ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
www.ijarke.com

INTERNATIONAL JOURNALS OF ACADEMICS & RESEARCH
(IJARKE Business & Management Journal)

Strategic Management Practices and Value Addition in the Dairy Sector – Kenya

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Abstract

The study investigated the influence of strategic management practices on value addition in the dairy sector in Kenya. Specifically, it examined the influence of strategic technology adoption practice, strategic market competition practice, strategic corporate governance practice, and strategic communication practice on value addition. The study was anchored on Value Chain Theory, the Unified Theory of Acceptance and Use of Technology (UTAUT), Porter's Competitive Advantage Model, Stakeholder Theory, and Relational Communication Theory. A cross-sectional research design was adopted, targeting 43 active dairy processors registered by the Kenya Dairy Board, with a total population of 238 senior managers. The dairy processors constituted the unit of analysis, while senior managers served as the units of observation. Data were collected using structured questionnaires and analyzed using descriptive statistics, correlation analysis, and multiple linear regressions. The descriptive results indicated an overall mean score of 3.39 for strategic technology adoption, 3.40 for strategic market competition, 3.63 for strategic corporate governance, 3.25 for strategic communication, and 3.64 for value addition. The direct regression model was statistically significant, ($F(4,106) = 24.694$, $p<.001$), explaining 48.2% of the variation in value addition ($R^2=.482$). The regression results revealed that strategic market competition practice ($B=.328$, $p<.001$), strategic corporate governance practice ($B=.314$, $p<.001$), and strategic communication practice ($B=.237$, $p<.001$) had positive and statistically significant relationships with value addition. However, strategic technology adoption practice had a negative but statistically non-significant relationship with value addition ($B= -.107$, $p=.057$). The study concludes that market competition, corporate governance, and communication practices are important correlates of value addition in Kenya's dairy sector, with corporate governance recording the highest standardized beta coefficient. It recommends that dairy firms strengthen governance structures, enhance competitive positioning and product differentiation, and improve internal and external communication. Firms should also address the financial, infrastructural, and technical capacity constraints that may limit the contribution of technology adoption to value addition.

Key words: *Strategic Management Practices, Strategic Technology Adoption, Strategic Market Competition, Corporate Governance, Strategic Communication, Value Addition, Dairy Sector, Kenya*

1. Introduction

In today's competitive environment, businesses must deliver value-added products and services to remain competitive and capture market share (Porter, 1985). Globally, changing consumer preferences toward convenient, high-quality, and differentiated products have accelerated demand for value-added goods (Mithöfer & Waibel, 2022). In Kenya's dairy sector, this shift highlights an urgent need for firms to adopt value addition strategies to meet evolving consumer expectations for premium dairy products (Kaplinsky, 2020). Value addition enables dairy organizations to differentiate their products, enhance brand loyalty, and compete effectively by offering superior and branded products (Elliott & Cameron, 2019).

Kenya's dairy sector contributes approximately ksh 184 billion annually—accounting for 6-8% of the national GDP—and supports over 1.8 million smallholder households, as well as 1.25 million individuals in related employment (Kenya Dairy Board [KDB], 2023). While the sector's annual growth rate of 3-4% (USAID-KAVES, 2023) signals potential, it is largely anchored on basic milk production rather than diversified, value-added products. This limits profitability and competitiveness, especially in the face of increasing domestic and global market competition (Muriuki, 2011).

Despite the recognized importance of value addition, Kenya's dairy sector struggles with specific challenges: inadequate milk collection infrastructure, inefficient transportation systems, inconsistent processing standards, and limited technological adoption (Karanja, 2013). Although processed dairy products yield better profitability compared to raw milk (Kariuki et al., 2015), strategic management interventions that could drive sector transformation remain largely underexplored. Prior studies have disproportionately focused on industries such as banking and public service (Mbugua et al., 2012), neglecting the strategic management imperatives of the dairy sector.

Critically, strategic management dimensions—especially corporate governance, market competition management, and technology adoption—are insufficiently integrated into value addition strategies. Studies such as Scherer and Voegtlin (2020) emphasize that effective corporate governance enhances transparency, accountability, and operational efficiency, yet its role in Kenya's dairy sector remains underdeveloped. Similarly, Widayawati and Hardati (2023) argue that integrating robust governance frameworks can drive competitiveness, particularly in smallholder-dominated sectors like Kenya's dairy industry.

The specific problem, therefore, is that despite Kenya's dairy sector having significant potential for value addition, the absence of targeted strategic management practices—particularly in corporate governance, competitive strategies, and technological innovation—continues to hinder the sector's ability to optimize value addition, enhance profitability, and improve market competitiveness (World Bank, 2021). This study thus seeks to fill the gap by examining how strategic management practices influence value addition in Kenya's dairy sector, offering insights necessary for improving the sector's sustainable growth and contribution to the national economy.

2. Statement of the Problem

Kenya's dairy sector contributes approximately ksh 184 billion annually—accounting for 6-8% of the national GDP—and supports over 1.8 million smallholder households, as well as 1.25 million individuals in related employment (Kenya Dairy Board [KDB], 2023). While the sector's annual growth rate of 3-4% (USAID-KAVES, 2023) signals potential, it is largely anchored on basic milk production rather than diversified, value-added products.

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3. Objective of the Study

The main objective of the study was to investigate the influence of strategic management practices on value addition in the dairy sector in Kenya.

4. Literature Review

4.1 Theoretical Framework

4.1.1 Value Chain Theory

The value chain concept was first described in 1985 by Harvard Business School professor Michael Porter, in his book Competitive Advantage: Creating and Sustaining Superior Performance. Value chain analysis describes the activities within and around an organization, and relates them to an analysis of the competitive strength of the organization. Therefore, it evaluates with each value each particular activity adds to the organization's products or services. The value chain concept is a systematic approach that has, over time, evolved hence deriving from different subjects (Al-Shammari, 2023). The method allows the firm to understand which parts of its operations create value and which do not (Strange & Humphrey, 2019). The aim is to cut the entire complicated supply chain of a company into smaller units. Benito, Petersen and Welch (2019) state that the fundamental notion in the value chain analysis is that a product gains value as it passes through the vertical stream of production within the firm. When created value exceeds costs a profit is generated.

The model was originally introduced for companies in the manufacturing industry which has a significant impact on service firms. The value chain is segmented into primary and support activities. Primary activities are those involved with a product's

physical creation, sales and distribution, and after-sales service. In detail, this involves the product interrelations inbound logistic and operations and the market interrelations outbound logistic, marketing, sales and after-sales service (Ireland et al., 2009). Primary activities are always defined as value-added activities which are those that customers perceive as adding utility to the goods or services they purchase (Asgary, Ozdemir & Özyürek, 2020).

Support activities provide the assistance necessary for primary activities. In detail, this involves the infrastructure interrelations firm's infrastructure and human resource management, technological interrelations (technology development) and procurement interrelations (procurement) (Al-Shammari, 2023). Those activities are not part of the closer value chain they are included in every function of the value chain. Usually, most companies do not produce all components by themselves and has, as incoming, a set of already-finished products. In this situation, the company is part of a larger supply chain and needs to consider linkages with external activities (Noga, Jarzębowski & Maciąg, 2020). Porter (2010) also identified the importance of chains or networks which lies outside and controlled by other companies. The upstream-suppliers (preceding company) provide input to a company which adds value (own company), which then down streams the products to the next company (following company). Accounting data is also essential for the value chain analysis. According to Miao (2021), measuring the effects of a value chain is a fundamental service of cost accounting.

The theory has been criticized by Dindial, Clegg and Voss (2020) who noted that a chief disadvantage of value chain analysis is that a company's overall vision and strategy may get lost or muddied when operations are broken down into fine segments**.** However, this theory is relevant to this study because value chain analysis is a concept which, through the analysis, could demonstrate the strength and weaknesses of the company and alight to create transparency. The results could then be used for internal and external benchmarking. Hence, the dairy sector requires adapting to the value chain theory to enhance better overall company earning financially and giving it a competitive edge through products offering in the market using strategic management practices. Thus, the value chain theory was important in evaluating the current study's dependent variable, that is, value addition in the dairy sector in Kenya.

4.1.2 Unified Theory of Acceptance and Use of Technology

This theory, popularly referred as UTAUT was postulated in 2003 by Venkatesh et.al. after a systematic review and consolidation of the constructs of earlier eight models (Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Technology Acceptance Model 2(TAM 2), Motivation Model (MM), Theory of Planned Behavior (TPB), Diffusion of Innovations (DOI), Social Cognitive Theory (SCT) and model of personal computer use). It is meant to serve as a comprehensive model that can be applied across a range of applications. It has four key constructs namely "performance expectancy, effort expectancy, social influence and facilitating conditions" (Humaid & Ibrahim, 2019).

For developing the unified model, the authors compiled and tested all the constructs that were used in previous models and theorized that out of the seven constructs used earlier, four constructs shown above are most significant as determinants of intention to use information technology (Daniali et al., 2022). They have hypothesized that remaining three constructs, namely, attitude toward using technology, self-efficacy, and anxiety are theorized not to be the direct determinants of intention as they are fully mediated by ease of use which has been considered in the unified model as performance expectancy. Therefore, these three constructs have been removed from the UTAUT model (Erjavec & Manfreda, 2022).

The unified theory is proposed to be superior as it is able to explain 70% of the variance while the earlier theories were explaining only 30-40% variance in the adoption behaviour (Momani & Jamous, 2017). However, it is criticized on the grounds of being overly complex, not being parsimonious in its approach and its inability to explain individual behaviour (Blut, Chong, Tsiga & Venkatesh, 2021). A comprehensive review of 450 articles that have cited UTAUT was carried out by Dwivedi et al (2019) and found that only a small number of articles have actually used the constructs of UTAUT in their study rather, it has been used more for theory-building.

The UTAUT model has been used in a number of studies related to small businesses around the world. For instance, Serben (2014) used the UTAUT model to examine factors influencing social media usage by African American small business (AABB) owners using the UTAUT model. The rresults showed that UTAUT constructs; performance expectancy (PE), social influence (SI) and facilitating conditions (FC) were positively related to the AABB owners' intention to use and use of social media, while age, gender, and experience showed no evidence of any significant interactions. Yadav et al., (2023) carried out a study on how COVID-19 affected Micro small and medium enterprises' (MSMEs) participation in sustainable development goals (SDGs) and their adoption of Fin-tech developing nations like India and used the UTAUT model. The study showed that the COVID-19 period saw the rise of contactless transactions as the primary payment method. Because of this shift in public opinion explained by UTAUT, small- and medium-sized enterprises (SMEs) have begun implementing Fin-tech for long-term growth.

The UTAUT model constructs; performance expectancy (PE), social influence (SI) and facilitating conditions (FC) can be instrumental in examining strategic technology adoption practice and value addition in the dairy sector in Kenya especially currently when the competition in the sector is high and firms are leveraging their technologies to improve performance.

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01

4.1.3 Porter's Competitive Advantage Model

The notion that the generic strategies can be a source of superior performance is as old as the idea of strategy itself and has provoked considerable interest and inquiry within the strategic management discipline (Islami et al., 2020).). However, credit for articulating a set of three generic strategies and developing them into a testable framework goes to Porter (Hahn, 2019). Michael Porter explains that the three strategies are an essential part of any effective business plan, which a firm can use to obtain a competitive market position (Firoz Suleman et al., 2019). Porter (1985) further asserts that a firm performs best by choosing one strategy on which to concentrate. However, this view has been criticized by several authors who argue that a combination of these strategies may offer a company the best chance to achieve superior performance (Slavik, Hanak & Hudakova, 2020). All the same, whatever strategy a business chooses, it must fit with the company and its goals and objectives to perform well (Hahn, 2019).

Michael Porter (1980) was the first person who introduced generic strategies and proposed that by using them organization can achieve competitive advantages. These were overall cost leadership, differentiation, and market niche (or focus) (Probosari et al., 2022). According to this theory, cost leadership enables a firm to become the low-cost producer in its industry. If a firm can achieve and sustain overall cost leadership, then it will be an above average performer in its industry. However, the sources of cost advantage are varied and depend on the structure of the industry. They may include the pursuit of economies of scale, proprietary technology, preferential access to raw materials and other factors. A low-cost producer must find and exploit all sources of cost advantage (Simanjaya, Chandra & Soesetyo, 2022).

Cost leadership Porter argued that a company could achieve superior performance by producing similar quality products or services but at lower costs. In this case, company sells products at the same price as competitors but reaps higher profit margins because of lower production costs. The company that tries to pursuing cost leadership strategy. Higher profit margins lead to further price reductions, more investments in process innovation and ultimately greater value for customers, dairy sector due to availability of the raw milk locally need to strategically analyse whether the approach would give an edge under value addition focus (Ruckman & Blettner, 2022).

In differentiation strategy a firm seeks to be unique in its industry along some dimensions that are widely valued by buyers. It selects one or more attributes that many buyers in an industry perceive as important and uniquely positions it to meet those needs (Ali & Anwar, 2021). Differentiation is aimed at the broad market that involves the creation of a product or services that is perceived throughout its industry as unique. Differentiation advantage is achieved by offering unique products and services and charging premium price for that (Ngo, 2023). Differentiation strategy is used in this situation and company positions itself more on branding, advertising, design, quality and new product development rather than efficiency, outsourcing or process innovation. Customers are willing to pay higher price only for unique features and the best quality that is delivered by value addition (Ochodo, 2022).

Market niche or focus strategy is narrow in scope while both cost leadership and differentiation are relatively broad in market scope. The generic strategy of focus rests on the choice of a narrow competitive scope within an industry (Greckhamer & Gur, 2021). The focuser selects a segment or group of segments in the industry and tailors its strategy to serving them to the exclusion of others (Suryanto & Anggraini, 2020). Organizations can make use of the focus strategy by focusing on a specific niche is sometimes referred to as the niche strategy (Habib, 2023). Firms pursuing this strategy are willing to service isolated geographic areas, satisfy needs of customers with special financing, inventory or servicing problems or even to tailor the products to somewhat unique demands of the small to medium sized customers.

Companies are constantly looking for ways to make their operations more efficient and effective by making their products to have better competitive edge and at the forefront of the market, to attract more loyal customers (Audretsch et al., 2021). Customer's tastes and preferences are shifting/changing and to manufacture what customer require engagement in terms of discussions on how best to adapt and meet their needs. Therefore, it is important to analyze and figure out a company's competitive advantage model for carrying out its activities. There are many ways to achieve the advantage but only two basic types of it: cost or differentiation advantage (Lehrer & Almor, 2022). A company that is able to achieve superiority in cost or differentiation is able to offer consumers the products at lower costs or with higher degree of differentiation and most importantly, is able to compete with its rivals

According Wairimu and Nyangau (2023), this model shows that by combining resources and capabilities with the external environment they become directly involved in strategic alliances in the formation of the appearance thanks to predatory, increases productivity, creates new resources and skills, as well as new products, services, markets, and significantly reduces the risk. It conveys the link between the company's valuable resources and skills, simulation barriers and factors affecting the industry. This model provides an opportunity to examine the continuing competitive advantage in speed. By acquiring and maintaining a competitive advantage the company can focus on the coordination between the what can be develop internally and through external changes where cost leadership and differentiation advantage can be achieve through strategic management practices.

In this study, Porter's Generic Competitive Strategies will be useful in examining how firms exploit the generic strategies to gain competitive advantages and achieve sustainable growth.

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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4.1.4 Stakeholders Theory

In 1970, Friedman published his iconic paper 'The social responsibility of business is to increase its profits' in which he held how a firm's main responsibility is to maximize the returns for its shareholders and that a company has no social responsibility to the public or society (Latapí Agudelo et al., 2019). Friedman's doctrine (i.e., shareholder theory) would be later criticized for its lack of support for Corporate Social Responsibility (CSR) and for not taking into account all the interests of the different firm stakeholders. Consequently, against this perceived dominance of the shareholder-centric view of the firm, and the corresponding utility and taken-for-granted nature of agency theory, stakeholder theory emerged as a seemingly alternative response (Valentinov & Chia, 2022). Most influentially set out by Freeman, stakeholder theory emerged to highlight and advocate the strategic importance of groups other than just the shareholder, including not only the suppliers, employees and clients, but also the local community, environmental groups, governments and even competitors (Mainardes et al., 2011).

The basic premises of stakeholder theory as described by others (Stoelhorst & Vishwanathan, 2022) are: the organization enters into relationships with many groups that influence or are influenced by the company, i.e. 'stakeholders' in accordance with Freeman's terminology; the theory focuses on the nature of these relationships in terms of processes and results for the company and for stakeholders; the interests of all legitimate stakeholders are of intrinsic value and it is assumed that there is no single prevailing set of interests, as Johnson-Cramer et al., (2022) pointed out; the theory focuses upon management decision making; the theory explains how stakeholders try and influence organizational decision-making processes so as to be consistent with their needs and priorities; and, organizations should attempt to understand and balance the interests of the various participants.

Stakeholder Theory is a view of capitalism that stresses the interconnected relationships between a business and its customers, suppliers, employees, investors, communities and others who have a stake in the organization (Alam & Miah, 2021). The theory argues that a firm should create value for all stakeholders, not just shareholders, business organizations have become amongst the most powerful social bodies in the planet. Businesses control massive resources, cross national borders, and touch all aspects of human life. Organizations have constituencies. Moreover, organizations are dependent upon these constituency groups for their own success. This much is uncontroversial. These constituencies as stakeholders, nevertheless, disagreements seem ceaseless (Villena, Wilhelm & Xiao, 2021).

In explicating stakeholder theory, it is most informative to first consider it as a descriptive tool to understand the workings of the firm (Ellemers & Chopova, 2021). Where the traditional view of the firm considered basic input (suppliers, investors/shareholders and employees) and output (customers) flows, the stakeholder model instead describes two-way flows between the firm and a multitude of stakeholders, wherein none of the stakeholders is necessarily more important than any other. Critically, the hegemony of the shareholder is both descriptively challenged and normatively denied (Squires & Elnahla, 2020). Each of these groups is held to have a potentially legitimate interest in participating in an enterprise to obtain benefits, and no interest is held to be automatically paramount over another. Of note, but beyond the scope of this review, is the challenge experienced in the literature in developing a commonly accepted definition of stakeholder (Kavvadia, 2022).

In its breadth, stakeholder theory is criticized for being imprecise in both its descriptive capacity and in its instrumental utility. Freeman and Dmytriyev (2017) set this out in detail, highlighting the following points: By suggesting that managers have more than one objective function (by virtue of seeking to satisfy multiple stakeholders as opposed to the shareholder), stakeholder theory creates a recipe for confusion and inefficient decision-making (Ramoglou, et al., 2023). Stakeholder attention distorts risk-taking by managers, as stakeholders, such as employees, suppliers and communities, will have incentives to dissuade managers from risk-taking activities. The evidence for a focus on stakeholder management leading to firm performance is weak, wherein the goal of maximizing shareholder value is pro-stakeholder in that it generates the economic performance that benefits the primary stakeholder in the long run (Freeman, Phillips & Sisodia, 2020).

Business organizations have become amongst the most powerful social bodies in the planet. They are certainly the big social institutions of our time, maybe the only enduring effective social institutions, anticipated to not only fuel free-market economies, but rather to shoulder the burdens once assumed to be the domain of government and religion (e.g., health care, child care, privacy protection, education). Businesses control massive resources, cross national borders, and touch all aspects of human life. Organizations have constituencies. Moreover, organizations are dependent upon these constituency groups for their own success. This much is uncontroversial. These constituencies as stakeholders, nevertheless, disagreements seem ceaseless (Squires & Elnahla, 2020).

The Stakeholder Theory will be used in the present study to the influence of strategic corporate governance practice on value addition in dairy sector in Kenya. In this respect, strategic corporate governance practice on value addition will be examined in terms of Accountability, transparency, -honesty and disclosure in the light of their stakeholder input.

4.1.5 Relational Communication Theory

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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Anthropologist Bateson developed the theory of relational communication. The relational communication body of knowledge is the most promising theory to advance the effective practice of strategic communication (Guddemi, 2020). Bateson developed two seminal propositions that serve as the foundation for other relational theories. The first proposition is the dual nature of messages. Every communicative exchange has two messages, a report message and a command message (Lee & Doran, 2017). The report message contains the substance or content of the communication, while the command message describes the relationship. These two elements are also known as the content message and the relationship message. Bateson's second proposition is that relationships can be characterized by complementarity or symmetry. In a complementary relationship, if one participant is dominant, the other is submissive. In symmetry, dominance is met by dominance; submissiveness elicits submissiveness (Wu et al., 2019).

Relational theory espouses the importance of mutually beneficial organization-publics relationships. Hence, a relational theory framework for strategic communication fills gaps and builds a bridge between current practice and theory (Guddemi, 2020). The relational theory of human communication provides a useful intellectual framework for strategic communication practice. Relational theory espouses the importance of developing and maintaining mutually beneficial relationships between organizations and key publics. Both the organization and publics influence the other, and communication activities link the parties (Glassman, Tilak & Kang, 2023).

Bruning and Lamb claimed that organizations should communicate both content and relational messages when interacting. Most organizations focus only on communicating content messages and often fail to attend to the relational aspects of organization-public communication (Goodbun, & Sweeting, 2021). This is based on one of the propositions of Bateson's relational theory of communication discussed earlier. According to Tufte, "Successful communication articulates trust, promotes feelings of security and belonging, and leads to reflection and action." Communication for sustained change invests as much effort in ensuring the audience is capable of engaging with the messenger and is strong and resilient enough to enact change. "This is the most likely way in which target populations will re-evaluate loyalties and behavior (Mwende, 2022).

The relational theory and the relationship management approach have gained scholarly and practical interest in the past decade. They offer promise for communication professionals conducting activities to support organizational goals (Glassman, Tilak & Kang, 2023). To firmly embed theory in strategic communication practice, a number of recommendations are offered. First, use relational theory as the foundation for more effective strategic communication practice. Second, replace the message influence model with the relationship management approach that focuses on the quality of mutually beneficial relationships organizations develop and maintain with strategic publics. The relationship – not the message – determines the meaning that a person makes from the communication (Guddemi, 2020).

4.2 Conceptual Framework

The conceptual framework below shows the relationship between the independent and dependent variables under the study.

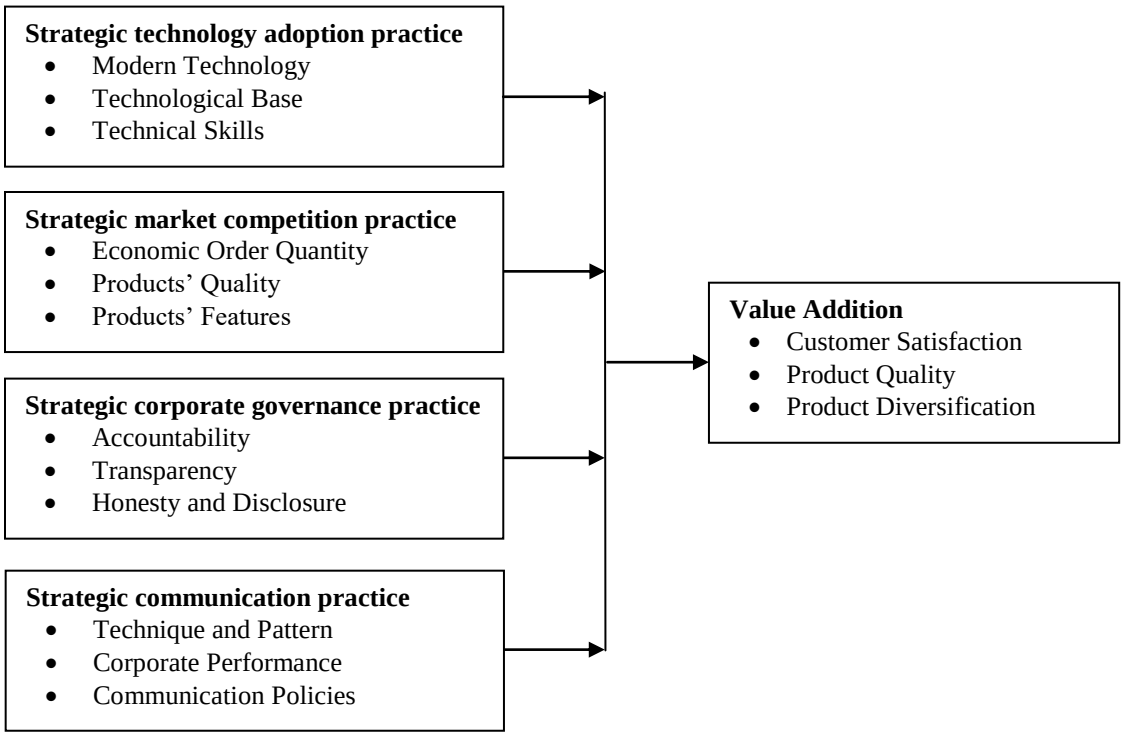


Fig. 1: Conceptual Framework

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01

5. Research Design

A population is a group of individuals, events or objects to which the researcher generates the results of the study. According to Wildemuth (2016), a population is a group of events, people or items of interest with a common observable attribute. This was a cross-sectional study of 43 active processors according to Kenya Dairy Board operating in Kenya which formed the unit of analysis. The unit of observation comprised senior managers in each of the dairies (Dairy manager, production manager, operations manager and or marketing manager) selected randomly.

Table 1: Population Size

S/No.	Dairy Processor Name	Population Size
1	Afrodane Foods Industries	5
2	Uplands Premium Dairies	4
3	BioFoods Ltd	6
4	New K.C.C. – Kiganjo	6
5	Happy Cow	7
6	Brookside Dairy Limited	7
7	Meru Dairy Union	6
8	Doinyo Lessos Creameries Ltd	5
9	Githunguri Dairy F.C.S.	4
10	Kinangop Dairy Limited	5
11	Highland Creamers and Foods Limited	4
12	Suka Farmers Co-operatives Society Ltd	6
13	Sameer Agr & Livestock Ltd	8
14	Bahati Agro Processors Limited	4
15	Superior Highland Dairy	5
16	Kiambaa D.F.C.S. Ltd	5
17	Lucky Dairies	5
18	New K.C.C.	7
19	Aspendos Dairy Limited	4
20	Mukurwe-ini Wakulima Dairy Ltd	4
21	Sunpower Products	5
22	New K.C.C. – Kitale	6
23	Emuhaya West Community Dairy Cottage	5
24	Beta Dairies	5
25	Chemjo Trading Company	5
26	Nile Dairy Kenya Ltd	6
27	Eden Dairy Limited	6
28	Oak Milk Limited	4
29	Glacier Products Ltd	7
30	Crystal Flakes	7
31	Tracy Holmes	5
32	Patbon Investments	6
33	Blue Room Company Ltd	5
34	Rockhouse Enterprises	6
35	Kairitu Farm Fresh Limited	5
36	Parkar Enterprises	4
37	Marto Holdings Ltd	7
38	Cafesserie Ltd	6
39	Tidypack Dairies	5

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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40	Favour Dairy Enterprises	4
41	Tuzo Dairies	8
42	Yogo Creameries	7
43	Iria Ini Dairies	7
Totals		238

Source KDB 2022

6. Research Findings and Discussion

6.1 Descriptive Statistics

This section presents the results of the descriptive statistical analyses of the data and their interpretations. The descriptive statistics helped to develop the basic features of the study and form the basis of virtually every quantitative analysis of the data. The results were presented in terms of the study objectives.

6.1.1 Strategic Technology Adoption Practice

The first objective was to examine strategic technology adoption practice and value addition in the dairy sector in Kenya. The findings are presented in Table 2.

Table 2: Descptive Results for Strategic Technology Adoption Practice

Statement	Mean	Std. Dev
My dairy company has capital investment in modern machinery and equipment.	3.1	1.512
Our company has necessary modern tools, machinery and equipment to make modifications to already existing products.	3.15	1.367
My company has engaged in early adoption of modern machinery and equipment for use in value addition	3.33	0.942
My dairy company top leadership use technology in making decisions	3.39	0.874
My dairy company systems and processes are adequately supported by Enterprise Resource Planning for easy use in value addition	3.6	1.139
Our equipment's are automated and robust to produce dairy products that meet international standards	3.58	0.671
My dairy company has enhanced technical skill which is key in achieving automation of most processes	3.62	0.834
My company provides technical support to its staff which helps them in constructing innovative equipment and machinery for use in value addition and product diversification.	3.03	1.063
My company provides continuous skills support and upgrade for its staff so as to put them abreast with the technology adoption.	3.71	1.079

Key Scale: 1.00–1.80 = Strongly Disagree (Very Low Practice), 1.81–2.60 = Disagree (Low Practice), 2.61–3.40 = Neutral (Moderate Practice), 3.41–4.20 = Agree (High Practice), 4.21–5.00 = Strongly Agree (Very High Practice)

Table 2 shows that the aggregate mean was, M = 3.39 and the standard deviation is, SDev = 1.053. The mean is low and the standard deviation is more than one which indicates that the dairy firms were split on strategic technology adoption practices carried out in them. There were indications that less than half of the dairy firms had made capital investments in modern machinery and equipment (mean = 3.1). However, most dairy firms had necessary modern tools, machinery and equipment to make modifications to already existing products. Most dairy companies have also engaged in early adoption of modern machinery and equipment for use in value addition (mean = 3.33). Adapting new technology facilitates makes a company more effective and productive, but only if the employees within the organization actually leverage the new technology to the fullest potential (Rodríguez-Espíndola et al., 2022). Adopting new technology is a long-term strategy that involves time, effort, and expertise. It is essential to identify the needs of an organization and what it wishes to accomplish. Moreover, the cost and time involved in the shift could be overwhelming for many.

There were also indications that the top leadership in most dairy companies use technology in making decisions (mean = 3.39). Further, the dairy company's systems and processes are adequately supported by Enterprise Resource Planning for easy use in value addition (mean = 3.6). The equipment in most of the dairy companies were automated and robust to produce dairy products that meet international standards (mean = 3.58).

Other findings indicate that most dairy companies have enhanced technical skill which is key in achieving automation of most processes (mean = 3.62). However, there was uncertainty on whether the dairy companies provide technical support to their staff which helps them in constructing innovative equipment and machinery for use in value addition and product diversification

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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(mean = 3.03). Nevertheless, most dairy companies provide continuous skills support and upgrade for its staff so as to put them abreast with the technology adoption (mean = 3.71).

Kromann and Sørensen (2019), in a study of the valve manufacturing industry, find that the adoption of new manufacturing technology is associated with increased skill requirements and changes in human resources practices. In other words, in order to successfully adopt new technologies and integrate them within their organizations, firms embracing new technology have to obtain new skills and/or to upgrade the skill level of their existing workforces because the attributes of new technology could be significantly different from old technologies. Training is often used to meet the challenge for two reasons (Stornelli et al., 2021).

6.1.2 Strategic Market Competition Practice

The second objective was to analyze strategic market competition and value addition in dairy sector in Kenya. The findings are presented in Table 3.

Table 3: Descptive Results for Strategic Market Competition Practice

Statement	Mean	Std. Dev
My dairy company practice Economic Order Quantity to reduce costs	3.74	0.755
My dairy company products are affordable /economical and of good value	2.77	1.038
My dairy company continuously seeks to reduce prices without sacrificing its products' essential features or acceptable quality	3.07	0.873
My company offers many product variations and a wide selection of products to cater for the customer's varied needs	3.53	0.984
Our dairy company involves major suppliers in the design stage of new dairy products focused on the development of partnership and quality service to our key stakeholders	2.86	1.026
My dairy organization has the capability needed to perform research and surveys in order to come up with new product ideas focusing the market capitalization	3.63	0.991
My dairy company ensures that there is a close relationship between the customers and the marketing team	3.73	0.867
Our dairy company offers unique product features that our customers are willing to pay for a higher price for.	3.53	0.712
Our dairy company ensures constant improvement and use of innovation to stay ahead of imitative competitors.	3.76	0.955

Key Scale: 1.00–1.80 = Strongly Disagree (Very Low Practice), 1.81–2.60 = Disagree (Low Practice), 2.61–3.40 = Neutral (Moderate Practice), 3.41–4.20 = Agree (High Practice), 4.21–5.00 = Strongly Agree (Very High Practice)

Table 3 shows that the aggregate mean is 3.402 and the standard deviation is 0.911, which indicates that the mean is low while the standard deviation is less than one. This shows that respondents agreed with less variability on the extent to which strategic market competition practice influences value addition in the dairy sector in Kenya.

There were indications that most dairy companies practice Economic Order Quantity to reduce costs (mean = 3.74). However, there was uncertainty on whether most dairy company's products were affordable /economical and of good value (mean = 2.77). There was also uncertainty on whether the dairy companies continuously seek to reduce prices without sacrificing its products' essential features or acceptable quality (mean = 3.07). Vazquez-Brust et al., (2020) note that as a way of mitigating the dwindling net farm income in such an environment, engagement in value addition activities is being prescribed as a solution to ensure market competition and survival. This may however be a solution only to the already existing firms to increase their net incomes. The competitiveness of milk processing companies in Kenya is directly linked to the strategies they put in place in order to position themselves better (Kihiu, 2021). Porter (2010) posits that there are three main strategies that companies need to use to remain competitive; focus strategy, where an organization identifies, targets and satisfies the specific needs of a particular segment, cost leadership strategy where an organization endeavors to produce its goods at the lowest possible cost thereby reflecting in the final prices as well as market differentiation strategy whereby a firm invests in unique product innovations so that products to stand out from their competitors.

There were also indications that most dairy companies offer many product variations and a wide selection of products to cater for the customer's varied needs (mean = 3.53). However, there was uncertainty on whether the dairy companies involve major suppliers in the design stage of new dairy products focused on the development of partnership and quality service to their key stakeholders (mean = 2.86). However, most dairy companies have the capability needed to perform research and surveys in order to come up with new product ideas focusing the market capitalization (mean = 3.63). Producers and suppliers familiar with farming and ranching may know that successful ventures in the agriculture industry have typically operated in a commoditized, price-driven market, where all parties produce essentially the same product. With the advent of product differentiation and niche and direct marketing, that reality has changed, and now there are niche markets in which both individual and wholesale buyers are looking for products with very specific characteristics or special services (Li, 2022).

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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The findings also show that most dairy companies ensure that there is a close relationship between the customers and the marketing team (mean = 3.73). Most dairy companies offer unique product features that our customers are willing to pay for a higher price for (mean 3.53). Further, the dairy companies ensure constant improvement and use of innovation to stay ahead of imitative competitors (mean = 3.76). Liu et al., (2022) states that through a strong brand and consistent product innovation an organization can be as competitive as possible. As such, effective competitive strategies are crucial for the achievement of the company's goals and objectives. Therefore, there is a need to consider ways in which organizations can become more competitive such as by raising their customer base through methods like engaging agents and brokers especially in regions that have not yet been covered by the organization to capture new markets. The company, in this case, will require good strategies that are not only objective but realistic in nature.

6.1.3 Strategic Corporate Governance Practice

The third objective was to analyze strategic corporate governance practice and value addition in dairy sector in Kenya. The findings are presented in Table 4.

Table 4: Descptive Results for Strategic Corporate Governance Practice

Statement	Mean	Std. Dev
We have created corporate codes of conduct and company unit to regulate business ethic as governance strategies	3.71	1.079
We have created company units dealing with business ethics as governance strategies for value addition	2.99	0.970
We have created corporate codes of conduct as governance strategies for value addition initiatives	3.26	0.811
We have adopted mechanisms that safeguard the interests of the stakeholders to actualize value addition initiatives	3.67	1.012
We belief that good governance helps in rebuilding confidence again with customers to actualize value addition initiatives into dairy business	3.97	0.625
We are concerned with holding the balance between economic and social goals to actualize value addition initiatives.	3.76	0.955
We have created financial reporting and customer service charter as governance strategies to achieve value addition	4.06	0.740
We have created stakeholder complaint channels as governance strategies for value addition initiatives	3.91	0.676
Growth of socially responsible investors has encouraged us to give greater attention to value addition initiatives	3.34	0.906

Key Scale: 1.00–1.80 = Strongly Disagree (Very Low Practice), 1.81–2.60 = Disagree (Low Practice), 2.61–3.40 = Neutral (Moderate Practice), 3.41–4.20 = Agree (High Practice), 4.21–5.00 = Strongly Agree (Very High Practice)

The analysis of Table 4 Strategic Corporate Governance Practice (SCGP) highlights a moderate influence of governance on value addition in the Kenyan dairy sector, with an overall mean score of 3.63 and a standard deviation of 0.864, indicating relatively consistent responses among the surveyed firms. While most dairy companies have established corporate conduct codes and units to regulate business ethics as part of their governance strategies (mean = 3.71), there remains significant uncertainty regarding the creation of units explicitly focused on business ethics and their direct role in value addition (mean = 2.99). This uncertainty suggests that while ethical governance practices are present, they may not be fully integrated into the operational strategies that drive value addition.

The relatively weak relationship between corporate governance and value addition in this sector can be explained through the lens of resource dependency theory (Pfeffer & Salancik, 1978), which posits that industries like dairy, heavily reliant on external resources such as technology, market competition, and raw materials, may prioritize operational efficiency over formal governance mechanisms. This is further supported by the mean score of 3.67 for safeguarding stakeholder interests, showing that while there are efforts to incorporate stakeholder engagement, the direct impact on value addition remains moderate. The belief that good governance rebuilds customer confidence (mean = 3.97) underscores the strategic importance of governance, but its contribution to tangible value addition outcomes, such as innovation or product quality, may still be limited.

The findings also show a moderate concern for balancing economic and social goals (mean = 3.76), which reflects growing attention to corporate social responsibility (CSR) within governance practices. This is aligned with studies that highlight the broader role of governance in addressing both economic and social objectives (Larcker & Tayan, 2020). However, the impact of such CSR initiatives on immediate value addition in the dairy sector is likely less significant than in other industries where governance has a more direct influence, such as finance or large-scale manufacturing (Macey & O'Hara, 2003).

Moreover, the creation of financial reporting mechanisms and customer service charters (mean = 4.06) indicates strong governance in areas of transparency and accountability, both of which are fundamental to enhancing organizational performance (Carmen Briano Turrent, Poletti-Hughes & Williams, 2023). This is complemented by the establishment of stakeholder complaint channels (mean = 3.91), which suggests dairy firms are actively engaging with their stakeholders, although the relatively lower score for socially responsible investors (mean = 3.34) implies that such governance efforts are still evolving.

The relatively weak influence of corporate governance on value addition, compared to sectors like banking or manufacturing, may also reflect the smaller scale and informal structure of many dairy firms in Kenya. These firms often prioritize immediate operational concerns over long-term governance improvements (Kirsch, 2018). As highlighted by agency theory (Jensen & Meckling, 1976), governance plays a more prominent role in larger firms where there is a clear distinction between ownership and management, and where governance is critical for aligning stakeholder interests with operational outcomes.

To strengthen the role of governance in driving value addition, dairy firms could benefit from formalizing business ethics units and more closely aligning governance practices with their operational objectives, particularly in areas like product innovation and customer service. Enhanced stakeholder engagement and the development of governance strategies tailored to the specific challenges of the dairy sector would also help to better integrate governance into value addition initiatives (Solomon, 2020).

6.1.4 Strategic Communication Practice

The fourth objective was to analyze strategic Communication Practice and value addition in dairy sector in Kenya. The findings are presented in Table 5.

Table 5: Descptive Results for Strategic Communication Practice

Statement	Mean	Std. Dev
We have created corporate codes of conduct and company units to regulate business communication practices	3.07	1.172
We have created company units dealing with business communication for value addition	2.41	1.634
We have created good corporate communication channels as governance strategies for value addition initiatives	4.17	0.589
We have adopted communication mechanisms that safeguard the interests of the stakeholders to actualize value addition initiatives	1.93	1.386
We belief that good governance helps in rebuilding confidence again with customers to actualize value addition initiatives into dairy business	3.37	0.783
We are concerned with holding the balance between economic and social goals to actualize value addition initiatives.	3.43	1.015
We have created financial reporting and customer service communication as a mechanism to achieve value addition	3.73	0.867
We have created stakeholder complaint channels as governance strategies for value addition initiatives	3.6	1.139
Growth of responsible social investors has encouraged us to communicate our value addition initiatives	3.53	0.984

Key Scale: 1.00–1.80 = Strongly Disagree (Very Low Practice), 1.81–2.60 = Disagree (Low Practice), 2.61–3.40 = Neutral (Moderate Practice), 3.41–4.20 = Agree (High Practice), 4.21–5.00 = Strongly Agree (Very High Practice)

With an overall mean score of 3.249 and standard deviation = 3.249, it is evident that the respondents were uncertain with most of the statements describing the extent to which strategic communication practice influences value addition in the dairy sector in Kenya. There was uncertainty on whether the dairy firms have created corporate codes of conduct and company unit to regulate business communication practices (mean = 3.07). There were, however, indications that the dairy companies have not yet created company units dealing with business communication for value addition (mean = 2.41). However, there were strong indications that most firms have created good corporate communication channels as governance strategies for value addition initiatives (mean = 4.17). Wetheim (2018) observed that communication strategies foster the development of a culture within an organization, there it be a sector, industry, department, of a proactive approach. This culture is characterized by the utilization of available resources in ways that are both rapid and sustainable for the welfare of the people. According to Lee and Zhong (2022), communication strategies determine the reason why communication is necessary and define the desired objectives.

Most dairy companies in the countries have not adopted communications mechanisms that safeguard the interests of the stakeholders to actualize value addition initiatives (mean = 1.93). However, most dairy firms still believe that good communication helps in rebuilding confidence again with customers to actualize value addition initiatives into dairy business (mean = 3.37), while most forms were concerned with holding the balance between economic and social goals to actualize value addition initiatives (mean = 3.43). The dairy sector uses communication to enhance information flow downward from top management to lower cadre management then to the rest of employees or upward from the rest of employees to the lower cadre

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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then to top management to enhance understanding of the value addition from farm level to processors (Baldin et al., 2021). Organization communication can flow vertically, horizontally, or through a network. In vertical communication, messages flow upward or downward along a path called the chain of command (Nabella et al., 2022).

The findings also indicate that most dairy companies have created financial reporting and customer service communication as a mechanism to achieve value addition (mean = 3.73). Further, most of the dairy firms have created stakeholder complaint channels as governance strategies for value addition initiatives (mean = 3.6). Also, growth of socially responsible investors has encouraged them to communicate their value addition initiatives (mean = 4.17). Reports and proposals commonly follow an upward path; policy statements, plans, directives, and instructions typically follow a downward path. Horizontal communication flows between workers, departments or units of comparable status within the organizational hierarchy who need to share data or coordinate efforts. In network communication, information flows freely among those who have a link that goes beyond the participants' role or unit within the organization hierarchy. Members' roles or status within the organization will generally have the greatest influence in vertical communication and the least influence in network communication (Espinosa & Stanton, 2022).

6.1.5 Value Addition

The study also sought to analyze strategic government interventions and value addition in dairy sector in Kenya. The findings are presented in Table 6.

Table 6: Descptive Results for Value Addition

Statement	Mean	Std. Dev
My company experience customer repeat purchase following recommendations and referrals from customers who have used our value-added products	3.91	0.969
There's less fluctuation of customer loss and high level of customer retention rate due to customer satisfaction by our value-added products	3.34	0.906
Having a customer care desk in my company has helped in customer complaints and complaints handling promptly contributing to customer satisfaction.	3.53	0.984
My company dairy products are of high quality in the Kenyan and international market	3.39	0.874
My company dairy products are customized to suit customer needs both in Kenya and in the international market.	4.17	0.589
The quality of my company dairy products meets our customer needs, tastes fashions, preferences and expectations	3.6	1.139
We have different varieties of dairy product brands in the local and international markets	3.58	0.671
Our dairy company product diversification has helped my company to take advantage of the evolution of markets and future growth opportunities.	3.33	0.942
Our dairy company quality production process meets the international standards for export markets	3.91	0.676

Key Scale 1.00–1.80 = Strongly Disagree (Very Low Practice), 1.81–2.60 = Disagree (Low Practice), 2.61–3.40 = Neutral (Moderate Practice), 3.41–4.20 = Agree (High Practice), 4.21–5.00 = Strongly Agree (Very High Practice)

With an aggregate mean =3.64 and standard deviation = 0.8611, it is evident that the means were high and the standard deviation less than zero, hence, it is evident that the respondents agreed with the statements regarding the status of value addition in the dairy firms in Kenya.

Most dairy companies experience customer repeat purchase following recommendations and referrals from customers who have used our value-added products (mean = 3.91). There is also less fluctuation of customer loss and high level of customer retention rate due to customer satisfaction by our value-added products (mean = 3.34). Having a customer care desk in the company has helped with customer complaints and complaints handling promptly contributing to customer satisfaction (mean = 3.53).

There were indications that most dairy company's products were of high quality in the Kenyan and international market (mean = 3.39). Further, there were strong indications that most dairy products were customized to suit customer needs both in Kenya and in the international market (mean = 4.17). Also, the quality of the company's dairy products meets our customer needs, tastes, fashions, preferences and expectations (mean = 3.6). Most firms had different varieties of dairy product brands in the local and international markets (mean = 3.58). Further, most dairy company's product diversification has helped the company to take advantage of the evolution of markets and future growth opportunities (mean = 3.33). Also, most of the dairy companies' quality production process meets the international standards for export markets (mean = 3.91).

6.2 Multiple Linear Regression Results

6.2.1 Model Summary

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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The first phase of the regression analysis examined the direct relationship between the dependent variable, Value Addition (VA), and the four independent variables: Strategic Market Competition (SMC), Strategic Corporate Governance (SCG), Strategic Technology Adoption (STA), and Strategic Communication (SC). The results of this model are summarized in Table 7.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.695[a]	.482	.472	.37187	1.729

a. Predictors: (Constant), strategic market competition practice, Strategic Corporate Governance Practice, Strategic Technology Adoption practice, Strategic Communication Practice.

b. Dependent Variable: Value Addition

The results indicate that the combined effect of the four strategic management practices on value addition is moderately strong, as shown by the multiple correlation coefficient R = 0.695. This implies that the independent variables collectively have a substantial positive linear association with value addition among dairy firms.

The coefficient of determination ($R^2 = 0.482$) shows that 48.2% of the variation in value addition can be explained by changes in the four strategic management practices. This suggests that almost half of the improvements or declines in value addition within the sector are attributable to variations in technology adoption, market competition, corporate governance, and communication practices. The adjusted $R^2 = 0.472$ confirms that the model maintains strong explanatory power even after adjusting for the number of predictors, indicating minimal inflation due to sampling error. The standard error of the estimate (0.37187) suggests a moderate dispersion of observed values around the regression line, reflecting acceptable model accuracy. Furthermore, the Durbin-Watson statistic (1.729) falls within the acceptable range of 1.5 to 2.5, suggesting that autocorrelation is not a major concern and that the residuals are largely independent.

In practical terms, the model reveals that strategic management practices are significant drivers of value addition in the dairy sector, but they do not account for the entire variability. The remaining 51.8% of variation in value addition is likely influenced by other external factors not captured in this phase of the model, such as government policy interventions, access to finance, market infrastructure, and macroeconomic conditions.

These findings are consistent with recent empirical studies in agribusiness and value chain management that emphasize the role of internal strategic practices—such as governance, market competition, and technology adoption—in enhancing firm performance and product value creation. For example, Vuvor et al. (2025) highlighted that combining internal strategic capabilities with external market responsiveness can explain nearly half of value creation outcomes in African dairy systems, with the remaining variation often dependent on enabling environments and external support mechanisms.

6.2.2 ANOVA Results

The ANOVA test was conducted to determine the overall statistical significance of the direct regression model examining the relationship between Value Addition (VA) and four strategic management practices: Strategic Technology Adoption Practice (STAP), Strategic Market Competition Practice (SMCP), Strategic Corporate Governance Practice (SCGP), and Strategic Communication Practice (SCP). The test assessed whether the predictors, considered jointly, significantly explained variation in value addition among the surveyed dairy firms. The results are presented in Table 8.

Table 8: ANOVA Results

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	26.286	4	6.572	24.694	.000[b]
Residual	28.211	106	.266		
Total	54.497	110			

a. Dependent Variable: Value Addition

b. Predictors: (Constant), strategic market competition practice, Strategic Corporate Governance Practice, Strategic Technology Adoption practice, Strategic Communication Practice

The ANOVA results in Table 8 indicate that the direct regression model was statistically significant, F (4,106) =24.694, p<.001 F (4,106) =24.694, p<.001. Since the p-value was below the 5% significance level, the null hypothesis that the four predictors jointly had no statistically significant relationship with value addition was rejected. This finding demonstrates that STAP, SMCP, SCGP and SCP, when considered collectively, provided a statistically significant explanation of variation in value addition among the surveyed dairy firms.

The regression sum of squares was 26.286, compared with a residual sum of squares of 28.211, out of a total sum of squares of 54.497. These results indicate that the model accounted for approximately 48.2% of the observed variation in value addition, consistent with the model summary (R^2=.482). The remaining 51.8% was not explained by the four predictors included in the direct regression model and may be associated with other factors not captured by the model, as well as random variation. The statistically significant F-statistic therefore indicates that the set of strategic management practices collectively improved the explanation of value addition compared with a model containing only the intercept.

From a managerial perspective, the findings suggest that value addition in the Kenyan dairy industry should be examined in relation to a combination of strategic practices rather than any single practice in isolation. Market competition practices may be relevant to product differentiation and market positioning; corporate governance practices may support accountability and strategic decision-making; technology adoption may support processing and operational activities; and communication practices may facilitate coordination and information-sharing. The significant overall model indicates that these practices, considered together, are statistically associated with value addition. However, the ANOVA test does not establish that each practice individually has a significant relationship with value addition. The individual regression coefficients and their p-values are required to determine the direction and statistical significance of each predictor.

The findings are broadly consistent with the strategic management perspective that organisational performance and value creation may be associated with the integration of internal strategic practices. Nevertheless, the specific studies previously cited as Vuvor et al. (2025) and SEI (2022) should be retained in this discussion only if their bibliographic details and relevance to strategic management practices and value addition have been verified in the thesis literature review. The ANOVA results alone do not establish agreement with those particular studies. Furthermore, the statistically significant direct regression model provides a basis for proceeding to the moderated regression analysis. The subsequent analysis can examine whether Strategic Government Intervention Practice (SGIP) changes the relationships between the individual strategic management practices and value addition. The significant ANOVA result for the direct model does not, by itself, demonstrate that government intervention moderates those relationships; that conclusion must be based on the relevant interaction coefficients and their statistical significance.

Overall, the results establish that the four strategic management practices jointly explain a statistically significant proportion of variation in value addition among the surveyed dairy firms. The model's explanatory power (R^2=.482) indicates that the predictors account for 48.2% of the observed variation, while the individual regression results are needed to establish the contribution of each practice separately.

6.2.3. Regression Coefficients

The study sought to determine how strategic management practices influence value addition (VA) in Kenya's dairy sector. To achieve this, a multiple linear regression model was estimated under the direct relationship phase, incorporating four strategic management practices as independent variables: Strategic Technology Adoption Practice (STAP), Strategic Market Competition Practice (SMCP), Strategic Corporate Governance Practice (SCGP), and Strategic Communication Practice (SCP). The regression coefficients, presented in Table 9, identify the magnitude and significance of the contribution of each practice to value addition.

Table 9: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	.969	.239		4.052	.000
STAP	-.107	.056	-.124	-1.916	.057
SMCP	.328	.065	.325	5.066	.000
SCGP	.314	.057	.347	5.559	.000
SCP	.237	.058	.269	4.090	.000

a. Dependent Variable: Value Addition (VA)

In the table 9, among the four predictors, Strategic Corporate Governance Practice (SCGP) recorded the highest standardized beta coefficient ($\beta = 0.347$, $p < 0.001$), making it the strongest driver of value addition in the dairy sector. This indicates that improvements in governance—such as enhanced transparency, accountability, and stakeholder engagement—are likely to yield the largest incremental gains in value creation. This aligns with Alfraih & Almutawa (2017) and Vuvor et al. (2025), who highlight that robust governance structures in agribusiness improve firm credibility, attract investment, and facilitate sustainable value creation.

The second strongest contributor is Strategic Market Competition Practice (SMCP) with $\beta = 0.325$ ($p < 0.001$). This result implies that firms that adopt competitive strategies—such as product differentiation, market responsiveness, and branding—achieve significantly higher value addition. This is consistent with the work of Grashuis & Magnier (2018), who emphasize that competitive behaviour in cooperative and smallholder settings enhances firm performance and market positioning.

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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Strategic Communication Practice (SCP) follows closely with $\beta = 0.269$ ($p < 0.001$), confirming that robust communication systems facilitate value creation. Effective communication ensures timely dissemination of operational and financial information, strengthens customer relationships, and aligns internal processes with strategic objectives. This aligns with recent findings that emphasize digital and organizational communication as catalysts for market integration and supply chain efficiency in African dairy systems (Vuvor et al., 2025).

In contrast, Strategic Technology Adoption Practice (STAP) demonstrated a negative but marginally non-significant effect on value addition ($\beta = -0.124$, $p = 0.057$). This indicates that, within the sample, technology adoption has not yet translated into substantial value creation, potentially due to implementation challenges such as high acquisition costs, inadequate infrastructure, and limited technical expertise. This finding contrasts with studies in mature dairy markets, where technological integration significantly improves operational efficiency and product quality (Kromann & Sørensen, 2019).

Overall, the regression coefficients highlight that internal strategic management practices collectively enhance value addition, but their individual contributions vary. Corporate governance and market competition are the most impactful, while technology adoption lags behind, signalling the need for capacity-building, digital infrastructure, and policy support to unlock its potential. These insights provide an empirical basis for prioritizing governance improvements, competitive positioning, and effective communication strategies to drive value creation in Kenya's dairy sector. Therefore, the resulting Multiple Linear Regression

Model (Direct Relationship) was:

$$VA = 0.969 - 0.107(STAP) + 0.328(SMCP) + 0.314(SCGP) + 0.237(SCP) + e$$

Where:

VA = Value Addition (Dependent Variable);
STAP = Strategic Technology Adoption Practice;
SMCP = Strategic Market Competition Practice;
SCGP = Strategic Corporate Governance Practice;
SCP = Strategic Communication Practice; 0.969 =
Regression intercept (baseline VA); e = Error term representing other unexplained factors

The results of the multiple linear regression models provide insights into how each strategic management practice contributes to value addition in the Kenyan dairy sector. The coefficient for Strategic Market Competition Practice (SMCP) is 0.328, indicating that a one-unit increase in market competition practice leads to a 0.328 unit increase in value addition, holding all other factors constant. This underscores the critical role of competitive strategies, such as product differentiation, market positioning, and pricing strategies, in driving value creation. Firms that actively respond to market forces and pursue competitive advantages are therefore more likely to achieve higher levels of value addition. Strategic Corporate Governance Practice (SCGP) has a coefficient of 0.314, suggesting that a one-unit increase in governance practices leads to a 0.314 unit increase in value addition, assuming other variables remain constant. This result highlights the importance of corporate governance mechanisms—such as transparency in reporting, effective decision-making structures, and stakeholder engagement—in enhancing operational efficiency and overall value creation. Dairy firms that implement strong governance frameworks are better positioned to optimize resources, attract investment, and sustain competitive performance.

Strategic Communication Practice (SCP) contributes 0.237 to value addition for every one-unit improvement, all else being equal. This finding reinforces the idea that effective communication—through internal coordination, customer outreach, and timely dissemination of operational information—enhances firms' ability to align strategies with market demands, resulting in increased value addition. Communication therefore serves as a vital link between internal processes and external market engagement. In contrast, Strategic Technology Adoption Practice (STAP) shows a negative coefficient (-0.107), suggesting that, in its current form, technology adoption does not significantly enhance value addition in the dairy sector. This negative association may reflect challenges such as the high cost of technology, limited digital infrastructure, or low levels of technical expertise among staff. These barriers could prevent firms from realizing the efficiency and productivity benefits commonly associated with technological innovation. Overcoming these constraints could transform technology into a more effective driver of value addition in the future.

Finally, the intercept (0.969) represents the baseline level of value addition when all the strategic management practices are at minimal levels. This indicates that even without significant strategic interventions, some inherent level of value addition exists, likely due to basic operational processes, market participation, and existing sectoral practices. However, maximizing value creation requires the deliberate implementation and strengthening of the strategic management practices captured in the model.

Collectively, these results demonstrate that corporate governance, market competition, and communication practices are the primary positive drivers of value addition, while technology adoption remains an underutilized resource. This underscores the need for dairy firms to not only strengthen governance and competitive strategies but also invest in the effective adoption of technology, possibly with government intervention to overcome structural barriers.

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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6.3 Hypothesis Results

The study has aligned the hypotheses (H1–H4) with the four strategic management practices, included the t-values, p-values, and the decision rule for either rejecting or failing to reject the null hypotheses at the 5% significance level ($\alpha = 0.05$). The hypothesis results summary is presented in table 10.

Table 10: Hypothesis Results

Hypothesis	Statement	B (Unstd.)	t-value	Sig. (p)	Decision
H_{01}	Strategic Technology Adoption Practice (STAP) has no significant effect on Value Addition	-0.082	-1.471	0.143	Fail to Reject H_{O1}
H_{02}	Strategic Market Competition Practice (SMCP) has no significant effect on Value Addition	0.226	3.146	0.002	Reject H_{O2}
H_{03}	Strategic Corporate Governance Practice (SCGP) has no significant effect on Value Addition	0.336	5.947	0.000	Reject H_{O3}
H_{04}	Strategic Communication Practice (SCP) has no significant effect on Value Addition	0.266	4.477	0.000	Reject H_{O4}

6.3.1 Hypothesis One (H_{01}): Strategic Technology Adoption Practice (STAP)

The results indicated a negative but non-significant regression coefficient ($\beta = -0.082$, $t = -1.471$, $p = 0.143$). Therefore, the null hypothesis was not rejected, suggesting that technology adoption in its current form does not significantly contribute to value addition in the Kenyan dairy sector. This may reflect structural barriers such as high implementation costs, inadequate infrastructure, or limited technical expertise, which prevent technology from delivering its intended benefits. According to Kromann and Sørensen (2019), technology can drive productivity and value creation when firms possess the capacity to implement and utilize it effectively. In the current context, the minimal effect of STAP implies that technology investments have not yet translated into measurable gains, and strategic alignment or capacity-building efforts may be necessary to unlock its value potential.

6.3.2 Hypothesis Two (H_{02}): Strategic Market Competition Practice (SMCP)

The model showed a positive and significant coefficient ($\beta = 0.226$, $t = 3.146$, $p = 0.002$), resulting in the rejection of the null hypothesis. This indicates that market competition strategies—such as product differentiation, branding, market positioning, and pricing flexibility—are critical drivers of value addition. Firms that actively respond to market signals and adopt competitive strategies can achieve superior market penetration and profitability. These findings are consistent with Grashuis and Magnier (2018), who note that dairy cooperatives in competitive markets enhance value creation through differentiated products and strong brand equity. In the Kenyan dairy context, firms that innovate their product offerings and leverage market intelligence can generate more value-added products, increasing both revenues and market share.

6.3.3 Hypothesis Three (H_{03}): Strategic Corporate Governance Practice (SCGP)

The regression results revealed a positive and significant coefficient ($\beta = 0.336$, $t = 5.947$, $p < 0.001$). This finding led to the rejection of the null hypothesis, confirming that corporate governance strongly contributes to value addition. This result highlights that well-structured governance practices, including accountability, transparency, risk management, and effective decision-making processes, enhance operational efficiency and resource utilization in dairy firms. Governance mechanisms ensure that firms comply with regulations, reduce operational risks, and maintain investor and stakeholder confidence. These outcomes align with findings by Alfraih and Almutawa (2017), who assert that robust governance structures improve voluntary disclosures and financial performance, ultimately enhancing value addition. In practice, dairy firms with clear board oversight and responsive management structures can better align operations with strategic objectives, leading to higher value creation in the sector.

6.3.4 Hypothesis Four (H_{04}): Strategic Communication Practice (SCP)

The regression analysis showed a positive and significant coefficient ($\beta = 0.266$, $t = 4.477$, $p < 0.001$), leading to the rejection of the null hypothesis. This underscores the crucial role of effective communication practices—both internally among employees and externally with stakeholders and customers—in facilitating value addition. Efficient communication channels enhance coordination, improve decision-making, and ensure that strategic initiatives are executed effectively. As Ansari (2021) and Lee & Zhong (2022) highlight, communication is central to achieving organizational goals, fostering stakeholder engagement, and aligning operations with market expectations. In the dairy sector, strong communication supports the dissemination of market feedback, quick adaptation to consumer demands, and the effective marketing of value-added products.

ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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7. Conclusions and Recommendations

7.1 Conclusions

The study concludes that strategic technology adoption in the Kenyan dairy sector has yet to make a significant contribution to value addition. While firms have access to modern tools and systems, the adoption is limited, and investments in technology are not sufficiently widespread to produce measurable improvements in value addition. Regression and moderated analyses confirmed that technology adoption had a marginally negative and non-significant effect on value creation. This indicates that while technology can support operational efficiency, its potential to drive value addition is constrained by high implementation costs, limited technical skills, and inadequate infrastructural support.

The study established that strategic market competition significantly enhances value addition in the Kenyan dairy sector. Firms that embraced competitive practices—such as product differentiation, cost optimization, branding, and market responsiveness—achieved higher levels of value creation. Regression results confirmed that SMCP was the second-strongest predictor of value addition, and its positive effect was amplified under supportive government interventions.

The research concluded that strategic corporate governance is the strongest driver of value addition in the Kenyan dairy sector. Firms with robust governance structures—including accountability mechanisms, transparent financial reporting, and active stakeholder engagement—demonstrated improved operational efficiency and higher value creation. However, the moderated results showed that excessive regulatory involvement may slightly reduce governance efficiency by introducing bureaucratic delays.

The study concludes that strategic communication significantly contributes to value addition by ensuring effective information flow, customer engagement, and stakeholder coordination. Firms with strong communication practices were better able to align internal processes with market demands and enhance customer satisfaction. Although government intervention did not significantly moderate this relationship, internal communication systems independently proved essential for supporting value addition.

7.2 Recommendations

Dairy firms should increase their investment in advanced technology solutions and integrate them into all stages of production and processing. Firms should prioritize staff training to enhance technical capacity and seek partnerships with government and development agencies to subsidize the acquisition of modern equipment. Additionally, the government should implement targeted programs such as digital infrastructure support and tax incentives to encourage full-scale adoption of technology in the sector.

Dairy firms should continue to strengthen their market competition strategies by focusing on product differentiation, branding, and responsive market positioning. Additionally, firms should implement competitive pricing strategies that align with consumer expectations of value. Collaboration with marketing experts, investment in consumer research, and participation in trade fairs can also expand market reach. Policymakers should further enhance market competition through anti-monopoly regulations and by supporting access to regional and international markets.

Dairy firms should institutionalize governance structures that strengthen accountability, promote ethical practices, and enhance stakeholder participation. Firms should align their governance practices with performance metrics that directly support value addition. Regulatory bodies should aim to simplify compliance processes to avoid unnecessary delays in decision-making. Establishing industry-wide governance standards can also boost trust and performance in the sector.

Dairy firms should invest in comprehensive communication strategies that enhance transparency and timely information sharing across internal and external stakeholders. Establishing dedicated communication units, adopting digital communication tools, and conducting regular stakeholder engagement forums can strengthen this strategic practice. Firms should also utilize communication to promote their value-added products and reinforce brand loyalty in competitive markets.

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ISSN: 2617-4138
DOI: 10.32898/ibmj.01/9.2article01
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