

Addis Ababa  
University  
(Since 1950)



***Risk Management in New Product Market Entry Process for the  
Breweries Industry: The Case of Some Selected Breweries***

---

*A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF  
BUSINESS AND ECONOMICS, GRADUATE STUDIES IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE  
DEGREE OF MASTER OF SCIENCE IN INTERNATIONAL BUSINESS*

**By: Aynadis Getahun**

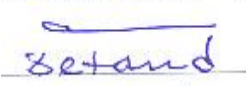
**Advisor: Asres Abitie (PhD)**

**June 2021**

**Addis Ababa, Ethiopia**

**CERTIFICATION**

This is to certify that Mrs. Aynadis Getahun on the thesis entitles “Risk Management in New Product Market Entry Process for the Breweries Industry: The Case of Some Selected Breweries”, is submitted to Addis Ababa University for the award of the Degree of Master of Science and it is the study undertaken by Mrs. Aynadis Getahun under my guidance and supervision. Therefore, I hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree or diploma.

<b>Advisor’s Name</b>	<b>Date</b>	<b>Signature</b>
<u><b>Dr. Asres Abitie</b></u>	_____	_____
<b>Internal Examiner’s Name</b>	<b>Date</b>	<b>Signature</b>
<u><b>Dr. Amare Abawa</b></u>	_____	_____
<b>External Examiner’s Name</b>	<b>Date</b>	<b>Signature</b>
<u><b>Dr. Getie Andualem</b></u>	<u><b>7/7/21</b></u>	<u></u>

**DECLARATION**

I hereby declare that this thesis entitled “Risk Management in New Product Market Entry Process for the Breweries Industry: The Case of Some Selected Breweries ” has been undertaken by me under the guidance and support of Asres Abitie (PhD). This research is original and has not been submitted to any university or institutions.

**Researcher’s Name**

**Date**

**Signature**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Abstract**

*The main objective of this study was to analyze Risk Management in New product market entry process for the breweries industry. It attempted to describe the risk management practices in new product market entry process and to determine the effect of Risk identification, Risk Assessment, Risk Response, Risk Control and Monitoring on new product performance. The study tested whether risk assessment, risk identification, risk control and Monitoring and risk response of new product had significant effect on product performance or not. In this study, descriptive and explanatory research design were used. Primary data, through structured questionnaire, was collected from samples of 241 respondents of Breweries Company. Stratified sampling was used to select proportional number of samples from the Habesha, St. George and Dashen companies. Data were analyzed using both descriptive and inferential statistics with the help of SPSS version 23. The results revealed that all independent variables in the study, risk identification, risk assessment, risk response, risk control and monitoring have positive and significant effect on new product performance. Hence, the concerned breweries company should review, audit, and communicate risk of new product development properly and strengthen provision of training on risk management for employees and conduct regular reviews of risk efforts and report to management of breweries' company.*

*Key Words: Risk Management, New Product Performance, New Product Development, Market Entry, Breweries*

### **Acknowledgement**

First and foremost, I want to give my thanks to Almighty God. Next, I would like to thank many people who helped me in the writing of this thesis. I would like to thank my advisor Asres Abitie (PhD) for his willingness to provide me with technical support and for his invaluable scientific advice. I would also like to extend my gratitude to staff of Habesha, St. George and Dashen Company who cooperated with me in data collection of this study. The last but not the least, a special thanks to my beloved family and friends who showed much devotion to the success of my thesis.

## Table of Contents

<b>Contents</b>	<b>Page</b>
CERTIFICATION.....	i
DECLARATION.....	ii
<i>Abstract</i> .....	iii
Acknowledgement.....	iv
Table of Contents .....	v
List of Tables .....	viii
List of Figures.....	ix
CHAPTER ONE.....	1
INTRODUCTION .....	1
1.1. Background of the Study.....	1
1.2 Statement of the Problem .....	2
1.3 Research Questions .....	4
1.4.1. General objectives .....	4
1.4.2. Specific objectives.....	4
1.5 Hypotheses of the Study .....	4
1.6 Significance of the Study .....	5
1.7. Scope of the Study.....	5
1.8. Organization of the paper.....	5
CHAPTER TWO .....	6
REVIEW OF RELATED LITERATURE .....	6
2.1. Theoretical related literature .....	6
2.1.1. Definition .....	6
2.1.2. Risk management .....	6
2.1.3. Risk Mitigation.....	7
2.1.4. Knowledge about risks and risk analysis .....	7
2.1.5. Contingency planning .....	8
2.1.6. Necessity of Risk Management in Product Development.....	8
2.1.7. New Product Development .....	9

2.1.8. Risk Categories in New Product Development.....	10
2.1.9. The Relation between Market Entry Process, New Product Development & New Product Performance .....	12
2.2. Empirical Literature Review .....	14
2.3. Theoretical Gap .....	14
2.4. Emperical Gap.....	14
2.5. Conceptual Framework .....	14
CHAPTER THREE .....	16
METHODOLOGY OF THE STUDY .....	16
3.1. Study Design .....	16
3.2. Research Approach .....	16
3.3. Source of Data.....	16
3.4. Methods of Data Collection .....	17
3.5. Population and Sampling Design .....	17
3.5.1. Population of the Study.....	17
3.5.2. Sampling Design & Sample Size Determination .....	17
3.6. Sample Selection Technique .....	18
3.7. Methods of Data Analysis .....	18
3.8. Mulitiple Liner Regression Function .....	18
3.9. Validity & Reliability Test.....	20
CHAPTER FOUR.....	22
DATA PRESENTATION, ANALYSIS AND DISCUSSION.....	22
Introduction .....	22
4. Data Presentation.....	22
4.1. Demographic Characteristics of Respondents.....	22
4.1.1. Gender of Respondents .....	22
4.1.2. Age of Respondents .....	23
4.1.3. Education of Respondents.....	23
4.1.4. Experience of Respondents .....	24
4.2. Results of Measures of Central Tendency and Dispersion .....	24
4.2.1. Risk Identification.....	25
4.2.2. Risk Assessment.....	27
4.2.3. Risk Response .....	28

4.2.4. Risk Control and Monitoring .....	29
4.2.5. Risk Management Skills and Resources .....	31
4.2.6. Tailoring Risk Management to integrate it with New Product Development.....	32
4.2.7. Critical Decisions with Risk Management Results .....	33
4.2.8. Transparency in New Product Development Risk .....	34
4.2.9. New product development Performance .....	35
4.2.10. General Variables .....	36
4.3. Inferential Statistics Analysis.....	37
4.3.1. Pearson's Product Moment Correlation Coefficient.....	37
4.3.1.1. Correlation Analysis between Risk Identification and product performance.....	38
4.3.1.2. Correlation Analysis between Risk Assessment and product performance .....	39
4.3.1.3. Correlation Analysis between Risk Response and product performance.....	39
4.3.1.4. Correlation Analysis between Risk Control and Monitoring and product performance .....	39
4.3.2. Multiple Linear Regressions Analysis.....	40
4.3.2.1 Multiple linear Regressions Analysis Assumptions .....	40
4.3.2.2. Coefficient of Determination.....	40
4.3.3. Analysis of Variance (ANOVA) .....	43
4.3.4. Regression Coefficients.....	43
4.4.1. The Effect of Risk Identification on Product Performance .....	44
4.4.2. The Effect of Risk Assessment on Product Performance .....	45
4.4.3. The Effect of Risk Response on Product Performance .....	45
4.4.4. The Effect of Risk Control & Mointoring on Product Performance .....	45
4.5. Hypotheses Test .....	46
CHAPTER FIVE .....	47
SUMMARY, CONCLUSION & RECOMMENDATION.....	48
Introduction .....	48
5.1. Summary.....	48
5.2. Conclusions .....	48
5.3. Recommendations .....	49
5.4. Future Research Direction .....	50
References .....	50
APPENDIX I.....	55

## List of Tables

Table 3.1: Proportional allocation for each stratum .....	18
Table 3.2: Reliability Statistics for Independent Variables.....	21
Table 4.1: Gender of respondents.....	22
Table 4.2: Age of respondents.....	23
Table 4.3: Education of respondents.....	23
Table 4.4: Experience of respondents.....	24
Table 4.5: Five Scaled Likert Criterion.....	25
Table 4.6: Risk Identification.....	26
Table 4.7: Risk Assessment.....	27
Table 4.8: Risk Response.....	28
Table 4.9: Risk Control and Monitoring.....	30
Table 4.10: Risk Management Skills and Resources.....	31
Table 4.11: Tailoring Risk Management to Integrate it with New Product Development....	32
Table 4.12: Critical Decisions with Risk Management Results.....	33
Table 4.13: Transparency in New Product Development Risk.....	34
Table 4.14: New product development Performance.....	35
Table 4.15: General Variables.....	36
Table 4.16: Pearson's Product Moment Correlation Coefficient.....	38
Table 4.17: Normality Test.....	41
Table 4.18: Multicollinearity Test.....	41
Table 4.19: Autocorrelation Test.....	42
Table 4.20: Coefficient of Determination.....	42
Table 4.21: Analysis of Variance.....	43
Table 4.22: Regression Coefficients.....	43

**List of Figures**

**Fig 2.1.** Conceptual Model.....15

# CHAPTER ONE

## INTRODUCTION

### 1.1. Background of the Study

Risk management is receiving much attention, since it is seen as a method to improve cost, schedule, and technical performance of new product development programs. However, there is a lack of empirical research that investigates the effective integration of specific risk management practices proposed by various standards with new product development programs and their association with various dimensions of risk management success (Oehen, 2021). As (Waring & Glendon, 2018, p.14) asserts, risk management has the task of identifying risks, measuring the probability and the possible impact of events, and treating risk, reducing their effect with minimum investment of resources.

According to (Mu et al., 2009) who point out that “new product development is inherently linked to taking and managing risks, as most activities can be interpreted as a structured reduction of uncertainty. Studies of customer needs and market trends reduce the uncertainty surrounding requirements; technology development, testing and evaluation create certainty regarding the capabilities and cost of new technologies, and the improvement and standardization of NPD processes within the organization increases the reliability of executing the development process”p.188.

Product development process connected to marketing activities for the purpose of identifying customer needs and translating them into a new product. According to (Kleinschmidt & Cooper 1991), one of the nine drivers of new product success is marketing synergy. Improvements in product development process enhance the firm’s reputation, corporate image, and the perceived value of the product. Thus, the firm can offer the product at a higher price, achieve greater market share, and, thereby, maximize its sales revenues accelerating product development and “developing and launching a new product within the proper time frame”, and have a positive impact on a firm’s performance (Evans & Lindsay, 2006).

Customer value considered to be increased when risks in new product development decreases (Browning et al., 2002) and reducing risk can be used as a lens to analyze and optimize product

development processes (Oehmen & Seering, 2011). More generally, improving the “risk-return balance” is a central tenant of business decision making, from project portfolio choices (Florice & Ibanescu, 2008) to business strategy and investment allocation. There is also evidence that new product development suffers from risks, and is prone to serious cost and schedule overruns, as well as problems in achieving the targeted technical performance of the product (GAO, 2010). For the brewery industry continues to grow, so do the risks involved with running this type of small business. However, there are things breweries can do to help manage these risks, which help allow for less equipment downtime, improved products, increased employee safety and a variety of other financial benefits (Mu et al., 2009).

Proactive risk management can reduce the chances of a loss, limit the amount of damage you suffer as a result, and, in some circumstances, and shift the financial burden to the responsible party. The best news is that a solid proactive risk-management plan is typically far less expensive than the cost of defending a case, paying a settlement or jury verdict, or rebuilding out of pocket if the brewery suffers damage (Fama & Macbeth, 2013).

The Ethiopia Beer industry growth has been increased in the last two decades. It transformed into one of the most competitive industries in Ethiopia with millions of birrs. These companies produce different types of new beer to compete in the industry. Some new beer products exist for short period of time in the market whereas others stay in the market. This study tried to analyze Risk Management in New product market entry process for the breweries industry.

### **1.2 Statement of the Problem**

Within every industry there are inherent risks that require special consideration to ensure the safety of new product. The most common risks in brewery industry includes fault equipment, packaging problems, and unsafe working condition and ergonomics hazards. New product development is inherently linked to taking and managing risks (Kwak & LaPlace, 2015), as most activities can be interpreted as a structured reduction of uncertainty. Studies of customer needs and market trends reduce the uncertainty surrounding requirements; technology development, testing and evaluation create certainty regarding the capabilities and cost of new technologies, and the improvement and standardization of NPD processes within the organization increases the reliability of executing the development process (Mu et al., 2014).

According to (Keizer et al., 2015), “new product faces a different marketing risks, in market entry process. Market risks can include factors such as consumer acceptance and marketing risks, competitor risks and the risks of substitution in the market the firm is competing in” p.143. On the other hand (Cooper, 2013) identified main risks as low acceptance or even rejection of the product in the market or being outperformed by a competitor for this extrinsic risk category, as these factors lie in the external environment of the firm, some sort of screening needs to take place to identify those risks for a certain company.

Even though (Leithold et al., 2016; Teller et al., 2014) acknowledged the importance and necessity of risk management in new product development, there is still a lack of appropriate tools and measures tailored to the needs of breweries company, despite gaining more attention (Pereira et al., 2013). However, risk management of the NPD is important for Breweries Company to develop risk management approaches customized to the company for their success and survival.

Even though, risk management is receiving much attention, as it is seen as a method to improve cost, schedule, and technical performance of new product development programs, there is a lack of empirical research that investigates the effective integration of specific risk management practices proposed by various standards with new product development programs and their association with various dimensions of risk management success.

No matter how, some studies have been conducted around Risk Management practice, little study was conducted to analyze Risk Management in New product market entry process for the breweries industry. There is also a gap on literatures done in Ethiopia in breweries industry, and most research focused on IT related business, automobile or pharmaceutical industry, construction, or manufacturing sector. Furthermore, little study was conducted in the study area. In this regard few researches attempted on breweries risk management practice. Thus, this study seeks to analyze Risk Management in New product market entry process for the breweries industry.

### 1.3 Research Questions

This research seeks to address the following questions towards the attainment of its objective,

1. What are the risk management practices used by breweries industry in new product market entry process?
2. What is the effect of Risk identification on New Product Performance?
3. What is the effect of Risk Assessment on New product performance?
4. What is the effect of Risk Response on New product performance?
5. What is the effect of Risk Control and Monitoring on New product performance?

### 1.4 Objectives of the Study

#### 1.4.1. General objectives

The main objective of the study is to analyze Risk Management in New product market entry process for the breweries industry.

#### 1.4.2. Specific objectives

The specific objectives of this study are:

- To describe the risk management practices in new product market entry process.
- To determine the effect of Risk identification on new product performance.
- To determine the effect of Risk Assessment on New product performance.
- To determine the effect of Risk Response on New product performance.
- To determine the effect of Risk Control and Monitoring on New product performance.

### 1.5. Hypotheses of the Study

With the help of appropriate empirical data on Risk Management in New product market entry process for the breweries industry, this study tested the following hypothesis:

H<sub>0</sub>: Risk identification has no significant effect product performance of breweries industry.

H<sub>1</sub>: Risk identification has positive and significant effect product performance of breweries industry.

H<sub>0</sub>: Risk Assessment has no significant effect product performance of breweries industry.

H<sub>1</sub>: Risk Assessment has positive and significant effect product performance of breweries industry.

H<sub>0</sub>: Risk Response has no significant effect product performance of breweries industry.

H<sub>1</sub>: Risk Response has positive and significant effect product performance of breweries industry.

H<sub>0</sub>: Risk Control and Monitoring has no significant effect product performance of breweries industry.

H<sub>1</sub>: Risk Control and Monitoring has positive and significant effect product performance of breweries industry.

### **1.6 Significance of the Study**

The finding of this study is expected to give feed back to the company to see whether the company's existing risk management in new product market entry process for the breweries industry is good or not. It also provides clear knowledge to decision makers on risk management in new product market entry process. This can help the company to have better understanding on what is to be improved. Furthermore, this study will serve as a basis for other researchers to conduct a comprehensive analytic research work on new product market entry process for the breweries industry.

### **1.7. Scope of the Study**

This study was confined to assess Risk Management in New product market entry process for the breweries industry. The geographical coverage of the study was delimited to Breweries Companies such as Habesha, St. George and Dashen breweries. It was selected because its proximity to the researcher as well as accessibility to collect primary data. The result is confined to data only obtained from these companies using closed ended questionnaire. The timeframe that the study cover was from 2020 fiscal year up to the current one. Through inclusive data collected from randomly selected employees both from permanent and temporary workers of the institution, the study tried to assess the up to dated risk management in new product market entry process.

### **1.8. Organization of the Paper**

This study consists of five chapters. The first chapter presents about background of the study, problem statement, research questions, objectives of the study, research hypothesis, significance of the study, limitation, and Scope of the study. Chapter two presents the theoretical, empirical related literature and depicts the conceptual framework. Chapter three is concerned with the methodology used for this study. Chapter four outlines' data presentation and analysis. The last chapter provides summary, conclusion, recommendation, and suggestion for future research.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

The review of related literature has two major sub-topics. These are: theoretical literature and empirical literature.

#### **2.1. Theoretical related literature**

##### **2.1.1. Definition**

According to (Khan & Burnes, 2007) risk is defined as the likelihood for an uncommon event to happen, and the negative effects this event will have on the organization. Generally, risk is defined by many as any future uncertain event that may lead to negative or positive outcome. (Ritchie & Brindley, 2009) identified 3 common dimensions of risks: Likelihood of occurrence of a specific event or outcome, Consequences of the event or causal pathway leading to the event. The likelihood of occurrence, more usually termed the probability, can be expressed in objective terms or in subjective terms, each being capable of measurement. Objective measurement relies on previous records of the occurrence of such events. Subjective assessment of the likelihood of occurrence relies more on the translation of previous experience and intuition. In decision theory, risk is related to making decisions under known probabilities of the states of nature (Luce & Raiffa, 2007). In economic theory, risk arises when the decision maker can assign probabilities to possible outcomes (Knight, 2001). A well accepted definition of risk given in projected management body of knowledge considers risk as “an uncertain event or condition that, if it occurs, has a positive (opportunity) or negative (threat) impact on project objectives” (PMI, 2008). However, for most practitioners’ risk management seems to be about identifying and managing threats. This study follows the ISO 31000 definition (ISO, 2009) which defines risk as the effect of uncertainty on achieving the NPD objectives.

##### **2.1.2. Risk management**

Some authors provide risk management approaches with various levels of details and, some additional activities as planning in advance, prioritization etc. (Ferreira & Oligari, 2005; Raz & Hillson, 2005). Risk identification is a phase of recognizing and defining risk for which heuristic, analogical and analytical methods can be used (Grubisic, et al. 2011). During risk analysis, impact and probability of risks should be valued and estimated so that in the next step they could be properly treated and mitigated according to risk strategies (Gericke, et al. 2009). Finally, risks need

to be continually reviewed and monitored to maintain desired project's course. Although a large part of this process concerns the decisions of policy makers, risk assessors provide useful information and practical propositions for dealing with risks in a most effective and efficient manner. Risk management entails identifying operational risks and developing mitigation procedures for maintaining operational performance. Efficient risk management can provide value to various stakeholders of a firm. The compliance with appropriate procedures and corporate governance policies can help to reduce or avoid crisis situations (Samir, 2007).

### **2.1.3. Risk Mitigation**

Mitigation seeks to actively reduce risk to an acceptable level. It applies both to the reduction of the probability of a risk event and to the consequences (Norrman & Jansson, 2004). Mitigation strategies are typically suitable for operational risks with a high probability and low impact (Aqlan & Lam, 2015). The selection of a risk mitigation strategy also depends on the risk type and the organization's budget (Tummala & Schoenherr, 2011). Different clusters of risks may need different risk treatment strategies, as a firm has limited resources, it is important to understand where these resources can be best deployed and when to change outdated strategies. Investing in risk avoidance seems necessary for high probability, high impact risks to reduce their likelihood of occurrence, whereas risk acceptance may be permitted for low probability, low impact risks. Risk mitigation appears most suitable for high probability, low impact risks while risks transfer/sharing seem most appropriate for disruption risks with a low probability and high impact, such as natural disasters and terrorist attacks. But the situation needs to be continually monitored the theme of the next section for each risk and across risks to capture the evolution of the strategies and ensure the strategies remain aligned with the threats. Unfortunately, there is no silver bullet strategy for protecting organizational supply chains. Instead, managers need to know which mitigation strategy works best against a given risk Supply chain risk mitigation (SCRM) practices, (Norrman & Jansson, 2004).

### **2.1.4. Knowledge about risks and risk analysis**

According to (Morgan, 2005) risk in a supply chain can be sorted in four general categories namely political, economic, terrorism related and "other." By understanding the variety and interconnectedness of supply-chain risks, managers can tailor balanced, effective risk-reduction strategies for their companies, (Chopra & Sodhi, 2004). Risk analysis is a practice with methods

and tools for identifying risks in a process, (Sinha, et al., 2004). It provides a disciplined environment for proactive decision making to assess continuously what could go wrong, determine which risks are important to deal with, and implement strategies to deal with those risks, (Shtub, et al., 1994). While assessing their risk exposures companies must identify the potential causes of a given risk in every significant link of their supply chains as those sources are the starting point of any risk faces firms supply chain, (Norrman & Jansson, 2004).

### **2.1.5. Contingency planning**

Contingency planning is a valuable strategic planning tool for many organizations that can bring about enhanced flexibility. Specifically, contingency planning provides a blueprint for responding to the risks associated with an unknown event. A properly prepared contingency plan should detail a timely and complete response to a specific risk or a cluster of risks, (Londe, 2005). The aim of the contingency plan is to minimize potential loss by identifying, prioritizing, and safeguarding assets that need protection, with the goal of the organization being able to reduce risk exposure and save valuable resources in the event of a disruption or disaster. Borrowing from the work of (Rice & Caniato, 2013) contingency planning is related with the development of plans that helps to respond and restore operations in the after math of a given disruption. Moreover, (Barnes, 2007) adds that this form of planning is the integration of formalized procedures and resource information that organizations can use to recover from a disaster that causes a disruption to business operations. Lack of Business contingency planning (BCP) makes firms vulnerable to risks they face as they lack the preparation to deal with unexpected crisis (Christopher & Peck, 2014).

### **2.1.6. Necessity of Risk Management in Product Development**

Products and processes in product development are becoming increasingly complex. As a result, errors associated with product development increase, thus product and process failures become more and more frequent. This leads ultimately to an increase in the number of crises related to product development, both in number and severity. In the worst cases, these crises can lead to the closing of a company. A solution to the challenge of increasing complexity and decreasing robustness of products and processes, are advanced procedural models for product development. They offer a structured approach to complex problems while maintaining efficiency and the necessary flexibility to adapt to changes. Risk management is applied in new product development for minimizing the time-to market by removing any potential obstacle and barrier in an early step, so as changes can be easier and more affordable, eliminate possible failures, design flaws and

defects, diminish any extra work as far as the design is concerned, and improve reliability by quick understanding of high probability failures, (August 2013).

After examining the existing literature, risk management in new product development includes seven phases: Context analysis (1), Risk identification (2), Risk analysis (3), Risk evaluation (4), Risk treatment (5), Monitoring and review (6), Communication and consulting (7) (Severine, 2009). According to the general approach to risk management, the first three steps are the area where the diagnosis takes place whereas the rest of the steps apply as the correction whenever needed. (Salamone, 1995) agrees that risk management should be part of the new product development process from the beginning because any changes or interactions, where needed, in early steps, cost less than necessary changes in the implementation phase. Moreover, (Sataporn, 2008) follows the same path saying that downstream losses by risk events, which are discovered early, are much preferable than the losses that cannot be prevented with any action. Thus, even the smallest detail can become a crucial effect in the development of a new product from the beginning to the latest stages where the customer expectations are not met. All these consist of some the project objectives of the new product development process that need to be achieved (Ammar, Kayis & Sataporn, 2007).

### **2.1.7. New Product Development**

The main reason that a company is trying to develop and, in extent, launch a new product out to the market is to stay viable among its competitors. As discussed before, for developing a new product, a certain path is followed widely. Usually, there are 8 steps to take (Duval, 2013):

1. Idea Generation: Execute an analysis, conduct market research, receive suggestions internally (employers) and externally (target group).
2. Idea Screening: Eliminate ideas that are not accepted or feasible. It is better to fail fast because changes in a next stage would be destructive.
3. Concept Development and Testing: Delivery of information to loyal customers to see their reaction whether the product would be acceptable.

4. Business Analysis: In this stage, numbers fall on the table. Some of the questions that need to be asked are if the product would be profitable, how the sales of the new product will be, and how is it going to cost in terms of advertising and promotion.

5. Product Development: Plans for production, marketing plans to distribute the product, plans for promotion.

6. Test Marketing: Introduction of the new product on a small scale of customers. If it is accepted the project is a “Go”. If not, changes are being made to reverse the situation, otherwise, the project “dies”.

7. Commercialization: Reaching this phase means that the test marketing was successful. Therefore, a bigger investment takes place on this product to deliver it on a larger scale of customers.

8. Review of Market Performance: Once the new product hit the market, this does not mean that all actions have been completed. The company must monitor its performance in the market otherwise the product will fail if the sales are not the prospective ones, meaning the investment was a failure as well.

Throughout these steps, whether the new product is something tangible or intangible, the close collaboration among the different departments of the company is essential. According to (Duval, 2013), the marketing department is responsible for most of the actions, as the most important factor for launching a new product is to be widely accepted by the end customers. Of course, this does not mean that all the other departments are excluded from the process. They need to participate in the whole research, and data should be shared within the project team properly until it is their turn to act.

### **2.1.8. Risk Categories in New Product Development**

After the analysis of the New Product Development process and identifying what is a risk, it becomes easier to divide risks into categories. Since this thesis aims to the NPD process, the most common risk categories are market, technical, financial, commercial organizational, schedule, external, and resource (Ricondo et al., 2007).

**Market Risk:** This kind of risks may derive from low customer acceptance which may lead to the rejection of the product, meeting the customers' requirements, competitors' risk which means the outperformance by a competitor (Cooper, 2003) etc. All these are external risks as far as the company is concerned but the marketing department is responsible for this area and some sort of screening is necessary to identify them.

**Technical Risk:** This category is an internal one and could be divided into sub-categories such as designing the product and manufacturing technology (Keizer & Vos, 2013). The most important concern of this category is the optimal exploitation and allocation of the available resources of the company. Meeting the performance requirements as well as safety after the development process is a key factor (Cooper, 2003). **Financial risk:** Risks that are related to the budget, exchange rates, inflation, etc.

**Commercial Risk:** Whether the product and the project in extent are considered financially feasible to be developed by the firm falls under this risk category (Kaizer & Vos, 2013). The key risk here is the possibility of exceeding important resource constraints such as the budget of the project which needs to be reduced and controlled through budgeting and forecasting methods (Cooper, 2003).

**Organizational Risk:** The organizational risk is an internal occurrence which includes the communication among different parties for achieving the acceptance and the realization of the idea of the new product. Also, the examination of the availability of the resources is essential (Keizer & Vos, 2003).

**Schedule risk:** Certain procedures for a specific project should be established regarding several operations which is referring to the milestones, the way tasks are dependent with each other, production planning, and lead times (Kayis et al. 2007).

**External risk:** This risk includes issues from parties outside of the organization, such as changes in customer requirements. Some companies have adopted the "Design with the Customers" approach to minimize such risks. In external risk, we can include factors such as political, weather, regulatory, economic, and competitive risk. Nowadays, a term that was introduced by the U.S. Army is most used for the external risk, "VUCA" which stands for Volatility, Uncertainty, Complexity, and Ambiguity (Goldense, 2017).

**Resource risk:** For a project to be finished, such as the development of a new product and its appearance to the market, the optimal availability and usage of resources is important. Supplies,

facilities, labor, and equipment are some of the resources that are needed the most and should not be in shortage. Otherwise, the development of the product may delay. process”p.188.

### **2.1.9. The Relation between Market Entry Process, New Product Development & New Product Performance**

Product development process connected to marketing activities for the purpose of identifying customer needs and translating them into a new product. According to (Kleinschmidt & Cooper 1991), one of the nine drivers of new product success is marketing synergy. Therefore, marketing proficiency of a firm determines the success of the product development process. Additionally, (Kim et al., 2005etc.) illustrate that marketing proficiency of a firm significantly affects the success of the new product development process. Since determining proper time frame for offering a new product is a marketing activity, marketing and managerial proficiency are the determining factors for real innovations (Kleinschmidt & Cooper, 1991).

New product development process affects the quality of a product. It can be argued that the perceived value of a product in the market depends on the quality of its design (Evans & Lindsay, 1996). Improvements in product development process enhance the firm’s reputation, corporate image, and the perceived value of the product. Thus, the firm can offer the product at a higher price, achieve greater market share, and, thereby, maximize its sales revenues accelerating product development and “developing and launching a new product within the proper time frame”, and have a positive impact on a firm’s performance.

## **2.2. Empirical Literature Review**

Several prior studies have pointed out that risk management in general is an important contributor to new product development program success: For example, (Mu et al., 2009) show that risk management strategies targeting technological, organizational, and marketing risk factors improve NPD performance individually and interactively. Also, a recent study carried out by one of the authors indicates that a lack of proper risk management is one of the 10 major challenges that plague large-scale new product development programs, and that conversely the introduction of efficient risk management practices is a contributor to increased performance (Oehmen et al., 2012). Additionally, (Som, 2013) recommend strategies for anticipating and managing environmental and safety risk.

Moreover, (Herrmann, 2015) describes the input information includes knowledge about physical phenomena, manufacturing processes, costs, customer requirements, regulations, and existing designs. The output is new information: a description of a design or a plan.

Study of (Shambel,2018) on Heineken brewery internal risk control system based on Regression analysis was used to test whether internal control environment, risk assessment, control activities, information and communication and monitoring have an influence on financial performance. His finding shows that there is a positive relationship between internal risk controls and company's efficiency and effectiveness.

Additionally, (Wang et al., 2010) proposed a method to link risk management activities in NPD projects via a balanced scorecard and quality function deployment to corporate strategy. Similarly, (Abraham, 2015) study found that although there are some positive steps so far taken by insurance companies to strengthen their risk management practices there still weakness regarding on consideration of risk management as an essential component and integration of HR with risk management function.

According to (Thamhain, 2013) study almost half of the risks that occur are not being detected before they impact product performance. The field data suggests that success scenarios point to the critical importance of recognizing and dealing with risks early on. This involves broad involvement and collaboration across all segments of the project team and its environment.

### **2.3. Theoretical gap**

Most Studies focus on the risk management practice by using other frameworks, strategic risk management, management of property risk, relationship between risk management practice and financial performance of different companies. There are limited studies theories providing risk management in new product market entry process. Even if the issue of risk management is equally important for all sector, only few literatures are available on breweries industry. Hence, this study aims to fill the gap in the literature by analyzing risk management practice in new product market entry process.

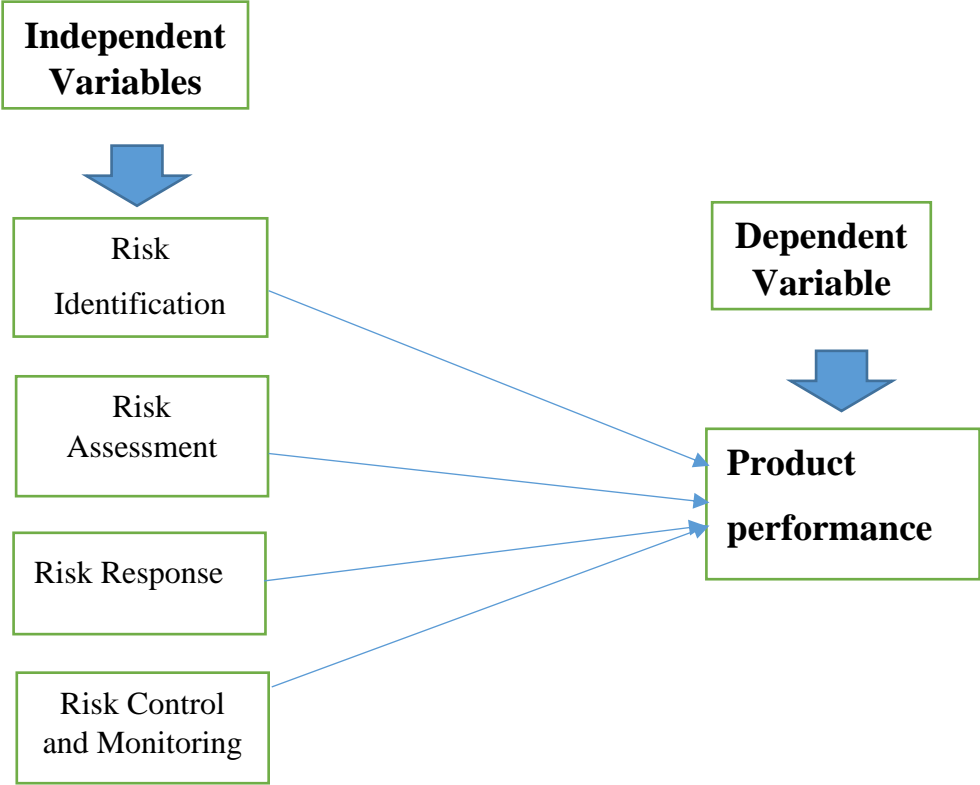
## **2.4. Empirical gap**

Empirically, there are limited studies providing risk management practice in new product market entry process for the breweries industry. Even if the issue of risk management is equally important for all sectors, it is less focused and only few studies are conducted on the breweries industry. However, as per the researcher's knowledge no study is conducted to analyze risk management practice in new product market entry process for the breweries industry. Therefore, this study aims to fill the gap in the practical environment of risk management practice in new product market entry process for the breweries industry.

## **2.5. Conceptual Framework**

Conceptual framework means that concepts that relate to one another were used to explain the research problem. Since product performance is influenced by Risk Assessment, Risk Identification, Risk Control and Monitoring and Risk Response. The influence of these factors to the product performance is very important but it is noteworthy that the management has no (little) control over them (Wanjiku, 2009). Nevertheless, the factors must be closely monitored to ensure that stringent measures are taken within the best time to either take advantage of the opportunities or combat the threats found in the external environment. To align the conceptual framework with the research objectives, product performance is the dependent variable whereas Risk Assessment, Risk Identification, Risk Control and Monitoring and Risk Response are all independent variables. The relationship can be expressed following diagram dependent and independent variables.

**Fig 2.1. Conceptual Model**



**Source: Own Model**

## CHAPTER THREE

### METHODOLOGY OF THE STUDY

#### 3.1. Study Design

The study used both descriptive and explanatory research design. According to (Kothari, 1990) the major purpose of descriptive research is to describe the situation as it exists at present. Descriptive design is appropriate because it involves collecting data to answer pertinent questions concerning the status of subjects. The primary purpose of the study was to analyze Risk Management in New product market entry process for the breweries industry. For this reason, explanatory survey research was used to see the direction of relationship and strength between independent and dependent variables. Explanatory research design was used to explain and predict the cause-and-effect relationships between dependent and independent variables. An explanatory research seeks to answers why and how types of questions. It attempts to “connect the dots” in research, by identifying causal factors and outcomes of the target phenomenon, (Bhattacharjee, 2012).

#### 3.2. Research Approach

This study applied quantitative approach to analyze risk management in new product market entry process for the breweries industry. A quantitative approach is one in which the researcher collects, analyzes, and or “integrates” quantitative data in a single study to understand a research problem (Creswell, 2003). 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 building in protections against bias, controlling for alternative explanations, and being able to generalize and replicate the finding (Creswell, 2013).

#### 3.3. Source of Data

To get reliable and relevant information both primary and secondary data sources were used. Primary data were collected from employees of Habesha, St. George and Dashen using closed-ended questionnaire. Secondary data source for this study were different sources such as magazines, newspaper, books, journals, and different research which were conducted on compensation practice.

### **3.4. Methods of Data Collection**

The study used structured questionnaire as a relevant method of data collection in the study. Based on this the researcher developed a questionnaire containing closed ended questions as an instrument of data collection which helped to increase statistical efficiency of the data. These questionnaires were distributed to 338 respondents on the issue related with Risk Management in New product market entry process for the breweries industry. A set of questionnaires anchored on Likert-type scale (ranged from strongly disagrees to strongly agree) were designed. Based on this, the data were collected from respondents working on risk management and new product development working in Breweries Company of Habesha, St. George and Dashen beer.

### **3.5. Population and Sampling Design**

#### **3.5.1. Population of the Study**

The population of the study included Habesha, St. George and Dashen breweries employees. Habesha Breweries Share Company (“Habesha”) is one of the leading Ethiopian brewing companies. Habesha beer has employed 500 employees (Annual report, 2020). St. George Beer is the most popular and oldest beer in Ethiopia. Founded in 1922, it is brewed by BGI Ethiopia in Addis Ababa. It has 1250 employees (Annual report, 2020). Dashen brewery is also a major player in the rapidly developing Ethiopian market. It has a total of 460 employees (Annual report, 2020). These three companies have collectively 2210 employees. The target population included employees of these breweries’ companies.

#### **3.5.2. Sampling Design & Sample Size Determination**

This study used stratified random sampling method to draw the sample from the population. Stratified random sampling was chosen because of the heterogeneous nature of Breweries Company. The goal of stratification was to ensure that the existing subgroups in the population are represented in the sample. This technique also preferred because it is used to assist in minimizing bias when dealing with the population. The strata were selected based on simple random sampling technique from population of Breweries Company. Based on this Habesha, St. George and Dashen companies were selected because of their financial capacity, market volume and variety products they have. A random sample of 338 respondents working on risk management and new product development were selected from Breweries Company of Habesha, St. George and Dashen, using Slovin’s sampling formula as follows:

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

n = sample size

N = the size of the population (2,210)

e = level of precision (0.05)

$$n = \frac{2,210}{1+2,210 (0.05)^2} = 338$$

### 3.6. Sample Selection Technique

Once sample size has been determined, a sample proportional to strata was determined from each strata using a formula of;  $n_h = (N_h/N)*n$ , where  $n_h$  is sample size from each stratum,  $N_h$  is total population of strata and  $N$  is total population and  $n$  is sample size. With this technique, the sampling frame was organized into relatively homogeneous groups (strata’s) as shown in table 3.1, before selecting elements for the sample. The stratum were Breweries Company of Habesha, St. George and Dashen. To select samples of employee from each stratum, simple random sampling method were applied from a complete list of the employees.

**Table 3.1: Proportional allocation for each stratum**

Sector	Total population by company	Sample size from each company/stratum	Percentage of Sample size
Habesha	500	76	22.5%
St. George	1250	191	56.5%
Dashen	460	71	21%
<b>Total</b>	<b>2210</b>	<b>338</b>	<b>100%</b>

### 3.7. Methods of Data Analysis

In this study, descriptive statistics were used. Descriptive statistics were used to analyze and describe a collection of quantitative data on Risk Management in New product market entry process for the breweries industry by using frequencies, percentages, arithmetic mean, and

standard deviation. In this study, descriptive statistics were used to analyze and describe a collection of quantitative data on Risk Management in New product market entry process for the breweries industry by using frequency tables, percentages, arithmetic mean, and standard deviation using Statistical Package for Social Scientists (SPSS) version 23 relevant methods of data analysis. Additionally, inferential statistics analysis (correlation and regression) using Statistical Package for Social Scientists (SPSS) version 23 relevant methods of data analysis were used.

### **3.8. Multiple Linear Regression Function**

The equation of multiple regressions on this study was generally built around two sets of variables, namely dependent variable (Product performance) and independent variables (Risk Identification, Risk Assessment, Risk Response and Risk Control and Monitoring). The basic objective of using regression equation in this study was to make the study more effective at describing, understanding, and predicting the stated variables. Therefore, the form of the model is given by:

$$Y = \beta_0 + \beta_1 RI_1 + \beta_2 RA_2 + \beta_3 RR_3 + \beta_4 RCM_4 + E$$

Where:

Y = is the dependent variable- product performance, E = Error Term

RI<sub>1</sub>= Risk Identification, RA<sub>2</sub>= Risk Assessment, RR<sub>3</sub>= Risk Response, RCM<sub>4</sub>= Risk Control and Monitoring are the independent variables.  $\beta_0$  is the intercept term, constant which is equal to the mean if all slope coefficients are 0. The  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  are the coefficients associated with each independent variable which measures the change in the mean value of Y, per unit change in their respective independent variables. Accordingly, this statistical technique was applied to explain the relationships between dependent and independent variables. It regressed the product performance (dependent variable) on the selected linear combination of the independent variables using multiple regressions.

### **3.9. Validity and Reliability Test**

#### **3.9.1. Validity Test**

Validity is the degree to which a test measures what it purports to measure (Creswell,2009). Its primary purpose is to increase the accuracy and usefulness of findings by eliminating or controlling as many confounding variables as possible, which allows for greater confidence in the findings of a given study. The validity test that was used in this study includes: Content validity is an assessment of how well a set of scale items matches with the relevant content domain of the construct that it is trying to measure. Another one is Construct validity which can examines how well a given measurement scale is measuring the theoretical construct that it is expected to measure (Kumar, 2011). Another validity which was considered in this study is Construct validity to measure the degree that the study confirms to predicted correlations with other theoretical propositions. Construct validity is the degree to which scores on a test can be accounted for by the explanatory constructs of a sound theory. For determining construct validity, we associate a set of other propositions with the results received from using our measurement instrument (Kothari, 1990). Therefore, the researcher followed the following techniques. First, the researcher checked the extent to which a measuring instrument provides adequate coverage of the topic under study. Then, the instrument was tested by undertaking pilot study. Additionally, the questionnaire was refined based on the respondent comment and finally the proper detection obtained from advisor was taken. Furthermore, statistical inferences were used to test the relationship of variable and to give inference for the dependent variable.

#### **3.9.2 Reliability of a Test**

Internal consistency reliability is a measure of consistency between different items of the same construct. If a multiple-item construct measure is administered to respondents, the extent to which respondents rate those items in a similar manner is a reflection of internal consistency. This reliability can be estimated in terms of average inter-item correlation, average item-to-total correlation, or more commonly, Cronbach's alpha. The reliability of a standardized test is usually expressed as a correlation coefficient, which measures the strength of association between variables. While different level of reliability is required, depending on nature and purpose of scale, (Nunnally, 1998) as cited by (Pallant, 2013) recommends a minimum level of 0.7. Therefore, the

correlation coefficient of dependent and independent variables was tested to check whether they are in the recommended range which shows that the data is reliable.

**Table 3.2: Reliability Statistics for Independent Variables**

Constructs	Cronbach's Alpha value
Risk Identification	0.828
Risk Assessment	0.839
Risk Response	0.728
Risk Control and Monitoring	0.741

**Source: Survey Data (2021)**

The reliability of a standardized test is usually expressed as a correlation coefficient, which measures the strength of association between variables. While different level of reliability is required, depending on nature and purpose of scale, (Nunnally, 1998) as cited by (Pallant, 2013) recommends a minimum level of 0.7. As shown in above table 3.2. Cronbach's Alpha value for risk identification (0.828), risk assessment (0.839), risk response (0.728) and risk control and monitoring (0.741) are in the recommended range which shows that the data is reliable.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND DISCUSSION

#### Introduction

This chapter presents research finding of the study carried out to analyze Risk Management in New product market entry process for the brewery's companies. The chapter is guided by research objective to describe the risk management practices in new product market entry process and to determine the effect of Risk identification, Risk Assessment, Risk Response, Risk Control and Monitoring on new product market entry process. The study was targeted 338 sampled respondents. The questionnaires were distributed to all sampled breweries companies based on their stratification. Out of this 241 of them returned questionnaires representing 71% response rate.

#### 4. Data Presentation

##### 4.1. Demographic Characteristics of Respondents

##### 4.1.1. Gender of Respondents

**Table 4.1: Gender of respondents**

Gender of respondents	Frequency	Percent
Male	155	64.3
Female	86	35.7
Total	241	100.0

**Source: Own Survey (2021)**

As shown in Table 4.1 above, most respondents 155(64.3%) are male and the remaining 86 (35.7%) respondents are female. This implied that from the sampled respondents, males are preferably required in breweries factory to reduce risks of new product market entry process.

### 4.1.2. Age of Respondents

**Table 4.2: Age of respondents**

Age of respondents	Frequency	Percent
18- 26	46	19.1
27-36	100	41.5
37-46	51	21.2
47-55	35	14.5
Above 56	9	3.7
Total	241	100.0

**Source: Own Survey (2021)**

As shown in table 4.2, majority of respondents 100(41.5%) are between 27-36 age, followed by those who are between the age of 37-46 which constitutes 51(21.2%), then between 18- 26 which constitutes 46(19.1%), then lastly by those between 47-55 which constitutes 35(14.5%) and finally by those above 56 which constitutes 9(3.7%). This indicates most sampled respondents are those in the younger age category which can manage risks of new product market entry process.

### 4.1.3. Education of Respondents

**Table 4.3: Education of respondents**

Education of respondents	Frequency	Percent
High School	31	12.9
Diploma	82	34.0
Degree	92	38.2
Masters and above	36	14.9
Total	241	100.0

**Source: Own Survey (2021)**

As shown in table above 4.3, the majority 92(38.2%) of respondents received a bachelor's degree, followed by those who have diploma which constitutes 82(34.0%), then followed by those who

have a masters and above 36(14.9%). And the remaining 31(12.9%) completed high school. This indicates that the companies prefer the educated manpower so that they can manage risk of new product market entry process.

#### 4.1.4. Experience of Respondents

**Table 4.4: Experience of respondents**

Experience of respondents	Frequency	Percent
Under 2 years	29	12
3–5 years	37	15.4
6–10 years	35	14.5
Over 10 years	140	58.1
Total	241	100.0

**Source: Own Survey (2021)**

As shown in table above 4.4, the majority 140(58.1%) of respondents have greater than 10 years’ experiences, followed by those who have 3–5 years experiences which constitutes 37(15.4%), then followed by those who have 6–10 years experiences 35(14.5%) and finally followed by those who have less than 2 years experiences which constitutes 29(12.0%). This indicates most sampled respondents are those who have greater than 10 years’ experiences. This implied that experienced human resource of the companies enables to manage risk of new product market entry process.

#### 4.2. Results of Measures of Central Tendency and Dispersion

In this part of the thesis measures of central tendency which means mean were used to analyze the collected data. As well as describing the central tendency for a variable, it is important to describe how the data values are dispersed around the central tendency. Measure of dispersion is suitable for numerical data. Hence, the extents to which values differ from the mean (standard deviation) were used to analyze the collected data.

In this part of the thesis all Likert type questionnaires were get into analysis and interpretation. For five-point Likert types of questionnaires according to (Al-Sayaad, Rabea & Samrah, 2006), as

cited by (Bassam, 2013) the mean ranges from 1-1.8, 1.8-2.6, 2.6-3.4, 3.4- 4.2 and 4.2-5 falls in response option of strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree category. Therefore, while making interpretation of the results of mean and standard deviation the Scales were obtained from the sample of respondents of breweries industry were reassigned in line with this category to make the interpretation easy and clear.

**Table 4.5. Five Scaled Likert Criterion**

No.	Mean range	Response Option
1	1 to 1.80	Strongly disagree
2	1.8 to 2.6	Disagree
3	2.6 to 3.4	Neutral
4	3.4 to 4.20	Agree
5	4.2 to 5.00	Strongly Agree

Source: (Al-Sayaad et al., 2006), as cited by (Bassam,2013).

#### **4.2.1. Risk Identification**

The respondent of the study was asked to describe about risk identification and the findings presented in the following table.

**Table 4.6: Risk Identification**

<b>Risk Identification</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
New product development risk-related objectives are developed by board and senior manager	241	3.95	.696
New product development risks that are acceptable by the organization are identified & clearly communicated to employees.	241	3.47	.817
New product development risk capacity clearly communicated to the employees	241	3.58	.654
New product development risk tolerance clearly communicated to the employees	241	3.47	.695
Risk identification for new product development is done by managers	241	3.42	.721
Risk identification of new product development involve all level of staff	241	3.18	.612
Roles and responsibilities for risk identification are clearly defined for new product development	241	3.38	.760
All managers are aware of the risks inherent in the business in new product development	241	3.95	.696
Workshop or panel discussion have been conducted to identify risk for new product development.	241	3.47	.817
<b>Grand Mean/Standard Deviation</b>		<b>3.54</b>	<b>.711</b>

**Source: Own Survey (2021)**

As shown in table 4.6, presents that the respondents agreed that new product development risk-related objective is developed by board and senior manager with mean score 3.95 and a standard deviation of 0.696. The respondents also agreed that new product development risks that are acceptable by the organization are identified & clearly communicated to employees with mean score 3.47 and a standard deviation of 0.817. Similarly, the respondents agreed that new product development risk capacity of the insurance clearly communicated to the employees with mean score 3.58 and a standard deviation of 0.654. Additionally, the respondents agreed that new product development risk tolerance of the insurance clearly communicated to the employees with mean score 3.47 and a standard deviation of 0.695. Moreover, the respondents agreed that risk identification for new product development is done by managers with mean score 3.42 and a standard deviation of 0.721.

In the same vein, the respondents agreed that risk identification of new product development involve all level of staff with mean score 3.18 and a standard deviation of 0.612. Additionally, the respondents agreed that new product development risk tolerance of the insurance clearly communicated to the employees with mean score 3.38 and a standard deviation of 0.760. Furthermore, the respondents agreed that all managers are aware of the risks inherent in the business in new product development with mean score 3.95 and a standard deviation of 0.696. The respondents also agreed that workshop or panel discussion have been conducted to identify risk for new product development with mean score 3.47 and a standard deviation of 0.817.

As the table reveals the grand mean of risk identification is 3.54 with standard deviation 0.711. For all items the mean score falls in the range of 3.18-3.95 which falls in the response option of “agree and strongly agree”. Thus, risk identification has positive contribution for new product market entry process for the brewery’s companies.

#### 4.2.2. Risk Assessment

The respondent of the study was asked to describe about risk assessment and the findings presented in the following table.

**Table 4.7: Risk Assessment**

<b>Risk Assessment</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Risks for new product development are evaluated with assumptions and uncertainties being clearly considered and presented	241	3.41	.659
Risks for new product development is evaluated in terms of both quantitative and qualitative value	241	3.32	.653
Measurement of both quantities in which risk assessment is concerned-potential loss and probability of occurrence is carried out by the company	241	3.32	.714
Risks for new product development with a large potential loss and a low probability of occurring is often treated differently from one with a low potential loss and a high likelihood of occurring	241	3.08	.586
<b>Grand Mean/Standard Deviation</b>		<b>3.28</b>	<b>.653</b>

Source: Own Survey (2021)

As shown in table 4.7, presents that the respondents agreed that risks for new product development are evaluated with assumptions and uncertainties being clearly considered and presented with mean score 3.41 and a standard deviation of 0.659. The respondents also agreed that risks for new product development is evaluated in terms of both quantitative and qualitative value with mean score 3.32 and a standard deviation of 0.653. Similarly, the respondents agreed that measurement of both quantities in which risk assessment is concerned-potential loss and probability of occurrence is carried out by the company with mean score 3.32 and a standard deviation of 0.714. The respondents also agreed that risks for new product development with a large potential loss and a low probability of occurring is often treated differently from one with a low potential loss and a high likelihood of occurring with mean score 3.08 and a standard deviation of 0.586. As the table reveals the grand mean of risk assessment is 3.28 with standard deviation 0.653. For all items the mean score falls in the range of 3.08-3.41 which falls in the response option of “agree and strongly agree”. Therefore, risk assessment has considerable contribution for new product market entry process for the brewery’s companies.

### 4.2.3. Risk Response

The respondent of the study was asked to describe about risk response and the findings presented in the following table.

**Table 4.8: Risk Response**

<b>Risk Response</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
The company avoids risk for new product development by insuring different types of risks	241	3.98	.826
The company avoids risks for new product development by insuring catastrophic risks	241	3.84	.677
The organization use risk retention for new product development as risk response practice	241	4.05	.820
The insurance train insured parties to reduce risk for new product development	241	4.21	.836
The company has a mechanism for transferring certain risks to third parties through reinsurance for new product development	241	3.93	.616
<b>Grand Mean/Standard Deviation</b>		4.00	.755

Source: Own Survey (2021)

As shown in table 4.8, presents that the respondents agreed that the company avoids risk for new product development by insuring different types of risks with mean score 3.98 and a standard deviation of 0.826. The respondents also agreed that the company avoids risks for new product development by insuring catastrophic risks with mean score 3.84 and a standard deviation of 0.677. Similarly, the respondents strongly agreed that the organization use risk retention for new product development as risk response practice with mean score 4.05 and a standard deviation of 0.820. The respondents also strongly agreed that the insurance train insured parties to reduce risk for new product development with mean score 4.21 and a standard deviation of 0.836. The respondents also agreed that the company has a mechanism for transferring certain risks to third party through reinsurance for new product development with mean score 3.93 and a standard deviation of 0.616. As the table reveals the grand mean of risk response is 4.00 with standard deviation 0.755. For all items the mean score falls in the range of 3.84-4.21 which falls in the response option of “agree and strongly agree”. This indicates, risk response has positive contribution for new product market entry process for the brewery’s companies.

### **4.2.4. Risk Control and Monitoring**

The respondent of the study was asked to describe about risk control and monitoring and the findings presented in the following table.

**Table 4.9: Risk Control and Monitoring**

<b>Risk Control and Monitoring</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Risk management program is well documented for new product development	241	3.95	.762
Risk management for new product development efforts are supported by senior management	241	4.05	.726
Employees are properly trained on risk management policies of new product development	241	4.22	.632
The roles and responsibilities of each employee in the new product development risk management efforts of the firm are well communicated to them	241	4.05	.697
Controls are in place to evaluate the efficiency of the risk management program of new product development	241	3.97	.661
There is a regular reviews of risk new product development management efforts and reporting to senior management	241	3.92	.708
<b>Grand Mean/Standard Deviation</b>		4.02	.697

**Source: Own Survey (2021)**

As shown in table 4.9, presents that the respondents agreed that risk management program is well documented for new product development with mean score 3.95 and a standard deviation of 0.762. The respondents also strongly agreed that risk management for new product development efforts are supported by senior management with mean score 4.05 and a standard deviation of 0.726. Similarly, the respondents strongly agreed that employees are properly trained on risk management policies of new product development with mean score 4.22 and a standard deviation of 0.632. Additionally, the respondents strongly agreed that the roles and responsibilities of each employee in the new product development risk management efforts of the firm are well with mean score 4.05 and a standard deviation of 0.697. Moreover, the respondents agreed that controls are in place to evaluate the efficiency of the risk management program of new product development with mean score 3.97 and a standard deviation of 0.661. In the same vein, the respondents agreed that there is a regular reviews of risk new product development management efforts and reporting to senior management with mean score 3.92 and a standard deviation of 0.728. As the table reveals the grand mean of risk control and monitoring is 4.02 with standard deviation 0.697. For all items the mean score falls in the range of 3.84-4.21 which falls in the response option of “agree and strongly

agree”. Therefore, risk control and monitoring contribute for new product market entry process for the brewery’s companies.

#### 4.2.5. Risk Management Skills and Resources

The respondent of the study was asked to describe about risk management skills and resources and the findings presented in the following table.

**Table 4.10: Risk Management Skills and Resources**

<b>Risk Management Skills and Resources</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
The employees are motivated to perform/implement new product development risk management	241	4.12	.661
New product development risk management is available and qualified experts help to implement risk management processes	241	3.53	.827
There are sufficient resources and personnel to conduct risk management for new product development	241	3.65	.661
Risk management for new product development teams are cross-functional and cross-organizational	241	3.54	.719
Risk management for new product development takes human and cultural factors into account	241	3.47	.730
<b>Grand Mean/Standard Deviation</b>		3.66	.719

**Source: Own Survey (2021)**

As shown in table 4.10, presents that the respondents strongly agreed that the employees are motivated to perform and implement new product development risk management with mean score 4.12 and a standard deviation of 0.661. The respondents also agreed that new product development risk management is available and qualified experts help to implement risk management processes with mean score 3.53 and a standard deviation of 0.827. Similarly, the respondents agreed that there are sufficient resources and personnel to conduct risk management for new product development with mean score 3.65 and a standard deviation of 0.661. Additionally, the respondents agreed that risk management for new product development teams are cross-functional and cross-organizational with mean score 3.54 and a standard deviation of 0.719. Moreover, the respondents strongly agreed that risk management for new product development takes human and cultural factors into account with mean score 3.47 and a standard deviation of 0.730.

As the table reveals the grand mean of risk management skills and resources is 3.66 with standard deviation 0.719. For all items, the mean score falls in the range of 3.47-4.12 which falls in the response option of “agree and strongly agree”. Therefore, risk management skills and resources contribute for risk management of new product market entry process for the brewery’s companies.

#### 4.2.6. Tailoring Risk Management to integrate it with New Product Development

The respondent of the study was asked to describe about risk management integrating it with new product development and the findings presented in the following table.

**Table 4.11: Tailoring Risk Management to Integrate it with New Product Development**

<b>Tailoring Risk Management to Integrate it with NPD</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Risk management for new product development is tailored to specific needs	241	2.97	.831
We coordinate and integrate new product development risk management activities of different functions and across the hierarchy	241	3.32	.587
Risk management for new product development is an integral part of all organizational processes	241	3.22	.736
Risks and risk management for new product development activities are communicated to management and staff	241	3.08	.840
Risk management for new product development process is effectively integrated with other program management processes	241	4.13	.638
<b>Grand Mean/Standard Deviation</b>		3.34	.726

**Source: Own Survey (2021)**

As shown in table 4.11, presents that the respondents neither agree nor disagree in that risk management for new product development is tailored to specific needs with mean score 2.97 and a standard deviation of 0.831. The respondents also agreed that they coordinate and integrate new product development risk management activities of different functions and across the hierarchy with mean score 3.32 and a standard deviation of 0.587. Similarly, the respondents agreed that risk management for new product development is an integral part of all organizational processes with mean score 3.22 and a standard deviation of 0.736.

Additionally, the respondents agreed that risks and risk management for new product development activities are communicated to management and staff with mean score 3.08 and a standard deviation of 0.840. Moreover, the respondents strongly agreed that risk management for new product development process is effectively integrated with other program management processes with mean score 4.13 and a standard deviation of 0.638.

As the table reveals the grand mean of tailoring risk management to integrate it with new product development is 3.34 with standard deviation 0.726. For all items, the mean score falls in the range of 2.97-4.13 which falls in the response option of “neither agree nor disagree and strongly agree”. Thus, risk management integration with new product development contributes for risk management of new product market entry process for the brewery’s companies.

#### 4.2.7. Critical Decisions with Risk Management Results

The respondent of the study was asked to describe about critical decisions with risk management results and the findings presented in the following table.

**Table 4.12: Critical Decisions with Risk Management Results**

<b>Critical Decisions with Risk Management Results</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Resources are allocated to reduce largest risks as early as possible in new product development	241	3.56	.815
Planning in new product development (e.g., cost, schedule, and performance) are adjusted based on risk assessment	241	3.66	.652
The results of the risk analysis in new product development are considered in making technical, schedule and/or cost trade-offs	241	3.55	.718
<b>Grand Mean/Standard Deviation</b>		3.59	.728

**Source: Own Survey (2021)**

As shown in table 4.12, presents that the respondents agreed that resources are allocated to reduce largest risks as early as possible in new product development with mean score 3.56 and a standard deviation of 0.815. The respondents also agreed that planning in new product development (e.g., cost, schedule, and performance) are adjusted based on risk assessment with mean score 3.66 and a standard deviation of 0.652. Similarly, the respondents agreed that the results of the risk analysis in new product development are considered in making technical, schedule and/or cost trade-offs with mean score 3.55 and a standard deviation of 0.718. As the table reveals the grand mean of

critical decisions with risk management results is 3.59 with standard deviation 0.728. For all items, the mean score falls in the range of 3.55 -3.66 which falls in the response option of “agree and strongly agree”. Hence, critical decisions with risk management results contribute for risk management of new product market entry process for the brewery’s companies.

#### 4.2.8. Transparency in New Product Development Risk

The respondent of the study was asked to describe about transparency in new Product development risk and the findings presented in the following table.

**Table 4.13: Transparency in New Product Development Risk**

<b>Transparency in New Product Development Risk</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
New product development risk management is based on the best available information	241	3.46	.724
New product development risk management is transparent and inclusive towards all members in the organization	241	3.24	.626
New product development risk management explicitly addresses uncertainty	241	3.40	.752
<b>Grand Mean/Standard Deviation</b>		3.36	.700

**Source: Own Survey (2021)**

As depicted in table 4.13 above, the respondents agreed that new product development risk management is based on the best available information with mean score 3.46 and a standard deviation of 0.724. The respondents also agreed that new product development risk management is transparent and inclusive towards all members in the organization with mean score 3.24 and a standard deviation of 0.626. Similarly, the respondents agreed that new product development risk management explicitly addresses uncertainty with mean score 3.40 and a standard deviation of 0.752. As the table reveals the grand mean of transparency in new product development risk is 3.36 with standard deviation 0.700. For all items, the mean score falls in the range of 3.24-3.46 which falls in the response option of “agree and strongly agree”. Hence, transparency in new Product development risk contribute for risk management of new product market entry process for the brewery’s companies.

### 4.2.9. New product development Performance

The respondent of the study was asked to describe about new product development performance in the study area and the findings presented in the following table.

**Table 4.14: New product development Performance**

<b>New product development Performance</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Overall, our customers are more satisfied with our new product	241	4.13	.636
New product fits target market/customers better	241	3.57	.834
New product development performance in our company increases customers' loyalty	241	3.66	.664
New product development performance attracts more new customers	241	3.55	.735
Our new products are more successful in the marketplace than before	241	3.47	.742
Our customers encourage other people to buy our new products	241	4.13	.636
<b>Grand Mean/Standard Deviation</b>		3.75	.707

**Source: Own Survey (2021)**

As shown in table 4.14, presents that the respondents strongly agreed that overall, our customers are more satisfied with our new product with mean score 4.13 and a standard deviation of 0.636. The respondents also agreed that new product fits target market/customers better with mean score 3.57 and a standard deviation of 0.834. Similarly, the respondents agreed that new product development performance in our company increase customers' loyalty with mean score 3.66 and a standard deviation of 0.664. Additionally, the respondents agreed that new product development performance attracts more new customers with mean score 3.55 and a standard deviation of 0.735. Moreover, the respondents agreed that our new products are more successful in the marketplace than before with mean score 3.47 and a standard deviation of 0.742. Furthermore, the respondents strongly agreed that our customers encourage other people to buy our new products with mean score 4.13 and a standard deviation of 0.636. As the table reveals the grand mean of new product development performance is 3.75 with standard deviation 0.707. For all items, the mean score falls in the range of 3.55-4.13 which falls in the response option of "agree and strongly agree".

#### 4.2.10. General Variables

**Table 4.15: General Variables**

No	Risk Management Skills and Resources	Mean	Std. Deviation
1	Risk Identification	3.54	.711
2	Risk Assessment	3.28	.653
3	Risk Response	4.00	.755
4	Risk Control and Monitoring	4.02	.697

**Source: Own Survey (2021)**

As the table reveals the grand mean of risk identification is 3.54 with standard deviation 0.711. For all items, the mean score falls in the range of 3.18-3.95 which falls in the response option of “agree and strongly agree”. Thus, risk identification has positive contribution for new product market entry process for the brewery’s companies. Additionally, the grand mean of risk assessment is 3.28 with standard deviation 0.653. For all items, the mean score falls in the range of 3.08-3.41 which falls in the response option of “agree and strongly agree”. Therefore, risk assessment has considerable contribution for new product market entry process for the brewery’s companies. Moreover, the grand mean of risk response is 4.00 with standard deviation 0.755. For all items, the mean score falls in the range of 3.84-4.21 which falls in the response option of “agree and strongly agree”. This indicates, risk response has positive contribution for new product market entry process for the brewery’s companies. Similarly, the grand mean of risk control and monitoring is 4.02 with standard deviation 0.697. For all items, the mean score falls in the range of 3.84-4.21 which falls in the response option of “agree and strongly agree”. Therefore, risk control and monitoring contribute for new product market entry process for the brewery’s companies.

### **4.3. Inferential Statistics Analysis**

Inferential statistics allows inferring from the data through analysis the relationship between two or more variables and how several independent variables might explain the variance in a dependent variable. In this case correlation and causal analysis were presented.

#### **4.3.1. Pearson's Product Moment Correlation Coefficient**

Correlation analysis is used to describe the strength and direction of the linear relationship between two variables (Pallant, 2010). In this paper Pearson's product moment correlation is used whether there is significant relation between the independent variables namely risk identification, risk assessment, risk response and risk control and monitoring with the product performance. The Pearson coefficient  $r$  ranges from -1 up to 1. -1 shows perfectly negative relationship, 0 show no relationship and 1 perfectly positive relationship. For the rest of the values is used the following guideline:

- For value 0.00-0.19 no relation or very small correlation
- For value 0.20-0.39 small correlation
- For value 0.4-0.59 medium correlation
- For value 0.60-0.79 large correlation
- For value 0.80 -1 very large or very strong correlation (Yalew, 2004).

Therefore, the following table shows the Pearson product moment correlation between the dependent and independent variables. The interpretation will follow the above classifications.

**Table 4.16: Pearson's Product Moment Correlation Coefficient**

Constructs		Product Performance
Risk Identification	Pearson Correlation	.628**
	Sig. (2-tailed)	.000
	N	241
Risk Assessment	Pearson Correlation	.605**
	Sig. (2-tailed)	.000
	N	241
Risk Response	Pearson Correlation	.704**
	Sig. (2-tailed)	.000
	N	241
Risk Control and Monitoring	Pearson Correlation	.654**
	Sig. (2-tailed)	.000
	N	241
Product Performance	Pearson Correlation	1
	Sig. (2-tailed)	
	N	241

Source: Own Survey (2021)

#### 4.3.1.1. Correlation Analysis between Risk Identification and product performance

Pearson correlation test was conducted to see the degree of relationship between the independent variable i.e. risk Identification and product performance. Table 4.16 depicts that the correlation between risk Identification and product performance is 0.628. This coefficient shows that there is a strong and positive relationship between risk Identification and product performance. The (\*\*) highlights that the probability of this correlation coefficient occurring by chance alone is less than 0.01 (1 percent). This correlation coefficient is therefore statistically significant. In other words, there is found a strong and positive correlation between risk Identification and product performance ( $r = 0.628, n=241, p < .01$ ) which is statistically significant at 99% confidence level or 1% significance level.

#### **4.3.1.2. Correlation Analysis between Risk Assessment and product performance**

Pearson correlation test was conducted to see the degree of relationship between the independent variable i.e., risk assessment and product performance. Table 4.16 depicts that the correlation between risk assessment and product performance is 0.605. This coefficient shows that there is a strong and positive relationship between risk assessment and product performance. The (\*\*) highlights that the probability of this correlation coefficient occurring by chance alone is less than 0.01 (1 percent). This correlation coefficient is therefore statistically significant. In other words, there is found a strong and positive correlation between risk assessment and product performance ( $r = 0.605$ ,  $n=241$ ,  $p < .01$ ) which is statistically significant at 99% confidence level or 1% significance level.

#### **4.3.1.3. Correlation Analysis between Risk Response and product performance**

Pearson correlation test was conducted to see the degree of relationship between the independent variable i.e., risk response and product performance. Table 4.16 depicts that the correlation between risk response and product performance is 0.704. This coefficient shows that there is a strong and positive relationship between risk response and product performance. The (\*\*) highlights that the probability of this correlation coefficient occurring by chance alone is less than 0.01 (1 percent). This correlation coefficient is therefore statistically significant. In other words, there is found a strong and positive correlation between risk response and product performance ( $r = 0.704$ ,  $n=241$ ,  $p < .01$ ) which is statistically significant at 99% confidence level or 1% significance level.

#### **4.3.1.4. Correlation Analysis between Risk Control and Monitoring and product performance**

Pearson correlation test was conducted to see the degree of relationship between the independent variable i.e., risk control and monitoring and product performance. Table 4.16 depicts that the correlation between risk control and monitoring and product performance is 0.654. This coefficient

shows that there is a strong and positive relationship between risk control and monitoring and product performance. The (\*\*) highlights that the probability of this correlation coefficient occurring by chance alone is less than 0.01 (1 percent). This correlation coefficient is therefore statistically significant. In other words, there is found a strong and positive correlation between risk control and monitoring and product performance ( $r = 0.654$ ,  $n=241$ ,  $p < .01$ ) which is statistically significant at 99% confidence level or 1% significance level.

### **4.3.2. Multiple Linear Regressions Analysis**

Though correlation analysis were conducted to see the magnitude and direction of relationship between the independents and dependent variables, it is important to conduct multiple linear regression analysis to show the cause and effect and the magnitude of the influence of the independent variables on the dependent variables. As it was formulated in the conceptual framework of the study in chapter two, in this thesis, there were identified 4 independent variables namely risk identification, risk assessment, risk response and risk control and monitoring which can affect product performance which is the dependent variable in this thesis.

#### **4.3.2.1 Multiple linear Regressions Analysis Assumptions**

Before regression analysis takes place, the paper considered various assumptions, which can affect the reliability of the model employed. In the practical world, multiple regression models subjected to enormous important assumptions. The model fitness is examined through testing of the linearity of each independent and dependent variable, sample size, normality of residuals and multicollinearity of the model. Accordingly, that assumption has tested under this research paper. The results of such analysis are narrated as follows.

##### **4.3.2.1.1 Measure of Sampling Adequacy Test**

Multiple linear regressions require large sample size. According to (Tabachnick & Fidell, 2001), as cited by (Pallant, 2005) give a formula for calculating sample size requirements, taking into account the number of independent variables:  $N > 50 + 8m$  (where  $m$  = number of independent variables). Therefore, in this thesis there are four independent variables. According to the given formula the required sample size should be above 82. In this thesis the sample size is 241. Hence, in this thesis this assumption has met.

**4.3.2.1.2. Normality Test**

**Table 4.17: Normality Test**

Constructs	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Risk Identification	241	-.379	.157	.290	.312
Risk Assessment	241	-.188	.157	.319	.312
Risk Response	241	-.134	.157	-.262	.312
Risk Control and Monitoring	241	-.188	.157	.014	.312

Source: Own Survey (2021)

According to (Hair et al., 1998), if the value of skewness ranges between -2 to 2 and for kurtosis ranges between -3 to 3, then the normality is assumed. Therefore, as the data can be seen in table 4.17, it is within the recommended range which shows that the data is normally distributed.

**4.3.2.1.3. Multicollinearity Test**

**Table 4.18: Multicollinearity Test**

Constructs	Collinearity Statistics	
	Tolerance	VIF
Risk Identification	.700	1.428
Risk Assessment	.677	1.477
Risk Response	.662	1.511
Risk Control and Monitoring	.721	1.387

a. Dependent Variable: MNPPER

Source: Own Survey (2021)

This assumption was checked by tolerance value and variance inflation factors. According to (Pallant, 2011), tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model. If this value is very small (less than .10) it indicates that the multiple correlation with other variables is high,

suggesting the possibility of multicollinearity. The other value given is the VIF (Variance inflation factor), which the values above 10 would be a concern here, indicating multicollinearity” (p.150). In this thesis table above shows that there is no multicollinearity among variables. The tolerance value for each independent variable of the lowest were 0.662 for the variable risk Response, which is greater than 0.10; therefore, it does not violate the multicollinearity assumption. This is also supported by the VIF value, which is the highest 1.511, which is well below the cut-off of 10.

**4.3.2.1.4. Autocorrelation Test**

**Table 4.19: Autocorrelation Test**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.859 <sup>a</sup>	.738	.733	.25522	2.029

b. Dependent Variable: Product Performance  
**Source: Own Survey (2021)**

According, (Fah, 2007) argue that Durbin-Watson tests can be used to see if adjacent observations are correlated. The statistics ranges in value from 0 to 4. If there is no correlation between successive residuals, the Durbin-Watson statistic should be close to 2. Values close to 0 indicate that successive residuals are positively correlated, while values close to 4 indicate strong negative correlation. Therefore, in this study there was no problem of auto correlation because Durbin Watson test was 2.029~2. So, we can say this assumption has been met.

**4.3.2.2 Coefficient of Determination**

**Table 4.20: Coefficient of Determination**

Model	R	R Square	Adjusted R Square			
				R Square Change	F Change	Sig. F Change
	.859 <sup>a</sup>	.738	.733	.738	166.055	.000

**Source: Own Survey (2021)**

Perusal of the model Summery table 4.20 above shows the value of R Square, which is 0.738 expressed as percentage 73.8%. This value is large and shows the adequacy of the model. Therefore, this entails that 73.8% variance in the dependent variable. In another word this means risk Identification, risk assessment, risk response and risk control and monitoring explain variation

in the product performance by 73.8%. And the other 26.2 % of the variance is explained by other variables which is not included in the model.

### 4.3.3. Analysis of Variance (ANOVA)

**Table 4.21: Analysis of Variance**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	43.265	4	10.816	166.055	.000 <sup>b</sup>
Residual	15.372	236	.065		
Total	58.637	240			

a. Dependent Variable: MNPPER

b. Predictors: (Constant), MNRCON, MNRI, MNRAS, MNRRES

Source: Own Survey (2021)

Perusal of table 4.21 the F-test result was 166.055 with a significance ('Sig.') of .000. This means that the probability of these results occurring by chance was less than 0.0005, indicates that the model reaches statistical significance (Sig = .000, this really means  $p < .0005$ ). This implies that the model is adequate (fit) and is worth maintaining. To assess the statistical significance of the result it is necessary to look in the table labelled ANOVA (Pallant, 2005). If Sig.  $0.000 < 0.05$ , the model fits the data.

### 4.3.4. Regression Coefficients

**Table 4.22: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.500	.175		-2.859	.005
Risk Identification	.292	.044	.261	6.565	.000
Risk Assessment	.173	.038	.187	4.608	.000
Risk Response	.344	.040	.356	8.692	.000
Risk Control and Monitoring	.299	.037	.321	8.184	.000

a. Dependent Variable: MNPPER

Source: Own Survey (2021)

Table 4.22 shows the unstandardized Coefficients “B” and standardized coefficient “Beta” with p-value. The unstandardized coefficient is used to formulate the equation. While the standardized coefficients are useful to identify which variable has strong effect on the dependent variable. All parameters are statistically significant since their P-value is less than 0.05.

Therefore, the equation is written in the following way:

Product Performance =  $B_0 + B_1$  (Risk Identification) +  $B_2$  (Risk Assessment) +  $B_3$  (Risk Response) +  $B_4$  (Risk Control and Monitoring) + E

Constant ( $B_0$ ) = -0.500 means that when independent variables are zero, product performance is -0.500, on average, keeping other things constant.

Coefficient of Risk Identification is ( $B_1$ ) 0.292. This implies that when Risk Identification increases by one unit, Product Performance increases by 0.292.

Coefficient of Risk Assessment ( $B_2$ ) is 0.173. This implies that when Risk Assessment increases by one unit, Product Performance increases by 0.173.

Coefficient of Risk Response ( $B_3$ ) is 0.344. This implies that when Risk Response increases by one unit, Product Performance increases by 0.344.

Coefficient of Risk Control and Monitoring ( $B_4$ ) is 0.299. This implies that when Risk Control and Monitoring increases by one unit, Product Performance increases by 0.299.

Thus, Product Performance =  $-0.500 + 0.292$  (Risk Identification) +  $0.173$  (Risk Assessment) +  $0.344$ (Risk Response) +  $0.299$  (Risk Control and Monitoring) + E

## 4.4. Discussion

### 4.4.1. The Effect of Risk Identification on Product Performance

Above table 4.22 indicates that risk identification has unstandardized coefficient B of 0.292. The coefficient is positive. The Sig. value or p-value is (0.000) which means that the probability of this results occurring by chance is less than 0.05. In other words, the regression coefficients for the variables are positive and statistically significant at the  $p < 0.05$  level. To elaborate more, a one-unit change in risk identification would lead to a 0.292-unit variation in product performance, when all the other variables in the model remaining constant. Therefore, the variable risk identification has a statistically significant and positive effect ( $\beta=0.292$ ,  $p<0.05$ ) on product performance at 95% confidence level or 5% significance level. This is supported by result of

(Oehmen et al., 2012) which states efficient risk identification practices is a contributor to product performance.

#### **4.4.2. The effect of Risk Assessment on Product Performance**

Above table 4.22 indicates that risk assessment has unstandardized coefficient B of 0.173. The coefficient is positive. The Sig. value or p- value is (0.000) which means that the probability of this results occurring by chance is less than 0.05. In other words, the regression coefficients for the variables are positive and statistically significant at the  $p < 0.05$  level. To elaborate more, a one-unit change in risk assessment would lead to a 0.173-unit variation in product performance, when all the other variables in the model remaining constant. Therefore, the variable risk assessment has a statistically significant and positive effect ( $\beta=0.173$ ,  $p<0.05$ ) on product performance at 95% confidence level or 5% significance level. This coincides with (Shambel, 2018) study which indicates Risk assessment has positive effect on product performance.

#### **4.4.3. The Effect of Risk Response on Product Performance**

Above table 4.22 indicates that risk response has unstandardized coefficient B of 0.344. The coefficient is positive. The Sig. value or p- value is (0.000) which means that the probability of this results occurring by chance is less than 0.05. In other words, the regression coefficients for the variables are positive and statistically significant at the  $p < 0.05$  level. To elaborate more, a one-unit change in risk response would lead to a 0.344-unit variation in product performance, when all the other variables in the model remaining constant. Therefore, the variable risk response has a statistically significant and positive effect ( $\beta=0.344$ ,  $p<0.05$ ) on product performance at 95% confidence level or 5% significance level. This complement with (Browning, et al, 2002) study which founds that risk response has significant influence on product performance.

#### **4.4.4. The effect of Risk Control and Monitoring on Product Performance**

Above table 4.22 indicates that risk control and monitoring have unstandardized coefficient B of 0.299. The coefficient is positive. The Sig. value or p- value is (0.000) which means that the probability of this results occurring by chance is less than 0.05. In other words, the regression coefficients for the variables are positive and statistically significant at the  $p < 0.05$  level. To elaborate more, a one-unit change in risk control and monitoring would lead to a 0.299-unit

variation in product performance, when all the other variables in the model remaining constant. Therefore, the variable risk control and monitoring has a statistically significant and positive effect ( $\beta=0.299$ ,  $p<0.05$ ) on product performance at 95% confidence level or 5% significance level. This is supported with (Shambel, 2018) study which confirmed that control activities and monitoring have any influence on product performance. His finding shows that there is a positive relationship between internal risk controls and company's product efficiency and effectiveness.

#### **4.5. Hypotheses Test**

Proposed hypothesis tested based on the results of the multiple regression analysis. By looking at the Sig.-value, it is possible to interpret whether the particular independent variable has a significant relationship with the dependent variables. Hypothesis is rejected when the Sig. value is smaller than 0.05; and a null hypothesis is supported when the p value is equal or larger than 0.05 (Pallant, 2010).

The hypothesis which states that the risk identification has no significant effect product performance of breweries industry is tested at 5% level of significance. Based on this, the p-value of risk identification ( $\text{sig}=0.000$ ) is less than 0.05. Thus, the null hypothesis is rejected and concluded that risk identification has positive and significant effect product performance of breweries industry.

The hypothesis which states that risk assessment has no significant effect product performance of breweries industry is also tested at 5% level of significance. Based on this, the p-value of risk assessment ( $\text{sig}=0.000$ ) is less than 0.05. Thus, the null hypothesis is rejected and concluded that risk assessment has positive and significant effect product performance of breweries industry.

The hypothesis which states that the risk response has no significant effect product performance of breweries industry is tested at 5% level of significance. Based on this, the p-value of risk response ( $\text{sig}=0.000$ ) is less than 0.05. Thus, the null hypothesis is rejected and concluded that risk response has positive and significant effect product performance of breweries industry.

The hypothesis which states that the risk control and monitoring has no significant effect product performance of breweries industry is tested at 5% level of significance. Based on this, the p-value of risk control and monitoring ( $\text{sig}=0.000$ ) is less than 0.05. Thus, the null hypothesis is rejected and concluded that risk control and monitoring have positive and significant effect product performance of breweries industry.

In general, the independent variables such as risk identification, risk assessment, risk response and risk control and monitoring significantly explain the variation on the dependent variable, product performance at 95% confidence interval because the p-value of risk identification, risk assessment, risk response and risk control and monitoring is less than 0.05. Moreover, beta value shows that the largest determinants of product performance in this study is the risk response (0.356) followed by risk control and monitoring (0.321), risk identification (0.261), risk assessment (0.187) when it is compared with variables under study.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

#### Introduction

This chapter presents summary, conclusion and recommendation based on the findings of the study and suggest possible areas for future research.

#### 5.1. Summary

The main objective of this study was to analyze Risk Management in New product market entry process for the brewery's companies. Specifically, the study attempted to describe the risk management practices in new product market entry process and to determine the effect of Risk identification, Risk Assessment, Risk Response, Risk Control and Monitoring on new product market entry process. Four independent variables were included in this study to examine their effect on new product market entry process. The dependent variable in this study is product performance. The result shows that risk identification has a statistically significant and positive effect on product performance. The finding also reveals that risk assessment has a statistically significant and positive effect on product performance. The result also indicates that risk response has a statistically significant and positive effect on product performance at 5% significance level. Moreover, risk control and monitoring have a statistically significant and positive effect on product performance.

#### 5.2. Conclusions

The result shows that risk identification has a statistically significant and positive effect on product performance at 5% significance level. Thus, new product development of risk-related objective, identification of acceptable risk & clear communication of risks, risk tolerance and capacity of the insurance to employees and participation of employees on risk identification for new product development has positive influence on new product performance.

The finding also reveals that risk assessment has a statistically significant and positive effect on product performance. Hence, evaluation of risks for new product development with assumptions and uncertainties, in terms of both quantitative and qualitative value, treatment of large potential loss and a low probability of occurring has influences on product performance.

The result also indicates that risk response has a statistically significant and positive effect on product performance at 5% significance level. This reveals that, the company avoidances of risk for new product development by ensuring different types of risks, catastrophic risks, uses of risk retention for new product development and reinsurance for new product development has positive influence on product performance.

Moreover, risk control and monitoring have a statistically significant and positive effect on product performance. This indicates, risk management program documentation, risk management efforts support by senior management, risk management policies training, evaluating the efficiency of the risk management has significant influence on new product performance.

### **5.3. Recommendations**

The result of the study shows that risk identification has a statistically significant and positive effect on product performance. Hence, Habesha, St. George and Dashen companies required to strengthen risk identification of new product development to reduce the risk of overlooking new emerging problems. The identification of risk should be given valuable credit because they are the decisive in managing risk in new product development.

Besides, risk assessment had significant influence on product performance, and it was found significant at less than 1%. Hence, risk in new product development required to be evaluated in terms of both quantitative and qualitative value and potential loss and probability of occurrence is carried out by the breweries' company so that they can reduce the probability of occurrence.

Furthermore, risk response had significant influence on product performance. The Habesha, St. George and Dashen companies should strengthen avoiding risk for new product development by insuring different types of risks. There should be well-developed strategy for risk responses. Risks should be recorded, and their characteristics must be considered to in order to apply appropriate risk response strategies that considers factors such as budget, schedule and resources and quality are considered while responding to risk.

Furthermore, risk control and monitoring had significant influence on product performance, and it was found significant at less than 5%. Therefore, the breweries company should review, audit, and communicate risk of new product development properly and strengthen provision of training on

risk management policies for employees and conduct regular reviews of risk efforts and report to management of breweries' company.

In general, the finding that the implication of risk management in new product market entry process could enhance the performance of these breweries' companies. The implication of this finding is that the proper implement of the organization wide, system approach to managing all the risks of the organization could enhance the extent to which the new product performance goal is achieved.

#### **5.4. Future Research Direction**

This study dealt with analyzing Risk Management in New product market entry process for the brewery's companies. These variables (Risk identification, Risk Assessment, Risk Response, Risk Control and Monitoring) predict 74% of variance. The remaining 26% of the variance is explained by variables which are not included in this study. Thus, future research should concentrate on investigation of other variables such as marketing strategy and internal control environment and check whether they have significant effect on product performance.

## References

- Alviunessen, A. & Jankensgård, H. (2009). Enterprise Risk Budgeting: Bringing Risk Management into the Financial Planning Process. *Journal of Applied Finance*, 19(1/2), 178- 190.
- Aqlan, F. & Lam, S. (2015). "Supply chain risk modeling and mitigation", *International Journal of Production Research*, Vol. 53 No. 18, pp. 5640-5656.
- Baba, Y., Kikuchi, J. & Mori, S. (1995). Japan's R&D strategy reconsidered: Departure from the manageable risks. *Technovation* 15, 65–78.
- Bhattacharjee, A. (2012). Social Science Research: Principles, Methods, And Practices
- Browning, T., et al (2002). Adding value in product development by creating information and reducing risk. *IEEE Trans. Eng. Manag.* 49, 443–458.
- Chopra, S. & Sodhi, M.(2004). Managing risk to avoid supply chain breakdown. MIT
- Christopher, M. & Lee, H. (2004). Mitigating supply chain risk through improved confidence *International Journal Physics Distribution & Logistics Management*, 34(5), 388-396
- Creswell, J. (2009): Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 3<sup>rd</sup> edition. *Landon, Sega publications.*
- Evans, J. & Lindsay, W.(1996). The management and control of quality 3rd ed, West Publishing Co., St Paul, MN
- Fah, L. (2007). Using Multiple Regression in Social Sciences Research
- Florice, S. & Ibanescu, M. (2008). Using R&D portfolio management to deal with dynamic risk. *R&D Manag.* 38, 452–467.
- Ferreira, V. & Oligari, A. (2005). "Guidelines for a risk management methodology for product design", *Product: Management & Development*, Vo. 3, No. 1, 2005.
- GAO, (2010). Defense Acquisitions: Managing Risk to Achieve Better Outcomes. United States Government Accountability Office, Washington, D.C.

- Hallikas, J., et al (2004). Risk Management processes in supply chain networks. *International Journal of Production Economics* 90(1):47-58.
- Hamann, R. & Bijl, M. (2002). Risk Management Literature Survey: An overview of the process, tools used and their outcomes. Dutch Space.
- Herrmann, J. (2015). Engineering decision making and risk management.
- IRGC, (2005). Risk Governance – Towards an Integrative Approach, *White Paper no 1*.
- Khan, O. & Bernard, B. (2007). Risk and supply chain management: creating a research agenda. *The International Journal of Logistics Management*, Vol. 18 Iss: 2, pp.197 – 216
- Kim, J., Wong, V. & Eng, T.(2005). Product variety strategy for improving new product development proficiencies. *Technovation*, 25(9), 1001-1015
- Kleinschmidt, E. & Cooper, R. (1991). The impact of product innovativeness on performance. *Journal of Production and Innovation Management*, 8(4), 240-251
- Kiochos, P. (1997). Principles of Risk Management and Insurance. 8th Edition, *Pearson Education, New York*.
- KPMG. (2006). Enterprise Risk Management in the United States: *A 2006 Report Card*.
- Kumar, A. & Kushwaha, G. (2018) Supply Chain Management Practice and Operational Performance of Fair Price Shops in India: An Empirical Study
- Mark Tranmer, M. E. (2006). *Multiple Linear Regression*.
- Makomaski, J. (2008). So What Exactly Is ERM? *Risk Management*, 55(4), 80-81.
- Mu, J., Peng, G. & MacLachlan, D.(2009). Effect of risk management strategy on NPD performance. *Technovation* 29, 170–180.
- Norrman, A. & Jansson, U. (2004). Ericsson's proactive supply chain risk mitigation approach after a serious sub-supplier accident, *International Journal of Physical Distribution and Logistics Management* 34(5):434-456.

Oehmen, J. & Seering, W.(2011), "Risk-Driven Design Processes – Balancing Efficiency with Resilience in Product Design", In Birkhofer, H., ed. *The Future of Design Methodology*, Springer, London, 2011.

Oehmen, J., et al (2010). Risk Management in Product Design: Current State, Conceptual Model and Future Research, in: Volume 1: 36th *Design Automation Conference*, Parts A and B. ASME, pp. 1033–1041.

Oehmen, J., et al (2014). Analysis of the effect of risk management practices on the performance of new product development programs. *Technovation*, 34(8),

Osborne,J.W.& Waters,E.(2010). Four Assumptions Of Multiple Regression That Researchers Should Always Test: Practical Assessment, Research, and Evaluation .*North Carolina State University and University of Oklahoma*,8(2).

Pallant,J.(2011).SPSS Survival Manual: A step by step guide to data analysis using SPSS 4th edition

PMI (2004). A Guide to the Project Management Body of Knowledge (3rd Ed.). *Project Management Institute*.

Pyke, D. & Tang, C., (2010). How to mitigate product safety risks proactively-Process, challenges and opportunities, *International Journal of Production Research and applications* 13(4):243-256

Rejda, G. (2008). Principles of Risk Management and Insurance, *Prentice Hall*, 10 th Ed

Ritchie, B. & Brindley, C. (2009). Effective Management of Supply Chains: Risks and Performance.

Sharma, B. (2003). Bank Frauds- Prevention & Detection, Universal law Publishing Co. Pvt.Ltd.

Smith, N., Merna, T. & Jobling, P.(2006) Managing risk in construction projects 2nd edn, Blackwell Publishing, Oxford, UK.

Smith, P. & Merritt, G. (2002), "Proactive Risk Management - Controlling Uncertainty in Product Development", *Productivity Press*, New York, 2002.

Thamhain, H.(2013). Managing Risks in Complex Projects. *Proj. Manag. J.* 44, 20–35.

Tummala, R. & Schoenherr, T., (2011), “Assessing and managing risks using the supply chain risk management process (SCRMP)”, *Supply Chain Management: An International Journal*, Vol. 16 No. 6, pp. 474-483

Wang, J., Lin, W. & Huang, Y.(2010). A performance-oriented risk management framework for innovative R&D projects. *Technovation* 30, 601–611.

Weigkricht, E. & Fedram, K. (1993) Computer Support for Risk Assessment of Dangerous

Williams, R., (2006). Quality and risk management: what are the key issues? *The TQM Magazine*, 18(1),67-8

## **APPENDIX I**

### **QUESTIONNAIRE**

**ADDIS ABABA UNIVERSITY**

**FACULTY OF BUSINESS AND ECONOMICS**

**MSc IN INTERNATIONAL BUSINESS**

**Risk Management in New Product Market Entry Process for the Breweries**

**Industry: The Case of Some Selected Breweries**

**Dear Respondents,**

My name is Aynadis Getahun, I am conducting study on Risk Management in New Product Market Entry Process for the Breweries Industry: The Case of Some Selected Breweries. The main objective of the study is to evaluate Risk Management in New Product Market Entry Process for the Breweries Industry: The Case of Some Selected Breweries. The data will be used only for the purpose of academic research to fulfill the requirement for the successful completion of graduate study. The result of the study is extremely dependent on your response. Therefore, you are kindly requested to respond honestly and answer all questions correctly as much as possible. Your name will not be included in the study and the information that you give will be kept confidential and used only for the purpose of the study.

Thank you in Advance for your cooperation!



## Risk Management in New Product Market Entry Process for the Breweries Industry

1	<b>Risk Identification</b>	1	2	3	4	5
1.1	New product development risk-related objectives are developed by board and senior manager					
1.2	New product development risks that are acceptable by the organization are identified & clearly communicated to employees.					
1.3	New product development risk capacity clearly communicated to the employees.					
1.4	New product development risk tolerance clearly communicated to the employees.					
1.5	Risk identification for new product development is done by managers					
1.6	Risk identification of new product development involve all level of staff					
1.7	Roles and responsibilities for risk identification are clearly defined for new product development					
1.8	All managers are aware of the risks inherent in the business in new product development					
1.9	Workshop or panel discussion have been conducted to identify risk for new product development					

2	<b>Risk Assessment</b>	1	2	3	4	5
2.1	Risks for new product development are evaluated with assumptions and uncertainties being clearly considered and presented.					
2.2	Risks for new product development is evaluated in terms of both quantitative and qualitative value.					
2.3	Measurement of both quantities in which risk assessment is concerned-potential loss and probability of occurrence is carried out by the company					
2.4	Risks for new product development with a large potential loss and a low probability of occurring is often treated differently from one with a low potential loss and a high likelihood of occurring					

3	<b>Risk Response</b>	1	2	3	4	5
3.1	The company avoids risk for new product development by insuring different types of risks					
3.2	The company avoids risks for new product development					
3.3	The organization use risk retention for new product development as risk response practice					
3.4	The insurance train insured parties to reduce risk for new product development					

Risk Management in New Product Market Entry Process for the Breweries Industry

3.5	The company has a mechanism for transferring certain risks to third parties through reinsurance for new product development.					
-----	--	--	--	--	--	--

4	<b>Risk Control and Monitoring</b>	1	2	3	4	5
4.1	Risk management program is well documented for new product development					
4.2	Risk management for new product development efforts are supported by senior management.					
4.3	Employees are properly trained on risk management policies of new product development.					
4.4	The roles and responsibilities of each employee in the new product development risk management efforts of the firm are well communicated to them.					
4.5	Controls are in place to evaluate the efficiency of the risk management program of new product development.					
4.6	There is a regular reviews of risk new product development management efforts and reporting to senior management					

5	<b>Risk Management Skills and Resources</b>	1	2	3	4	5
5.1	The employees are motivated to perform/implement new product development risk management.					
5.2	New product development risk management is available and qualified experts help to implement risk management processes.					
5.3	There are sufficient resources and personnel to conduct risk management for new product development.					
5.4	Risk management for new product development teams are cross-functional and cross-organizational.					
5.5	Risk management for new product development takes human and cultural factors into account					

6	<b>Tailoring Risk Management to Integrate it with New Product Development</b>	1	2	3	4	5
6.1	Risk management for new product development is tailored to specific needs.					
6.2	We coordinate and integrate new product development risk management activities of different functions and across the hierarchy.					
6.3	Risk management for new product development is an integral part of all organizational processes					

## Risk Management in New Product Market Entry Process for the Breweries Industry

6.4	Risks and risk management for new product development activities are communicated to management and staff					
6.5	Risk management for new product development process is effectively integrated with other program management processes.					

<b>7</b>	<b>Critical Decisions with Risk Management Results</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
7.1	Resources are allocated to reduce largest risks as early as possible in new product development.					
7.2	Planning in new product development (e.g., cost, schedule, and performance) are adjusted based on risk assessment.					
7.3	The results of the risk analysis in new product development are considered in making technical, schedule and/or cost trade-offs.					

<b>8</b>	<b>Transparency in New Product Development Risk</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
8.1	New product development risk management is based on the best available information.					
8.2	New product development risk management is transparent and inclusive towards all members in the organization.					
8.3	New product development risk management explicitly addresses uncertainty					

<b>9</b>	<b>New product development Performance</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
9.1	Overall, our customers are more satisfied with our new product					
9.2	New product fits target market/customers better					
9.3	New product development Performance in our company increase customers' loyalty					
9.4	New product development Performance attracts more new customers					
9.5	Our new products are more successful in the marketplace than before					
9.6	Our customers encourage other people to buy our new products					