INFLUENCE OF AFTER-SALE SERVICES ON THE CUSTOMER SATISFACTION OF DAIRY PROCESSING FIRMS IN KENYA

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DECLARATION

Student's Declaration

I declare that this thesis is my original work and has not been presented for the award of any degree at this or any other institution. I confirm that all material contained herein is original, except where explicit reference is made to the work of others.

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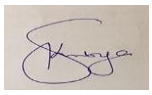

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LIST OF ABBREVIATIONS

ASP	Advanced Ship Process
B2B	Business-To-Business
CSI	Customer Satisfaction Index
EDT	Expectancy Disconfirmation Theory
EFA	Exploratory Factor Analysis
GDP	Gross Domestic Product
IRB	Institutional Review Board
KDB	Kenya Dairy Board
MTBF	Mean time between failures
MMSPI	Manufacturer Managed Spare Parts Inventory
MRA	Multiple Regression Analysis
NACOSTI	National Commission of Science, Technology, and Innovation
OEM	Original Equipment Manufacturers
SEM	Structural Equation Modelling
SERVQUAL	Service Quality
SPRMs	Spare Parts Replenishment Methods
USI	User Satisfaction Instrument

ABSTRACT

In today's increasingly globalized and competitive market, providing high-quality products is no longer sufficient. After-sales services have emerged as a critical business strategy for firms seeking to achieve sustainable competitive advantage, enhance customer satisfaction, foster loyalty and advocacy, strengthen brand image, and drive profitability. While the positive impact of after-sales services on customer satisfaction is widely acknowledged, empirical evidence remains limited, particularly in business-to-business sectors. This study addressed this gap by investigating the relationship between after-sales services and customer satisfaction in the Kenyan dairy processing industry, specifically focusing on equipment and machinery purchases. It aimed to determine how warranty services, technical assistance, and spare parts distribution—the independent variables—influence customer satisfaction—the dependent variable—among milk processing companies in Kenya. This study was grounded in servitization theory as the primary theoretical framework, complemented by expectancy disconfirmation theory. Employing a positivist philosophy and a descriptive design, the research analysed data collected via structured questionnaires from a purposive sample of 215 professionals within the technical departments of 43 dairy processing firms in Kenya. Data analysis utilized both descriptive and inferential statistics. Descriptive statistics reveal that respondents exhibit reasonably high satisfaction with technical support, moderate satisfaction with warranty services and spare parts supply, and an overall satisfaction level ranging from moderate to high. Inferential statistical analysis highlights that all three after-sale services—warranty services, technical support, and spare parts supply—have significant positive effects on customer satisfaction. Among these, technical support and spare parts supply emerge as the strongest predictors, underscoring their vital role in enhancing the customer experience within the dairy processing sector. Ultimately, technical support and spare parts supply are identified as the most influential factors in determining customer satisfaction, highlighting the need for equipment suppliers to prioritize these areas to enhance customer satisfaction in dairy processing firms.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The dynamic global business environment necessitates that organizations develop a proper blend of strategies to attract and retain customers. Customer satisfaction has been embedded into an organization's strategy of retaining its existing customer base (Chiguvi, 2020; Nasir et al., 2021). According to Yuen and Chan (2010), for profit-making entities, the customer is considered king; therefore, customer satisfaction is a fundamental priority and integral to the success of the business. Customer satisfaction has become more important than ever. Shokouhyar et al. (2020) point out that "in today's extremely competitive market, customer satisfaction can provide a significant and sustainable competitive advantage."

The supply of industrial equipment has drawn significant empirical interest due to the growth of industrialization among emerging economies. In particular, Gebeyehu (2023) says the "growing global demand for milk and milk products has seen a notable growth in the dairy processing equipment market." The manufacture, sale, and use of different types of equipment, including "pasteurizers, homogenizers, mixers and blenders, separators, evaporators, dryers, and membrane filtration, among others, have been on the rise" (Gebeyehu, 2023). These specialized equipment serve different purposes, including preprocessing, separation and concentration, fermentation, heat treatment, packaging, storage, and quality control. Customer satisfaction as far as the supply of these equipment is subjective and varies. However, as Egonsson et al. (2013) suggest, customer relationships and after-sale services are crucial in the business of industrial equipment.

Both Dombrowski and Engel (2013) and Sellitto (2021) view after-sale services as a winning strategy for original equipment manufacturers (OEMs). According to the aforementioned scholars, it is a strategic imperative that extends far beyond driving customer satisfaction—it also enhances customer loyalty, revenue growth, brand reputation, adaptability, and compliance with safety standards. After-sale services are particularly critical in the supply of milk processing equipment. As explained by Burke et al. (2018) and Rankin et al. (2017), the dairy processing industry involves complex operations that require precise control over various factors, such as temperature, hygiene,

and equipment performance. Given the sensitive nature of dairy products and the stringent quality standards that must be met, manufacturers of processing equipment must offer comprehensive after-sale services to ensure optimal performance and compliance.

Customer satisfaction is multidimensional; Jap (2013) says a multitude of variables can influence satisfaction throughout the customer lifecycle. Among the factors influencing customer satisfaction, after-sales services have long been recognized as a reliable predictor. After-sales services, as well as post-sales or after-market services, have consistently grown and are now considered a critical aspect of the service industry (Kaparthi & Bumblauskas, 2020). It encompasses “activities that happen after the sale and influences performance along the entire life cycle” (Li et al., 2014). An after-sale product is a composition of both product and service (Ulaga & Loveland, 2014). As Chiguvi (2020) clarifies, marketers today use “after-sales services as a core strategy to keep customers happy and satisfied.”

The recognized value of after-sales services in driving customer satisfaction and their strategic importance has garnered significant global interest from researchers and practitioners. Wahjudi et al. (2018) found “a direct and positive correlation between after-sales services and customer satisfaction in the housing sector.” The researchers argued that in today's business landscape, quality goods are not sufficient; “businesses must deliver excellent after-sales services as a source of competitive advantage.” In a similar fashion, Ruben (2012) is of the opinion that "products are often physically comparable," so after-sale services serve as the differentiator for a firm's ability to stand out in satisfying customers. After-sales services have also been shown to predict customer satisfaction in other sectors such as automotive (Adusei & Tweneboah-Koduah, 2019), home appliances (Murali et al., 2016), telecommunications (Ashfaq, 2019), and consumer electronics (Rigopoulou et al., 2008).

The “dynamics of after-sales services and how it influences customer satisfaction differ in the Swedish heavy equipment machinery sector”, as demonstrated by Egonsson et al. (2013). The researchers observed that the most common after-sale service in small and large organizations alike was customer care. However, they stress that “field technical assistance, spare parts distribution, and customer relationship management were less common and varied depending on the size of the organization”. Abdu (2019) also supports the notion that “after-sale services positively affect

customer satisfaction in Ethiopia's Volvo Trucks company". However, coefficient analysis revealed that warranty, maintenance service, and communication were found to be strong predictors of satisfaction, while training, availability of branches, spare parts supply, and manuals had a moderate impact.

The conventional wisdom based on empirical research so far is that "after-sales services enhance customer satisfaction". However, there is another set of studies that deviates from this notion, denoting its weak, lack of, or negative effect. For instance, According to Chiguvi (2020), "after-sales services have a weak positive influence on customer satisfaction and customer loyalty and a very weak positive relationship on customer retention at Sefalana Holdings in Botswana." Karatzas et al. (2022) observed that incorporating services into the core product offering can pose a financial risk to manufacturing firms. Neely (2008) found that while servitization pays off for smaller firms, it is problematic for larger firms; it generates lower profits as a percentage of sales and comes with some hidden risks.

The effect of after-sales services has been tested across different sectors, from retail to heavy equipment industries. As illustrated above, "the effect of after-sales services can go both ways"—positively or negatively. In other words, there is inconsistency in findings on how post-purchase services translate into satisfied customers. Moreover, it is worth noting that there is limited evidence on the fundamentals of these services and their interactions with the contentment of Kenya's milk-professing firms. While studies such as Egonsson et al. (2013) offer valuable insights into the topic in the context of the heavy equipment market, they fail to statistically quantify the correlation between the variables of the study. Therefore, more empirical research is needed, especially from the perspective of Kenya's dairy processing industry.

1.1.1 After-Sales Services

An after-sale service can broadly be defined as "a set of activities adopted after a purchase of a product and intended to support customers in the use, maintenance, and/or disposal of the product" (Durugbo, 2020; Rigopoulou et al., 2008). Nivethika and Yoganathan (2015) "conceptualize after-sales services as a continuous interaction between a company and customers throughout the post-purchase product lifecycle." This includes activities taking place post-acquisition and supporting

"customers in the usage and future on the disposal of equipment" (Saccani et al., 2007). After-sale services providers ensure functional capabilities for the period in which customer uses their products. These services may vary depending on the type of business or industry.

Li et al. (2014) point out that, in some industries, "the provision of after-sale services is a legal requirement." However, in most cases, they serve as a strategy enterprises use to boost customer satisfaction, improve loyalty, and optimize sales. After-sale services are the "extension for the entire useful totality of activities that occur after the purchase and before the final divestment of the equipment" (Sheth et al., 2020; Nivethika & Yoganathan, 2015). Therefore, the common examples of after-sale services include warranty services, user training, repairs and maintenance, upgrade offers, return and replacement policies, automated support resources, installation, manuals and documentation, spare parts supply, technical support, delivery services, and branches (Rigopoulou et al., 2008; Golrizgashti et al., 2020). This study focused on the following services: warranty services, technical assistance, and spare parts supply.

As Durugbo (2020) and Egonsson et al. (2013) suggest, warranty services, readily available spare parts, and field technical assistance are three of the most crucial after-sale services for the supply of industrial equipment. For industrial equipment, particularly new or complex machinery, warranty services provide essential financial protection and peace of mind, while readily available spare parts minimize costly downtime and ensure operational continuity (Bian et al., 2019; Luo & Wu, 2019). Field technical assistance offers expert support for installation, troubleshooting, and training, mitigating the challenges of complex systems thus maximizing equipment efficiency and longevity (Zhang et al., 2019). Together, these three elements are indispensable for safeguarding equipment and maintaining uninterrupted productivity.

Therefore, given their importance, the focus on these three crucial services holds great relevance to the study. This is because it sought to understand how after-sales services can be utilized in the dairy processing industry to enhance dairy equipment satisfaction. Durugbo (2020) adds that warranty, technical support, and spare parts availability, as crucial after-sale offerings, are aimed at minimizing machine downtime, optimizing performance, and ensuring customer satisfaction throughout the equipment lifecycle. Providing these services enables heavy equipment and

machinery suppliers to build strong client relationships by ensuring their equipment operates efficiently and reliably.

A warranty is "a type of guarantee a seller makes to a buyer promising to maintain, repair, replace, or refund a product if it fails to function as intended for a specified period of time" (Luo & Wu, 2019). The purpose of a warranty is to "minimize the financial risk of purchasing a product" (Rigopoulou et al., 2008). According to Egonsson et al. (2013), since industrial equipment is a significant investment, warrantees provide the reassurance needed against defects and unprotected breakdowns. Bian et al. (2019) also hold the view that warranty services provide peace of mind and financial protection for customers, assuring them that the supplier stands behind their product and covers the costs of repairs or replacements within a specified period. Warranty services are crucial for heavy-duty equipment used for industrial dairy processing due to the high cost and time involved in repairs or replacements. Also, Wang and Xie (2018) demonstrate that warranties are indicative of suppliers' confidence in the quality and durability of their equipment. Therefore, when customers know that they are covered by suppliers in case of problems, they have the peace of mind to focus more on their core operations.

Technical assistance refers to the support extended to a customer after purchase (Rebelo et al., 2021). Technical assistance may vary depending on the product, but it primarily involves troubleshooting technical issues, answering complex questions about product functionality, and guiding users on the proper usage of the product. Industrial equipment can be complex to operate and maintain (Aljabar & Hasibuan, 2021). Therefore, as Islam (2024) and Rebelo et al. (2021) suggest, offering comprehensive technical support can enable users to understand equipment functionality, troubleshoot and resolve any technical difficulties, optimize equipment usage, perform proactive maintenance and more, all of which increase business efficiency.

Industrial equipment is complex and often requires specialized knowledge for maintenance and repairs (Castellano et al., 2017). Technical support provides access to experts who can diagnose and resolve issues on-site. Having technicians come to the worksite reduces the need to transport large, heavy machinery to repair shops. Also, field technicians can provide training and guidance to operators and maintenance personnel, helping to prevent future problems (Zhang et al., 2019). The importance of field technical support is more pronounced for new industrial equipment. This

is because, as Sharma et al. (2015) elaborate, new equipment often incorporates cutting-edge technologies, advanced automation, specialized software, and intricate control systems. This makes it more challenging for on-site personnel to understand, operate, and maintain. At the same time, when new equipment is introduced, there is a learning curve for operators and maintenance staff. Field technicians can provide training and guidance to ensure proper operation and prevent errors.

Technical support can be especially important for small- to medium-scale dairy processing companies that may lack the in-house expertise to handle these tasks themselves. Therefore, it should be readily available and accessible through all relevant communication channels. It is for this reason that Durugbo (2020) emphasizes that for industrial equipment, expert service should be conveniently available for clients on how to install, operate, repair, maintain, or troubleshoot the machinery.

Lastly, heavy machinery often operates in demanding environments, leading to wear and tear over time (Sellitto, 2021). Quick access to spare parts ensures that repairs can be carried out without long delays. Downtime for such equipment can lead to significant losses, especially for critical and demanding industries such as dairy processing, given the sensitive nature of the dairy products and intricate production process (Burke et al., 2018). Readily available parts can go a long way in minimizing downtime and operational disruptions. Quick access to spare parts allows businesses to maintain their operational efficiency and meet deadlines. Additionally, as noted by Pagalday et al. (2018), the availability of spare parts ensures the long-term viability of the equipment, allowing businesses to use it for its intended lifespan.

A wise dealer should be able to foresee the repair or replacement of key components of equipment and make the necessary parts available and easily accessible. Zhang et al. (2021) contend that unexpected equipment breakdowns or failures often halt operations, leading to significant financial and nonfinancial implications for a business. Therefore, it is imperative that the supply and availability of spare parts be a prerequisite for all equipment sales. Readily available spare parts translate to rapid repairs, significantly reducing downtime and maximizing equipment uptime. In view of the above, Costantino et al. (2018) believe manufacturers and dealers of industrial equipment should incorporate the concept of spare parts management into their business models to ensure sufficient availability and distribution of necessary components for machinery.

1.1.2 Customer Satisfaction

Customer satisfaction is a “marketing concept that measures the degree to which a company's products, services, or capabilities meet or exceed customers' expectations” (Eckert et al., 2022). In their “customer satisfaction index (CSI) model”, Fornell et al. (1994) conceptualized customer satisfaction as “a function of expectations, perceived quality, and perceived value.” The satisfaction of customers should be the mantra of all businesses. After all, a business entity's primary existence is to serve customers’ needs. Therefore, “customer satisfaction is an indication of a firm's commitment to improving the quality of its products and services in reference to customer expectations” (Hill & Alexander, 2017). Beyond this, the benefits of fulfilled customers are tremendous.

Assessing customer satisfaction helps a company determine if and the extent to which they are meeting customers' needs and expectations (Denove & Power, 2007). Insights into customer satisfaction can help a company identify areas for improvement. Other benefits of customer satisfaction include improved brand awareness, greater customer retention and brand loyalty, stronger competitive advantage, and revenue growth. Min et al. (2016) point out that “it costs a company up to five times more to acquire a new customer than to retain an existing one.” Therefore, companies across all sectors should strive to ensure customers are satisfied with their products or services for the purpose of standing out and maximizing revenues.

Customer satisfaction is crucial for both business-to-business (B2B) and business-to-consumer (B2C) settings. However, Gligor and Maloni (2022) advance the notion that there are some key differences in how satisfaction is approached and factors that drive it in each of the models. For instance, while customer satisfaction in a B2C model focuses on individual needs and emotional connection with the brand, in a B2B model, the focus is often on business needs, return on investment (ROI), and delivering long-term value. Gevers et al. (2024) mention that “product quality, price, customer service, brand experience, and emotional connection serve as the key drivers of customer satisfaction in a B2C model”, whereas Kolis and Jirinova (2013) identify product or service performance, reliability, long-term value, responsiveness, consistency, and expertise as the primary determinants of customer satisfaction in a B2B model.

Therefore, as far as the industrial machinery sector is concerned, Soe et al. (2024) argue that "customer satisfaction is how well a company selling industrial machinery meets the expectations of its customers, encompassing factors like quality, delivery times, after-sale services, technical support, communication, and overall value proposition." Paiva et al. (2024), instead suggest that "customer satisfaction is a critical factor for the success of enterprises operating in the B2B machinery manufacturing setting". According to the scholars, therefore, customer satisfaction seems to extend far beyond the initial sale, and the aim is to cultivate long-term relationships and ensure repeat business. This means offering quality and durable equipment with specifications that meet customer expectations at affordable rates and ensuring operational efficiency. Additionally, Paiva et al. (2024) mention that post-purchase services such as installation, user training, repairs and maintenance programs, technical support, and spare parts availability are crucial factors for customer satisfaction.

Furthermore, "measuring customer satisfaction is crucial for any business – it provides valuable insights into how customers perceive products, services, and overall experience" (Hill & Alexander, 2017; Hill & Brierley, 2017). Fundamentally, the assessment of customer satisfaction helps a company identify areas for improvement. A wide range of models and frameworks for measuring customer satisfaction exist: "customer satisfaction score (CSAT), customer effort score (CES), customer feedback surveys, net promoter score (NPS), churn rate, customer reviews, service quality (SERVQUAL) instrument, repeat purchase, and customer retention rate" (Hill & Alexander, 2017; Hill & Brierley, 2017; Milner & Furnham, 2017). As further noted by Hill and Brierley (2017), the metrics for customer satisfaction can vary significantly between industries and business models due to customer expectations, varying customer journeys, and industry-specific needs.

In this study, customer satisfaction was measured by evaluating key indicators related to the industrial machine sector, including expectation confirmation, repeat purchases, customer rating, and overall satisfaction. These key indicators are interconnected and collectively provide an in-depth understanding of customer satisfaction with dairy processing equipment. Together, they offer valuable insights into how dairy processors evaluate the value of their purchases, both in terms of equipment performance and the broader customer experience. By focusing on these dimensions, the study sought to identify potential gaps in equipment supply and suggest areas for improvement.

The choice of these indicators has been influenced by current literature and the study's theoretical framework.

1.1.3 Dairy Processing Firms in Kenya

Kenya's dairy processing sector is important to the country's economy. Kimitei's (2024) report, commissioned by the Global Agricultural Information Network (GAIN), suggests that "the sector contributes 4% of the country's Gross Domestic Product (GDP) and further supports more than 1.8 million smallholder farmers." In other words, the dairy processing sector contributes significantly to promoting food security, creating jobs, and generating income for rural households. Additionally, as highlighted by the Kenya Dairy Board (2022), the "sector helps meet the growing domestic demand for dairy products and contributes to exports". Kimitei (2024) further points out that it is one of the most advanced dairy industries in East Africa and the second largest in Africa in terms of herd size (3.4 million dairy cattle and 1.8 million dairy goats).

There are 43 dairy processors, as listed on the Kenya Dairy Board site (Kenya Dairy Board, 2022). However, the industry is highly concentrated; the top 5 processors dominate with a 90% market share. "Despite the role of these large-scale processors, the industry often experiences cyclical glut seasons where processors are unable to absorb all the milk from producers due to significant capacity constraints" (Kimitei, 2024). "The government-owned New KCC Ltd has vast processing capacity and infrastructure across the country; most of its plants are under-capacitated due to the use of outdated technology and machinery" (Kenya Agribusiness and Agroindustry Alliance, 2022). While the supply of milk continues to increase, there is still a substantial gap between supply and demand.

Currently, more than 85% of the milk produced is sold in the informal sector in its raw form, highlighting the need for more dairy processing companies (Kenya Agribusiness and Agroindustry Alliance, 2022). Unfortunately, dairy processing is a capital-intensive sector characterized by high initial investment costs. The cost of a dairy processing plant with a daily processing capacity of one million litres of milk in Nakuru is estimated at United States Dollars (USD) 32 million (Kenya Agribusiness and Agroindustry Alliance, 2022). This is because acquiring modern industrial milk

processing equipment can be prohibitively expensive, especially for small to medium-scale processors, who, as established, control only 10% of the market.

Kenya has a well-established industry that supplies all equipment throughout the entire milk production process, from raw milk collection to filling and packaging (Appendix 3). A wide range of these machines and types of equipment, including refrigerated milk tanks, joint filters, plate heat exchangers, homogenizers, plate pasteurizers, cooling tanks, milk butyrometers, milk testing instruments, milk analysers, CIP cleaning systems, and much more, are sold for agricultural, domestic, and commercial uses. For commercial purposes, the Kenya Dairy Board recognizes 10 companies that are licensed and recognized as qualified service providers for the supply of machinery and equipment for dairy processing in the country. However, some of these companies source their equipment from international companies, mostly from Europe and Asia.

Due to its capital-intensive nature, dairy processing critically depends on after-sales services throughout the equipment lifecycle (Mugo, 2021). “Original equipment manufacturers (OEMs) typically offer services such as financing, consultancy, installation, maintenance, training, warranties, spare parts, upgrades, retrofitting, and decommissioning” (Sheth et al., 2020). Yet, according to Njarui et al. (2010), "lack of equipment and skills are the greatest impediment in the processing of milk." This alludes to the notion that the industry is plagued by several issues, including a shortage of expertise to perform repair and maintenance of processing equipment, high costs of acquiring components, high maintenance costs, and operational issues, all of which contribute to interment productions, high cost of production, and operational issues, as documented by Beamer (2018) and Kwamboka et al. (2022).

This study sought to determine the status of after-sale services extended to dairy processors by dairy machinery and equipment suppliers and whether these services influence the customer satisfaction of dairy processing firms. The study is crucial in promoting value-addition activities along Kenya's dairy supply chain by highlighting areas of improvement as far as after-sale offerings of dairy processing equipment are concerned.

1.2 Problem Statement

The dairy processing industry is important to Kenya's economy, “accounting for 17% of the agricultural GDP and 4% of the national GDP and supporting up to 1.8 million smallholder farmers” (Kimitei, 2024). However, the sector faces several challenges, including high investment costs limiting processors from acquiring, upgrading, and maintaining modern milk processing equipment (Mugo, 2021). For this reason, the sector only processes 15% of all milk produced, despite a growing demand for processed dairy products (Kimitei, 2024). Consequently, the country is forced to import processed dairy products to fill this shortage. According to Kimitei (2024), imports reached USD 139.65 million in 2019 and USD 110.05 in 2022. The provision and optimization of after-sale services would serve as a solution to enhancing the sector because the challenges faced are related to milk processing equipment. An empirical study into after-sale services and their effect on the satisfaction of dairy processors can go a long way in improving the sector and making it more competitive.

Besides the practical problem, the empirical gap relating to the topic lingers. While some studies have readily paid attention to after-sales services, including (Chiguvi, 2020; Wahjudi et al., 2018; Ruben, 2012; Adusei & Tweneboah-Koduah, 2019; Rigopoulou et al., 2008; Ashfaq, 2019; Murali et al., 2016; Egonsson et al., 2013; Abdu, 2019; Karatzas et al., 2022; Neely, 2008), little research has been done on its effect on the customer satisfaction within the dairy sector. In addition, there is inconsistency of findings; whereas most studies suggest a positive effect of after-sales service, the likes of Neely (2008) and Karatzas et al. (2022) are of the opposite opinion. Also, most of the studies are outside Kenya, denoting a geographical scope gap. Due to the uniqueness of Kenya’s dairy and equipment supply sectors, findings from these studies cannot be inferred from the target population.

Contextual gaps in existing literature have also been identified. Most of the available literature, as illustrated above, was based on other sectors such as automotive, housing, consumer electronics, telecom, and manufacturing, except for Egonsson et al. (2013), whose study focused on industrial equipment. Therefore, while there might be research on a topic, this literature has not adequately explored how that topic plays out specifically in the dairy processing sector. Findings from these contexts might not be applicable to the dairy processing sector in Kenya. It is also worth noting

that even though Egonsson et al.'s (2013) research was based on industrial equipment supply, it examined the nexus between after-sale services and customer relationships, denoting a conceptual gap since the present study sought to explore customer satisfaction as the outcome variable.

Furthermore, current empirical literature exhibits methodological limitations. Several studies, including Karatzas et al. (2022), Egonsson et al. (2013), and Neely (2008), primarily relied on qualitative data and methodologies, restricting the ability to establish statistical effects of after-sale services on customer satisfaction. While qualitative approaches provide crucial contextual insights, their reliance on non-numerical data prevents the determination of precise effects. The absence of quantitative analysis in these studies underscored the need for more data-driven investigations.

Due to the empirical gaps above, that is, limited evidence, a lack of consensus, contextual gaps, methodological inconsistencies, the present study was motivated to address these gaps by examining the impact of after-sale services on customer satisfaction with dairy processing firms in Kenya by adopting a quantitative approach.

1.3 Research Objectives

This study was guided by one main objective and three specific objectives, as illustrated below.

1.3.1 Main Objective

The main objective was to establish the influence of after-sale services on the customer satisfaction of dairy processing firms in Kenya.

1.3.2 Specific Objectives

The study aimed to achieve the following objectives.

i. To determine the influence of warranty services on the customer satisfaction of dairy processing firms in Kenya.

ii. To determine the influence of technical assistance on the customer satisfaction of dairy processing firms in Kenya.

iii. To determine the influence of spare parts supply on the customer satisfaction of dairy processing firms in Kenya.

1.4 Research Questions

The study sought to answer the following research questions:

i. What is the influence of warranty services on the customer satisfaction of dairy processing firms in Kenya?

ii. What is the influence of technical assistance on the customer satisfaction of dairy processing firms in Kenya?

iii. What is the influence of spare parts supply on the customer satisfaction of dairy processing firms in Kenya?

1.5 Scope of Study

This study aimed to analyse the influence of after-sales services of processing equipment dealers on the customer satisfaction of dairy processing firms in Kenya. Specifically, after-sales services operationalized through warranty provision, technical assistance, and spare parts supply served as the independent variable. Customer satisfaction was the dependent variable and was operationalized using customer rating, repeat purchases, expectation confirmation, and overall satisfaction as the key indicators. The study's geographical scope encompassed the Kenyan dairy processing industry, involving all 43 licensed dairy processors. Methodologically, the study was limited to descriptive cross-sectional design with a quantitative approach. The study was underpinned in the servitization theory and the expectancy disconfirmation theory. The research was conducted between February and April 2025.

1.6 Significance of the Study

Policymakers in the dairy processing sector can find the study useful. The outcome of the study, as well as its recommendations for after-sales services regarding the customer satisfaction of processing equipment among dairy processing companies, are crucial in policymaking. The study serves as an invaluable reference for formulating policies designed to improve the customer satisfaction of dairy processors as far as the trade of processing equipment is concerned. When the

processing companies are fulfilled, this will translate positively into the performance of both the dairy sector and the trade of processing equipment and machinery.

The dairy equipment and machinery suppliers also benefit from the study. By highlighting how warranty services, technical assistance, and the supply of spare parts affect customer satisfaction, the suppliers are best positioned to improve the satisfaction of their clients. The study presents empirical evidence on what after-sale services to prioritize in order to maximize the customer satisfaction of their clients—dairy processors. In other words, the study is useful in informing strategy formulation processes in an effort to improve the adoption of after-sale services among dairy equipment and machinery suppliers.

Researchers and academicians can gain valuable insights from this study, which seeks to expand the ongoing empirical discussion on "customer satisfaction and after-sales services". This work provides a comprehensive understanding of the topic, and future researchers can utilize it as a basis for hypothesis formulation, empirical analysis, methodological refinement, and theoretical advancement.

1.7 Chapter Summary

This research aimed to analyse "the relationship between after-sales services and customer satisfaction" regarding milk processing equipment among dairy processors in Kenya. This chapter offers a comprehensive overview of the study's synopsis, including the contextual background, clear problem definition, research objectives, specific research questions, defined scope, and significant contributions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter establishes the theoretical foundation of the study by exploring the relevant theoretical frameworks and their application to the research problem. It further provides a critical review of the existing empirical literature, synthesizing key findings and identifying research gaps. The chapter then establishes the conceptual framework, illustrating the relationships between the study's variables. Finally, it outlines the operationalization of these variables, detailing the specific measures and indicators that were used.

2.2 Theoretical literature

As defined by Varpio et al. (2020), "a theoretical framework is a structure that can hold, support, or provide theoretical assumptions for the larger context of the study". It can help "explain, predict, and understand a phenomenon and, in many cases, challenge and extend existing knowledge." This study employed servitization theory as its core theoretical framework, which was complemented by expectancy disconfirmation theory as a supporting framework, both of which are elaborated in the following sections.

2.2.1 Servitization Theory

Servitization theory is a business model proposed by Sandra Vandermerwe and Juan F. Rada in their 1988 publication, "Servitization of Business: Adding Value by Adding Services" (Kamal et al., 2020). It proposes that "manufacturing firms should shift from just focusing on products to providing services in addition to their products". Vandermerwe and Rada observed that the unprecedented penetration of the service industry into the manufacturing sector warranted the creation of value-added capabilities through the provision of services around a product's entire life cycle (Kamal et al., 2020; Song & Yu, 2023). This would enable manufacturers to differentiate themselves from competitors and establish stronger customer relationships.

The fundamental concepts of the theory include servitization strategy, service-oriented business, and customer economy (Frank et al., 2019; Wei et al., 2022). The servitization strategy seeks to establish service supply relationships to deliver product services in order to augment a physical product. The concept of servitization encompasses a variety of approaches. The first approach is product-oriented servitization, "where manufacturers offer services that are directly related to their products—for example, maintenance and repair services for industrial equipment" (Li et al.,2022). The other approach is customer-oriented servitization, where manufacturers offer services that are tailored to the specific needs of their customers—for example, consultation services to help install the equipment. Service-oriented business logic is a business model that prioritizes customer needs and market demands, whereas customer economy involves focusing on customers as the centre of business operations.

As established above, servitization theory is based on the idea that manufacturers should offer services in addition to their products, including anything from maintenance, repair, and training to consultation. Since the theory emphasizes the strategic shift from product-based offerings to value-added services that enhance the overall customer experience, it was highly relevant to the study of after-sales services and their impact on customer satisfaction. The provision of after-sale services by equipment suppliers aligns with the concepts of the theory: servitization strategy, service-oriented logic, and customer economy, which together, emphasize that value is co-created with the customer through service exchange. After-sales interactions are crucial touchpoints for this co-creation, influencing customer perceptions of value and satisfaction. Therefore, servitization theory provided a strategic framework for understanding why after-sales services are no longer peripheral but central to creating and capturing customer value.

However, despite being a valuable theoretical framework, servitization is not without its shortcomings. Ruiz-Martín and Díaz-Garrido (2021) cite that the shift from product-centric to service-centric business models presents several implementation challenges, which often involve significant organizational changes, including restructuring, retraining, and cultural shifts. Additionally, some firms may experience a phenomenon that Brax et al. (2021) term the "servitization paradox", where the shift to services may not lead to improved financial performance.

Nevertheless, despite these limitations, the theory of servitization was a valuable theoretical framework for the study.

The theory helped identify and define the key dimensions of after-sales services associated with the supply of dairy processing equipment and how those after sale services contribute to the experiences and satisfaction of users of these equipment, that is, dairy processing companies. Servitization theory provided the theoretical justification and framework for studying whether warranty services, technical assistance, and spare parts supply, as key aspects of after-sale services, are not just a support function but a vital strategic element for achieving high levels of customer satisfaction within the dairy processing sector.

2.2.2 Expectancy Disconfirmation Theory

Expectancy disconfirmation theory (EDT) is a cognitive theory of customer satisfaction developed by Richard L. Oliver in his 1980 and 1997 scholarly publications. According to Yüksel and Yüksel (2001), "the theory proposes that customers purchase goods and services with prior expectations about an anticipated performance." Therefore, "post-purchase or post-adoption satisfaction is a function of expectations and perceived performance" (Schiebler et al., 2025). The primary constructs of the theory include "expectations, perceived performance, and disconfirmation of beliefs" (Schiebler et al., 2025). In this case, expectations represent the customer's pre-purchase beliefs about the value of a product or service, and perceived performance is the actual value experienced post-purchase. Disconfirmation of bias is the difference between the two.

Therefore, as Schiebler et al. (2025 cite, "the expectation point then becomes a standard against which the product or service is judged." Following the principles of the EDT framework, performance confirmation, or perceived performance, is assessed after product or service utilization. "Disconfirmation can be positive, zero, or negative – a positive disconfirmation occurs when the perceived (actual) performance is better than expectations, denoting satisfaction; a negative disconfirmation is when perceived performance falls short of expectations, signifying dissatisfaction; zero disconfirmation occurs when there is a match between perceived performance and expectations, denoting simple confirmation" (Yüksel & Yüksel, 2001). While EDT remains a powerful framework for understanding customer satisfaction, it is not without its limitations.

Critics of the theory, such as Lankton and McKnight (2012) and Schiebler et al. (2025), claim the theory oversimplifies the complex customer satisfaction process, only recognizing expectations and perceived performance.

Nonetheless, the theory was relevant to the study, which sought to understand customer satisfaction in the dairy processing sector. EDT has extensive application in customer satisfaction literature. A classic example is Huang's (2015) study, which observed that the model was instrumental in managing relationship satisfaction in B2B marketing. In the same way, Hirsch (2011) concluded that the tenets of the EDT framework can be translated into a technology B2B context; it provides a model for evaluating customer satisfaction. For this reason, since the trade of dairy processing equipment and machinery adopts a B2B business model, the EDT model was relevant to this study. It served as a supporting theory to provide the theoretical framework for analysing how after-sales service influences the satisfaction of processing equipment in the dairy processing industry.

In particular, the theory was used to model prior expectations customers had towards after-sale services and whether (and the extent to which) these expectations were fulfilled. Fundamentally, EDT provided a valuable lens for understanding the psychological drivers of customer satisfaction with after-sale services in dairy processing sector. By focusing on the gap between what customers expect and what they experience, the study sought to gain crucial insights into how to deliver after-sale services that meet and exceed those expectations.

2.3 Empirical Review

This section discusses existing literature on the subject matter under investigation. The section is structured around the specific objectives of the study.

2.3.1 Warranty Services and Customer Satisfaction

A warranty is a promise a firm makes to a customer that it will fix any defects or malfunctions that occur within a specified period. Issuing warranties has long been proven to contribute greatly to a firm's ability to exhibit confidence in its work and demonstrate its commitment to customers. However, a warranty can fail to sufficiently serve its intended purpose, especially if it is not well communicated, expectations are not clearly set, and follow-ups are not done promptly. In such

instances, The terms and conditions of a warranty can become a potential cause of conflict between business enterprises and their clients, resulting in adverse effects and sometimes irreversible repercussions to the company.

Sabbagh et al. (2017) tested “the moderating effect of warranty on customer satisfaction antecedents (service quality and product quality) in the automotive dealership sector in Malaysia.” The researchers adopted a quantitative methodology, whereby car owners recruited using a random sampling technique participated by filling out questionnaires. A two-step approach was adopted for data analysis, “where confirmatory factor analysis was used to assess the construct validity and perform structural model tests on the proposed hypotheses”. A multiple-group SEM was then used to assess the influence of warranty moderation on the proposed model. The study found that “product quality and service quality have a positive impact on customer satisfaction, and warranty moderates the relationship between these variables.” While this study offers useful insights into the topic, it is not without limitations. The study was based in Malaysia and focused on the automotive dealership business, with warranty being the moderating variable. Therefore, scope, conceptual, and contextual gaps are present.

In separate research, Ashfaq (2019) sought to determine “the relationship between after-sales, customer satisfaction, and customer loyalty in the telecom sector in Pakistan.” The study focused on “delivery, installation, warranty, online support, maintenance, and complaint handling as after-sales services.” 204 customers recruited from Pakistan’s telecom companies were required to complete questionnaires. Results of the SEM analysis approach revealed that “after-sales services had a significant influence on customer satisfaction and customer loyalty.” Furthermore, “customer satisfaction partially mediated the correlation between after-sales services and customer loyalty.” Therefore, warranty services is among the after-sales services that significantly influence customer satisfaction. However, since the study was based in Pakistan's telecom sector, its findings cannot be inferred from Kenya's dairy processing sector, hence the need for the current study.

Warranty services and their effect on purchase decisions were examined by Ullah and Islam (2011) in Bangladesh's electronic product sector. The researchers recruited a sample of 100 respondents through convenient sampling and had them fill out questionnaires consisting of eight categories of questions: “provider's accountability, product reliability, short-term warranty, long-term warranty,

branded products, nonbranded products, country of origin, and risk reliever". The outcome of the regression analysis showed that "only six of the eight factors – reliability, service provider, short-term warranty, long-term warranty, branded product, nonbranded product, and risk reliever impacted purchasing decisions". It is worth noting that despite the valuable insights the study provides, it faces certain empirical gaps. For instance, it is limited conceptually since purchasing decisions instead of customer satisfaction make for the dependent variable. Also, the study was based in Bangladesh, with the context of the electronics product market.

A similar investigation was conducted by Najmi et al. in 2014, who looked into the effect of warranties on customer preferences in Pakistan. Two hundred ninety-eight customers completed a structured questionnaire, whereby the resulting data was subjected to inferential statistics for analysis. Results from one-way ANOVA analysis show that "a product's warranty has a significant impact on preferences toward a brand, concern for price, and price intentions." However, "the impact of warranty on the willingness to pay was insignificant." However, the study is limited in that it was conducted in Pakistan, and consumer preferences made for the outcome variable. Therefore, conceptual and scope limitations were apparent in the study, which is why the present study focused on the effect of warranty on customer satisfaction in the dairy sector.

2.3.2 Technical Assistance and Customer Satisfaction

Technical assistance or technical support "aims to improve customer satisfaction by providing assistance and solutions to customer needs and issues" (Gajic & Boolaky, 2015). It achieves this by ensuring customers have a positive experience and interaction with the brand. Companies that address customer issues and concerns more promptly and effectively through dedicated technical assistance services are associated with greater levels of customer satisfaction (Gajic & Boolaky, 2015). However, while technical assistance elevates the happiness levels of customers, it can be expensive. Ripping the benefits of increased customer satisfaction can come at the cost of increased labour costs from the need for more trained personnel and the infrastructure needed to provide round-the-clock support. Therefore, the provision of technical support should be strategic to ensure maximum benefit at the least possible cost.

A variety of studies have attempted to analyse the nexus between customer satisfaction and technical support. A classic example is Gajic and Boolaky's (2015) study, which investigated “the impact of technical support on customer satisfaction in the automotive painting manufacturing business.” Primary data was “collected from a sample of 169 respondents from Egypt and India using a quantitative questionnaire based on the SERVQUAL instrument, and data was analysed using exploratory factor analysis (EFA) and multiple regression analysis (MRA)”. The findings revealed that technical support is a significant predictor of customer satisfaction. However, the impact varied between specific elements of technical support, with the trust and assurance dimensions of technical support having the strongest impact on customer satisfaction. The study was, however, based on the automotive painting business, meaning its findings cannot be inferred from the dairy processing business.

The importance of technical assistance was also explored by Begichev and Zhukovskaya (2022), whose study was based on IT companies in Russia. The instrument the researchers used was the DEMATEL multi-criteria decision-making method. The study observed that, generally, technical support impacts customer satisfaction positively. However, the most impact was felt from factors such as the complexity of the task performed, speed of resolving issues, response time, and working conditions of the support team. While this scholarly literature makes a remarkable contribution to the problem being investigated, it is not without limitations. The context of the study was the IT sector, with a geographical scope limited to Russia, which is why this research was based on Kenya's dairy processing companies.

Gutierrez's (2000) study is also a valuable addition to the discussion. More specifically, the study sought to examine how technical support issues influence user satisfaction in information systems in the United States. This was a survey that targeted 720 individuals who were surveyed using a survey instrument designed using Doll and Torkzadeh's user satisfaction instrument (USI) and Kettinger and Lee's modified SERQUAL instrument. Out of the ten issues of technical support studied, only six, including method of support, experience of the support technician, location of the service personnel, quality of support, level of support, and type of users, were predictors of customer satisfaction. Despite insights of the study, it is worth noting that it was published more than two decades ago and was contextualized to the information systems.

A study by Egonsson et al. (2013) provided more insights into the topic, contextualized to the Swedish heavy equipment machinery industry. The researchers adopted “a multiple case study whereby semi-structured interviews were conducted in three organizations—small, medium, and large organizations.” They observed that across the three different sizes of organizations, “customer care, field technical assistance, and spare parts distribution were the three most common after-sales services.” However, out of the three, “field technical assistance produced the least profit in the heavy equipment machinery industry, suggesting that it had the least impact”. Since the study was based in Sweden and failed to provide a statistical measurement of the extent to which customer satisfaction is influenced by technical assistance, a study based in Kenya's dairy processing industry that quantifies how technical assistance impacts satisfaction is warranted.

2.3.3 Spare Parts Supply and Customer Satisfaction

The distribution of spare parts, as an after-sales strategy, is thought to improve customer satisfaction. According to Dombrowski et al. (2007), “a well-organized and executed spare parts management system can have a great effect on satisfaction and loyalty in the long run.” However, the downsides of spare parts distribution can also be notable. For example, the authors point out that “the growing application of electronic components in the automotive industry poses new challenges for spare parts supply.” Since the lifecycles of industrial machinery and equipment and their respective components differ, sustaining the distribution of spare parts can be problematic and can translate negatively to customer fulfilment.

The influence of spare parts supply on customer satisfaction has been explored in the same way as other aspects of after-sales services. In Thailand, Sae-Eia (2014) examined dealer satisfaction on logistics performance in automotive spare parts after-market business. This was a comprehensive study that involved ABC Company, a well-known car dealership in the country. A sample of 345 respondents was surveyed, and data was collected on the eight dimensions of logistics: product quality, condition, source, destination, time, cost, and documentation. Out of the eight dimensions, only three—the perception of right product condition, right delivery time, and right document—impacted dealer satisfaction. It was also observed that dealer satisfaction drove retention. These findings needed to be tested in the context of Kenya's dairy processing industry.

Elsewhere in Ghana, Adusei and Tweneboah-Koduah (2019) sought to determine how “after-sales services impact customer satisfaction in the automotive industry.” A mixed-method approach was used, and the primary focus was on maintenance, online service, car washing, inspections, warranty, training, documentation, and spare parts supply as after-sales services. A sample of 82 respondents, including car owners, service technicians, and workshop managers, were surveyed, and Kano's model and Kendall's coefficient and concordance were made for data analysis techniques. Out of the eight after-sales service types, maintenance, online service, and car washing were the only must-haves in terms of satisfaction. Only 47% of the customers surveyed (car owners) considered spare parts supply a must-have requirement.

A similar investigation was conducted by Mustofa and Afewerk (2011) in Ethiopia's automotive industry. The researchers focused on “maintenance, spare parts supply, warranty, inspection, online service, training, and documentation as aspects of after-sales services and their influence on customer satisfaction and loyalty and the mediating role of customer satisfaction.” Questionnaires were used to collect data from 167 customers. The resulting data were analysed using descriptive and inferential statistics." All the after-sales services were found to have “a significant effect on satisfaction and loyalty.” Additionally, “customer satisfaction also mediated the relationship between after-sale service and customer loyalty.” However, since the study was carried out in Ethiopia and contextualized to the automotive sector, findings cannot be generalized to Kenya's dairy processing sector.

Another important contribution to the literature was a study conducted by Bluett et al. (2019) on “the effectiveness of spare parts replenishment methods (SPRMs) for warranty service satisfaction in the United States.” The focus of the study was on two SPRMs adopted by XYZ Corporation: “manufacturer-managed spare parts inventory (MMSPI) and advanced ship process (ASP)”. There were no significant differences observed between the two methods as far as average repair lead time and system backorder/stockout cost parameters are concerned. However, “major differences in system holding cost and system ordering cost in favour of ASP were observed.” This implies that, overall, ASP resulted in greater warranty service satisfaction. However, despite the usefulness of these findings, conceptual and contextual are apparent.

2.4 Summary of Literature and Gaps

The literature reviewed holds the view that warranty services, technical assistance, and spare parts supply are critical drivers of customer satisfaction. However, these studies are not without empirical gaps. The gaps identified include geographical scope gaps, contextual gaps, conceptual gaps, and methodological gaps. Studies reviewed were unevenly distributed across different geographical locations, with Kenya, which makes the present study's geographical scope remain largely overlooked. These studies include (Sabbagh et al., 2017; Ashfaq, 2019; Ullah & Islam, 2011; Najmi et al., 2014; Gajic & Boolaky, 2015; Begichev & Zhukovskaya, 2022; Gutierrez, 2000; Egonsson et al., 2013; Sae-Eia, 2014; Adusei & Tweneboah-Koduah, 2019; Mustofa & Afewerk, 2011; Bluett et al., 2019). Findings and conclusions from these studies may not be applicable to Kenya because of the differences in the industrial equipment and dairy processing industries.

Contextual gap occurs when studies focus on a general or broad context but fail to address specific settings or populations. In the case of the present study, the context was the dairy processing firms. None of the literature reviewed was based on the dairy processing industry as the context, highlighting the need for further research in this area. The key concepts examined in some studies are inconsistent with those of the present studies. Notable, Ullah and Islam (2011), Najmi et al. (2014), and Egonsson et al. (2013) explored purchase decisions, customer preferences, and customer relationships, respectively, as the outcome variable. The present study sought to examine customer satisfaction as the dependent variable. Lastly, Egonsson et al. (2013) relied on qualitative methods, whereas the present study sought to incorporate quantitative approaches. Table 2.1 offers a summary of the empirical literature reviewed. It also describes the gaps identified in the empirical materials analysed and how the study addressed these gaps.

Table 2. 1: Summary of Literature and Gaps

Researcher	Objective	Findings	Gaps	The focus of this study
Sabbagh et al. (2017)	"The moderation influence of warranty on customer satisfaction's antecedents"	"Product quality and service quality have a positive impact on customer satisfaction, and warranty moderates the relationship between these variables. "	"The study was based in Malaysia and focused on the automotive dealership business, with warranty being the moderating variable. "	"The present study was based in Kenya and focused on the dairy processing sector."
Ashfaq (2019)	"After-sales services, customer satisfaction, and loyalty in the telecom sector"	"After-sales services positively impact customer satisfaction and loyalty. Satisfaction mediates the relationship between after-sales and loyalty."	"The study was based on Pakistan's telecom sector. "	"The present study focused on Kenya's dairy processing sector."
Ullah & Islam (2011)	"Effects of warranty on purchase decision of electronic products"	"Reliability, service provider, short-term warranty, long-term warranty, branded product, nonbranded product, and risk reliever impacted purchasing decisions."	"The purchasing decision was the outcome variable; the study was based in Bangladesh, and the context was the electronic products market. "	"The present study focused on the dairy sector in Kenya, with the outcome variable being satisfaction."
Najmi et al. (2014)	"Effects of product warranty on customers preferences."	"The warranty has a significant impact on preferences towards a brand, concern for price, and price intentions, but the willingness to pay was insignificant."	"The study is limited in that it was conducted in Pakistan, and consumer preferences made for the outcome variable."	"The present study focused on the effect of warranty on customer satisfaction in Kenya's dairy sector."

Researcher	Objective	Findings	Gaps	The focus of this study
Gajic & Boolaky (2015)	"Impact of technical support on customer satisfaction: Case of automotive paints."	"The findings revealed that technical support is a significant predictor of customer satisfaction."	"The study was based on Egypt and India's automotive painting business, meaning its findings cannot be inferred from the dairy processing market.	"The present study focused on dairy processors in Kenya."
Begichev & Zhukovskaya (2022)	"Research of customer satisfaction factors of technical support"	"Technical support impacts customer satisfaction positively. The most impact was felt from factors such as the complexity of the task performed, speed of resolving issues, response time, and working conditions of the support team."	"The context of the study was the IT sector, with geographical scope limited to Russia."	"The present study focused on Kenya's dairy processing companies."
Gutierrez (2000)	"An investigation of technical support issues influencing user satisfaction."	"Six out of ten factors of technical support have a significant impact on customer satisfaction."	"The study was published more than two decades ago and was contextualized to the information systems. It was also based in the United States."	"The dairy processing sector constituted the context of the study, and it was based on updated data."
Egonsson et al. (2013)	"After-sales services and customer relationship marketing in the Swedish heavy	"Customer support, field technical assistance, and spare parts distribution were common, with	"The study was based in Sweden and failed to quantify the relationship between the variables."	"The current study was based on Kenya's dairy processing industry and quantified how technical

Researcher	Objective	Findings	Gaps	The focus of this study
	equipment machinery industry."	technical assistance having the least impact."		assistance impacts satisfaction."
Sae-Eia (2014)	"Dealer satisfaction on logistics performance in automotive spare parts after-market business in Thailand."	"After-sales services impact dealer satisfaction significantly, which translates to dealer retention."	"The study was based in Thailand, and the context was automotive dealerships."	"The present study focused on Kenya, with the context being the dairy processing industry."
Adusei & Tweneboah-Koduah (2019)	"After-sales services and customer satisfaction in the automobile industry in an emerging economy. "	"After-sales services have a positive impact on customer satisfaction. "	"The scope and context of the study was Ghana's automotive industry. "	"The scope and context of the present study was Kenya's dairy processing industry. "
Mustofa & Afewerk (2011)	"Effect of after-sale services on customer satisfaction and loyalty in the automotive industry of Ethiopia. "	"After-sales services have a positive effect on customer satisfaction and loyalty. "	"The study was based on Ethiopia's automotive industry. "	"The present study focused on Kenya's dairy processing industry. "
Bluett et al. (2019)	"Evaluating the effectiveness of spare parts replenishment	"This implies that, overall, ASP resulted in greater warranty service satisfaction than MMSPI. "	"The effect of spare parts supply on customer satisfaction has not been well	"The relationship between spare parts

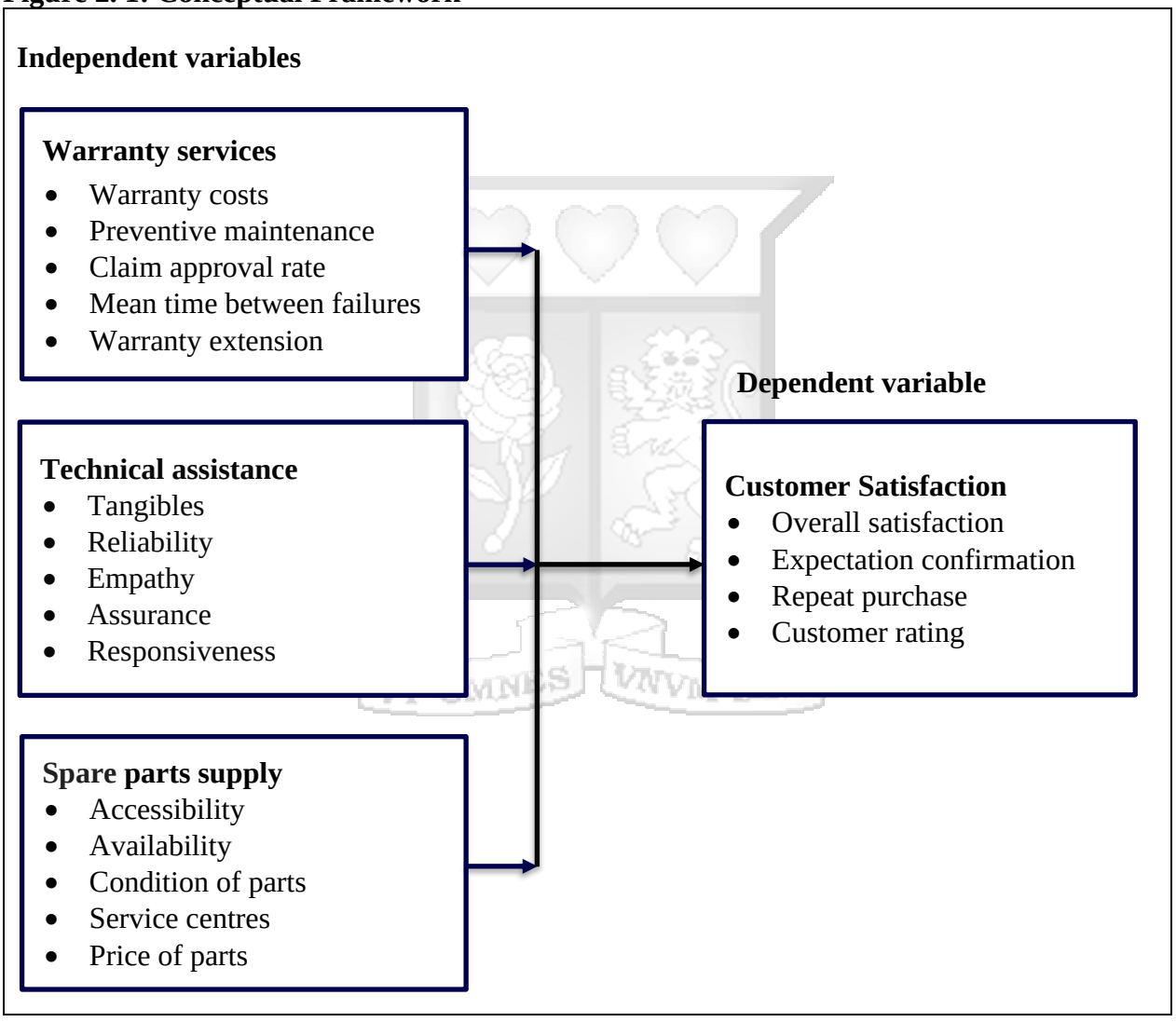
Researcher	Objective	Findings	Gaps	The focus of this study
	methods for warranty service satisfaction. ”		tested. The study was also based in the United States.”	supply and satisfaction was tested.”

Source: ***Researcher (2025)***

2.5 Conceptual Framework

A conceptual framework is a "hypothesized model identifying the variables under study and the relationship between the dependent and independent variables" (Mugenda & Mugenda, 2003). The independent variables were warranty services, technical assistance service, and spare parts supply, and the dependent variable was customer satisfaction, as illustrated in Figure 2.2.

Figure 2. 1: Conceptual Framework



Source: ***Researcher (2025)***

2.6 Operationalization of Variables

The variables in a research study must be operationalized into concepts that can be measured. This occurs through a process that involves defining and turning variables into measurable factors that allow a researcher to collect and analyse quantifiable data. The independent and dependent variables in this study were operationalized, as shown in Table 2.2.

Table 2. 2: Operationalization of Variables

Variable	Code	Indicators	Scale	Sources
Dependent Variable				
Customer satisfaction	CSAT	• Overall satisfaction • Expectation confirmation • Repeat purchase • Customer rating	5-point Likert scale	(Birch-Jensen et al., 2020; Sun & Kim, 2013)
Independent variables				
Warranty services	WRNTY	• Warranty costs • Preventive maintenance • Claim approval rate • Mean time between failures • Warranty extension	5-point Likert scale	(Ashfaq, 2019; Ullah & Islam, 2011)
Technical Assistance	TCHN	• Tangibles • Reliability • Empathy • Assurance • Responsiveness	5-point Likert scale	(Gajic & Boolaky, 2015)
Spare parts supply	SPSUP	• Accessibility • Availability • Condition of parts • Service centres • Price of parts	5-point Likert scale	(Sae-Eia, 2014; Adusei et al., 2019)

Source: ***Researcher (2025)***

2.7 Chapter Summary

This chapter defines the theoretical framework, encompassing servitization theory and expectancy disconfirmation theory. A comprehensive literature review, aligned with the research objectives, reveals "a generally positive correlation between the independent and dependent variables."

However, methodological, conceptual, scope, and contextual gaps exist within the literature. The chapter also presents the study's conceptual framework and the operationalization of variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a comprehensive overview of the study's research methodology, outlining the philosophical underpinnings that guide the research process, the chosen descriptive cross-sectional design, the defined target population, the sampling strategy employed, the data collection instrument and procedures, the statistical methods used for data analysis, the measures implemented to ensure research quality and validity, and the ethical considerations that were addressed throughout the study.

3.2 Research Philosophy

Research philosophy, as defined by Sekaran and Bougie (2016), "represents a fundamental belief system that guides the researcher's approach to data collection, analysis, and interpretation of a phenomenon." Creswell (2014) identifies four primary research philosophies that underlie social science research: "positivism, interpretivism, realism, and pragmatism". This study aimed to objectively quantify the relationship between after-sales services offered by equipment suppliers and customer satisfaction among dairy processors. Consequently, a positivist research philosophy, as advocated by Saunders et al. (2019), is deemed most appropriate. "Positivism is predicated on the assumption that reality is objective and measurable, allowing for the identification and quantification of causal relationships" (Saunders et al., 2019). This philosophy emphasizes the development of knowledge through objective methods, minimizing researcher bias and ensuring that findings are based on empirical evidence.

In this context, positivism allowed for the generation of statistically significant results, providing a robust foundation for understanding the impact of after-sales services on customer satisfaction within the dairy processing sector.

3.3 Research Design

Research design, as defined by Saunders et al. (2019), "aims to provide a structured framework for the systematic data collection and analysis with the goal of ultimately generating meaningful insights." This study employed a descriptive cross-sectional research design, "a method that entails collecting data from a diverse sample of individuals at a single point in time." This design, as noted by Siedlecki (2020), is "particularly effective for accurately portraying the characteristics of a defined population or a specific phenomenon at a specific point in time." In the context of this research, a descriptive cross-sectional design was well-suited to comprehensively describe the relationships between after-sales services and customer satisfaction with processing equipment within the dairy processing sector.

By capturing a snapshot of these relationships at a specific moment, the study provides valuable insights into the current state of customer satisfaction and the perceived impact of after-sales services. Furthermore, Siedlecki (2020) adds that "a descriptive cross-sectional research design allows for the examination of multiple variables simultaneously, providing a holistic understanding of a phenomenon." This further makes it suitable for the present study, which sought to examine the above-mentioned factors influencing customer satisfaction within this industry.

3.4 Population and Sampling

This section describes the target population for the study and the methods that were employed for sampling.

3.4.1 Population

Population refers to "a complete number of objects or entities that can be included in a particular study" (Zikmund et al., 2012). The study population consisted of dairy milk processors in Kenya. As outlined by the KDB, there are 43 licensed and operational dairy processing companies in the country as of Dec 2024 (Appendix 4). These companies consisted of the study's units of analysis.

3.4.2 Sampling and Sample Size

The research employed purposive sampling with the selection of respondents relevant to the phenomenon of interest. Robinson (2024) says purposive sampling is “a non-probability sampling technique intentionally selecting research participants based on their specific characteristics, knowledge, or experiences relevant to the research topic.” Therefore, using purposive sampling, employees in relevant technical departments in each of the 43 dairy processors were targeted. They make for excellent target respondents for the study because of their direct interactions with equipment, knowledge of the equipment's performance, and experience with after-sale services: warranty, technical support, and spare parts supply.

Specifically, the study targeted five (5) employees within the technical/maintenance departments of all 43 dairy processing companies, translating to a sample size of 215 respondents. The hierarchy of the departments was observed when recruiting the participants, whereby the Head of Maintenance, Maintenance Manager, Maintenance Supervisor, Maintenance Engineer, and Maintenance Technician were targeted. To account for inconsistent or conflicting views, responses were averaged per firm before data analysis. The choice of this group of respondents is based on the fact that they have requisite knowledge and interaction with the processing equipment supplied to the dairy industry.

3.5 Data Collection

Data collection is a critical part of an empirical inquiry. For the purpose of enhancing the credibility of a research study, “systematic processes must be employed to gather accurate and quality data that enables a researcher to sufficiently answer research questions, test the hypothesis, and fulfil the objective of the study” (Willson & Miller, 2014). This study relied on primary data collected directly from the targeted respondents through the administration of structured questionnaires. As explained by Willson and Miller (2014), “The use of primary data ensures that the information gathered is current, relevant, and specifically tailored to the research objectives.”

Structured questionnaires were made for the study’s data collection instrument. Paradis et al. (2016) cite that “structured questionnaires are excellent data collection instruments due to their ability to provide standardized responses, facilitating quantitative analysis and allowing for direct

comparisons between respondents." This approach enabled the study to obtain "firsthand insights into the perceptions and experiences of the participants regarding the research topic."

The design of the questionnaire followed Yaddanapudi and Yaddanapudi's (2019) guidelines, who proposes that "the design of a research questionnaire should be informed by the study's research questions, conceptual framework, and operationalization of variables." It consisted of three parts: A-Respondents' Demographics, B-Independent Variables, and C-Dependent variable. It featured close-ended questions where data were measured using a five-point Likert scale (Appendix 3).

Both online (Google Forms) and in-person (drop-off/pick-up [DOPU]) methods were leveraged in the distribution of questionnaires to elicit a higher response rate. Once the respondents agreed to participate in the study, they were asked whether they preferred electronic or physical participation. Those who preferred the online method were asked to provide their email addresses so that the questionnaires could be emailed to them. Trained research assistants were contracted to expedite the data collection process and also elicit a higher response rate.

3.6 Data Analysis Approach

Quantitative statistical tools were adopted for data analysis since the study was based on primary quantitative data. The completed questionnaires were collected, sorted, organized, and checked for completeness to ensure eligibility for data analysis. Those that were eligible for analysis were coded and input into SPSS for analysis.

3.6.1 Descriptive Statistics

Kaur et al. (2018) define descriptive statistics as "a set of statistical methods used to summarize and describe the main features of a dataset. They provide a concise overview of the data without making inferences about a larger population. Essentially, they help you understand the characteristics of your data at a glance."

This statistical method was employed to provide an initial understanding of the data. Measures of frequency reveal the distribution of responses across categories, while measures of central tendency (mean) illustrate respondents' characteristics. Measures of variability (standard deviation) highlight the degree of dispersion in the data, offering insights into the consistency of responses. These

descriptive analyses enabled the summary of key trends and patterns within the dataset, providing a basis for subsequent inferential analysis.

3.6.2 Inferential Statistics

Inferential statistics were applied to the sample data to make inferences generalizations, or draw conclusions about the population. The specific uses of inferential statistics were as follows:

3.6.2.1 Correlation Analysis

Marshall & Jonker, 2011) cite that "correlation analysis is used to measure the strength and direction of the relationship between variables". It determines whether and the extent to which the variables are correlated and whether the correlation is positive or negative. The presence of a correlation is denoted by "a coefficient value ranging from -1 to +1: a negative coefficient denotes a negative correlation, a positive coefficient denotes a positive correlation, and zero signifies a lack of correlation" (Marshall & Jonker, 2011).

3.6.2.2 Multiple Regression Analysis

Multiple linear regression analysis is "a statistical technique that aims to predict the value of a dependent variable based on the values of multiple independent variables" (Sarstedt et al., 2019). Since the study consists of "multiple independent variables—warranty services, technical assistance, and spare parts supply—and an independent variable, customer satisfaction," the statistical technique was relevant to the study.

This technique is "useful in determining the magnitude and direction of each independent variable's effect on the dependent variable while controlling for the influence of other variables in the model" (Sarstedt et al., 2019). Specifically, the regression coefficients reveal the change in customer satisfaction associated with "a one-unit change in each independent variable, holding other factors constant". The overall model fit was assessed using the R-squared statistic, and the statistical significance of individual predictors was evaluated using t-tests and p-values.

The following is the regression equation for the study:

$$\mathrm{CSAT} = \alpha + \beta_1 \mathrm{WRNTY} + \beta_2 \mathrm{TCHN} + \beta_3 \mathrm{SPSUP} + \varepsilon$$

Where; CSAT = Customer satisfaction, WRNTY= Warranty services, TCHN= Technical assistance, SPSUP= spare parts supply, α = constant (the intercept), β = Beta coefficients, and ε = error term.

3.7 Tests for Statistical Assumptions

Prior to regression analysis, the study performed diagnostic tests, usually a set of procedures to assess the validity of the regression model. This involved "checking if the dataset aligns with the assumptions made about the relationship between the variables under regression analysis" (Bollen et al., 2016). The tests sought to examine outliers, non-linearity, and multicollinearity. They include homoscedasticity, normality, and multicollinearity.

The test for homoscedasticity, or constant variance test, was performed to check whether the variance of the error terms (residuals) is consistent across the predictor values. This was done by generating residual plots. A normality test, in which a histogram with a normality curve was drawn, was performed to check whether the residuals followed a normal distribution. Lastly, the Durbin-Watson test was performed to check for the independence of the error terms from each other.

3.8 Research Quality

This section describes the measures that were employed to enhance the quality of the study and its findings.

3.8.1 Pilot Study

The actual data collection was preceded by a pilot study, a small-scale study, to test the design and feasibility of the study. "The purpose of a pilot study is to identify potential issues and make necessary adjustments before the actual study" (Lowe, 2019). It also went a long way in refining the study's design and methodology. A smaller sample of 10 respondents, which is 5% of the sample size, with attributes similar to those of the target population, was used to pilot test the questionnaire. This includes the recipients of after-sale services from industrial machinery and equipment suppliers within Nairobi County.

3.8.2 Validity

Validity in research is described as “the appropriateness of the processes, tools, and data used in a study” (Leung, 2015); this is achieved by ensuring that the sampling technique, methodology, and analysis of data are appropriate and relevant to the study. The study adopted purposeful sampling of selected participants currently influencing or making decisions on the subject. Further, the questions were drafted in line with the desired outcome to enhance validity. The feedback that was obtained from the pilot study, as well as the expert opinion of the assigned supervisor, was used to enhance the validity of the research instrument.

3.8.3 Reliability

Reliability is “the consistency of the processes used and the results obtained” (Leung, 2015). In this study, reliability involved clearly communicating the study’s statement of purpose to the participants, and questions were drafted in English. Internal reliability was also enhanced by performing a pilot study. The pilot study aimed to “evaluate and refine the internal consistency of the questionnaire using Cronbach's alpha” (Leung, 2015). The minimum Cronbach's alpha level of 0.7 was acceptable for all the variables. The results of the reliability test are shown in Table 3.1.

Table 3. 1: Reliability test

Construct	Cronbach's alpha statistic	N. of Items
Warranty services	0.807	6
Technical assistance	0.950	9
Spare parts supply	0.825	6
Customer satisfaction	0.935	5

Source: ***Researcher (2025)***

As demonstrated above, all the variables achieved the recommended minimum Cronbach’s alpha value of 0.7, implying that the requirement for the internal consistency was satisfied.

3.9 Ethical Considerations

Ethics in research has been defined as the actions of the researcher and the research population (Saunders et al., 2019). Ethical clearance was obtained from Strathmore University's ethical committee, and subsequently, a research license was obtained from NACOSTI.

Aguinis and Henle (2004) stress that, in an ethical scientific study, "research participants are required to sign an informed consent form prior to data collection, acknowledging their voluntary participation and their right to withdraw from the study at any point." This ethical requirement was observed for the present study. "The principle of doing no harm is especially important to the study" (Saunders et al., 2019). Any information disclosed during the survey that could compromise the safety of the participant was immediately removed from the study.

Strict confidentiality was maintained for all participant data, which was used exclusively for research purposes. Confidentiality was achieved by delinking specific information from data subjects. The study also guaranteed anonymity by not identifying the respondents and dairy processors that participated in the research.

3.10 Chapter Summary

The chapter describes the specific methods that were employed to achieve the objectives of the study. In particular, the study adopted a positivist research philosophy and used a descriptive cross-sectional research design. As also described, the target population for the study constituted staff within the technical/maintenance departments of the 43 dairy processors in Kenya, from whom a sample of 215 respondents was selected. Data was collected using questionnaires and analysed using descriptive and inferential statistics. Standards for quality and ethical research were also observed.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

This section provides a comprehensive overview of the results derived from the research methodology described in the preceding chapter. It includes an overview of the response rate, the demographic characteristics of the participants, and both descriptive and inferential statistical analyses. These findings are organized and illustrated through a combination of tables and figures to facilitate understanding and interpretation.

4.2 Response Rate

The study aimed to assess the how warranty services, technical assistance, and spare parts supply influence customer satisfaction among dairy processing firms in Kenya. To achieve this, questionnaires were distributed to a sample of 215 employees working in the technical and maintenance departments across 43 dairy processing firms as listed on the Kenya Dairy Board website. 167 completed questionnaires from 38 dairy processing firms were returned. However, after a careful review for errors and incomplete responses, 23 questionnaires were excluded, leaving 144 completed questionnaires eligible for data analysis. Therefore, the study had an initial response rate of 77.7%. After excluding ineligible data, the usable response rate was 67.0%, as illustrated in Table 4.1.

Table 4. 1: Response Rate

	Frequency	Percentage
Questionnaires distributed	215	100.0%
Completed questionnaires received (initial response rate)	167	77.7%
Questionnaires with errors and incomplete responses	23	10.7%
Eligible questionnaires (usable response rate)	144	67.0%

Source: Primary Data (2025)

The 67.0% response rate is considered adequate, for a research study whose target population is a group of professionals within a particular industry. (Fincham, 2008). Sataloff and Vontela (2021)

point out that while there is no universally agreed-upon threshold, experts consider response rates of 50% or higher to be excellent, indicating a strong representation of the target population. In this case therefore, the study achieved a sufficient response rate, implying representativeness, validity, and generalizability of the findings are enhanced.

Several strategies were employed to attain a high response rate. First, adequate time was allocated for data collection, allowing respondents sufficient time to complete the questionnaires at their convenience. Second, the study adopted a hybrid approach by utilizing online google forms and in-person data collection methods. This strategy ensured broader accessibility and accommodated the preferences of different respondents across the dairy processing firms. Third, the data collection tool was designed to be clear, concise, and user-friendly, which encouraged full participation. Finally, both the principal researcher and trained research assistants were actively engaged throughout the data collection period, offering prompt support, answering questions, and providing necessary clarifications to participants.

4.3 Demographic Information of the Respondents

The study aimed to collect and analyse the demographic data of respondents to provide a contextual understanding of the sample population while assessing its representativeness and diversity. This demographic profile also served to enhance the interpretation of findings. Key details gathered included respondents' age, gender, educational attainment, job position, organizational tenure, and the organizational characteristics of the 38 dairy processing firms, such as the number of employees, processing capacity, and factors influencing the choice of equipment suppliers. Table 4.2 presents a comprehensive summary of the findings.

Table 4. 2: Respondents' Demographic Information

Demographic information	Distribution	Frequency	Percentage
Gender	Male	130	90.3%
	Female	14	9.7%
Age	18-25 years	24	16.6%
	26-35 years	60	41.7%
	36-50 years	36	25.0%
	Over 50 years	24	16.6%

Educational attainment	Diploma	38	26.4%
	Undergraduate	59	41.1%
	Graduate	47	32.6%
Position within the department	Head of the department	18	12.5%
	Technical manager	36	25.0%
	Technical supervisor	60	41.7%
	Technical other	30	20.8%
Organizational tenure	Less than 5 years	36	25.0%
	5-10 years	60	41.7%
	11-15 years	24	16.6%
	More than 15 years	24	16.6%
Processing capacity	Below 5,000 litres	13	34.2%
	5,000-10,000 litres	10	26.3%
	10,000-20,000 litres	8	21.1%
	Over 20,000 litres	7	18.4%
Organizational size	Below 100 employees	14	36.8%
	101-300 employees	10	26.3%
	301-500 employees	8	21.1%
	Above 500 employees	6	15.8%
Criteria for choosing a supplier	After-sale services	8	21.1%
	Total cost of ownership	11	28.9%
	Equipment initial price	8	21.1%
	Supplier brand	7	18.4%
	Other	4	10.5%

Source: Primary Data (2025)

The demographic information highlights the key attributes of the respondents. It suggests a diverse and representative sample. The majority of respondents were male (90.3%), indicating that professional within the technical and maintenance departments across 43 dairy processing firms are predominantly male. This finding aligns with Mwaniki (2024) report which suggests that only 11% of women in Kenya are in engineering and technology. Most respondents fell within the 26-35 age bracket (41.7%). Educational attainment was well distributed, with a majority holding undergraduate degrees (41.1%), followed by graduate degrees (32.6%) and diplomas (26.4%). In terms of job roles, the largest group of respondents were technical supervisors (41.7%), followed by technical managers (25.0%) and other technical positions (20.8%), while heads of departments

accounted for 12.5%. Organizational tenure also varied, with most respondents having 5-10 years of experience (41.7%).

Regarding organizational characteristics, most firms surveyed had processing capacity of below 5,000 litres (34.2%), followed by 5,000-10,000 litres (26.3%), 10,000-20,000 litres (21.1%), and over 20,000 litres categories (18.4%). Similarly, the size of organizations varied, with the majority employing fewer than 100 people (36.8%), while smaller proportions had 101-300 (26.3%), 301-500 (21.1%), and more than 500 employees (15.8%). In choosing suppliers, cost considerations ranked high, total cost of ownership (28.9%) was the prominent criterion followed by equipment initial price (21.1%), after-sale services (21.1%) and supplier brand (18.4%). Five of the dairy processing firms, or 10.5%, cited other reasons, including quality and performance, technology, compliance, and reliability.

Accordingly, the demographic and organizational data above have significant implications for the study. They provide context for interpreting the findings on the influence of after-sale services on customer satisfaction among dairy processing firms in Kenya. The predominance of respondents in mid-level technical roles, who most holding undergraduate/graduate qualifications, suggests that data was obtained from individuals with sufficient knowledge and hands-on experience with the equipment. The wide range of organizational characteristics of dairy firms enhances the generalizability of the findings across the dairy processing sector. Therefore, the diverse demographic and firm characteristics validate the quality and reliability of the study.

4.4 Descriptive Statistics

The study employed descriptive statistical analysis to summarize and interpret the responses for each of the key variables under investigation. The analysis was instrumental in highlighting patterns, central tendencies, and distributions across the dataset. It provided an overview of how respondents perceived the three dimensions of after-sale services and their impact on customer satisfaction. The results of this analysis are systematically presented in the following section through well-organized tables.

4.4.1 Warranty Services

Respondents were asked to assess warranty services provided by their respective dairy processing equipment suppliers using a five-point Likert scale, with 1 representing “strongly disagree” and 5 representing “strongly agree”. Table 4.3 offers a detailed summary of the responses.

Table 4. 3: Warranty Services

	N	Mean	SD
How satisfied are you with the warranty service provided by equipment suppliers	144	3.4167	0.9571
Supplier offers comprehensive warranty coverage for their equipment.	144	3.0833	1.0411
The supplier makes it easy to make a warranty claim.	144	2.6667	0.7480
The supplier maintains a high warranty claim approval rate, indicative of a well-functioning warranty process.	144	2.8333	0.8021
The suppliers offer speedy repairs and replacement of warranty claims	144	3.0833	1.0411
The supplier offers fairness in warranty policies.	144	3.0833	1.0411
Overall mean	**144**	**3.0278**	**0.9384**

Source: Primary Data (2025)

The overall mean for the warranty services variable was 3.0278, with a standard deviation value of 0.9384. On a 5-point scale, the mean score indicates a neutral perception regarding the warranty services provided by equipment suppliers. In other words, while warranty services provided do not generate strong dissatisfaction, they fail to create a compelling positive experience, indicating a missed opportunity for suppliers to enhance customer value. Further insights into the individual measures of warranty services reveals specific areas for improvement.

For instance, among the specific aspects of warranty services, the lowest rating (M=2.6667) was recorded on the ease of making a warranty claim, indicating that respondents were generally dissatisfied with the process. Similarly, the supplier's ability to maintain a high warranty claim approval rate was rated low (M=2.833), indicating moderate dissatisfaction with the effectiveness of the approval process. In contrast, with a rating of 3.0833 for the comprehensiveness of the

warranty coverage, the speed of repairs and replacements, and the fairness of the warranty policies, respondents expressed moderately positive perceptions regarding these aspects of the warranty. The mean score for satisfaction with warranty services was 3.217, suggesting a moderate to high level of satisfaction regarding the warranty services received.

Notably, the relatively high standard deviations across these measures (ranging from 0.7480 to 1.0411) show a considerable variation in respondents' views, further emphasizing the mixed satisfaction levels with the warranty services provided by the equipment suppliers. This can be attributed to the diversity of the respondents sampled and the characteristics of the dairy firms featured in the study. Nevertheless, these findings suggest that while equipment suppliers are offering warranty services, these services are insufficient to fully satisfy dairy processing firms. Specifically, the data highlights comprehensive warranty coverage and the warranty claim approval rate as significant areas of concern.

4.4.2 Technical Assistance

Respondents were asked to assess the technical assistance provided by their respective dairy processing equipment suppliers using a five-point Likert scale, with 1 representing “strongly disagree” and 5 representing “strongly agree”. Table 4.4 offers a detailed summary of the responses.

Table 4. 4: Technical Assistance

	N	Mean	SD
How satisfied are you with the responsiveness of technical assistance?	144	3.7500	0.8321
The technicians are knowledgeable and competent in providing technical assistance	144	4.0000	0.9161
Technicians always have the necessary tools and equipment to diagnose and fix problems.	144	4.2500	0.9274
The technicians are always available for technical assistance enquiries in responding to distress requests.	144	3.4167	1.1188
The suppliers offer different technical assistance channels – online, remote, phone, email	144	4.1667	0.9895

The technicians always demonstrate a high level of expertise and maintain professionalism throughout the technical assistance visit.	144	3.8333	0.8021
The technicians are always able to restore equipment back to operation within a reasonable time during technical assistance	144	4.0833	0.9571
The Technicians are able to suggest long-term solutions for repeat issues after technical assistance.	144	3.9167	0.9571
Training provided on equipment operation and maintenance during technical assistance is adequate	144	3.9167	0.7619
Overall mean	**144**	**3.9259**	**0.9180**

Source: Primary Data (2025)

The results indicate a reasonable level of satisfaction among respondents regarding the technical assistance provided by dairy processing equipment suppliers, with an overall mean score of 3.9259 and a standard deviation of 0.9180. This overall rating for this after-sale service suggests that the technical assistance provided by dairy processing equipment suppliers is generally well-received by their dairy processing firms, indicating a strength in their service delivery.

Among the specific aspects assessed, the availability of tools and equipment for diagnosing and fixing problems received the highest mean score (4.2500), demonstrating that the suppliers are well-equipped to address technical issues effectively. The availability of multiple technical assistance channels also scored highly (4.1667), emphasizing the value of accessible and diverse support options. Respondents further appreciated the technicians' knowledge and competence (4.0000) and their ability to restore equipment to operational status within a reasonable time (4.0833), indicative of the high level of expertise and efficiency in technical services. Additionally, the appreciation for long-term problem-solving abilities (3.9167), training on equipment operation and maintenance, though adequate (3.9167), and professionalism and expertise during assistance visits (3.8333) were somewhat positive.

However, some aspects of technical assistance however showed comparatively lower scores, indicating potential opportunities for improvement. The availability of technicians to respond promptly to distress requests received the lowest mean score (3.4167), alluding to the idea that response times may occasionally fall short of expectations.

In summary, there is a generally positive perception towards technical assistance received from equipment suppliers. However, the standard deviation values ranging from 0.7619 to 1.1188 indicate that the perceptions varied moderately. This means that while the experience of technical assistance in most dairy processing firms is positive, it is negative in or neutral in a few others.

4.4.3 Spare Parts Supply

Respondents were asked to assess the spare parts supply for the equipment provided by their respective dairy processing equipment suppliers using a five-point Likert scale, with 1 representing "strongly disagree" and 5 representing "strongly agree". Table 4.5 offers a detailed summary of the responses.

Table 4. 5: Spare Parts Supply

	N	Mean	SD
How satisfied are you with the availability of spare parts for dairy processing equipment?	144	3.5000	1.0445
The spare parts and components for the dairy processing equipment can be quickly delivered from equipment suppliers.	144	3.0000	1.0839
The spare parts from equipment suppliers are always of guaranteed good quality.	144	3.5833	0.9571
The prices of spare parts by equipment suppliers are perceived to be competitively priced compared to local market alternatives of similar quality	144	2.7500	1.0139
Spare parts are easy to order through multiple channels – online, on-call, email, customer service	144	4.0833	0.9571
The spare parts inventory catalogue is comprehensive and up to date.	144	3.3333	1.1094
Overall mean	**144**	**3.3750**	**1.0276**

Source: Primary Data (2025)

The findings indicate a moderate level of satisfaction among respondents regarding the availability of spare parts for dairy processing equipment, with an overall mean score of 3.3750. In other words, a rating of 3.3750 on a 5-point scale indicates a slightly positive perception towards spare parts supply among the respondents. Based on this overall score, respondents recognize the supply of spare parts by equipment suppliers, but the provision of this specific after-sale service is not

sufficient to elicit greater levels of customer experience and satisfaction among dairy processing firms. There is a great room for improvement as shown on the individual measures of spare parts supply.

For instance, among the specific indicators measured, the ease of ordering spare parts through multiple channels received the highest mean score (4.0833), implying that equipment suppliers incorporate accessible and user-friendly options for ordering spare parts. However, the quality of spare parts was rated fairly positively (3.5833), the overall availability of spare parts (3.5000), the comprehensiveness and currency of the inventory catalogue (3.3333), and the spare parts delivery speed received a lower mean score (3.0000) were all rate moderately. These findings imply that respondents had moderate trust in the standards of the spare parts supplied, the availability of those parts, and their delivery.

In contrast, spare parts pricing scored the lowest (2.7500), suggesting dissatisfaction with the perceived competitiveness of prices compared to local market alternatives of similar quality. The moderate to high standard deviation, as denoted by values of 0.9571 to 1.1094, suggests moderate to high variability in responses. This implies that the perception of spare parts supply for dairy processing equipment varies among dairy processing firms.

4.4.4 Customer Satisfaction

Respondents were asked to rate customer satisfaction of after sale services on the dairy processing equipment provided by their respective equipment suppliers using a five-point Likert scale, with 1 representing “strongly disagree” and 5 representing “strongly agree”. Table 4.6 offers a detailed summary of the responses.

Table 4. 6: Customer Satisfaction

	N	Mean	SD
How satisfied are you with the overall value of equipment after-sales services	144	3.5833	0.6423
How do you rate the extent to which the equipment meets your expectation	144	3.8333	0.8021
Compared to your expectations, how do you rate your experience?	144	3.5833	0.6423

How would you rate your likelihood of recommending your equipment supplier for a repeat purchase	144	3.7500	1.0139
How do you rate the value of equipment suppliers after-sales services	144	3.7500	0.8321
Overall mean	**144**	**3.7000**	**0.7865**

Source: Primary Data (2025)

The overall mean score for customer satisfaction with dairy processing equipment provided by the equipment dealers is 3.7000. The means suggests a generally positive level of satisfaction among dairy processing firms. However, since it also highlights the potential for improvement and the importance of understanding the specific needs and expectations of the customers more in order to deliver a positive customer experience. This is shown on the scores for the specific measures of customer satisfaction.

Respondents reported the highest mean score (3.8333) for the extent to which the equipment meets their expectations. This indicates that the processing equipment generally aligns with the operational needs of the dairy processing firms. Furthermore, there is a notable likelihood of recommending the equipment supplier for repeat purchases (M=3.7500). Similarly, the perceived value of the after-sales services provided by the equipment suppliers received a fairly positive rating, with a mean of 3.7500. Both these ratings suggest a moderately high degree of trust and positive experience with the suppliers.

However, while the overall satisfaction is moderately positive, the ratings for the overall value of after-sales services and the actual experiences with the equipment compared to prior expectations both have a mean of 3.5833, which is slightly lower than the other satisfaction indicators. This suggests that while after-sale services are offered for the equipment, with dairy processing firms holding prior expectations of this equipment, they fell short of the actual experiences. Also, the relatively low standard deviations across all items indicate a consistent level of satisfaction among the respondents. This implies that the views of the respondents were consistent, both for the indicators that were highly rated and those that received relatively low ratings.

4.5 Inferential Statistics

Building on the foundational insights provided by the descriptive statistical analysis, the study employed inferential statistics to explore the relationships between the variables and make generalizations about the target population based on the sample data. Specifically, correlational and regression analyses were conducted.

4.5.1 Correlation Analysis

Correlational analysis was adopted to assess the strength and direction of relationships among the study's variables. In SPSS, the three types of correlations include Pearson correlation, Kendall rank correlation, and Spearman correlation. According to Kafle (2019), the appropriateness of each correlation analysis type depends on the level of measurement of the variables and the nature of the relationship being assessed.

For instance, Pearson correlation is the most common type and is suitable when measuring the linear relationship between two continuous variables, and it assumes that the data is normally distributed (Kafle, 2019; Roni & Djajadikerta, 2021). Kendall Rank Correlation is a non-parametric test that measures the ordinal association between two ranked variables. It is often preferred over Spearman's rho when the data has many tied ranks or a smaller sample size. Lastly, the Spearman Correlation is another non-parametric test that measures the monotonic relationship between two ordinal or continuous variables converted to ranks. Kafle (2019) clarifies that a monotonic relationship means that as one variable increases, the other tends to either increase or decrease (not necessarily linearly). Spearman's rho is less sensitive to outliers than Pearson correlation and is a good choice when Pearson's assumptions are violated or when dealing with ranked data.

Accordingly, the normality test, the Shapiro-Wilk (S-W) test, was performed to examine the underlying assumption of Pearson. Table 4.7 provides a summary of the findings.

Table 4. 7: Shapiro-Wilk Test

	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis	S-W	Sig.
WRNTY	144	1.3333	4.0000	3.027778	.6753514	-.890	1.050	.868	.000
TCHN	144	2.0000	4.8889	3.925926	.7796071	-1.087	.789	.870	.000

SPSUP	144	1.6667	4.3333	3.375000	.7514555	-.701	-.158	.891	.000
CSAT	144	1.8000	4.4000	3.700000	.7119362	-1.494	1.690	.804	.000

Source: Primary Data (2025)

The S-W test results, as presented in Table 4.7, indicate that none of the constructs is normally distributed within the sample (N=144), as denoted by the significance values of 0.000, which are well below the conventional alpha level of 0.05. This finding indicates a statistically significant deviation from normality for each of the four constructs. As a result, the underlying assumption of normality required for Pearson correlation analysis is violated for this dataset. This means that Spearman's rho was more appropriate for examining the relationships between these constructs than the non-parametric alternative. Results of the Spearman's rho are shown in Table 4.8.

Table 4. 8: Spearman's rho

			CSAT	WRNTY	TCHN	SPSUP
Spearman's rho	CSAT	Coefficient	1.000			
	WRNTY	Coefficient	.881**	1.000		
	TCHN	Coefficient	.797**	.654**	1.000	
	SPSUP	Coefficient	.918**	.774**	.593**	1.000

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Primary Data (2025)

As demonstrated in the correlation matrix above, strong positive relationships between all the constructs in the study are revealed, with each relationship being statistically significant at the 0.01 level. Customer satisfaction and spare parts supply exhibit the strongest correlation, with a coefficient of 0.918. This implies that as the spare parts supply for dairy processing equipment is improved, so does customer satisfaction by a significant margin. Similarly, customer satisfaction is strongly correlated with warranty services but moderately correlated with technical assistance, as denoted by coefficients of 0.881 and 0.797, respectively. These associations imply that a change in warranty services and technical assistance will see a proportionate change in customer satisfaction. Overall, these findings suggest that these after-sales services are critical for customer satisfaction, but to varying degrees.

In addition, the analysis reveals significant positive correlations between the after-sale service constructs themselves. There is a strong positive relationship between warranty services and spare parts supply ($r=.774$, $p<.01$), suggesting that suppliers who offer good warranty services also tend to have better spare parts availability. Technical assistance shows a strong positive correlation with warranty services ($r=.654$, $p<.01$) and a moderate positive correlation with spare parts supply ($r=.593$, $p<.01$), indicating that these aspects of after-sale service tend to be positively related. These inter-correlations suggest that a holistic approach to providing strong after-sale services across warranty services, technical assistance, and spare parts supply is crucial for maximizing customer satisfaction within the dairy processing equipment sector.

4.5.2 Diagnostic Tests

While correlation analysis revealed associations between the variables, the study employed regression analysis to model and understand the predictive influence of the independent variables on the dependent variable. This step was crucial "as correlation alone does not establish causality" (Russo, 2011). Prior to the analysis, several diagnostic tests were undertaken to validate the regression model. These tests aimed to "examine the homoscedasticity of the residuals, normality of residuals, independence of residuals, and the absence of multicollinearity in the predictor variables," as Bollen et al. (2016) suggest.

4.5.2.1 Test for Heteroscedasticity

The "residuals, or error terms, in the regression model are expected to exhibit constant variance across the predictor variables, a condition known as homoscedasticity" (Bollen et al., 2016). A scatter plot was created to assess whether this assumption was violated, potentially indicating heteroscedasticity. The results are presented in Figure 4.1.

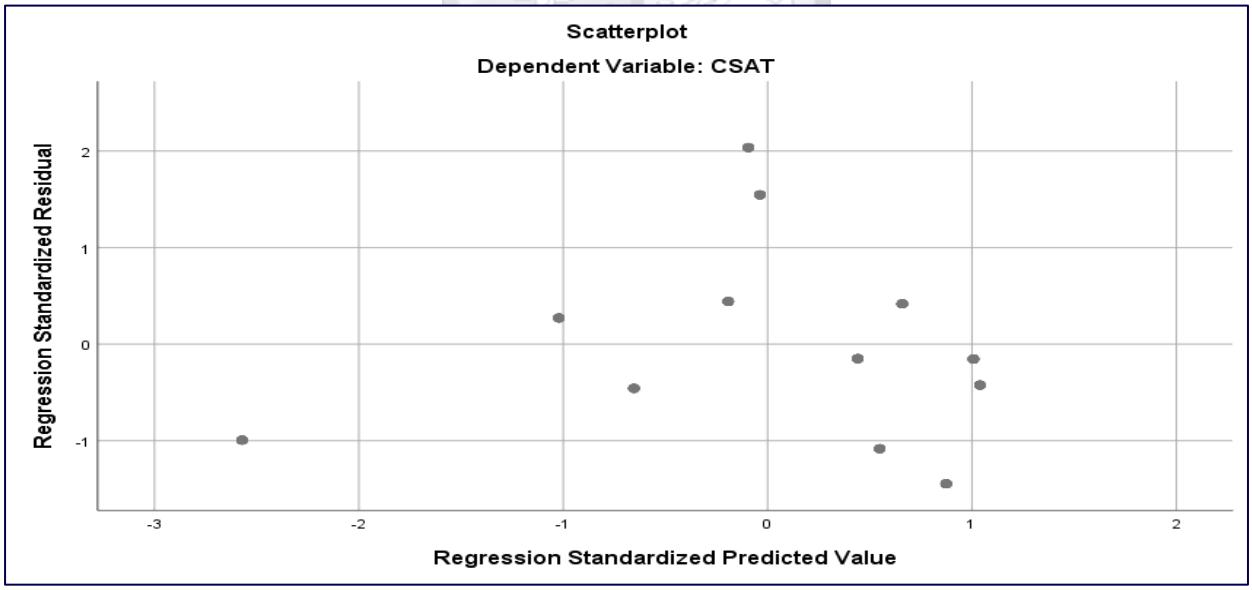


Figure 4. 1: Scatter plot
Source: Primary Data (2025)

Based on the scatter plot above, there is no clear pattern that would suggest heteroscedasticity, such as a funnel-shaped or non-random distribution of residuals. The points are randomly scattered across the plot, with no discernible increase or decrease in variance as the predicted values increase.

This suggests that the assumption of homoscedasticity—that the residuals have a constant variance across all levels of the predictor variable—is not violated. Therefore, the regression model satisfies the assumption of constant variance for the residuals.

4.5.2.2 Test for Normality

The second assumption requires "the residuals, or error terms, in the regression model to be normally distributed" (Bollen et al., 2016). A histogram was generated to assess whether this assumption was satisfied. The results are presented in Figure 4.2.

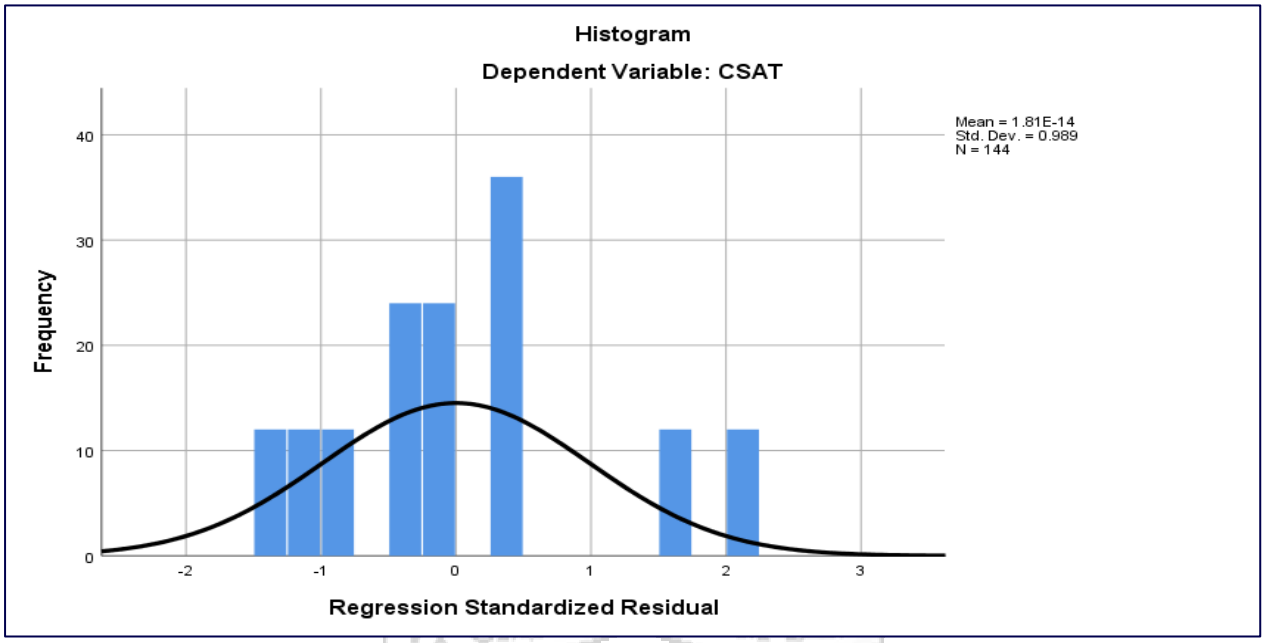


Figure 4. 2: Histogram
Source: Primary Data (2025)

As demonstrated above, the overall shape of the distribution of the residuals approximates a bell curve, which aligns with the overlaying normal distribution curve, suggesting that the residuals exhibit reasonably normal behaviour (Bollen et al., 2016). Also, the mean of 1.81E-14 is very close to zero, indicating no significant bias in the residuals. It is also worth noting that the standard deviation of 0.989 further supports a close clustering of residuals around the mean, consistent with normality. Therefore, the assumption of normality of residuals was not violated.

4.5.2.3 Test for Autocorrelation

Thirdly, the error terms in the regression model should be independent, meaning they should not exhibit serial autocorrelation, as this can undermine the model's predictive accuracy. To assess the presence of first-order autocorrelation, the Durbin-Watson (D-W) statistic was computed. The findings of the test are shown in Table 4.9.

Table 4. 9: Durbin-Watson statistic

Statistic	Value	Interpretation at 0.05 significance
Durbin-Watson statistic	2.146	No serial autocorrelation

Source: Primary Data (2025)

King (2018) points out that "the D-W statistic test produces values ranging from 0 to 4 and that values closer to zero denote serial positive autocorrelation and values closer to 4 denote serial negative autocorrelation." A D-W statistic of 2 indicates an ideal case of the independence of the residuals. In this case, a D-W statistic value of 2.146 is closer to 2, suggesting that first-order autocorrelation among the residuals was not a concern for the study.

4.5.2.4 Test for Multicollinearity

Lastly, the assumption of the absence of multicollinearity requires that "the predictor variables in the regression model should not be highly correlated as this undermines its predictability" (Bollen et al., 2016). Multicollinearity occurs when two or more independent variables in a regression model are highly correlated. The Variance Inflation Factor (VIF) was undertaken to examine whether this assumption was violated. The findings are shown in Table 4.10.

Table 4. 10: Variance Inflation Factor Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	WRNTY	.220	4.550
	TCHN	.366	2.736
	SPSUP	.229	4.376

a. Dependent Variable: CSAT

Source: Primary Data (2025)

A VIF value of 1 indicates the absence of multicollinearity, and values higher than 1 suggest multicollinearity. Akinwande et al. (2015) point out that the recommended VIF threshold is 5 since values higher than that suggest a case of the predictor variables being highly correlated. Therefore, as shown above, multicollinearity was not a concern for the study's regression model.

4.5.3 Multiple Regression Analysis

Having validated the regression model by ensuring none of the underlying assumptions was violated, the multiple regression analysis was performed to examine the predictive power of the independent variables on the dependent variable.

As the initial step of the analysis, the Model Summary of the regression model was generated to assess the proportion of variance in the dependent variable explained by the independent variables as a group. The results of this analysis are presented in Table 4.11.

Table 4. 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.994[a]	.987	.987	.0816566

a. Predictors: (Constant), WRNTY, TCHN, SPSUP

b. Dependent Variable: CSAT

Source: Primary Data (2025)

The findings above suggest the regression model demonstrates a very strong relationship between the independent variables and the dependent variable, as evidenced by an R-value of 0.994. This

implies a near-perfect positive correlation, suggesting that the independent variables collectively explain a substantial portion of the variance in customer satisfaction. The R Square value of 0.987 means that 98.7% of the variance in customer satisfaction is attributed to the predictors, indicating an excellent fit of the model. The Adjusted R Square, which adjusts for the number of predictors in the model, also remains very high at 0.987, further confirming the fitness of the model. Finally, the standard error of the estimate (0.0817) is relatively low, indicating that the predictions made by the model are close to the actual observed values, further reinforcing the model's precision in predicting customer satisfaction. Therefore, the model is highly effective in predicting variations in customer satisfaction based on after-sale services, technical assistance, and spare parts supply.

Following the assessment of the fitness of the regression model, the study computed the Analysis of Variance (ANOVA) to assess its overall significance. The findings of this analysis are shown in Table 4.12.

Table 4. 12: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.547	3	23.849	3576.719	.000[b]
	Residual	.933	140	.007		
	Total	72.480	143			

a. Dependent Variable: CSAT

b. Predictors: (Constant), WRNTY, TCHN, SPSUP

Source: Primary Data (2025)

The results of the analysis highlight the overall significance of the regression model in explaining variations in customer satisfaction. The regression model has a Sum of Squares (SS) of 71.547, with 3 degrees of freedom (df), leading to a Mean Square (MS) of 23.849, whereas the residual has an SS of 0.933 with a 140 df, leading to an MS of 0.007. Consequently, the calculated F-value of 3576.719 is exceptionally high, and the corresponding p-value is 0.000, which is well below the significance threshold of 0.05. This indicates that the model is statistically significant, meaning the independent variables—warranty services, technical assistance, and spare parts supply—together have a meaningful impact on customer satisfaction. Overall, the results confirm the robustness and predictive power of the regression model in explaining customer satisfaction.

Finally, having established that the regression model is fit for the data and statistically significant, the study proceeded to examine regression coefficients to assess the prediction of each independent variable on the outcome variable. The results are shown in Table 4.13.

Table 4. 13: Coefficients

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	0.1093	0.035786	3.055166	0.002694
	WRNTY	0.1708	0.021567	7.919168	0.000000
	TCHN	0.4299	0.014487	29.677110	0.000000
	SPSUP	0.4106	0.019009	21.597630	0.000000

Source: Primary Data (2025)

The results of the regression analysis, as indicated by the unstandardized coefficients, provide valuable insight into the relationship between the independent variables (warranty services, technical assistance, and spare parts supply) and customer satisfaction. The coefficient for warranty services is 0.1708, which implies that for each unit an increase in the perception of warranty services, customer satisfaction is expected to increase by 0.1708 units, holding other variables constant. The high t-value (7.919) and a p-value of 0.000 indicate that this relationship is statistically significant. Similarly, technical assistance and spare parts supply have positive effects on customer satisfaction, with coefficients of 0.4299 and 0.4106, respectively. The very high t-values (29.677 and 21.598) and p-values of 0.000 for both variables suggest that these relationships are highly significant as well, reinforcing their importance in driving customer satisfaction.

Overall, these findings suggest that warranty services, technical assistance, and spare parts supply are all important predictors of customer satisfaction in dairy processing firms. However, based on the beta coefficients, their degree of importance varies. Technical assistance has the highest predictive effect (B=0.4299, $p<.05$) on customer satisfaction, followed closely by spare parts supply (B=0.4106, $p<.05$), and then warranty services (B=0.1708, $p<.05$). Accordingly, the final regression model for the study is as follows:

CSAT = 0.1093 + 0.1708WRNTY + 0.4299TCHN + 0.4106SPSUP + 0 0816566

From the regression model, if the values of all predictors were zero (that is, the provision of warranty services, technical assistance, and spare parts supply by equipment dealers were all non-existent), the predicted value for the customer satisfaction of dairy processing firms in Kenya would only be 0.1093 which is statistically significant.

4.6 Chapter Summary

The chapter offers a detailed breakdown of the findings in terms of the study's response rate, respondents' demographic profile, and descriptive and inferential statistics. At their core, the results of the descriptive and inferential statistical analysis provide deeper insights into the underlying dynamics of the data while also facilitating the robust generalization and drawing of conclusions that extend to the broader population. The results fundamentally provide a snapshot of the status of the provision of after-sale services to dairy processing firms by their equipment suppliers and how these services influence their satisfaction.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

Building on the previous chapter, which presented a comprehensive overview of the findings, this chapter offers a detailed discussion of these results, along with the study's overall conclusion. It also explores the implications of the findings, outlines the limitations of the study, and provides recommendations for areas of future research.

5.2 Summary of the Findings

The study sought to determine the influence of after-sale services on the customer satisfaction of dairy processing firms in Kenya. To achieve this, data was collected from a sample consisting of experienced and knowledgeable industry professionals holding technical roles across the surveyed dairy processing firms in Kenya. This implies that the views in this study were obtained from professionals with sufficient knowledge and hands-on experience with the concepts that were being studied. With a sufficient response rate for analysis, the study applied both descriptive and inferential statistical analytical methods.

The findings of descriptive statistics offer valuable insights into the performance of after-sale services and customer satisfaction in the dairy processing sectors. On a five-point Likert scale, warranty services and spare parts supply were moderately rated, suggesting that respondents held the view that the issuance of warranty and the distribution of spare parts for equipment provided by the suppliers is largely below their expectations. Technical assistance, as an after-sale service, was favourably rated, suggesting that, in general, dairy processing firms were satisfied with the technical assistance provided by their equipment suppliers. Additionally, the overall customer satisfaction with the suppliers of dairy processing equipment was moderately positive.

Following the examination of relationships between the variables using correlational and regression analysis, the findings reveal interesting interactions between the components of after-sale services and customer satisfaction within the sector. Correlation analysis demonstrates that customer satisfaction is highly correlated to with the three after-sale services and a significant inter-

correlation among these services. On the regression analysis, all three independent variables are significant predictors of customer satisfaction, however, after accounting for individual prediction, technical assistance emerged as the most important determinant of customer satisfaction, followed closely by spare parts supply and warranty services, which has a weak but significant effect.

5.3 Discussion of the Findings

This section provides a comprehensive discussion of the study's findings, including their implications, how they support the study's theoretical frameworks and their alignment with existing literature. The discussion is organized around the specific objectives of the study to ensure a clear and structured analysis.

5.3.1 Warranty Services and Customer Satisfaction

The study sought to determine the influence of warranty services on the customer satisfaction of dairy processing firms in Kenya. The analysis aimed to examine the provision of warranty services by equipment suppliers and the extent to which these warranties contributed to the satisfaction of dairy processing firms. A descriptive statistical summary of the respondents' views suggests that while there is some degree of warranty provision by the equipment supplier, the perception towards these warranties is rather relatively neutral. Specifically, while the perception of warranties is moderately positive, the placement of claims, their approval rates, fairness of warranty policies, timely repairs, and comprehensiveness need significant improvements. The reported status of the warranty landscape for industrial dairy processing equipment is consistent with Kwamboka et al. (2022) and Bebe et al.'s (2017) assessment of the industry, citing that the practices within the sector, including the provision of warranty, are subject to regulations, industry-specific standards, and supplier practices. In relation to the study, while warranties exist as mandated by law, the specificity of their provisions may vary between suppliers, hence the variability of satisfaction among the dairy processing firms as demonstrated above.

The results of the inferential statistics suggest warranty services have a significant predictive effect on customer satisfaction. This observation implies that investing in and improving warranty services can be a strategic way to boost customer satisfaction within Kenya's dairy processing sector. In this regard, the statistically significant relationship between warranty services and

customer satisfaction supports both servitization theory and EDT theoretical frameworks. Vandermerwe and Rada's servitization theory is supported by the demonstration that a value-added service like a warranty service can be a key element in a company's offering and customer relationship strategy (Kamal et al., 2020). In other words, since the theory stresses the importance of service-based offerings, warranty services act as added services that complement the sale of industrial dairy processing equipment, thereby boosting customer satisfaction. In the context of EDT, the framework is supported by the finding that the actual experience with warranty service, in comparison with prior expectations, is a strong determinant of overall customer satisfaction (Schiebler et al., 2025). Therefore, the effective management of warranty services has a tangible influence from these two theoretical standpoints.

Furthermore, the observed relationship between warranty service and customer satisfaction is supported by multiple empirical findings (Ashfaq, 2019; Najmi et al., 2014; Sabbagh et al., 2017; Ullah & Islam, 2011). These studies provide evidence that warranty services do not just provide consumers with protection against defects or failures; they are also a key driver of positive customer sentiment and potentially lead to benefits like increased customer loyalty, brand advocacy, and repeat business. Warranty services enhance customer satisfaction in a variety of ways. For example, according to Sabbagh et al. (2017), these services play a crucial role in mitigating post-purchase risks and anxieties, assuring customers of product reliability and company support. In reference to industrial equipment, Ashfaq (2019) says effective and easily accessible warranty processes create positive experiences when issues arise, leading to quicker resolutions and reduced inconvenience. In the context of this study, the ease and efficiency of the warranty claims process, such as timely approvals and speedy repairs, further contribute to a seamless customer experience, resulting in satisfied dairy processing firms.

5.3.2 Technical Assistance and Customer Satisfaction

the second specific objective of the study, sought to determine influence of technical assistance by equipment suppliers on customer satisfaction of dairy processing firms in Kenya. First, the study determined the perception towards technical assistance rendered by equipment suppliers to dairy processing firms. A descriptive summary of the respondents' views suggests a reasonably high level of satisfaction with the technical assistance, suggesting that equipment dealers are readily

available to offer technical assistance whenever needed. Respondents also felt that technical assistance teams demonstrated a high level of expertise, and were well-equipped, were easily accessible, exhibited professionalism, suggested long-term solutions, and were competent. This positive perception implies that equipment suppliers in Kenya excel at providing technical assistance to their clients, particularly in the dairy processing sector. However, the study noted room for improvement; respondents felt the suppliers' technical assistance teams were not adequately responsive to distress requests. This is particularly concerning because, as Rankin et al. (2017) emphasize, given the sensitive nature of the dairy sector, the availability of technical support is crucial.

Accordingly, inferential statistical analysis further demonstrated the critical importance of technical assistance to the customer satisfaction of dairy processing firms in Kenya. Technical assistance exhibited a positive and statistically significant effect on customer satisfaction. , of the three after-sale services studied, technical assistance had the strongest predictive power on customer satisfaction. Therefore, this research emphasizes its role, particularly in the dairy processing industry. This also means that the observed effect of customer satisfaction aligns with the foundational propositions of servitization and EDT theories. Regarding servitization theory, the study demonstrates that when equipment suppliers shift from solely selling equipment to integrating product-service solutions such as technical assistance, they create customer value, thereby enhancing customer satisfaction. the study illustrates that when suppliers leverage this value-added service, it improves customer satisfaction among dairy firms. Regarding EDT, the study demonstrates that, dairy processing firms, form expectations That equipment suppliers utilise to better understand and manage the expectations of dairy processing firms. This theory underscores the importance of delivering technical assistance, which can lead to positive disconfirmation and increased satisfaction among dairy processing firms

Moreover, the observed relationship between technical assistance and customer satisfaction is supported by multiple scientific literature (Begichev & Zhukovskaya, 2022; Egonsson et al., 2013; Gajic & Boolaky, 2015; Gutierrez, 2000). These studies also underscore the importance of technical field assistance for industrial equipment. Its interaction with customer satisfaction is explained in a variety of ways using a variety of parameters. For instance, Egonsson et al. (2013) hold the view that effective technical support for industrial equipment boosts customer satisfaction

by ensuring clients receive prompt and effective solutions to operational challenges, minimizing downtime and productivity loss. The scholars further point out that accessible and experienced support teams provide timely guidance, troubleshooting assistance, and repair solutions, reducing frustration and ensuring continuous productivity. Additionally, Gajic and Boolaky (2015), through this proactive and reactive support, a supplier demonstrates a commitment to the customer's needs that extends far beyond the initial purchase, fostering trust and strengthening the long-term partnership.

5.3.3 Spare Parts Supply and Customer Satisfaction

The third and final specific objective of the study was to determine the influence of spare parts supply on the customer satisfaction of dairy processing firms in Kenya. First, the study sought to determine respondents' thoughts on the supply of spare parts and components for the dairy processing equipment distributed by the equipment suppliers. Their views on the same was moderately positive, implying that while these components were distributed, their supply was not enough to adequately meet the expectations of dairy processing firms. Specifically, while they demonstrated satisfaction with suppliers having multiple options for placing orders for components, there was a general dissatisfaction with the pricing of these components and their delivery. Drawing from Rankin et al. (2017) and Burke et al.'s (2018) views of the demanding nature and sensitivity of the dairy processing industry, the affordability and prompt delivery of spare parts and components are crucial. Delays can disrupt operations and impact production efficiency, whereas higher prices can undermine the profitability of these firms.

Further, in demonstrating the significance of spare parts supply, findings from statistical analysis demonstrate a positive and statistically significant predictive relationship between spare parts supply and customer satisfaction. This means that when equipment suppliers improve the availability of spare parts and components along the parameters assessed dairy processing firms experience higher customer satisfaction. Notably, the effect of spare parts supply is strong, following closely on technical assistance, emphasizing its importance on customer satisfaction among dairy processing firms. Besides being sensitive, as demonstrated by Rankin et al. (2017) and Burke et al. (2018) , Campbell and Marshall (2016) explain that industrial milk processing is a complex, multi-stage operation involving multiple equipment such as "milk reception tanks,

filters, centrifugal clarifiers, pasteurizers, homogenizers, separators, UHT sterilizers, and packaging machines.” , in this highly intricate and complex process therefore, equipment can break down , and replacement parts can urgently be needed, necessitating easily accessible spare parts and components.

The observed relationship between spare parts supply and customer satisfaction supports the principles of both servitization and EDT theories as the study’s anchoring and supporting theoretical frameworks. According to the observations and through the theoretical lens of the servitization model, spare parts supply can be viewed as value-added service that suppliers deliver to complement their sales of equipment. As a result, when targeted customers enjoy the benefits of readily available, accessible, and affordable spare parts and components, they experience higher customer satisfaction. In the context of EDT, the results demonstrate that when customers' prior expectations of the availability, accessibility, quality, and accessibility of spare parts and components are met, they become satisfied. This theory underscores the importance of delivering high-quality and affordable spare parts, which can lead to positive disconfirmation and increased satisfaction among dairy processing firms as such, the effective distribution of affordable and high-quality spare parts and components for dairy processing equipment has a tangible theoretical standpoint.

The finding is further supported by multiple existing studies, including (Adusei & Tweneboah-Koduah, 2019; Bluett et al., 2019; Mustofa & Afewerk, 2011; Sae-Eia, 2014). These studies produce empirical evidence suggesting that spare parts supply enhances customer satisfaction by ensuring that operations are sustained without significant delays or downtime. Timely availability of high-quality spare parts allows for quick repairs and minimizes equipment downtime, which is critical in an industry where even short interruptions can lead to high production losses and increased operational costs (Bluett et al., 2019). Efficient spare parts supply also reflects the supplier’s reliability and commitment to supporting the longevity and optimal performance of their equipment (Bluett et al., 2019; Sae-Eia, 2014). Additionally, competitive pricing and a comprehensive, up-to-date spare parts inventory ensure that customers can rely on the supplier for both quality and affordability, fostering trust and loyalty. In turn, these factors contribute to higher levels of customer satisfaction, as dairy firms are confident in the ongoing performance of the equipment and in the support capabilities of the supplier.

5.4 Conclusion

The study provides valuable empirical insights into the determinants of customer satisfaction among dairy processing firms in Kenya, focusing on warranty services, technical assistance, and spare parts supply as critical after-sales services offered by equipment suppliers. Descriptive statistics reveal that respondents exhibit reasonably high satisfaction with technical assistance, moderate satisfaction with warranty services, and spare parts supply, leading to overall satisfaction levels ranging from high to moderate. Inferential statistical analysis highlights that all three after-sales service warranty services, technical assistance, and spare parts supply—have significant positive effects on customer satisfaction. Among these, technical assistance and spare parts supply emerge as the strongest predictors, underscoring their vital role in enhancing the customer experience amongst the dairy processing firms. While warranty services demonstrate a weaker yet significant effect, it remains an essential contributor to customer satisfaction. Therefore, the study concludes that all three after-sales services are significant determinants of customer satisfaction, with technical assistance and spare parts supply identified as the most influential factors. These findings emphasize the need for equipment suppliers to prioritize robust technical assistance systems and efficient spare parts supply chains to optimize customer satisfaction levels.

5.5 Implications of the Study

The implications of the study at policy, practical, and theoretical levels are as follows:

At the policy level, this study underscores the importance of after-sale services. Specifically, findings demonstrate that technical assistance and spare parts supply are critical in shaping customer satisfaction within the dairy processing firms. Policymakers, including Kenya Dairy Board and other key industry players, should consider developing standards to encourage equipment dealers to invest in robust after-sale service infrastructure, particularly in technical assistance and spare parts supply. Establishing policies that require all registered equipment suppliers offer comprehensive warranty services, technical assistance and readily available spare parts could help enhance the sustainability of dairy processing operations, improve industry efficiency, and ultimately protect the interests of dairy processing firms in Kenya.

From a practical standpoint, the study suggests that dairy processing equipment suppliers should focus more on strengthening technical assistance by ensuring that technicians have requisite tools and equipment to enable them fix problems when they arise at customer sites, while improving on ease of making warranty claims while ensuring affordability of spare parts. They should consider enhancing the accessibility of their support services, consisting of both remote, online and on-site assistance. Additionally, maintaining an up-to-date inventory of spare parts and improving the speed of deliveries would help minimise effects of operational disruptions for dairy processing firms., the availability of critical after-sale services such as technical assistance and spare parts supply should be the basis for choosing the right equipment supplier. This is particularly important because, currently, the criteria for selecting suppliers are mostly centred around total cost of ownership, supplier brand, cost of equipment and other factors. As such, engaging and establishing long-term partnerships with equipment suppliers that offer high-quality after-sale services would likely lead to higher customer satisfaction.

From a theoretical perspective, the study supports the application of both servitization theory and EDT within the context of customer satisfaction in the dairy processing industry. Servitization theory stresses the shift from just selling products to offering integrated services, and the impacts of technical assistance and spare parts supply align with this concept, highlighting the critical role of service offerings in enhancing equipment value, the study equally affirms the relevance of EDT, showing that when the prior expectations of after-sale services are met customer satisfaction is achieved. These findings contribute to the theoretical understanding of how after-sale services, as part of a broader service-oriented business model, play a central role in customer satisfaction.

5.6 Recommendations of the Study

The recommendations of the study are as follows, policy makers, including Kenya Dairy Board and other key industry players, should consider reviewing standards governing warranties by equipment suppliers particularly strengthen warranty claim processes. Reviewing such policies with registered equipment suppliers will further boost customer satisfaction levels ultimately protecting the interests of dairy processing firms in Kenya. Dairy processing equipment suppliers should keep high focus more on strengthening technical assistance by ensuring that service technicians continue having requisite tools and equipment to enable them fix problems when they

arise at customer sites. Enhancing the accessibility of support services, consisting of both remote, online and on-site assistance will continue enhancing customer satisfaction. It is particularly important to further understand with different processors their views on criteria for equipment selection since currently it is currently centred around total cost of ownership that scored higher than after sales services. Academia should continue partnerships with industry with more focus on conducting comprehensive research to identify best practices for warranty services that enhance customer satisfaction further facilitating research and development of innovative after-sale service solutions This includes studying the impact of extended warranties, simplified claims processes. Equipment suppliers should strengthen spare parts supply chains by implementing advanced inventory management systems, fast-track delivery options, and maintaining transparent communication with customers regarding part availability. Dairy Processors should clarify and utilize warranty Services: Actively engage with equipment suppliers to understand and utilize warranty services effectively. Provide feedback to suppliers to help them improve these services and ensure technical staff understand and can access warranty provisions.

5.7 Limitations of the Study

This study has several limitations that should be considered when interpreting its findings. First, the research was limited to dairy processing firms in Kenya, which restricts the generalizability of the results to other sectors. The dynamics of customer satisfaction in dairy processing may not fully reflect those in other industries, where after-sale services may differ in nature and significance. Second, the study focuses solely on three after-sale services—warranty services, technical assistance, and spare parts supply—leaving out other factors like maintenance services, training and education, upgrade and updates, customer feedback mechanism that could influence customer satisfaction. Finally, a quantitative methodology was adopted, which, while effective for identifying patterns and relationships, did not capture the rich, qualitative insights that could emerge from in-depth interviews. A mixed-methods approach, incorporating qualitative data, could provide a deeper understanding of the complexities behind customer satisfaction and the role of after-sale services for dairy processing firms in Kenya.

5.8 Areas for Further Research

Given the aforementioned limitations of the study, several areas for further research can be explored. Future researchers should consider expanding the scope to include other industries beyond dairy processing firms, allowing for cross-sector comparisons and a deeper exploration of how after-sale services impact customer satisfaction in different contexts. Additionally, research could examine other dimensions of after-sale services, such as customer feedback mechanism and service, training and education, upgrades and updates, and maintenance services to assess their relative influence on satisfaction. Employing a mixed-methods approach, combining both quantitative and qualitative data would provide more nuanced insights into the customer experience and the underlying factors driving satisfaction.

5.9 Chapter Summary

In this chapter, the study's findings are comprehensively discussed. The chapter also highlights the implications of these findings for policy, practice, and theory, emphasizing the importance of robust after-sale services for improving customer satisfaction. Despite the valuable insights, the study is limited by its focus on dairy processing firms, narrow scope of after-sale services, and reliance on a quantitative approach. Suggestions for future research include expanding the scope to other industries, exploring additional after-sale services, and utilizing mixed-methods approaches to provide a more comprehensive understanding of customer satisfaction in relation to after-sale services.

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APPENDICES

Appendix 1: Letter of Introduction

Marsh Ochieng

Master of Business Administration Student

Strathmore University Business School

To whom it may concern,

RE: REQUEST FOR PARTICIPATION IN AN ACADEMIC RESEARCH

I am a Master of Business Administration student at the Strathmore University Business School, conducting research on *"Influence of After-Sale Services on Customer Satisfaction in Kenyan Dairy Processing Firms in Kenya."*

The accompanying questionnaire is for academic purposes only. Your participation by completing it will greatly assist my data analysis, and your responses will be kept anonymous and confidential.

On completion of the questionnaire, I would appreciate an opportunity for a brief, 20-minute follow-up interview. Please let me know your availability.

Thank you for your time and consideration. I look forward to your positive responses.

Best regards,

Marsh Ochieng

Appendix 2: Information Sheet and Consent Form

TITLE OF THE PROPOSED STUDY

Influence of After-Sale Services on Customer Satisfaction of Dairy Processing Firms in Kenya

SECTION 1: INFORMATION SHEET

Principal Investigator: Marsh Ochieng

Institution Affiliation: Strathmore University Business School

Mobile: +254 724 259 806

Email: marsh.ochieng@strathmore.edu

Supervisor: Dr Stella Nyongesa

Email: snyongesa@strathmore.edu

Institution Affiliation: Strathmore University Business School

SECTION 2: INFORMATION SHEET – THE STUDY

2.1 Why is this study is being conducted?

This study is being conducted in fulfilment of the requirement for the award of master's in business administration of Strathmore university business school.

It aims to determine the Influence of After-sale services on the customer satisfaction of dairy processing firms in Kenya.

2.2 Do I have to take part?

No you don't. Taking part is entirely optional, the decision rests with you. If you however make the decision to take part, you will be asked to complete a questionnaire to get information on the Influence of After-sale services on the customer satisfaction of dairy processing firms in Kenya.

The questionnaire will be simple to understand and fill, further explanation will be provided where necessary.

2.3 Who is eligible to take part in this study?

Personnel in technical and maintenance department who interact and have experience with dairy processing equipment.

2.4 Who is not eligible for the study.

- Individuals not directly involved in dairy processing
- Individuals incapable of providing informed consent
- Individuals with potential conflict of interest
- Individuals under the age of 18 (Minors)

2.5 what will taking part in this study involve for me?

Participating in this study involves completing the attached questionnaire. Your input will help with insights on the topic under study.

You will also be asked to sign the informed consent form (this form).

2.6 Are there any risks or dangers in taking part in this study?

There is no known risk in taking part in this study. All information provided will be treated

2.7 Are there any benefits in taking part in this study?

Information from the study will contribute to the body of knowledge on the Influence of After-sale services on the customer satisfaction of dairy processing firms in Kenya.

2.8. What happens to me if I refuse to take part in this study?

Participation in this study is entirely voluntary. You are free to join, but you are also free to withdraw at any time without explanation.

2.9. Who will have access to my information during this research?

We will keep all information from this research confidential. Your data will be stored securely, both physically in locked cabinets and electronically in an encrypted, password-protected database. Only authorized research staff will have access to your information, and all data will be treated as private.

2.10. Who can I contact in case I have further questions?

You can contact me, the Principal Investigator, Marsh Ochieng, at Strathmore University Business School by email at marsh.ochieng@strathmore.edu or by calling +254 724 259 806, and a summary report of the findings will be shared via email.

You can also contact my supervisor, Dr. Stella Nyongesa, at the Strathmore University Business School, Nairobi, or by e-mail at. snyongesa@strathmore.edu

If you want to ask someone independent anything about this research, please contact:

The Secretary

Strathmore University Institutional Ethics Review Board,

P. O. BOX 59857, 00200,

Nairobi.

Email: ethicsreview@strathmore.edu

Telephone: +254(0)730 734 418

I, _____, confirm that all the issues confirm that all the issues about this study have been clarified. I further affirm that I have asked all the questions that I needed to ask, and all of them have been answered to my satisfaction. I have read and understood the questions. I have been provided with the contacts of the person and institution that I need to contact in case issues arise and I need further clarification.

Please tick the boxes that apply to you;

Participation in the research study

☐ I AGREE to take part in this research

☐ I DON'T AGREE to take part in this research

Storage of information on the completed questionnaire

☐ I AGREE to have my completed questionnaire stored for future data analysis

☐ I DON'T AGREE to have my completed questionnaire stored for future data analysis

Participant's signature: _____ Date: ____/ _____/ _____ (DD/MM/YY)

Participant's name: _____ Time: ____: _____ (HH/Mins)

(please print name)

I, MARSH OCHIENG, certify that I have followed the statement of purpose (SOP) for this study, have explained the study information to the study participant named above, and that s/he has understood the nature and the purpose of the study and consented to the participation in the study. S/he has been given the opportunity to ask questions which have been answered satisfactorily.

Investigator's signature: ___  ___ Date: ____/ _____/ __2025___

Investigator's name: __Marsh Ochieng_____ Time: ____: _____ (HH/Mins)

Appendix 3: Ethical Clearance

Strathmore UNIVERSITY

10th April 2025

Mr Ochieng' Marsh,
marsh.ochieng@strathmore.edu

Dear Mr Ochieng',

RE: Influence of After-Sale Services on the Customer Satisfaction of Dairy Processing Firms in Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2783/25.** The approval period is from **10th April 2025 to 9th April 2026.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

Appendix 4: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **606886**

Date of Issue: **15/April/2025**

RESEARCH LICENSE

This is to Certify that Mr.. Marsh Ochieng of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kiambu, Kisii, Meru, Muranga, Nairobi, Nakuru, Nyandarua, Nyeri on the topic: INFLUENCE OF AFTER-SALE SERVICES ON THE CUSTOMER SATISFACTION OF DAIRY PROCESSING FIRMS IN KENYA for the period ending : 15/April/2026.

License No: **NACOSTI/P/25/4172956**

606886

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix 5: Research Instrument

The purpose of this survey is to gather data on the **Influence of After-Sale Service by Equipment Suppliers on Customer Satisfaction Among Dairy Processing Firms in Kenya**. The study is being conducted as part of the fulfilment of the requirements for a degree in Master of Business Administration at Strathmore University. Your insights will be invaluable in understanding how customer satisfaction of dairy processing firms in Kenya is influenced by after-sale services rendered by dairy processing equipment suppliers.

Please note that participation in this study is voluntary and that all the information you choose to provide will be kept confidential and used for academic purposes only.

Read each question carefully and answer as honestly as possible by ticking (✓) where appropriate.

PART A: DEMOGRAPHIC INFORMATION

1. Please indicate your gender.

☐ Male ☐ Female

2.Please Indicate your age bracket.

☐ 18 – 25 ☐ 26 - 35

☐ 36 – 50 ☐ Above 50

3. What is your highest level of education?

☐ Diploma ☐ Undergraduate

☐ Graduate ☐ Other_____

4. Please select the title representative of your current employment level within the organization.

☐ Head of Department ☐ Technical Manager

☐ Technical Supervisor ☐ Technical Other

5. How long have you worked for the company?

☐ Less than 5 years ☐ 5-10 years

☐ 11-15 years ☐ More than 15 years

6. What is this company's processing capacity per day in litres?

☐ Below 500 litres ☐ 501-1000 litres

☐ 1001-5,000 litres ☐ Above 5,000 litres

7. What is the size of you company in terms of Number of Employees

☐ Below 100 employees ☐ 101-300 employees

☐ 201-500 employees ☐ Above 500 employees

8. What is the primary reason for choosing a particular equipment supplier?

☐ Equipment Initial Price ☐ Total Cost of Ownership

☐ Supplier Brand ☐ After Sale Services Support

☐ Other (Please Specify)_____

PART B: AFTER-SALE SERVICES

Section 1: Warranty Services

This section asks about your perspectives on the warranty services provided by your equipment supplier. Please indicate the extent to which you agree with the following statements regarding the warranty services provided by your supplier, using the following scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

	1	2	3	4	5
9. How satisfied are you with the warranty service provided by equipment suppliers					

10. Supplier offers comprehensive warranty coverage to their equipment?					
11. The supplier makes it easy to make a warranty claim?					
12. The supplier maintains a high warranty claim approval rate, indicative of a well-functioning warranty process.					
13. The suppliers offers speedy repairs and replacement of warranty claims					
14. The supplier offers fairness in warranty policies.					

Section 2: Technical Assistance

This section asks about your satisfaction with the technical assistance you have received from your equipment supplier. Please indicate the extent to which you agree with the following statements on the aspects of technical support, using the scale below: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

	1	2	3	4	5
15. How satisfied are you with the responsiveness of technical assistance?					
16. The technicians are knowledgeable and competent in providing technical assistance					
17. The technicians always have necessary tools and equipment to diagnose and fix a problem.					
18. The technicians always available for technical assistance enquiries in responding to distress requests.					
19. The suppliers offer different technical assistance channels – online, remote, phone, email					
20. The technicians always demonstrate high level of expertise and maintain professionalism throughout the technical assistance visit.					

21. The technicians are always able to restore equipment back to operation within reasonable time during technical assistance					
22. The Technicians are able to suggest long term solutions for repeat issues after technical assistance.					
23. Training provide on the equipment operation and maintenance during technical assistance is adequate					

Section 3: Spare Parts Supply

This section asks about your opinion on the distribution of spare parts for the equipment provided by your supplier. Please indicate the extent to which you agree with the following statements on the aspects of spare parts supply, using the scale below: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

	1	2	3	4	5
24. How satisfied are you with availability of spare parts for dairy processing equipment.					
25. The spare parts and components for the dairy processing equipment can be quickly delivered from equipment suppliers.					
26. The spare parts from equipment suppliers are always of guaranteed good quality.					
27. The prices of spare parts by equipment suppliers are perceived to be competitively priced compared to local market alternatives of similar quality					
28. Spare parts are easy to order through multiple channels – online, on call, email, customer service					
29. The spare parts inventory catalogue is comprehensive and up to date.					

PART C: CUSTOMER SATISFACTION

This section asks about your satisfaction with the dairy processing equipment provided by your supplier. Please rate your level of satisfaction with various aspects of the equipment and experience with the supplier, using the following scale: 1=Poor, 2=Fair, 3=Average, 4=Good, 5=Excellent.

	1	2	3	4	5
Overall Satisfaction					
30. How satisfied are you with overall value of equipment after sales services					
Expectation Confirmation					
31. How do you rate extent to which the equipment meet your expectation					
32. Compared to your expectation, how do you rate your experience?					
Repeat Purchase intentions					
33. How would you rate your likelihood to recommend your equipment supplier for a repeat purchase					
Customer Rating					
34. How do you rate value of equipment suppliers after sales services					

Thank you for your time in completing this survey

Appendix 6: Dairy Processors in Kenya

No.	Station	Outlet
1	NBI SOUTH	BIO FOOD PRODUCTS LIMITED
2	KISII	HIGHLAND CREAMERS FOODS LIMITED
3	OL KALAU	KINANGOP DAIRY LTD
4	NYERI	DEMKA DAIRY
5	MURANG'A	SICHE DAIRY
6	OL KALAU	OL KALOU DAIRY LTD 2016 LIMITED
7	OL KALAU	ZIARA DAIRIES LIMITED
8	KISII	MUSTY DISTRIBUTION LIMITED KISII
9	OL KALAU	COUNTRY DELIGHT DAIRY LIMITED
10	NAKURU	RAVINE DAIRIES LIMITED
11	NAKURU	DEVYANI FOOD INDUSTRIES KENYA LIMITED
12	NBI CENTRAL	UPLANDS PREMIUM DAIRIES & FOODS LIMITED
13	MURANG'A	ASPENDOS DAIRY LIMITED
14	MERU	MERU CENTRAL DAIRY CO-OPERATIVE UNION LTD
15	THIKA	BROOKSIDE DAIRY LTD
16	NBI SOUTH	GLACIER PRODUCTS LIMITED
17	NAKURU	FACTORY
18	NBI WEST	SUN POWER PRODUCT LTD
19	NYERI	MUKURWEINI WAKULIMA DAIRY LIMITED
20	NYERI	NARUMORO DAIRY FARM LTD
21	NBI WEST	CARITAS DAIRY UNIT
22	MERU	MERU HIGHLANDS DAIRY LIMITED
23	NAKURU	NIMAC PLAZA
24	OL KALAU	MILFRESH DAIRY LIMITED
25	NBI CENTRAL	PALMHOUSE DAIRIES LIMITED
26	OL KALAU	ABERDARE SLOPES FRESH DAIRY LTD
27	OL KALAU	VALLEY EVER FRESH DAIRY LIMITED
28	NAKURU	SUKA FARMERS CO-OPERATIVE SOCIETY LTD
29	OL KALAU	MUGIKO FAVOURED DAIRY
30	NBI CENTRAL	NDUMBERI DAIRY
31	THIKA	AMSTRONG COMPANY LIMITED
32	NBI WEST	TATUMILK LIMITED
33	OL KALAU	LUCKY DAIRIES NJABINI FACTORY
34	ATHI RIVER	STANLEY & SON LIMITED
35	NBI WEST	AFRODANE FOOD INDUSTRIES
36	NBI WEST	LIMURU DAIRY FARMERS CO-OPERATIVE SOCIETY LIMITED - PROCES
37	ATHI RIVER	MWAMBA OIBOR DAIRY CENTRE
38	MURANG'A	MURANG'A COUNTY CREAMERIES COOPERATIVE UNION LIMITED
39	NAKURU	HAPPY COW
40	NBI CENTRAL	WIMSSY -KIAMBU
41	OL KALAU	GOLAN DAIRIES
42	NBI WEST	KIAMBAA DAIRY FARMERS CO-OPERATIVE SOCIETY LIMITED
43	NYERI	MORANI LIMITED

Source: Kenya Dairy Board (2025)

Appendix 7: Dairy Machinery & Equipment Suppliers

S/N	Name	Location	Telephone	Email
1	Desley Holdings Ltd	Serengeti House, Factory street, Nairobi	020 2066573	desley@desleyholdings.com
2	Promaco Ltd	Windy Ridge, Karen	020 3882811	
3	Dairy Systems & Services Ltd	Enterprise Road, Industrial Area	20553657	info@dairysystems.co.ke
4	Desbro Engineering	Kampala Rd, Industrial Area	020-6536134	info@desbrokenya.com
5	Happy Cow Ltd	Section 58, Nakuru	51850808	info@happycowkenya.com
6	Rhino Agrimac	Old Mombasa Road	0 20 2614858	sales@rhinoagrimac.com
7	ASL Ltd	Old Mombasa Road, behind Tile & Carpets Depot	020 8091077/ 2054137	p.ogolla@heavyfab.co.ke
8	G. North & Son	Funzi Road, Industrial Area	020 6531267	gsales@gnorth.co.ke
9	Richie Technologies	Shirikwa Coop Building, Ngara		richietechnologies@gmail.com
10	Krays Company ltd	Westlands, Nairobi		alpa@iconnect.co.ke

Source: Kenya Dairy Board