

Influence of Intellectual Capital on Job Satisfaction in Selected Food Manufacturing Firms in Kenya



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Abstract

Aim: This study aimed to determine the relationship between intellectual capital and job satisfaction in selected food manufacturing firms in Kenya.

Methods: The study adopted an explanatory research design with a stratified sampling technique. A sample of 370 respondents was obtained, using Yamane's (1967) formula, from a target population of 11456 employees from 45 firms. A pilot study was conducted covering 40 respondents from 8 firms. Data were collected through a 5-point Likert-scale questionnaire using a drop-and-collect approach and analyzed in SPSS v24 for both descriptive and inferential statistics.

Results: The findings indicate a statistically significant positive relationship between intellectual capital and job satisfaction at $t_{cal}=15.262 > t_{crit}=1.96$ at $p=0.000$. Therefore, the null hypothesis that intellectual capital has no significant effect on job satisfaction was rejected. The regression outcome of $\beta=0.678$, $p=0.000$ indicated that a unit enhancement in intellectual capital results in job satisfaction enhancement by 0.678 units.

Conclusion: These results highlight the strategic role of intellectual capital in shaping workforce satisfaction, reinforcing the need for targeted investment in knowledge-based resources in the manufacturing sector.

Recommendations: To optimize job satisfaction at the firm level, human resource and ICT managers should consistently ensure the adequacy of human and structural capital. The head of marketing, in collaboration with production portfolio managers, must address relational capital needs, while the head of finance secures budgetary allocations for the acquisition, installation, and maintenance of activities supporting intellectual capital. Additionally, the HR head, together with portfolio managers, should facilitate targeted employee training and development to promote career growth, enhance job satisfaction, and ensure the effective and efficient use of intellectual capital, ultimately boosting organizational productivity and performance.

Keywords: *Knowledge management, intellectual capital, human capital, structural capital, relational capital, job satisfaction.*

1.0 INTRODUCTION

Intellectual capital, as part of knowledge management, involves applying acquired knowledge. Abubakar *et al.* (2019) declared that organizations use knowledge to enhance employee performance and satisfaction in a volatile, uncertain, complex, and ambiguous (VUCA) environment, making knowledge a strategic priority. Nawab *et al.* (2015) define knowledge management as a firm's ability to create and use knowledge for innovation and competitiveness. Rahmayanto *et al.* (2019) described it as a process for identifying, creating, and sharing insights while Inkow (2020) defined it as management of both internal and external knowledge, with intellectual capital driving value addition in administrative and production functions. Intellectual capital, representing a firm's intangible assets, focuses on converting knowledge into productive value.

The OECD (2011) classified intangible assets into economic competencies, innovative property, and computerized information, while Koech and Cheluget (2019) categorized intellectual capital into human, structural, and relational capital. Akdağ and Oter (2020) defined human capital as employee competence, structural capital as culture and IP rights, and relational capital as brand and customer relationships. With workforce management becoming a competitive advantage, human capital, including suitable skills, knowledge, and experience, is vital for performance and the development of structural and relational capital (Lin *et al.*, 2015).

Kaul and Singh (2018) defined structural capital as organizational processes, databases, and intellectual property that outlast employee departure, categorizing it into organizational, process, and innovation dimensions. It includes culture, structure, and workflows that facilitate knowledge creation and sharing, linking human and relational capital to enhance value and competitiveness. Ozkan *et al.* (2017) emphasized structural capital's role in knowledge management and its impact on profitability. Relational capital, involving relationships with customers, suppliers, and stakeholders, is crucial for value creation. Bozutti (2020) stressed managing the client lifecycle for competitive advantage, while Ramírez-Solis *et al.* (2022) emphasized the role of strategic alliances in bringing external knowledge and innovation to enhance performance.

The primary goal of a business is to enrich customer relationships and loyalty, exceed customer satisfaction, and optimize organizational image as key components of relational capital. This makes it necessary to operate an effective system for customer relationship management (CRM). Dehghanpouri *et al.* (2020) showed CRM's role in ensuring effective communication and customer satisfaction, while Sun (2020) emphasized its importance for sustained competitiveness. CRM's success is evidenced by technological capabilities like real-time analysis, vast data storage, fast information retrieval and instant knowledge sharing. These confer employee empowerment with relevant and adequate data, information and knowledge thereby enhancing job satisfaction, optimizing performance and customer satisfaction.

Researchers have developed frameworks to measure returns from intangible assets, inspired by the adage "what gets measured gets done." Akdağ and Oter (2020) identified methods like the market-to-book ratio and VAIC model, with others emerging like Relief from Royalty and Multi-period Excess Earnings. These methods inform decisions to improve productivity and performance. Job satisfaction, linked to motivation and performance can be affected by factors like pay and promotion with competitive salaries reducing turnover (Mehrzaad & Rostan, 2021). Ghasemy *et al.* (2021) stressed the importance of supervisory support in managing team conflicts and enhancing

job satisfaction, performance, and growth. According to Wau and Purwanto (2021), millennials' desire for technical expertise makes training essential, with clear growth paths crucial for reducing turnover intentions.

KAM-UNIDO (2020) emphasized that effective knowledge management is crucial for manufacturing giants like the USA, China, Germany, Japan, and the UK, showing the importance of intellectual capital. Germany invests heavily in its skilled workforce, supported by structural capital in strong policies and advanced technology. According to Audretsch (2018), German manufacturing contributes the most to GDP in the European Community, linking intellectual capital to productivity. Unlike Germany, South Africa, and Egypt, where knowledge management and intellectual capital enhance manufacturing, Kenya's sector faces challenges, including low productivity and job satisfaction (KAM-UNIDO, 2020). Kenya is losing its manufacturing lead in East Africa due to issues like employee dissatisfaction and unrest (Kariuki & Kiiru, 2021), showing the need for interventions to improve satisfaction, productivity, and performance.

Njuguna and Juma (2024) reported a decline in the performance of food manufacturing firms in Nairobi, just as KNBS (2023) declared a drop in growth from 4.3% in 2020 to 2.9% in 2022. These reflected continued decline linked to ineffective knowledge management, hindering manufacturing efficiency (Jagongo *et al.*, 2012). The need to investigate factors impacting performance, particularly the role of intellectual capital and job satisfaction, arises from studies connecting these elements to nosedive in Kenya's manufacturing performance (Rasugu *et al.*, 2020).

1.1 Research Objective

The objective of the study was to explore the influence of intellectual capital on job satisfaction in selected food manufacturing firms in Kenya.

1.2 Research Hypothesis

H₀: Intellectual capital has no significant influence on job satisfaction in selected food manufacturing firms in Kenya.

H₁: Intellectual capital has a significant influence on job satisfaction in selected food manufacturing firms in Kenya.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

To enable grounding of concepts and study findings on established principles and practices, consistent with the existing body of knowledge in the area of investigation, the study was grounded on three theories – Human Capital theory, Resource-Based View of the Firm and Herzberg Two Factor theory of Motivation.

2.1.1 The Human Capital Theory (HCT)

Human capital theory posits that education and training promote employee productivity by imparting useful knowledge and skills, thereby raising workers' future income and increasing their lifetime earnings. The theory was developed from Schultz's 1960; 1961 and Becker's 1962 publications, which viewed human capital as an additional source of income, created on the basis of employee-enhanced knowledge, skills and abilities. To realize sustained economic growth, human capital as a necessity demands investment in employee education and health; and operates

on the assumption that employees possess innate abilities and acquired set of skills that enhance their productive capacity through education and training (Becker, 1993). In purpose, the theory holds that employees increase their productivity through higher education and skills training, which enhances the intangible economic value of the employees.

The theory supports the need for education and training as key pillars for employee growth and development that confer marginal productivity of labour and earnings, which enhances job satisfaction. Through an emphasis on investing in employee education and health, the theory provides explanations for the essence of intellectual capital enhancement and the need to ensure a conducive work environment, supportive supervision and continued learning. The theory remains relevant in the sphere of human capital development and provides technical backstopping to explain aspects of both human and relational capital as study constructs and their influences on job satisfaction.

2.1.2 Resource-Based View of the Firm

Wernerfelt (1984) put together the resource-based framework and declared ‘A Resource-Based View of the Firm’ which posits that the availability of or access to resources and decision-making on the use of the resources to a firm, is a pillar factor for its sustained competitive advantage. The Resource-Based View (RBV) developed as a complement to Penrose’s (1959) conception of the firm as an administrative organization utilizing a collection of human and physical productive resources; which evolved to Porter’s contributions (Porter, 1980). While the IO approach focused on the structure-conduct-performance paradigm and placed determinants of firm success on external resources, the RBV shifted emphasis to internal resources. RBV focuses on internal capabilities and access to assets in shaping competitive advantage and explaining performance differentials among firms within the same industry. Barney (1991) entrenched the purposefulness of the theory by declaring that strategic resources are valuable, inimitable, rare and non-substitutable, with emphasis that they confer sustained competitive advantage to a firm.

The theory is hinged on two major assumptions: first being heterogeneity; that skills, capability and other organizational resources differ markedly from one firm to another and second, immobility; that the strategic resources do not move from one firm to another. These define a firm uniqueness and inherent capability for productivity and competitiveness. A firm exploits its strengths to optimal performance and competitiveness owing to the immobility of its strategic resources; with heterogeneity of such resources determining industry equilibrium. Amit and Schoemaker (1993) asserted that such resources become the differentiating factors for efficiency and productivity among firms in an industry, as buttressed in Seth & Thomas’s (1994) conclusion that efficiency differences among firms arise from the inimitability of their strategic resources. Benefits of the theory accrue from its ability to gear management attention to particular strategic resources - determined to aptly influence the efficiency and productivity of the firm. Therefore, RBV purposefully guides top management during strategy formulation to access certain industry-specific resources that dictate whether a firm thrives, survives, or perishes.

Critics of RBV hold that the characterization of resources as being valuable, rare, inimitable and non-substitutable is neither a necessary nor sufficient condition for sustained competitive advantage. They hold that the mere value of a resource is too indeterminate to underpin theoretical framing; as the definition of resource remains generic. However, the weaknesses of RBV do not obfuscate its utility. Thus, RBV remains fundamental for strategic fitness – making it significant

for this study, given that intellectual capital is one such strategic resource, a priority for success and survival in the knowledge economy and 4IR sphere.

2.1.3 Herzberg's Two-Factor Theory

The theory holds that for employee peak performance; there is a need for adequate motivation - achieved through motivator and hygiene factors. In 1959 Fredrick Herzberg sought to answer the question "What do people want from their jobs? This led to data collection by interviewing 203 engineers and accountants in the Pittsburgh area; the focus being motivation - the art of engagement with the workforce to enable them to give the very best performance. Answering the question led to the publication of "One More Time: How Do You Motivate Employees?" This led to development of the Herzberg's Motivation-Hygiene theory, also called the Two-Factor theory, which holds that job satisfaction and job dissatisfaction exist on two different dimensions, each having its own set of factors (Herzberg *et al.*, 1959; Herzberg, 1991).

In purpose, the theory triggers management to continually address both continua to attain desired levels of satisfaction for required job performance. Job satisfaction is achieved through the prevalence of motivator factors such as work itself, responsibility, achievement, recognition, opportunities for growth and self-development; while deficiencies in hygiene factors such as company policies, administration, work environment, salary, supervision, relationship with managers and peers stimulate dissatisfaction (Herzberg, 2003). The main assumption of the theory is that employees remain consistent with the expectations of Maslow hierarchy of needs. The significance of the theory is inherent in its push on management to display humane concerns when dealing with employees, for instance, through the appropriateness of work design, provision of resources for work and performance management.

However, studies have emerged challenging some aspects of the Two Factor theory; for instance, Deb (2021) found that supervision and interpersonal relationships serve as important predictors of job satisfaction, painting them as motivators. Similarly, Kotni and Karumuri (2018) and Rahman *et al.* (2018) found that hygiene factors such as salary and job security played a major role in motivating employees. Findings from these studies were a converse of the auspices of the Two-Factor theory and remain a trigger for review of the classification of elements defining the theory. However, the theory remains relevant and adequate in explaining motivation requirements for optimizing workforce performance. For this study, the theory provided a framework for assessing motivation levels in the firms and their impact on job satisfaction relative to influences emanating from intellectual capital status in the industry.

2.2 Conceptual Framework

The study involved intellectual capital as the independent variable; with human capital, structural capital and relational capital as its constructs. The dependent variable was job satisfaction, with constructs being growth and development, salary, supervisory support and work environment. The interaction shown in Figure 1 demonstrates the relationship.

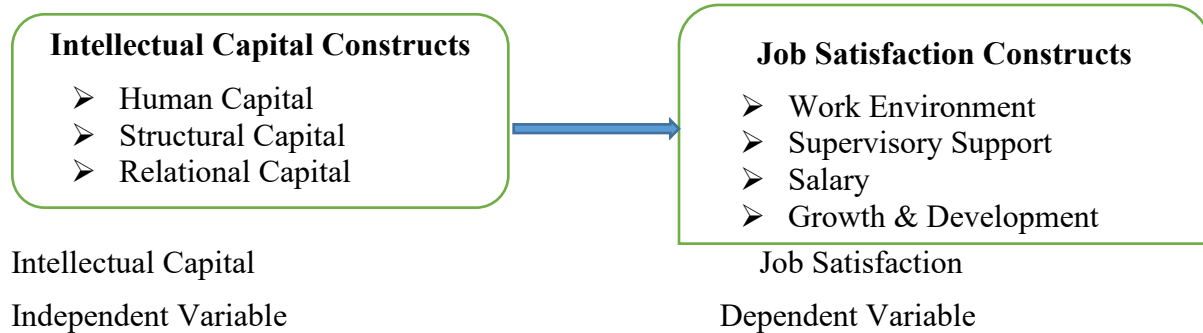


Figure 1: Conceptual Framework of the Study.

2.3 Empirical Literature Review

2.3.1 Human Capital

Globalization, technological advancements, and demographic shifts are key factors influencing Human Capital Management (HCM). Globalization increases talent competition, driving the need for global networks, talent mobility, and innovation (Cooke *et al.*, 2014). It is therefore essential for organizations to recruit, develop, and retain skilled talent to ensure sustained success, as effective talent engagement plays a critical role in enhancing productivity and job satisfaction (Marybeth *et al.*, 2019). Appropriate HCM strategies tend to address challenges posed by technological disruptions like automation and artificial intelligence, which require reskilling and upskilling of employees (Acemoglu & Restrepo, 2017). The 4IR phenomenon further complicates HCM by creating new job opportunities while displacing old ones, making it necessary to optimize both human and technological resources (Zahi, 2025).

Technological advancements in AI and automation demand rapid skill adaptation, reshaping career paths and influencing employee satisfaction (McKinsey Global Institute, 2017). As businesses adopt new technologies, they must balance human input with machine learning to sustain productivity (Kvirchishvili, 2024). Demographic shifts, such as the aging workforce and the rise of millennials, also impact HCM. Millennials bring new challenges and opportunities in talent management, while the aging population requires strategies to manage multigenerational teams (Skibiński, 2019).

In Kenya, demographic changes and an emergent millennial workforce necessitate a new approach to HCM policies, addressing recruitment and retention issues (Kediya *et al.*, 2023). Ineffective HCM remains a hindrance for the manufacturing sector, leading to brain drain and low employee satisfaction (Khayinga & Muathe, 2018). Mwiathi (2021) found that health and education are critical in human capital, recommending increased access to health insurance and a focus on improving education quality. The study also noted the importance of reducing the pupil-teacher ratio in early childhood development for long-term workforce potential. Thus, HCM policies in Kenya must address both educational and healthcare factors to improve workforce preparedness and job satisfaction, ensuring sustained employee productivity and performance.

2.3.2 Structural Capital

The International Glossary of Business Valuation Terms holds that intangible assets are non-physical assets like franchises, securities, patents, trademarks, copyrights, equities, goodwill,

mineral rights and, contracts that grant rights and privileges, with value for the owner but away from physical assets. Gazi *et al.* (2024) held that intangible assets ought to be managed with a view to enhancing company productivity and performance, in addition to customer satisfaction. For instance, innovation as intellectual capital is significant in yielding intellectual property rights and other intangible assets, which add value to the firm in business growth and job satisfaction.

Structural capital is significant in two main ways: one, strengthening business processes and two, enabling measurement and evaluation of intellectual capital performance (Ercan *et al.*, 2006). It includes intellectual property achievements such as copyrights, trademarks, and patents. Kaul and Singh (2018) categorized structural capital into organizational, process, and innovation dimensions, with key antecedents including organizational culture, business reengineering, intellectual property rights, research and development - R&D, and internal control systems. Their study found that systems, programs, and R&D have significant impacts on employee productivity, performance, and job satisfaction. Ozkan *et al.* (2017) further noted that structural capital encompasses both physical elements like systems and processes, and non-physical components like databases and business strategies, with culture and structure influencing decision-making and job satisfaction.

Innovations led to the Industrial Revolution, transforming the global economy from agriculture to manufacturing then to service and, lately to a largely digital knowledge economy, with all these being anchored on intellectual capital. That innovation creates new solutions to business challenges, enables growth and economic breakthroughs and creates jobs for society inherently conferring job satisfaction. Relatedly, Tan (2021) emphasized the need to protect and monetize IP to demonstrate the viability of its benefits. The study held that protection can be through copyrights, patents, trademarks and industrial designs; while it can be monetized and leveraged by direct sale or auction, licensing, or using it as collateral; which potentially enhances productivity, performance and job satisfaction.

2.3.3 Relational Capital

According to Matos *et al.* (2022), there is a need for resilience in societies and systems to withstand shocks from VUCA challenges like digital transformation, climate change, and crises such as COVID-19. Robust relational capital is key to building this resilience, with knowledge management solutions, digital transformation, and system interoperability enhancing firm strength and agility. Vibrant relational capital allows firms to quickly respond to disruptions, positioning them as industry leaders. This requires support from human and structural capital to maintain strong relationships with customers, suppliers, and external networks.

Relational capital focuses on developing beneficial relationships, with customer concerns being key. Otor (2015) broke down customer capital into connections, interactions, loyalty, and goodwill between firms and stakeholders. Effective Customer Relationship Management (CRM) strategies are crucial for improving organizational performance and job satisfaction. Altarifi (2020) found a strong correlation between CRM effectiveness and marketing success, while Gazi *et al.* (2024) emphasized that CRM enhances customer satisfaction, loyalty, and profitability, further boosting relational capital and job satisfaction.

Brand image, another critical aspect of relational capital, influences customer perception and loyalty. Gazi *et al.* (2022) linked brand image to customer trust, while Kodua *et al.* (2022) asserted

it moderates CRM effectiveness. Gazi *et al.* (2024) found that a positive brand image strengthens customer satisfaction and loyalty, supporting Wang *et al.* (2023), who concluded that brand image drives trust and commitment, ultimately increasing customer loyalty and profitability.

2.3.4 Job Satisfaction

Job satisfaction is a critical factor influencing employee engagement and commitment. Vroom (1964) defined it as an individual's emotional response to work roles, while Locke (1976) described it as a positive emotional state resulting from job experiences. Kara (2020) linked job satisfaction to factors like job motivation, performance, and life satisfaction, emphasizing that it involves a set of emotions shaped by core job characteristics such as skill variety, autonomy, and feedback. These elements help employees evaluate their work and determine their level of satisfaction.

Job satisfaction is also seen as a key predictor of employee performance. Qureshi and Hamid (2017) argued that it results from evaluating job characteristics and noted that supervisor support enhances satisfaction, boosting productivity and strategic goal achievement. Oluwaseun (2018) emphasized that pursuing job satisfaction necessitates targeted training and development, making them essential mechanisms through which employees enhance their success at work about productivity and overall organizational performance.

Compensation is a significant driver of job satisfaction, as it sustains workers' livelihoods. Judge *et al.* (2010) demonstrated how financial sustenance and security are the essence of salary in motivating employees to work. Mabaso and Dlamini (2018) found that compensation directly impacts job satisfaction, which, in turn, influences employee engagement, productivity, and performance, all of which affect organizational competitiveness.

2.3.5 Intellectual Capital and Job Satisfaction

Intellectual capital plays a crucial role in mitigating risks from volatile, uncertain, complex, and ambiguous (VUCA) forces such as technological advancements, globalization, and demographic shifts. Bansal *et al.* (2023) showed that firms leverage intellectual capital comprising human, structural, and relational assets for success in the knowledge economy and competition in the 4IR sphere. Akdağ and Oter (2020) classified intellectual capital into internal structures, external structures, and employee competence. Intellectual capital contributes to profitability, efficiency, and employee productivity, with the VAIC model being an effective tool to measure its performance (Ozkan *et al.*, 2017).

Effective Human Capital Management (HCM) is essential for organizational success and job satisfaction. Studies by Paul *et al.* (2023) show that HCM strategies like talent acquisition, employee engagement, and performance management play crucial roles in boosting employee satisfaction, which in turn enhances productivity. Additionally, relational capital, including customer and supplier relationships, influences business performance and job satisfaction. Ngari (2014) and Victoria *et al.* (2018) found positive correlations between relational capital and organizational performance, underlining its importance in enhancing customer loyalty and satisfaction.

Intellectual capital, especially in the form of knowledge, skills, and managerial expertise, is a key driver of innovation and firm performance. Studies by Mukaro *et al.* (2023) and Mubarik *et al.* (2020) focused on the importance of intellectual capital in sustaining competitiveness. For SMEs,

Otor (2015) revealed that intellectual capital drives growth through innovation, creativity, and job creation. Effective use of intellectual capital, including intellectual property rights (Koech & Cheluget, 2019), further strengthens HCM and CRM strategies, fostering knowledge creation, sharing, and application, which ultimately enhances productivity, job satisfaction, and organizational success.

3.0 METHODOLOGY

3.1 Procedure

The study adopted a post-positivism philosophy, with explanatory research design. Firms were obtained from a sampling frame comprising food types, namely: flour; beverages, juices and stimulants; and edible fats, oils and spreads. A sample of 384 respondents was obtained, using stratified sampling technique, from 52 food manufacturing firms, with target population of 12,118 employees using the Fisher's formula. A pilot study with 40 respondents from 10 firms was conducted to refine the 5-point Likert scale questionnaire, focusing on validity, reliability and time for completing questionnaire. The questionnaire was modified significantly based on the validity and reliability test outcomes. Respondents were briefed on the study's purpose, anonymity and confidentiality were guaranteed, informed consent was obtained and ethical approval was secured. Both hard and soft copy version options were made available to the respondents. Data collection involved drop-and-collect technique and analyzed using SPSS version 27, for both descriptive and inferential statistics.

3.2 Validity of the Research Instrument

The questionnaire was exposed to validity tests - content, face and construct validities. Human resource experts and data analysts critiqued the instrument for appropriateness of face and content validities. To ascertain the construct validity of the instrument, the study utilized a factor analysis/loading approach, adopting Steenkamp and Maydeu-Olivares (2023) position that a factor loading threshold of 0.50 and above is suitable. Thus, this study retained items with factor loading of 0.5 and above, for both independent and dependent variables.

3.3 Reliability of the Research Instrument

The reliability of the research instrument was determined using Cronbach's Alpha coefficient, α , which according to Vaske *et al.* (2017) is acceptable at $\alpha \geq 0.7$ and which this study adopted. Intellectual capital as the independent variable had a reliability coefficient of 0.722 while employee performance - the dependent variable had a reliability coefficient of 0.727, indicating that items in both variables, scoring above 0.7, were suitable for the study.

4.0 FINDINGS AND DISCUSSIONS

From the survey of 384 distributed questionnaires, 329 were received back; upon screening for completeness and accuracy, 276 questionnaires met the requirements as fit for analysis, achieving a response rate of 71.9%. The analysis outcomes were presented in descriptive and inferential statistics. For interpretation of Likert scale responses, the researcher adopted the use of mean and standard deviation for each parameter, sub-construct, construct and the variables; and used the following ranking, consistent with 5-point Likert intervals: Very Low=1.00 – 1.80; Low=1.81 – 2.60; Average=2.61 – 3.40; High=3.41 – 4.20; Very High=4.21 – 5.00. The midpoint between the lowest and highest score attained was 3.75, which became the adopted industry performance

threshold – below which any parameter performance would be deemed as requiring priority remedial intervention.

4.1 Descriptive Findings

The intellectual capital variable was decomposed into three constructs – Human capital (HC); Structural capital (SC); and Relational capital (RC), each of which had statements or parameters for performance assessment as per the Likert scale. Scores obtained were collated and corresponding averages were calculated with relative standard deviation as presented in Tables 1, 2 and 3.

4.1.1 Descriptive Results for Human Capital

This was summarized in Table 1, showing statements of assessment – the parameters, and their corresponding mean and standard deviation; then cascaded to construct mean and standard deviation.

Table 1: Human Capital Descriptive Outcome

Code	Parameter	Mean	Std Dev.
HC1	Employees are actively involved in decision-making and problem-solving at the workplace	3.23	1.47
HC2	Our employees have exposure to the latest trends and practices in their fields	3.65	1.19
HC3	HC3 Employees are engaged in training and development programs for career growth and enhanced expertise.	3.70	1.37
H4	Our employees continuously engage in workshops and seminars to sharpen their professional skills	3.90	1.37
Variable Mean		3.62	1.35

From Table 1, the human capital construct mean score was 3.62, short of the industry threshold at 3.75 indicating that respondents experienced dissatisfaction concerning HCM. Only HC4 on sharpening of professional skills through seminars and workshops attained a mean score of 3.90, above the industry threshold of 3.75. All the other parameters had below average scores: HC3 at 3.7 on training and development for career growth and expertise; HC2 at 3.65 for professional exposure to latest industry trends and practices; and the worst was HC1 at 3.23 for employee involvement in decision-making and problem-solving. It is therefore imperative that concerted efforts be put to inculcate emergent practices into company HCM activities (Wiyono & Wu, 2022) for sustained competitiveness.

Failure to involve employees in decision-making and problem-solving as observed in HC1 has the negative impact of constricting productivity, which negatively affects their job satisfaction. Poor exposure to professional trends and practices in HC2 potentially demoralizes employees as it smothers their self-esteem thereby jolting commitment to work and impeding job satisfaction. Inadequate training and development for career growth and expertise reported in HC3 diminish employee potential for learning and innovativeness, which hinders productivity and satisfaction. Mahendra *et al.* (2017) averred that targeted training enhances innovation and entrepreneurship

among employees, conferring employee motivation (Murnieks *et al.*, 2020) and commitment to organizational success. Accordingly, this study observed that these aspects - training and development; decision making and problem-solving; and industry trends and practices, as antecedents to employee motivation for job satisfaction at individual, team and corporate levels, are critical to HCM as Al Shbail *et al.* (2022) held that HCM is a pillar for VUCA mitigation; adding that organizations need to continually invest on HCM to ensure adequacy of suitable skill sets and competencies for organizational success.

Odhong' *et al* (2014) concluded that HCM drivers can be used: to benchmark organizational capabilities; identify HCM strengths and weaknesses; and link corresponding improvements or shortcomings in performance to specific HCM practices. In tandem with this, Nedeva (2021) emphasized that innovation, entrepreneurship and knowledge can increase organizational competitiveness and growth, with much potential to improve employee engagement, commitment and job satisfaction.

4.1.2 Descriptive Results for Structural Capital

This was summarized in Table 2, showing statements of assessment – the parameters and their corresponding mean and standard deviation; enhanced to construct mean and standard deviation.

Table 2: Structural Capital Descriptive Outcome

Code	Parameter	Mean	Std Dev.
SC1	Our organization has routine frameworks for harmony, quality standards and practices across all departments.	3.58	1.23
SC2	Our company has documented processes, well communicated to employees and promotes effective work execution.	3.73	1.36
SC3	The company has a strategic plan, clear to my workplace, guiding performance activities in the company	3.93	1.24
SC4	Our organization has information systems, databases and repositories that facilitate knowledge storage and retrieval.	3.61	1.16
Variable Mean		3.71	1.25

Findings from Table 2 showed that the structural capital mean score of 3.71 was below the industry threshold of 3.75 depicting the need for urgent corrective actions. Only SC3 on a clear strategic plan guiding company performance activity had a mean score of 3.94 - surpassing the industry threshold. All the other parameters underperformed starting with the SC2 mean score of 3.73, concerning company-documented processes and their communication to employees for promoting effective work execution; which may lead to a lack of uniformity in performance and disparate outcomes that distort customer loyalty and hinder employee satisfaction. Ineffective documentation of processes hampers uniformity of practices, hindering the efficiency of information and knowledge storage and retrieval, which affects employee productivity, performance and job satisfaction. Effective documentation enables the identification and integration of knowledge for improving HCM, physical resource management, information resource management and facilitating training of new employees (Taheri, 2015), which should be harnessed to achieve customer satisfaction and loyalty.

This was followed by SC4 mean score of 3.61 - on the extent to which information systems, databases and repositories facilitate knowledge storage and retrieval, which potentially hinders employee performance by slowing decision-making and problem-solving due to ineffective information storage and retrieval that negatively impacts job satisfaction. In demonstrating the significance of structural capital, Koech *et al.* (2015) posited that knowledge storage and retrieval had a positive and significant relationship with employee performance, which potentially enhances job satisfaction.

The lowest mean score of 3.58 occurred in SC1, concerning routine frameworks for harmony, quality standards and practices – that precipitates a lack of unison in productivity, potentially creating a loss of uniformity in performance evaluation. This absence of standards may generate negative differentials that demoralize employees, cause conflicts with supervisors and impede job satisfaction. Sardo (2018) held that the adequacy of structural capital is dependent on the effectiveness of: management processes, strategies, databases, software, information systems, routines, patents, copyrights, trademarks, brands, hardware, licenses, organizational culture, know-how, creativity and innovations. The outcome is an enhanced organizational knowledge base and optimized efficiency of information sharing and knowledge storage and retrieval.

4.1.3 Descriptive Results for Relational Capital

This was summarized in Table 3, showing statements of assessment – the parameters, their mean and standard deviation, from which construct grand mean and standard deviation were obtained.

Table 3: Relational Capital Descriptive Outcome

Code	Parameter	Mean	Std Dev.
RC1	Our organization regularly conducts customer surveys to identify areas requiring improvement	4.07	1.08
RC2	Our organization has adopted customer integration in all departments for the comprehensive handling of customer concerns	3.20	1.34
RC3	Our organization has established strategic alliances with other firms for collaborations and partnerships	4.03	1.24
RC4	Our organization has adopted supplier integration practices	3.82	1.28
Average		3.78	1.24

The relational capital variable mean score of 3.78 was beyond the industry threshold of 3.75 as shown in Table 3, converse to the performance of human capital and structural capital variables. Though three of its items surpassed the industry threshold in the mean score, one did not - RC2 concerning the adoption of integrated comprehensive handling of customer concerns. It had the lowest score in the entire survey at 3.20, which was very concerning. The mean score below the industry threshold in matters of customer handling was an indictment on industry customer satisfaction, and a mean score as low as 3.20 indicates disparate handling of customer concerns. A comprehensive and integrated approach to handling customer concerns provides a focused, efficient and progressive mechanism for consolidating gains achieved in the spheres of human, structural and relational capital. Deloitte (2015) observed that an integrated comprehensive

customer handling approach optimizes company productivity and performance by extracting value-add from complaints, enhancing regulatory compliance and conferring competitiveness. The system should provide for complaints intake capabilities, capturing fundamental aspects of customer experience and providing feedforward information for improvements, thereby enriching processes, and improving employee productivity, performance and satisfaction.

4.1.4 Grand Descriptive Results for Intellectual Capital

This was summarized in Table 4, showing the mean, standard deviation and performance rank for constructs and variables, relative to industry adopted threshold.

Table 4: Intellectual Capital Constructs Summarized Scores

Item Ref.	Construct	Mean Score	Standard Deviation	Mean Rank Description
HC	Human Capital	3.62	1.35	High
SC	Structural Capital	3.71	1.25	High
RC	Relational Capital	3.78	1.26	High
Grand for Intellectual Capital		3.70	1.28	High

From Table 4, the grand mean score for intellectual capital at 3.70 was below industry adopted mean of 3.75; requiring corrective actions to benefit the firms. The failure of the variable grand mean to attain the industry threshold was mainly attributable to underperformance by human capital at 3.62 and structural capital at 3.71; which became the focus for remedial interventions, to improve job satisfaction, employee productivity and performance.

The parameters requiring remedial interventions on existing HCM strategies included: low employee participation in decision-making and problem-solving; factors limiting employee exposure to industry best practices and trends; and elements thwarting training and development effectiveness for expertise and career growth. Relatedly, Shimoli *et al.* (2020) declared that hitches relating to cognitive, educational, contextual, social, demographic and environmental factors, potentially impact job satisfaction and employee performance; making it mandatory that corrective actions for these inadequacies be effectively conducted.

It is crucial that firms deepen structural capital capabilities as integral success features (Bontis *et al.*, 2018) to achieve potential human and relational capital benefits (Torres *et al.*, 2018) including productivity, performance, job satisfaction and company growth. The key areas requiring remedial actions on structural capital included: inadequacy of networks and systems to facilitate knowledge storage and retrieval; poor documentation of processes; and ineffective frameworks for quality standards and practices. Relatedly, Shanthi (2018) expressed that structural capital confers unique capabilities, proprietary tools and data, corporate technologies, intellectual property and structures. This study found that structural capital enables the firm with capabilities to overcome its internal and external challenges; emphasizing the significance of such knowledge-based assets as technical aptitude embedded in corporate processes, for optimizing productivity, performance and satisfaction.

Nedeva (2021) posited that relational capital represents the social capital of a firm, declaring that access to and use of resources in its networks is bound by the principles of trust, solidarity, cooperation and reciprocity. These virtues become prevalent in a firm with effective relational capital. One feature of relational capital that required corrective action in this research concerned the adoption of customer integration for comprehensive handling of customer concerns; justifying the need for the installation of a robust CRM system to ensure sustained customer satisfaction and loyalty. Such a system would provide feedback with entrepreneurial and innovative values (Mei *et al.*, 2017) that enrich career commitment, strengthening their entrepreneurship, abilities, value and personal reputation, which influence job satisfaction.

4.1.2 Descriptive Results for Job Satisfaction Results

The constructs adopted were work, salary, supervision as well as growth and development. Results were summarized in Table 5, showing mean, standard deviation and performance rank relative to industry adopted threshold for the construct and variable.

Table 5: Descriptive Results for Job Satisfaction

Item No.	Statement	Mean	Standard Deviation
Work - WK			
WK1	My form of employment – casual, contract, or permanent, is satisfying.	3.97	1.19
WK2	My work conditions are satisfactory	3.87	1.12
WK3	Feedback on my work performance is satisfactory	3.72	0.99
	Average	3.85	1.10
Salary - SA			
SA1	The current level of salary is satisfying.	3.62	1.10
SA2	The reward given for extra performance is adequate	3.71	1.13
SA3	The remunerations are punctually and regularly released	3.82	0.94
	Average	3.71	1.06
Supervision - SU			
SU1	My direct supervisor knows my job well	3.54	1.03
SU2	My effort and commitment are appreciated by my direct supervisor.	3.79	1.11
SU3	I receive appropriate feedback from my supervisor	3.76	1.23
	Average	3.70	1.12

Growth and Development - GD			
GD1	The coaching and mentorship offered by the employer meet my expectations for career progress.	3.55	1.19
GD2	The company helps me build effective networking for career growth and development	3.71	1.08
GD3	My growth and development compare favorably with peers in the industry	3.57	1.03
Average		3.61	1.1
Grand for Job Satisfaction		3.72	1.10

From Table 5, it is discernible that only work as a construct met the adopted industry mean threshold of 3.75 though one of its parameters, WK3 concerning feedback on work performance being satisfactory did not. Respondents expressing dissatisfaction with feedback on performance is a disruptive phenomenon with a potential impact on motivation, engagement and satisfaction. Proper feedback on work performance is a critical tool in managing employee performance, with a significant impact on job satisfaction (Saruni, 2015), making job evaluation fundamental in defining pathways for employee growth and development. Dissatisfaction with feedback on work performance can be detrimental to employee morale as concluded in Obiekwe *et al.* (2019) that job satisfaction has negative relations with low work self-drive, absenteeism and turnover; connoting that job satisfaction stimulates positive and high staff morale, heightens employee commitment and productivity. Therefore, employee contentment with performance evaluation enhances job satisfaction, as it promotes remedial interventions such as targeted training for improved employee job fitness by qualifications and competency.

There was underperformance and lack of satisfaction with both salary levels (SA1) and rewards given for extra tasks or additional responsibilities undertaken (SA2), which potentially diminishes employee motivation. The need for employee motivation to stimulate satisfaction remains a permanent managerial concern, to which Ratnamiasih *et al* (2024) observed that appropriate salary levels stimulate motivation, and satisfy employee expectancy and utility, driving polarity to enhanced commitment, which increases employee entrepreneurial interest in performance. Adequacy of reward for extra work done would confer an increased drive to independently organize, manage and exert control upon ideas and team members to not only sustain gains achieved but also conquer new successes in performance.

There was dissatisfaction with supervisory support as respondents expressed discontent with the fact that their direct supervisors had less knowledge of jobs being done than the employees (SU1). This was a fundamental disconnect in the sense that supervisors ought to have more knowledge of the work than the subject employees, to confer effective coaching and mentoring, supervisory career support, and objective performance evaluation, all of which impact employee motivation for job satisfaction. Rahman *et al.* (2018) documented a positive correlation between coaching and mentoring with employee performance improvement, depicting that a change in the quality of coaching and mentoring can directly change employee performance, making it one of the potential factors in addressing employee satisfaction. Respondents expressed dissatisfaction on: the expected career progress from coaching and mentoring (GD1); company

facilitation for professional networking (GD2); and employee self-esteem relative to industry peers (GD3). These are critical issues as posited by Aisah and Arfian (2024) that coaching and mentoring foster professional growth and personal well-being, thereby playing a crucial role in enhancing job satisfaction. Coaching and mentoring as a development program supports employee professional development thereby improving job satisfaction. The following, Table 6, is a snapshot of job satisfaction constructs performance summarized from Table 5 for ease of comparison.

Table 6: Constructs Mean Score Summarized

S. No	Construct	Code	Mean	Std Dev.	Rank
1	Work	WK	3.85	1.10	Average
2	Salary	SA	3.70	1.06	Average
3	Supervision	SU	3.70	1.12	Average
4	Growth & Development	GD	3.61	1.10	Low
Mean			3.61	1.10	Low

From Table 6, only work as a construct at a mean score of 3.85 met the industry threshold of 3.75 while constructs of growth and development, supervision and salary did not; indicating that respondents expressed satisfaction with work design and conditions. The salary mean score of 3.70 was below the industry threshold, with the potential to lower employee motivation and job satisfaction. Respondents' discomfort with salary levels is a potential impediment to the optimization of employee motivation relative to Aluna and Sharma's (2024) assertion that salaries should be aligned to employees' contributions, declaring that employee perception of salaries and benefits significantly influences their morale and job satisfaction. Consistent with Herzberg two two-factor theory anchoring this study, to sustain heightened employee motivation, strategies must be implemented that integrate monetary incentives, worker recognition, and personal development. Sejal and Bhavikatti (2024) advocated for an array of pay approaches considering creative, customized and conventional salary-based systems.

Supervision construct underperformance had potentially negative effects on aspects like performance feedback, coaching and mentoring. Herawati *et al.* (2023) declared that supervisor support significantly affects job satisfaction, highlighting that: it achieves stress reduction; reduces burnout through socio-emotional assistance; and confers instrumental strengthening through information, advice and job responsibilities. In this way, a rapport develops between supervisors and employees thereby promoting productivity, performance and job satisfaction. As such, supervisors ought to have a thorough grasp of job knowledge to enable them to forecast how to develop subject employees through coaching and mentoring (Qureshi and Hamid, 2017); which requires that supervisors provide positive attitude, achievable targets and enhanced employee awareness for self-development. Thus, effective supervisor support remains crucial as it through predetermined remedial interventions influences employee motivation, stimulates employee psychological well-being, provides valuable performance feedback, and potentially improves employee performance and job satisfaction.

Growth and development construct failure to meet industry threshold had a potential negative influence on job satisfaction and performance; consistent with Preston's (2021) assertion that organizational success is contingent upon employee productivity, in turn affected by employee happiness and engagement (Osborne & Hammoud, 2017). Relatedly, Kuchinka (2022) averred that growth and development opportunities remain integral for ensuring sustained job satisfaction. Moreover, Nasreen and Odhiambo (2018) declared that growth and development confer enhancement of employee abilities, which are required to urgently address observed underperformance. This requires fundamentals such as leadership style, work environment, opportunities for career growth, and prevalence of justice in the organization. Shuler (2018) concluded that growth and development opportunities enable the advancement of employee skills, knowledge and career, which improves performance and increases job satisfaction.

Management ought to pursue job satisfaction in its multidimensional nature, encompassing intrinsic factors such as the nature of work itself, autonomy, opportunities for skill growth and development; and extrinsic factors - compensation, job design, leadership and management as well as communication. Baxi and Atre (2024) nuanced that job satisfaction is a glue for employee retention, productivity and performance, declaring that satisfied employees exhibit higher levels of commitment, engagement and discretionary positive efforts, leading to improved efficacy and competitive advantage. It is pertinent that interpersonal relationships concerning supervisors, co-workers and organizational practices play a fundamental role in shaping job satisfaction effects on productivity and performance.

4.2 Correlation Analysis

Pearson correlation analysis was conducted to determine the strength and direction of the relationship between intellectual capital and job satisfaction, as shown in Table 7.

Table 7: Correlation between Intellectual Capital and Job Satisfaction

Item		KR	Job satisfaction
Intellectual Capital	Pearson Correlation	1	
	Sig. (2-tailed)		
Job satisfaction	Pearson Correlation	0.678**	1
	Sig. (2-tailed)	0.000	

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

The findings showed a positive and significant correlation between intellectual capital and job satisfaction. A correlation coefficient of 0.678 at a corresponding p-value of 0.000 evidenced a moderately strong relationship, depicting that a change in intellectual capital leads to a similar change in job satisfaction in the same direction. The position was consistent with Victoria *et al.* (2018) finding that there is a strong positive correlation between relational capital and value creation; that enhancing relational capital stimulates value creation; and that the value may take tangible or intangible form. Relatedly, Rahmayanto *et al.* (2019) found that knowledge management significantly affected employee job satisfaction; in tandem with Bansal *et al.* (2023) assertion that organizations obtain much value from intangible, resource-based capabilities especially intellectual capital for their success. It is therefore crucial that organizations

strategically position their intellectual capital dynamics for optimal utilization toward the enhancement of employee productivity, performance and satisfaction.

4.3 Regressing Intellectual Capital on Job Satisfaction

A linear regression analysis was conducted to test the hypothesis, “Intellectual capital has no significant influence on job satisfaction in selected food manufacturing firms in Kenya” with findings presented in Tables 8, 9 and 10 illustrating the outcomes.

Table 8: Model Summary Table for Intellectual Capital

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.678a	0.46	0.458	0.28718

a Predictors: (Constant), intellectual capital

Findings in Table 8 give adjusted R square as 0.458 implying that intellectual capital explains 45.8% of the variations in job satisfaction in the selected food manufacturing firms in Nairobi. This was in tandem with Rehman and Rehman’s (2015) position that effective deployment of intellectual capital confers technical capabilities that promote job satisfaction. Similarly, Momani *et al.* (2021) declared that capital-employed efficiency had a positive and significant effect on performance and concluded that this had a positive influence on employee commitment and job satisfaction. It is discernible that the adequacy of human capital confers required technical capabilities that are necessary for the generation and utilization of both robust structural capital and intense positive relational capital. This can lead to the optimization of employee productivity, which improves job satisfaction through autonomy, achievement and responsibility as intellectual capital becomes a leverage for success in job execution.

Table 9: ANOVA for Intellectual Capital Regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.211	1	19.211	232.94	.000b
	Residual	22.597	274	0.082		
	Total	41.808	275			

a Dependent Variable: job satisfaction

b Predictors: (Constant), knowledge resources

The ANOVA findings in Table 9 give a significant F-statistic ($F=232.94$, $p=0.000<0.05$), showing that the regression model for intellectual capital and job satisfaction is a good fit; depicting that intellectual capital model can significantly predict job satisfaction for the selected food manufacturing firms. Thus, intellectual capital statistically predicts job satisfaction satisfactorily as per the regression model:

$$\text{Job satisfaction} = 1.156 + 0.678\text{Intellectual capital} + e$$

Table 10: Regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.156	0.157		7.343	0.000
Intellectual capital	0.699	0.046	0.678	15.262	0.000

a Dependent Variable: job satisfaction

Findings in Table 10 show that the t-statistic for the regression coefficient of intellectual capital is greater than 1.96 ($t_{cal}=15.262 > t_{crit}=1.96$) at a corresponding p-value of less than 0.05 ($p=0.000$). The null hypothesis that intellectual capital has no significant effect on job satisfaction in selected food manufacturing firms is rejected; as results indicate that intellectual capital has positive and significant effects on job satisfaction ($\beta=0.678$, $p=0.000 < 0.05$); with a unit change in intellectual capital yielding a change in job satisfaction by 0.678 units in similar direction. In an investigation that showed that relational capital enhances job satisfaction, Ngari (2014) declared that supplier relations and customer knowledge have a positive and significant influence on business performance, which conferred employee satisfaction through achievement and responsibility.

Kiruthika and Khaddaj (2017) demonstrated significant effects of intellectual capital on performance that yields job satisfaction when they vividly highlighted human capital and structural capital applications involving the following artificial intelligence products: Haystack (facial recognition), Siri and Alexa (virtual assistants), Mezi (travel), Spotify and Pandora (music streaming), Olivia (financial advising), Uber and Bolt (service delivery) and Nest (home solutions). These successes informed Grandinetti's (2020) position that the adoption of technology heightens company status thereby enhancing its market share, and enriching its relational capital and employee satisfaction. Relatedly, Peyravi *et al.* (2020) confirmed that intellectual capital significantly influences job satisfaction through human capital and structural capital involvement in enhancing productivity and competitiveness; making structural capital a proven game-changer in employee performance and job satisfaction as demonstrated in several outfits of artificial intelligence practices.

5.0 CONCLUSION

This study investigated the influence of intellectual capital on job satisfaction in selected food manufacturing firms in Kenya. The findings revealed a positive and moderately strong correlation between intellectual capital and job satisfaction, with regression analysis confirming a statistically significant effect leading to the rejection of the null hypothesis. Notably, while relational capital achieved mean scores above the industry threshold, both human and structural capital did not. Key gaps identified included limited employee involvement in decision-making, weak organizational information systems, insufficient quality frameworks, and inadequate customer integration mechanisms. Addressing these can potentially boost job satisfaction, fostering stronger employee engagement and organizational productivity.

Additionally, job satisfaction was negatively affected by poor feedback mechanisms, low salary and inadequate rewards for both extra-role tasks and additional responsibilities, poor work

knowledge among supervisors, unmet expectations in coaching and mentoring, and inadequate professional networking. These issues point to critical deficiencies in human capital relative to the principles of Human Capital Theory and Herzberg's Two-Factor Theory. Despite the study being limited by scope to certain food types, it contributed valuable insights into the role of intellectual capital in enhancing employee satisfaction and performance in Kenya's manufacturing sector.

6.0 RECOMMENDATIONS

The intellectual capital mean score of 3.70 was below the industry threshold of 3.75; therefore, industry managers should implement corrective actions on underperforming elements of human and structural capital constructs. Human resource managers should prioritize aspects like: the entrenchment of participatory decision-making tools to enhance employee involvement; mainstreaming continuing professional development schemes as mandatory to up-scale employee problem-solving abilities and involvement; and establishment of coaching and mentoring programs to promote employee exposure to professional practices and industry trends, including targeted training for career growth and development. Similarly, ICT managers should ensure: comprehensive integration of operations with emphasis on information systems, databases and repositories; adequacy of networks to facilitate knowledge storage and retrieval; and a company-wide framework for quality standards and routine practices across all departments. Besides, marketing managers in liaison with ICT managers ought to entrench company-wide adoption of customer integration for comprehensive handling of customer concerns.

For effective competitiveness in the knowledge economy and 4IR sphere, the heads of finance ought to obtain a company-wide list of areas identified for improvements and accord them budgetary support to enable optimization of intellectual capital effects on employee productivity, performance and satisfaction. This study recommends that researchers undertake further investigations with an expanded sampling scope and alternatively, further research can be done outside the food purview like in the engineering and chemical sectors.

7.0 SIGNIFICANCE OF THE STUDY

One of the key contributions of this study is that it enriched extant literature by exposing the influence of intellectual capital on job satisfaction; especially on Kenya's manufacturing context which remains scarcely studied on matters of knowledge management. The study confirmed that human capital theory, resource-based view of the firm and Herzberg's factor theory of motivation have continued relevance as pillars defining requirements for organizational management, thereby diminishing theoretical misperceptions and empirical contradictions.

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