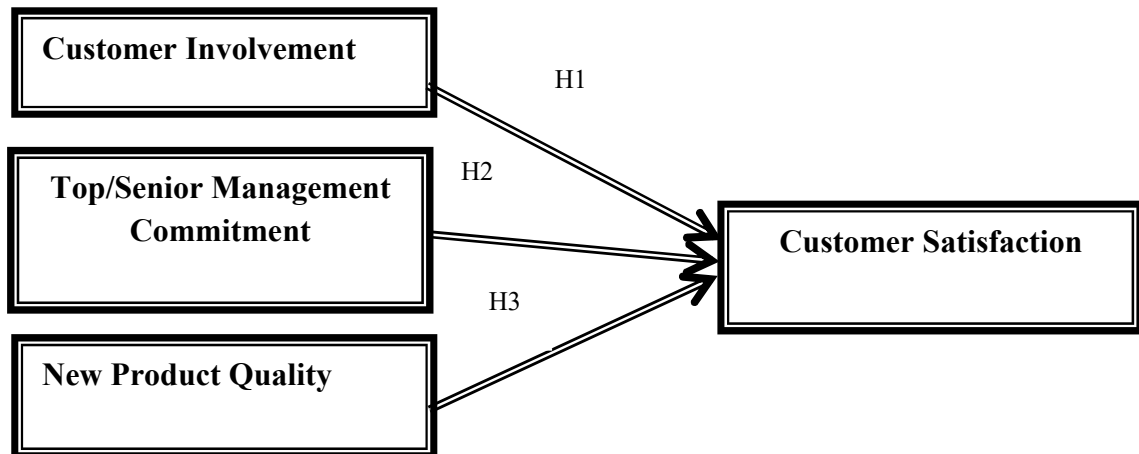


Figure 2: Conceptual frame work

Source: Researcher's own work (2019)

CHAPTER THREE

RESEARCH METHODOLOGY

3. 1. Introduction

This chapter presents the detailed methodology the researcher use throughout the research it includes the research approach, research design, data type and data Sources, population of the study, sampling procedure, data gathering instrument, data analysis technique, validity and reliability and ethical consideration.

3. 2. Research Design

Research designs are types of inquiry that provide specific direction for procedures (Creswell, 2014). According to Kothari (2004), research design is a plan, a roadmap and blueprint strategy of investigation conceived so as to obtain answers to research questions; it is the heart of any study.

Various study of research design presented various list of research design types and it can be summarized the basic research designs as follows. Descriptive research sets out to describe and to interpret 'what is'. Explanatory research, aims at establishing the cause and effect relationship between variables. The researcher uses the facts or information already available to analyze and make a critical evaluation of the data/information and Exploratory research is less formal, sometimes even unstructured and focuses on gaining background information and helps to better understand and clarify a problem. It can be used to develop hypotheses and to develop questions to be answered. Since the research will focus on evaluating the NPD relationship between variable of the company. Therefore, the research will be Explanatory research.

3. 3. Research Approach

Creswell (2014), defined research approach as plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. He further identified three types of approach:

Qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem.

•Quantitative research is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures.

Mixed methods research is an approach to inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. Since the research examines relationship among variables and uses questionnaires for data collection, the researcher used a quantitative method.

3. 4. Data Types and Data Sources

There are two types of data which are primary and secondary data. The research used primary data types as well as secondary data sources. Source of primary data was questionnaire, and the secondary data were collected by reviewing journals, survey collected by the case company, various company reports, written documents, from internet and website.

3. 5. Population of the Study

The total population for the research were the case companies business customer in Addis Ababa, which purchased more than 100,000 birr worth of tyre in 2018 and have been customer of the company for at least 1 year. The researcher received the list of the customers from the case company. According to the list, the total number of the customers were around 200.

3. 6. Sampling Procedure

3. 6. 1. Sample size

There are several approaches to determining the sample size. Some of the approaches are using a census for small population, imitating a sample size of similar studies, using published tables and applying formulas (Israel, 1992). The researcher used the following simplified formula developed by Yamane (1967:886) cited by (Israel, 1992) to calculate sample sizes:

Customer Sample Size

$$n = \frac{N}{1 + N(e)^2}$$

Where n= sample size, N= total population and e= level of precision

$$n = \frac{200}{1 + 200(.05)^2} \quad n = 134$$

It indicate that n is the number of respondents needed

3. 6. 2. Sampling Technique

There are various types of non-probability sampling techniques. One of them is judgemental probability sampling technique. In this sampling technique the samples are selected based on the researchers discretion. Since the case companies customers are located through out Addis Ababa and because of limitations like time, money and manpower the researcher used Judgemental probability sampling technique to select the sample from the total population.

3. 7. Data Gathering Instruments

There are various types of data collection instruments for primary as well as secondary data. This research used questionnaire for collecting primary data and secondary data were collected by reviewing journals, survey collected by the case company, various company reports, written documents, from internet and website.

The questionnaire were developed for this research by the researcher and it contains two parts. The first part of the questionnaire includes eight questions, which would

provide information about the respondent, the respondent company as well as the relationship of the respondent company and the case company. It also include three questions that was used to validate the respondents appropriateness.

The second part of the questionnaire is composed of twenty-nine five-point Likert Scale questions (1=strongly disagree 2= Disagree 3= Neutral, 4= agree and 5= strongly agree), which are divided in to four coded categories. The categories indicates the four independent and dependent variable of the study.

The questionnaire distribution were administered by the researcher. The researcher, based on the list of customer received from the case company, visited each selected sample customers at their office. While visiting, the researcher first requested the respondent's willingness to support the research. Then, since the case companies customer representative, who works with the case company might be from various departments like purchasing, administration, maintenance, Logistics or other departments, the researcher requested for the right person who would give valid response to the questionnaire and made sure that the questionnaire reached the right person. Finally, the researcher personally collected the distributed questionnaire by checking whether all questions were answered or not.

3. 8. Data Analysis Technique

The research used quantitative data analysis technique, which are descriptive and inferential analysis. Descriptive analysis refer to statistical describing aggregating & presenting the construction of interest or association between there constructions. While inferential analysis refers to the use of statistical tests to see whether a pattern we observe is due to chance or due to the program or intervention effect and also find out if there is relation between variables. Accordingly this research used various descriptive analysis for the first part of the questionnaire and inferential analysis like correlation and multiple regression for the second part of the questionnaire.

3. 9. Validity and Reliability

3.9.1. Validity

Validity determines whether the measuring instrument truly measures what it was intended to measure or how truthful the research results are. And in order to verify whether the instrument used for this study was valid, content validity check was used. Content validity was verified by discussing with the research advisor, who looked into the appropriateness of the questions and the scales of measurement and by reviewing of related literature. The comments and findings of both were incorporated accordingly.

3.9.2. Reliability

A measuring instrument is reliable if it provides consistent results. Reliable measuring instrument does contribute to validity, but a reliable instrument need not be a valid instrument. Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. As multiple items in all constructs were used in the questionnaire, internal consistencies were assessed with Cronbach's alpha. Cronbach's alpha values greater than 0 .70 indicates acceptable. Since the value for all constructs are all greater than 0.70, we can say that the instrument we used is reliable. Cronbach's Alpha reliability test output is summarized below.

Table 1: Cronbach's Alpha output summary

Variables	Cronbach's Alpha	No of Items
Customer Involvement	.824	7
Top management Commitment	.847	6
New Product Quality	.910	7
Customer Satisfaction	.702	7
Overall	.915	27

Source: Survey Data (2019)

3. 10. Ethical Consideration

Ethical considerations involves the right to choose, right to safety, right to be informed, right to privacy and confidentiality.

Accordingly, the researcher:

- ✓ consider the interest of everyone in participating on the research,
- ✓ not perform any activity that place any participant on physical or psychological harm,
- ✓ make information available on the research task,
- ✓ keep the privacy of participant and the company by controlling the communication mechanisms and detail information of the participate
- ✓ keep the confidentiality of the research by not disclosing the identity of the respondent.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4. 1. Introduction

This chapter emphasizes on the analysis of data and discusses the findings of the study in relation to the effects of new product development on customer satisfaction. The data collected from respondent were analyzed and interpreted, based on the specific objectives and hypotheses of the study, using descriptive analysis, correlation analysis and regression analysis.

Both descriptive, focusing on the description of the sample population and discussion of the findings as well as inferential statistics, which makes inferences about the population based on the data from the sampled population, are presented. The data analysis was undertaken with the help of a software Statistics Package for Social Sciences (IBM SPSS version 25).

4. 2. Response Rate

From the total questionnaire distributed which were 134 the response rate were 88.81%, However, from the total response, 10 responses were discarded because they didn't qualify our sample requirement, which are purchasing at least 100,000 per year, work with the company for at least for 1 year, and they don't have enough information on the new product development of HATSC. And from the discarded responses 2 responses were discarded by not fulfilling two requirements. The response rate responses are summarized as follows.

Table 2. Questionnaire response rate.

No.	Item	No of responses	Percent
1	Total questionnaire distributed	134	100
2	Total response collected	119	88.81
3	Discarded responses	10	7.46
4	Valid responses for part 2 analysis	109	81.34

Source: Survey Data (2019)

4. 3. General Information Analysis

The first part of the questionnaire is composed of questions, which can describe the respondent company, the respondent and the relationship of respondent company with the case company. From those questions, three questions were included to determine the validity of the respondent before proceeding to detail analysis. The general information analysis is summarized below as follows.

➤ Respondents' Organizational profile

The below organizational profile frequency chart indicate that the majority of respondents were governmental organization covering 63% of the total data collected. The remaining 21.8 % were private companies, 5.9% were NGOs and 9.2% were various associations, which selected others categories from the questionnaires. The organization profile indicate that various types of customers were involved in responding the questionnaires.

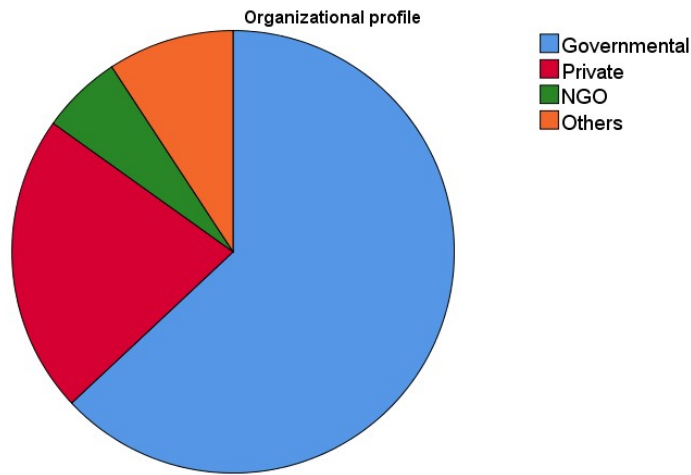


Figure 3: Organization profile frequency distribution

Source: Survey Data (2019)

➤ **Educational level of the respondents**

According to the collected data the educational level of the respondent indicated that the majority 62.2% holds BA degree. The remaining 18.5% have college Diploma, 16.8% have MA/MSC/MBA or above and only 2.5% have certificate. These might indicate that the respondents were from different organizational structure level and the case company communication is not limited to upper or lower levels.

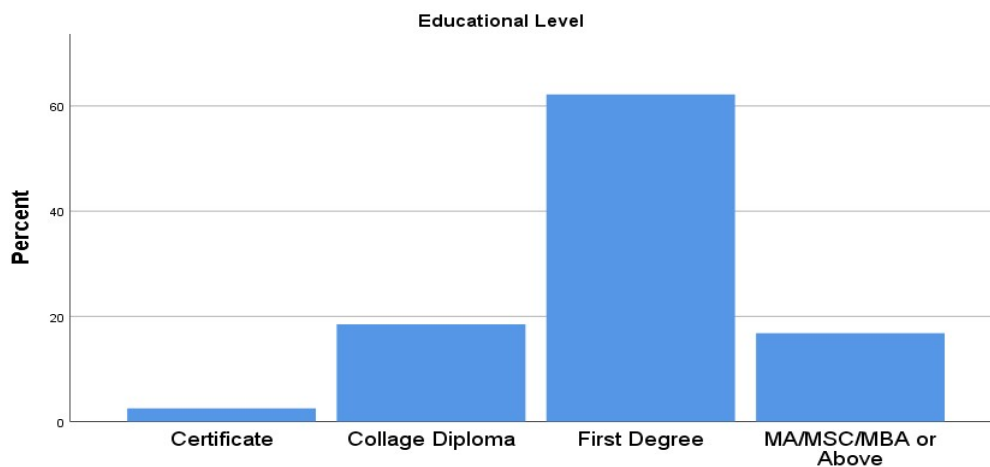


Figure 4: Educational level of respondent

Source: Survey Data (2019)

➤ **Department of the respondents**

Since the respondent's company representative that have contacts with the case company were not limited to only one department. The case company focused on working with other technical departments, beside purchasing departments, like logistics, maintenance, commercial departments and administrative staffs like drivers. From the collected data as depicted on the chart. The majority of respondents were from purchasing department covering 52.1%, while 22.7% were from logistics department, 14.3% were from administration and the remaining 4.2% were from other departments which includes commercial, general service and stores department staffs.

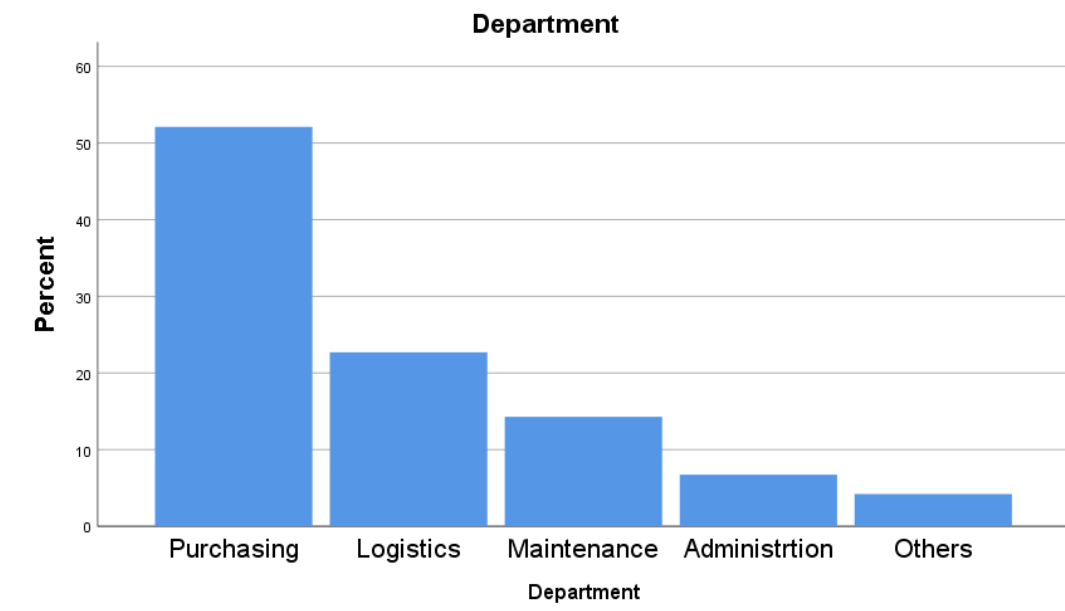


Figure 5: Respondent department

Source: Survey Data (2019)

➤ **Yearly tyre purchase budget of the respondent company**

The analysis of respondents yearly budget on the purchase of tyre indicated that around 99.2% of the respondent purchases more than 100,000 birr yearly. However, even though the list of the customer, we received from the case company, indicate that the customers purchases were more than 100,000, the actual data collected from the

questionnaire indicate that 0.8%, which is 1 respondent, did not have purchase capacity of more than 100,000 birr. Therefore, it was discarded from the part two analysis because it doesn't satisfy the research requirement.

Table 3: Yearly tyre purchase capacity of the respondent

		Frequency	Percent
Valid	Less than 100,000 birr	1	0.8
	from 100,000 - 500,000 birr	31	26.1
	from 500,000-1 million birr	31	26.1
	more than 1 million birr	56	47.1
	Total	119	100.0

Source: Survey Data (2019)

➤ **Respondent's company relation with case company**

According to the analysis 99.2% of the respondent's company worked with Horizon Addis Tyre S.C for at least 1 year, of which 82.4% worked for more than 3 years, and the remaining 0.8% worked less than one year therefore the later was discarded because it didn't qualify as per the research criteria for the data collection.

Table 4: Respondent's company relation with HATSC in years

		Frequency	Percent
Valid	Less than 1 year	1	0.8
	1-3 Years	20	16.8
	3-5 Years	39	32.8
	More than 5 years	59	49.6
	Total	119	100.0

Source: Survey Data (2019)

➤ **Relationship intensity**

The relationship intensity of the respondents organizations and the case company indicate that of f the total respondents the majority which is 45.4 % and 43.7% work moderately close and very closely respectively, while 10.9% works slightly close. It indicate that all the respondent’s company works closely with the case company with a difference level of relationship intensity.

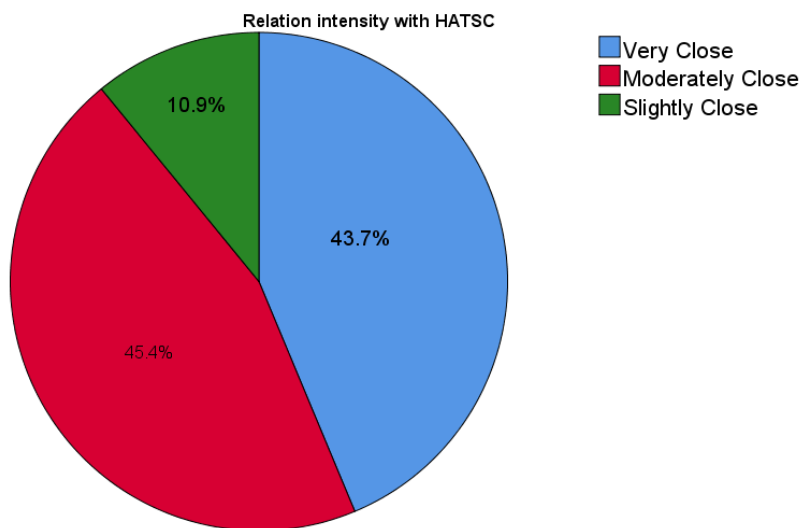


Figure 6: Relation intensity of respondent with HATSC

Source: Survey Data (2019)

➤ **Respondent’s Brand Preference**

The case company manufactures three tyre brands, which are Addis Tyre, Horizon and Matador Brand. From the three brands, Horizon Brand is the NP developed. According to the data collected the majority of the respondent, which are 74.8%, preference were the New Product developed by the case company that means at least 74.8% have a positive experience with the NP Developed by HATSC.

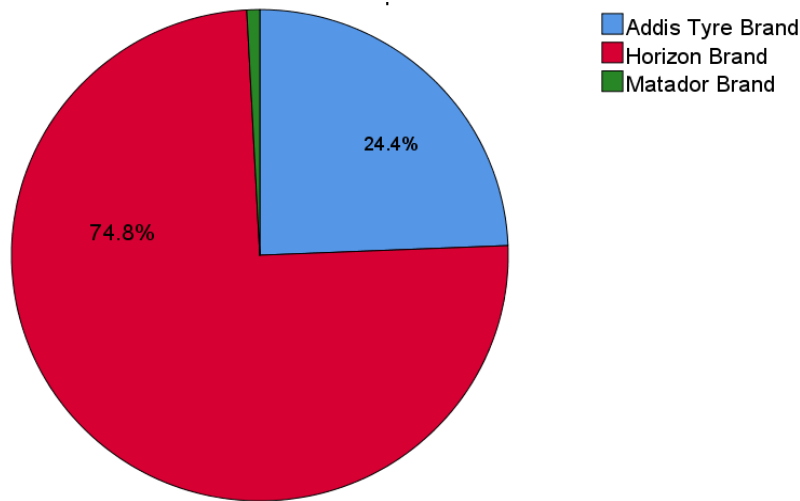


Figure 7: Respondent's brand preference

Source: Survey Data (2019)

➤ **Knowledge of respondent about NPD by the case company**

The final question regarding general information try to measure the knowledge of the respondents on the case companies new product development. Of all the respondent, the majority 41.9% knows about right or have enough knowledge about the new product development of the case company. The remaining 28.6% knows more than enough, 20% knows too much and 8.5% of the respondents know nothing, little or very little.

From our finding we can conclude that about 91.5% of the total respondent have enough knowledge about the case company new product development practice and were eligible to give response and the remaining 8.5% fo the response, which the respondent have a little, too little or no knowledge about the new product development of the case company, were discarded form the next analysis. It is because they might not have enough information about the new product development practice of the case company to give valid response for the questionnaire. These respondents might work with a company that purchases more than 100,000 and are customer with the case company for more than one year. However, the person who were giving the response might be new to the respondent's company and that could be one of the reasons to discard the response.

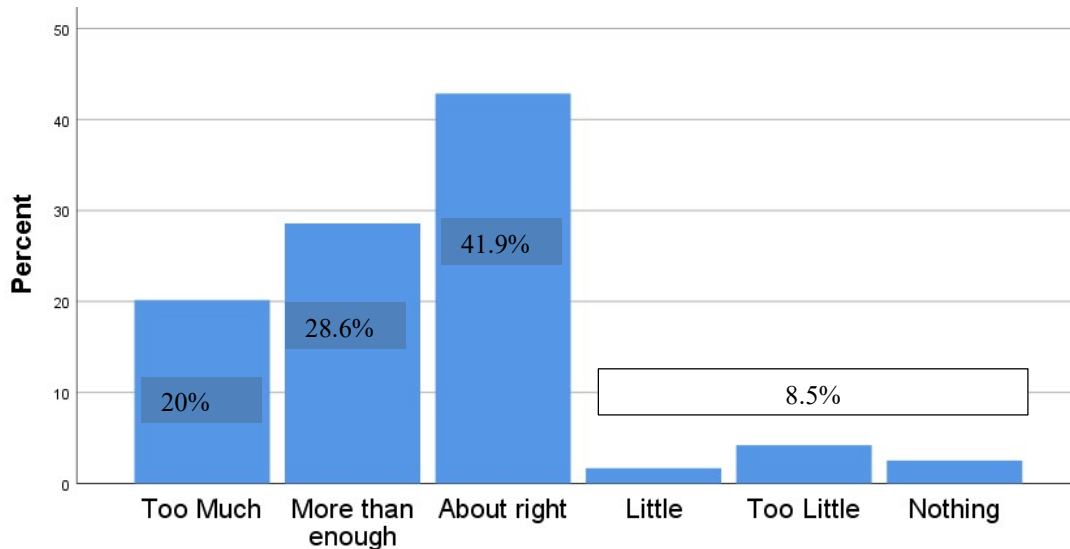


Figure 8: Respondents knowledge about NPD

Source: Survey Data (2019)

4. 4. Overall result of Research Variables

The researcher attempted to summarize respondents' status based on the four research variable of the study. The overall finding indicate that 81.7% percent of the respondents' company were involved in the NPD, 76.1% agrees to the case companies top management commitment towards the NPD, 77.1% agrees on quality of NP of the case company and 89.9% of the case company's customers are satisfied with the NP developed. A summary table is annexed at the end, which shows the overall result of the research variable.

4. 5. Correlation Analysis

Correlation is a statistical technique that can show whether and how strongly pairs of variables are related. Correlation analysis is one of the most widely used analysis test in research. It is also a very useful means to measure the relationships between the variables with a single number that falls between -1 and +1 (Taylor, 1990).

A correlation analysis with Pearson's correlation coefficient (r) was conducted on all variables in this study to explore the relationships between the dependent and independent variables. The correlation coefficient r is statics used to measure the degree or strength of this type of relationship (Taylor, 1990). According to Geoffrey

et al. (2005) The results of correlation studies simply provide researchers with information regarding the relationship between two or more variables. When interpreting correlation coefficient 'r' value ranging from 0-0.3 indicates weak positive relationship while 0.3-0.7 indicates moderately positive relationship r (Ratner, 2009).

Therefore, the research finding indicates that all the three independent variables (Customer Involvement, Top Management Commitment & New Product Quality) have moderately positive correlation with the dependent variable. However, the correlation output indicate that top management commitment ($r=.367, p<0.01$) has weaker relation with customer satisfaction compared with customer involvement ($r=.579, p<0.01$) and new product quality ($r=.691, p<0.01$). The correlation analysis output is summarized on the below table:

Table 5: Correlation between NPDSF and Customer Satisfaction

		CI	TMC	NPQ	CS
CI	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	109			
TMC	Pearson Correlation	.253**	1		
	Sig. (2-tailed)	.008			
	N	109	109		
NPQ	Pearson Correlation	.604**	.322**	1	
	Sig. (2-tailed)	.000	.001		
	N	109	109	109	
CS	Pearson Correlation	.579**	.367**	.691**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	109	109	109	109
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Survey Data (2019)

4. 6. Multiple Regression Analysis

According to Kothari (2004) regression analysis is a statistical method used for the purpose of prediction of the values of dependent variable, given the values of the independent variable. He also added that regression is the determination of a statistical relationship between two or more variables.

Multiple regression analysis is used when we have more than one independent variable and one dependent variable (Kothari, 2004). Since this research has three independent and one dependent variables, the researcher used multiple regression analysis to identify the effect of independent variables on the dependent variable.

Before conducting a multiple regression analysis, two assumptions such as normality of the dependent variable and multi-collinearity test of independent variables were tested.

4. 6. 1. Normality Test

The variables in the multiple linear regression models must follow normal distribution. Therefore, the normality of the data was checked. Normality test is used to determine whether sample data has been drawn from a normally distributed population. According to Garson (2012), Shapiro Wilk's test is the standard test for normality and valid for sample size less than or equal to 2000 and If the Shapiro-Wilk test has a p-value less than 0.05 ($p < 0.05$), the data is considered not normally distributed.

Since the Shapiro-Wilk test of this study had a p value(0.054) is not significant (or $p > 0.05$), we can say that the data is approximately normally distributed. Similarly the Normal Q-Q plot (see Appendix) also shows the data is normally distributed.

Table 6: Normality test result

	Shapiro-Wilk		
	Statistic	df	Sig.
CS	.977	109	.054

Source: Survey Data (2019)

4. 6. 2. Multi-collinearity test of the independent variable

Multi-collinearity test is used to check if the independent variables in the model are strongly associated with each other or not. If independent variables are strongly associated with each other, it means they are essentially measuring the same thing, which can affect the final multiple regression model fitting. Therefore, the result of multi-collinearity test should show no or very small multi-collinearity among the independent variables, to be valid for multiple regression analysis. Tolerance of a variable is used as a measure of collinearity.

Table 7: Multi-collinearity test output

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	CI	.631	1.584
	TMC	.891	1.122
	NPQ	.604	1.655
a. Dependent Variable: CS			

Source: Survey Data (2019)

The result in the above table show that the collinearity between independent variables has no series problem since the value of tolerance for all independent variable is greater than 0.1 and all VIF is less than ten (VIF<10).

4. 6. 3. Model Summary

Regression model summary is one output of multiple regression analysis that measures the amount of total variation in dependent variable due to independent variable. The value R Square in Table 8 indicate that there is almost 53.8% variation in dependent variable (customer satisfaction(CS)) due to one unit change in

independent variables (customer involvement(CI), top management commitment(TMC) and new product quality(NPQ)

Table 8: Model summary of multiple regression analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.733 ^a	.538	.525	2.6296
a. Predictors: (Constant), NPQ, TMC, CI				

Source: Survey Data (2019)

4. 6. 4. ANOVA Test

The ANOVA table is the second output of multiple regression analysis. It shows the overall significance/acceptability of the model from a statistics perspective. As shown on the below ANOVA table, the F value 40.735 with (P<0.001) significant level indicates that the model was statistically acceptable at the 0.05% level of significance, which indicate that the value of the variation explained by the model is not due to chance.

Table 9: ANOVA Table

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	844.994	3	281.665	40.735	.000 ^b
	Residual	726.033	105	6.915		
	Total	1571.028	108			
a. Dependent Variable: CS b. Predictors: (Constant), NPQ, TMC, CI						

Source: Survey Data (2019)

4. 6. 5. Hypothesis Testing

Hypothesis testing determines the validity of the assumption. It helps to decide on the basis of a sample data, whether a hypothesis about population is likely to be true or false.

The third output of the multiple regression analysis is a standard beta coefficient which helped us to identify the strength of each predictor (Independent variable) influence on the dependent variable, which also help us to accept and reject the research hypothesis.

Table 10: Multiple Regression Analysis Standard Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.496	1.709		6.142	.000
	CI	.184	.064	.242	2.892	.005
	TMC	.148	.071	.145	2.068	.041
	NPQ	.348	.060	.499	5.841	.000
a. Dependent Variable: CS						

Source: Survey Data (2019)

Hypothesis one proposed that customer involvement in NPD positively affects customer satisfaction. Table 10, indicate that Customer involvement has $p\text{-value}=0.005$ & $\beta=0.242$, which implies that with $p<0.05$ the independent variable have a statistically significant effect on customer satisfaction.

Hypothesis two proposed that top management commitment towards NPD positively affects customer satisfaction. Table 10, indicate that TMC has $p\text{-value}=0.041$ & $\beta=0.145$, which implies that with $p<0.05$ the TMC have a statistically significant effect on customer satisfaction.

Hypothesis three proposed that NPQ towards NPD positively affects customer satisfaction. Table 10, indicate that NPQ has p-value=.000 & $\beta=0.499$, which implies that with $p<0.05$ NPQ have a statistically significant effect on customer satisfaction.

Therefore, according to the research finding, based on the p-value result, we can conclude that all the three hypothesis are statistically supported. In addition, the standard Beta (β) value shows that NPQ ($\beta=0.499$) has highest importance followed by CI ($\beta=.242$) and TMC($\beta =.145$) consecutively. The result is summarized in the below table 11

Table 11: Hypothesis Test Result Summary

Hypothesis		Result
H1	Customer Involvement in NPD affects CS	Supported
H2	Top Management commitment in NPD positively affects customer satisfaction	Supported
H3	New product quality positively affects CS	Supported

Source: Survey Data (2019)

4. 7. Discussion of the finding

The research finding indicate that all three independent variables(CI, TMC & NPQ) are positively correlate with and have significant effect on the dependent variable(CS). This research findings are also consistent with most and differ from some of the previously done empirical research, which are reviewed in this research. The different in the result might have been created because the adoption of NPD practice depends on product character, culture aspects & ecosystem of countries or regions where a company operates (Echeveste et al, 2017).

The research finding result of hypothesis one shows that CI does have significant effect on customer satisfaction. The findings are consistence with previous studies

done by Bhuiyan (2013) from Canada, Abdolmaleki & Ahmadian(2016) from Tehran, Lwu (2010) from South Africa and Walter & Chijindu (2015) from Nigera and it differ from previous study done by Lin et al. (2013) from Taiwan and Gonzalez & Palacios (2000) from Spain.

Similarly, the research finding result of hypothesis two shows that TMC also have significant effect on customer satisfaction. It is consistent with other previous researches done by Aziz et al. (2014) and Mokhtar & Yusof (2010) from Malaysia and Gonzalez & Palacios (2000) from Spain while it differ from other researchers like Maidique & Zirger (1990) from USA and Ernst (2002) from Germany.

According to this research finding, NPQ have the greatest effect on customer satisfaction, this finding is consistent with research previously conducted by various researchers in different country, from Spain (Gonzalez & Palacios, 2000), India (Jahanshahi et al, 2011), Indonesia (Razak & Nirwanto, 2016) and Nigeria (Scholastica & Maurice, 2013) and differ from study done by Januako et al.(2018) in Indonesia.

The difference in the findings might be attributed to the type of product, the ecosystem and culture of the researcher's country and the population of the study participants. Most of the above mentioned empirical researches, which were consistent with the three hypothesis findings, conducted their researches on various manufacturing companies like furniture, automotive industries, sanitary items etc. while Lin et al. (2013) and Maidique & Zirger (1990) conducted their research on high tech electronic industries and Januako et al.(2018) conducted their research on Batik industry. On the other hand, Gonzalez & Palacios (2000) population only considered successful NP developers while all the others didn't differentiate successful from failed.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5. 1. Introduction

This chapter will give summary of the findings, conclusion of the research, recommendation and future area of research regarding NPDSF and CS.

5. 2. Summary of the findings

In chapter four we have analyzed the data collected using descriptive and inferential statistics methods. The descriptive analysis summarize part one of the questionnaire. For part one analysis we considered all returned responses. However, based on response given on three questions from the part one, around 10 responses were discarded from inferential analysis.

The descriptive analysis findings are summarized as follows organizational profile of the respondent indicate that the majority of the respondent with 63% were governmental companies respectively and 99.2% worked more than 1 year with the case company and purchase tyre amounted to 100,000 birr yearly. In addition, all respondents' company work closely with the case company and the majority of the respondent's company prefer the new product of the case company from the existing one.

The majority educational level of the person who represented the respondent company indicate that they have BA degree, work at purchasing and logistics departments and around 91.5% have enough knowledge of NPD of the case company.

The correlation analysis and regression analysis result indicate that all the three independent variables (customer involvement, top management commitment and new

product quality) are positively correlated with the dependent variable(customer satisfaction) and affects customer satisfaction significantly.

In addition the research finding also shows that 81.7 % of the respondent customers were involved in NP of the case company, 76.1% agrees on the commitment of the top management of the case company towards new product development, 77.1% agrees on the quality of the new product of the case company and 89.9% of the respondents are satisfied with the new product developed by the case company.

5. 3. Conclusion

The main objective of this study was to identify effects of NPD on customer satisfaction. Three hypothesis were developed based on the three independent variable (CI, TMC & NPQ) identified in the study. The hypothesis test result indicate that the three independent variables have statistically significant effect on customer satisfaction and the correlation analysis also indicate that all three independent variables (CI, TMC & NPQ) have positive relation with the dependent variable(CS).

Based on the finding of the research, in the case of HATSC, we can conclude that NPQ, CI and TMC, as the new product development success factors, have a positively significant effect on customer satisfaction of the case company's potential customer, which is found in Addis Ababa. In addition, we can conclude that NPQ had the greatest effect on the dependent variable (Customer satisfaction) compared to customer involvement and top management commitment.

The research findings have managerial importance for the case company. It implies that the selected new product development success factors, which are CI, TMC and NPQ are crucial for customer satisfaction of the case company. Therefore, the management of the case company should give more attention to NPDSF, while developing new products, to increase their customer satisfaction.

5. 4. Recommendation

- Based on the research findings the researcher recommends that since NPQ, CI and TMC affects the case company's customer satisfaction:

- The case company should work on NPQ intensively to increase customer satisfaction. The determinate of new product quality being product performance, reliability, durability, features, meeting international standard, meeting customer expectations and serviceability.
 - The case company, in addition to their existing practice, should work on increasing the customer involvement in NPD.
 - Around 1/3 of the case company customers agrees on the top management commitment towards NPD. So the case company should continue in what they are doing and increase there commitment to the point where they can show the remaining customers to believe in their commitment.
- The researcher also recommend the case company to do research on effect of NPDSF on customer satisfaction with wider scope, including customers outside Addis Ababa, to find out the full effect their NPD have on their customer satisfaction.
 - The overall customer satisfaction level of the research indicates that 89.9% of the customers are satisfied with the NP developed. And the brand preference of the customer's also indicates the majority of the respondents prefer the case company new brand. However, the overall customer satisfaction research done by the case company, indicated lower satisfaction level. Therefore, the researcher recommends the case company to do a customer satisfaction research for NPD separately from their existing product. So that they can be able to identify its effect.

5. 5. Future Area of Research

Future researchers, who want to investigate similar area, may include other success factors of NPD which might affect customer satisfaction, like NPD process, Strategy, Cross-functional team, etc.. and use cross-sectional questionnaire that involves employees of the case company. In addition, since the research only concentrates on the case study of one company, we strongly recommend future researchers to do the same research on other product manufacturers as well.

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APPENDIXES

1. Sample Questionnaire

ADDIS ABABA UNIVERSITY, SCHOOL OF COMMERCE

QUESTIONNAIRE

This study is being carried out on the title of “**Effect of New Product Development on Customer Satisfaction: the case of Horizon Addis Tyre S.C**” in partial fulfillment of the Award of a Master of Art Degree in Marketing Management. I would like to ask you to spare a few minute of your precious time to fill this questionnaire as your cooperation is critical for this research.

Please note that there is no right or wrong answer. You are only required to reflect your opinion. Any information you provide will be kept absolutely confidential and will be used only for academic purpose. Your timely response will be highly appreciated.

General Instructions

- There is no need of writing your name or company name
- Please note that **HATSC** means Horizon Addis Tyre S.C.
- New product/tyre refers to Horizon Brand Tyres

PART I: General Information

Instruction: Please put a tick (✓) mark in the answer box corresponding to your response

1. Your organization profile

- Governmental Private
 NGO Others _____

2. What is your educational level?

- Certificate College diploma First Degree MA/MSC/MBA or above

3. In which department of the organization do you work?

- Purchasing Logistics Maintenance
 Administration Other _____

4. How much do your company spent yearly on tyre purchase?

- less than 100,000 birr from 100,000- 500,000 birr
 from 500,001- 1 million birr more than 1 million birr

5. For how long did your company use Horizon Addis Tyre S.C. (HATSC) Tyre products?

- Less than 1 years 1- 3 years 3-5 years More than 5 years

6. Which Tyre brands of HATSC product your company mostly prefer ?

- Addis Tyre Horizon Brand Matador brand

7. How closely do your company work with HATSC?

- Very Close Moderately close Slightly Close
 Not close at all

8. How much do you know about new product development done by HATSC?

- Too Much More than enough About right
 Little Too Little Nothing

PART II: New product development and customer satisfaction

Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement. With 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 =agree, 5 = strongly agree.

No		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
CI1	HATSC have done enough research on demand and requirement of the customer before new product development	1	2	3	4	5
CI2	HATSC invited us to answer Questionnaire several times regarding new product requirement and demand	1	2	3	4	5
CI3	HATSC have visited us several times to discuss regarding new product requirement and demand	1	2	3	4	5
CI4	Our company was involved in Testing new products of HATSC	1	2	3	4	5
CI5	HATSC value customers feedback and ideas in developing new products	1	2	3	4	5
CI6	We know that HATSC consult customer to improve new or existing product quality	1	2	3	4	5
CI7	We participated in HATSC events like customer day celebration or factory visits to give our feedback and comments regarding the companies product	1	2	3	4	5

No.		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
TM1	We Know that top management of HATSC are committed to introducing new product to the market	1	2	3	4	5
TM2	We know that HATSC top management set vision that indicate the companies commitment towards developing new tyre products	1	2	3	4	5
TM3	HATSC Top Management generated enthusiasm to customers	1	2	3	4	5
TM4	HATSC Top Management generated enthusiasm to their employees	1	2	3	4	5
TM5	HATSC various teams highly coordinate and collaborate with each others	1	2	3	4	5
TM6	Top management of HATSC monitor and control new product development effectively	1	2	3	4	5
PQ1	HATSC New Tyres meet our performance requirement	1	2	3	4	5
PQ2	HATSC New Tyres are reliability	1	2	3	4	5
PQ3	HATSC New Tyres features are desirable	1	2	3	4	5
PQ4	HATSC New Tyres conformity with international standard requirement	1	2	3	4	5
PQ5	HATSC New Tyres are Durable	1	2	3	4	5
PQ6	HATSC New Tyres are Serviceable	1	2	3	4	5
PQ7	HATSC New Tyres meet our company standard	1	2	3	4	5
CS1	We recommend HATSC new products(Horizon Brands) to others	1	2	3	4	5
CS2	We will purchase more of the new product of HATSC in the future	1	2	3	4	5
CS3	We are less sensitive on the price of HATSC new products	1	2	3	4	5
CS4	We give less attention to HATSC new product size competing tyre brands in the market	1	2	3	4	5
CS5	We don't complain much	1	2	3	4	5
CS6	We will continue to give feedback and ideas for future new product development	1	2	3	4	5
CS7	We will stay being loyal customer of HATSC	1	2	3	4	5

THANK YOU!!!

2. Statistical Outputs

➤ Frequency tables for the first part of the questionnaires

- ✓ Organizational profile frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Governmental	75	63.0	63.0	63.0
	Private	26	21.8	21.8	84.9
	NGO	7	5.9	5.9	90.8
	Others	11	9.2	9.2	100.0
	Total	119	100.0	100.0	

- ✓ Other organizational profile frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		108	90.8	90.8	90.8
	Association	11	9.2	9.2	100.0
	Total	119	100.0	100.0	

- ✓ Educational Level frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certificate	3	2.5	2.5	2.5
	Collage Diploma	22	18.5	18.5	21.0
	First Degree	74	62.2	62.2	83.2
	MA/MSC/MBA or Above	20	16.8	16.8	100.0
	Total	119	100.0	100.0	

✓ Respondents' department frequency table 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Purchasing	62	52.1	52.1	52.1
	Logistics	27	22.7	22.7	74.8
	Maintenance	17	14.3	14.3	89.1
	Administrtion	8	6.7	6.7	95.8
	Others	5	4.2	4.2	100.0
	Total	119	100.0	100.0	

✓ Organizational profile frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		114	95.8	95.8	95.8
	Commercial	2	1.7	1.7	97.5
	General Service	1	.8	.8	98.3
	Stores	2	1.7	1.7	100.0
	Total	119	100.0	100.0	

✓ Yearly Tyre purchase budget frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 100,000 birr	1	.8	.8	.8
	from 100,000 - 500,000 birr	31	26.1	26.1	26.9
	from 500,000-1 million birr	31	26.1	26.1	52.9
	more than 1 million birr	56	47.1	47.1	100.0
	Total	119	100.0	100.0	

✓ Respondent's company relation with the case company frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	1	.8	.8	.8
	1-3 Years	21	17.6	17.6	18.5
	3-5 Years	39	32.8	32.8	51.3
	More than 5 years	58	48.7	48.7	100.0
	Total	119	100.0	100.0	

✓ Respondent company brand preference frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Addis Tyre Brand	29	24.4	24.4	24.4
	Horizon Brand	89	74.8	74.8	99.2
	Matador Brand	1	.8	.8	100.0
	Total	119	100.0	100.0	

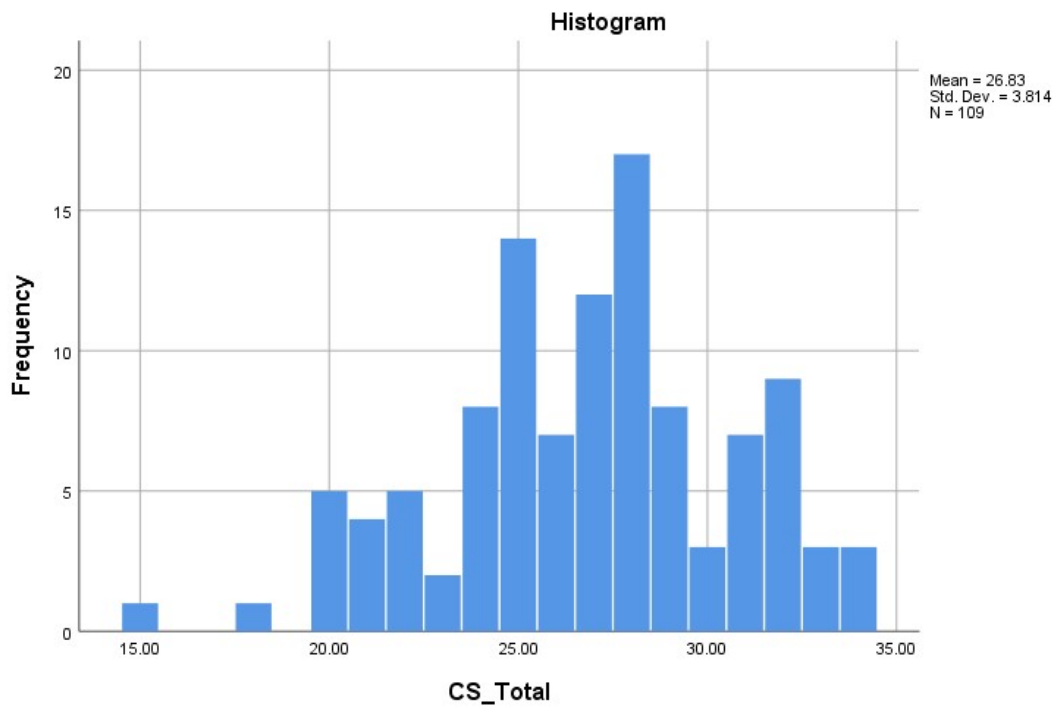
✓ Respondent's company intensity of the relation with the case company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Close	52	43.7	43.7	43.7
	Moderately Close	54	45.4	45.4	89.1
	Slightly Close	13	10.9	10.9	100.0
	Total	119	100.0	100.0	

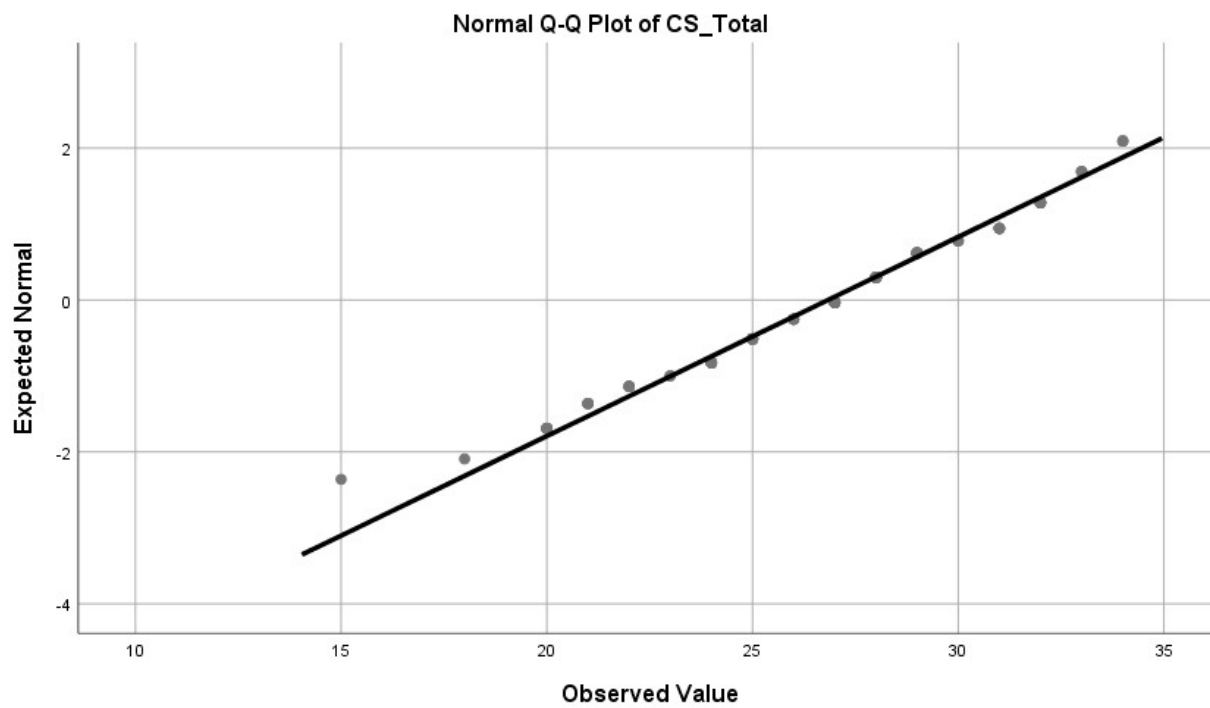
✓ Respondent's knowledge level about NPD of the case company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Too Much	24	20.2	20.2	20.2
	More than enough	34	28.6	28.6	48.7
	About right	51	42.9	42.9	91.6
	Little	2	1.7	1.7	93.3
	Too Little	5	4.2	4.2	97.5
	Nothing	3	2.5	2.5	100.0
	Total	119	100.0	100.0	

➤ **Normality Test Histogram**



➤ **Normal Q-Q plot of the dependent variable**



➤ **Frequency summary table of overall values of variables**

No.	Variable	Value of variable	Frequency	percent
1	Customer Satisfaction	Satisfied	98	10.1
		Not Satisfied	11	89.9
2	Customer Involvement	Involved	89	81.7
		Not Involved	20	18.3
3	Top Management Commitment	TM Committed	83	76.1
		Not Committed	26	23.9
4	New product quality	Quality	84	77.1
		Not Quality	25	22.9