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The Relationship Between Intellectual Capital, Research and Development and Organizational Performance of Tea Processing Firms in Kenya

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Abstract

A firm's investment in intellectual capital strategy is considered a crucial factor for tea processing firms' capability to innovate, or its ability to utilize its knowledge resources. On the one hand, most organizations are recognized for their main ability as intangible possession and for accessing competitive advantage. On the other hand, the importance and the influence of employees' knowledge and organizational knowledge on the performance and competitiveness of organizations have become very necessary and it leads to acceleration of learning patterns within the organization. According to the value of the subject, the study intends to examine the influence of capital strategy on organizational performance of Tea firms in Kericho and Kisii highland in (Kenya). The study was anchored upon Resource Based View theory. The framework of the study was tea processing firms in the regions 5 and 6. The study relied on primary data and questionnaires were used. The descriptive survey design was adopted with a response rate of 79.4%, and adopted a stratified sampling technique. The sample size of the study was 403 respondents. Data was analyzed using descriptive and inferential statistical techniques. T-test statistic was computed for intellectual capital and the results indicated that the strategy was statistically significant in enhancing organizational performance. The study results showed that intellectual capital had a positive influence on performance of KTDA managed processing firms in Region Kericho and Kisii highlands in Kenya. The implication of the study findings is that, tea firms' managers should develop their human capital through training, increase their networking and partnership, and increase their investment in modern technology in order to enhance tea processing firms' performance in Kenya.

Keywords. Intellectual Capital, Research and Development, Tea Firms, Organizational Performance

Introduction

In recent years, organizations have acknowledged the significance of intangible assets management. The development of products, stakeholder relationships, reputation and the philosophy of organizations are regarded as providing sustainable bases of competitiveness. The ability to build and influence the value of these intangible assets constitutes organizations' fundamental capability. However, recent studies claim that empirical. A strategy for improving workforce productivity to drive higher value for the firms has become an important focus (Volberda et al., 2010). Organizations pursue to improve their workforce through inclusive human capital development programmes not only to attain commercial goals but survival and sustainability. To accomplish this responsibility, organizations will need to invest resources to warrant that employees have the knowledge, skills, and capabilities they need to work efficiently in a rapidly fluctuating and turbulent environment.

Globally it's believed that an organization's ability to R&D is closely linked to its intellectual capital, or its capacity to exploit its human resources. Studies have highlighted how current products represent organizational knowledge. Aya et al. (2018) described R&D as a knowledge management process and considered innovative organizations as knowledge creating. In other words (R&D) refers to two intertwined processes of research (to identify new knowledge and ideas) and development (turning the ideas into tangible products or processes) (Volberda et al., 2010). Companies undertake R&D in order to develop new products, services, or procedures that will help them grow and expand their operations. It is now quite common for studies examining R&D to utilize intellectual capital as backgrounds, and studies investigating intellectual capital frequently use R&D as outcomes (Schweisfurth & Raasch, 2018).

As a result, R & D has been considered as an important element in improving the specialization patterns of organization's competitiveness globally, helps in the improvement of existing products, formation of new products and innovation of the production procedures of organizations thus improving organizational performance (Abutabenjeh & Jaradat, 2018). Furthermore, R & D is also aimed at improving the professional know-how associated with the processing and production processes of organizations, covering issues such as basic research, product design, manufacturing processes and service procedures (Papatungan et al., 2020). Consequently, an increase in a organization's R & D will aid modernize the production of new goods, rendering them appealing to hook the responsiveness of domestic buyers away from imports as well as to catch the attention of foreign buyers, thus increasing exports (Gatimbu et al., 2020).

Intellectual capital strategies enable tea processing firms to exploit human skills, nonphysical setup, methods and databases of the firm leading to high performance. High performance includes efficient procedures, copyrights, and symbols organizational image, information systems and branded softwares (Martin & Namusonge, 2014). Seo & Kim (2020) for instance, examined the relationship between intellectual capital strategy, innovative work behavior and organizational performance reflection. The study confirmed that intellectual capital enables organizations to effectively use its employee resources as measured by creativity, innovation and therefore spur high organizational performance. Intellectual capital can provide direct benefits in the form of superior performance, productivity and career advancement. From an organizational perspective, intellectual capital is the result of a firm's deliberate investment through the selective hiring of employees with high general skills and also a firm investment in training of more specific skills through in-house training activities (Ipek, 2018). This study agrees to expand the boundaries of potential aspects that jointly affect performance in tea processing firms Kenya.

In Kenya, the importance of intellectual capital as an agent of manufacturing transformation and economic creation have recently received special attention in the country's Vision 2030 strategy that aims to transform the country to a medium income economy by the year 2030 (GoK, 2013). In the Vision, the Government projects that due to innovation, manufacturing sector investment will rise to over 7 percent of GDP, strengthened by the exploitation of new scientific knowledge in science, technology and innovation (Kipkosgei et al., 2020).

Performance of Tea Processing Firms in Kenya

According to the republic of Kenya sector plan for science, technology and innovation (STI) 2013-2017, Tea processing firms in Kenya are lagging behind in the uptake of innovation strategy and face challenges exposing a technology crisis in Kenya's tea firms. Research and development strategies are most likely to benefit processing firms in: energy storage, production and conversion; enhancement of tea productivity and quality management (Takano & Kanama, 2019). One of the reasons for the poor performance could be lack of intellectual capital strategy and access of diverse knowledge in tea processing firms in Kenya.

Available evidence indicates that technological capabilities in tea processing firms and intellectual capital enhance the quality of employees and the richness of knowledge exchange among team members. Intellectual capital is embodied in how it assists collaborations and the exchange of ideas progress of internal processes of learning within the firm are a prerequisite for organizational performance (Gatimbu et al., 2020). Purposeful investments in knowledge enable firms to select, adapt, modify and improve products (Mwangi & Namusonge, 2014). It is a generally held view that R&D and investments in machinery and equipment (technology acquisition) together with knowledge labour and ordinary labour makes a main contribution to tea firms' performance (Oanh et al., 2020). As explained by Indahsari & Kesumajaya (2017) tea processing firms require accelerated efforts to increase and generate new ideas through advances in technologies, innovativeness and commercialization.. It is agreeable that enhanced outcomes will be realized through the intellectual capital strategy, and capacity building. Maximizing delivery, uptake, acceptability, sustainability and value addition to the products, process and services will be an overarching outcome of innovation strategy.

Statement of the Problem

Due to the increasing market competition and antagonistic environment globally, tea processing firms particularly in Kenya, face strong competition. They should continuously find ways to improve their capability to innovate efficiently and aim for sustainable growth and improved organizational performance. Ahmed Hashmi et al. (2019) recognizes that intellectual capital capability provides the possible for effective innovation, while Abdulaali (2018) maintain that intellectual capital and the capability to innovate are among the most significant dynamics that influence an organization's competitiveness and performance.

Tea processing firms are successful innovators though they naturally face considerable resource limitations (Beheshti & Beheshti, 2010). Firms which are not able to improve and sustain their intellectual capital capability are associated with weak performance in competitiveness and commercialization (Seo & Kim, 2020). Hence, intellectual capital capability needs to be enriched in order to be competitive in the market (Sofian et al., 2020). While studies on intellectual capital are in abundance Zerenler et al. (2008); Soo et al. (2017); Agostini et al., (2017) there is still less empirical

proof linking it as to how processing firms increase their intellectual capital capability (Salazar, 2017). Effective utilization of intellectual capital guarantees that a processing firm; increase their financial revenues, achieves targets, new technology and deliver new organizational assets used by firms to develop, manufacture, and deliver products and services to its customers. In a changing environment, averred that the main reason that gives an organization competitive advantages and performance over others is due their advancement of resources and abilities (Beheshti & Beheshti, 2010). In spite of several calls for more intellectual capital utilization and actions, the extent of intellectual capital embraced in Kenya is considered still low. A report by tea board of Kenya TBK(2016) observed that in 2014, tea processing firms had a decline of 11% in market share as compared to the year 2013. On the same standing, Kenya, contributed on average 45% of the foreign exchange earnings up to the year 2010 when its contribution dropped to 25% Gatimbu et al. (2019); International Tea Committee (2017); Tea Board of Kenya (2017). This trend has made this sector to be in distress, issues like, escalating costs of production, pronounced gaps and fluctuations in (dividends) bonus payments per kilogram in different KTDA tea processing firms' operational costs and heavy taxation imposed to it (Mwangi & Namusonge, 2014).

General Objective

The general objective of the study was to determine the relationship between intellectual capital, research and development and organizational performance of tea processing firms in Kenya.

Specific Objective

To examine the influence of intellectual capital, R&D and organizational performance of Tea firms in Kericho and Kisii highland in Kenya.

Research Hypotheses

H_{01b}: Intellectual capital do not have a significant influence on the organizational performance of Tea Firms in Kericho and Kisii highlands in Kenya

Research Methodology

Research Design

Survey design was employed in this study. Survey design was ideal and appropriate to this study because the population under study is spread over a wide region (Cooper & Schindler, 2010) Also survey design enables a researcher to collect quantitative data enabling one to use descriptive statistics Saunders et.al (2015). Above all it is effective, cheap, and easy to conduct

Target Population

Target Population is the collective of the likely components in given space for which the researcher needs the findings. There are of two categories of population; targets and accessible population (Kothari, 2016). Target population for this study consisted of 1509 employees of 66 tea processing firms managed by KTDA limited and at the time of the study they were demarcated into seven regions. The targeted sample for the study was 403 employee of 24 tea processing firms in regions (5 and 6) Kericho and Kisii highlands, Kenya. The respondents of the study were strategic management team such as, Board of directors (BOD), top and middle level management. These categories were chosen as the respondents because they are mostly concerned with implementation organizational

strategic issues in their tea processing firms (TBK 2016). This is consistent with Indahsari *et al.* (2017) in their study of Challenges and profitability in remote areas who found out that 350 target population were good.

Sample Design

Purposive sampling technique was used targeting only respondents who work in the targeted KTDA processing firms for they have the required information. Also, this was used owing the fact that all processing firms in region 5 and 6 were to be considered. The sampling technique was adopted considering the sampling size and the analysis that was carried out and this is inconsistent with Geoffrey (2015) who adopted the same technique, in examining the role of R&D spending on economic growth of developing countries and found it appropriate

Sample Size

The sample of the study was 403 respondents. The study employed a census study by collecting data from all the 403 respondents of the target population comprising of all board of directors, top level management, and middle level management. Kothari (2004) used 390 sample size and found it appropriate for their study. To determine the sample size for the study population, the study used Saunders *et al.* (2012) formula to calculate sample size, Based on this, and with an estimated 95%. The sample size was 403 employees of twenty four (24) Tea firms which are 100% of firms in regions 5 and 6 and constitute 36% of all the processing firms in Kenya. The sampled firms were selected because they have readily available information, have a higher level of information disclosure, some were not performing well and some have fairly invested in various in knowledge management based on information available from their annual reports (KTDA Annual Report, 2017).

Caroline and Susan (2014) adopted the same formula in their study that yielded 30% of the target population and used a purposive sampling technique in identifying the respondents and this was in line with this study. A study by Baraza (2015) used the same formula to calculate the sample size of (398) by adopting multistage stratified sampling to select the respondents. Isoe, *et al.*, (2013), used the same formula in their study that yielded 30% of the target population and used a purposive sampling technique in identifying the respondents and this was in line to this study.

Research Instruments and Data Collection

Data used in this research was gotten from primary sources obtained from the research instruments. The study used primary data that were collected using the questionnaires Saunders (2015) defined questionnaires as measuring instruments that ask individuals to answer a set of questions or responding to a set of a statement. The questionnaire used comprised of Likert Scale this was intended to get the depth of information and data that was analyzed to realize the objectives of the study.

The questionnaire was pretested for reliability and validity on one tea processing firm that Was not among the targeted firms. The pre-test sample was selected using purposive sampling Technique. After the pilot test, any items that were not clear, or were confusing or could cause bias were modified or omitted. A total of 40 questionnaires were sent out but only 34 questionnaires were received giving a response rate of 85% which was considered to be very good. According to Mugenda (2008), a response rate of 50% is considered adequate, 60% and above good, and above 70% very good.

A total of 403 questionnaires were administered to , directors, top level management and middle level management of tea processing firms who were considered to be the best able to understand the intellectual strategy and do implement at various levels. 320 respondents replied, which is 79.4 percent of response rate. This response rate was statistically adequate as it compares fundamentally well with other studies conducted in the same context (Bolarinwa, 2018). The questionnaires were easy to manage too many respondents within a short time. Also since the questions were the same to all respondents, distortions were greatly minimized. Shin et al. (2017), used a similar tool, in their studies examining the influence of innovation on organizational growth of processing firms and organizational performance and found it appropriate

Justification of the Study

The study will be useful to various stakeholders including:

First, Based on these findings, policy makers in tea processing firms in Kenya will identify the specific areas of intellectual capital strategy , in making decisions on to be adopted, implemented and eliminate the bottlenecks. Second, investors need the study findings to enable them promote and get current and creative ideas for resolving problems from all organizational members, make informed intellectual capital decisions and make their investment decisions going forward hence eliminate the factors that affect firm performance. Third, the finding will enable top management to "can discern, realize, conceptualize, and articulate to their workers the opportunities and threats facing their processing firm and its strengths, weaknesses, and comparative advantages." Furthermore, this will allow management to seek intellectual ways to solve problems, analyze situations, critically question long held principles/assumptions/ideals, and therefore seek innovative and creative methods to solve traditional problems.

Review of Literature

Resource Based View (RBV) Theory

This theory highlights the interior abilities of the organization in formulating policy to attain a sustainable competitive advantage in its markets and organizations. Since organizations are made of resources and capabilities they can be configured (and reconfigured) to offer it with a competitive advantage. In other words, its internal abilities determine the strategic adoptions it makes in competing in its external environment. Shin et al. (2017) the resource-based view theory has an extensive precursor, with links extending back to Edith Penrose (1959), which was further enhanced by (Indahsari et al., 2016).

The Resource Based Theory of the firm explains the role of IC and organizational performance by assuming that distinctive competencies are relatively constant over time and are heterogeneously shared across firms (Beheshti & Beheshti, 2010). Intellectual capital is considered as a valued resource and a source of competitive advantage that affect firm performance. Intellectual capital introduction of capabilities and skills in an organization which is one of the factors that drive organizational performance in tea processing firms (Burton & Rycroft-Malone, 2014). Abdulaali (2018) stated that IC can be sustained through collaboration in order to manage, create, transfer and implement knowledge.

Building on the assumptions that resources are heterogeneously distributed across firms and that these differences are stable over time, Barney (1991) as cited by (Joao, 2017). Salazar (2017); İpek (2018). Henrik, Volberda et al. (2010) stressed Four empirical principles of RBV to generate sustained

competitive advantage are valuable, rare, inimitability, and non-substitutability (VRIN) resources. From the literature RBV integrates knowledge management in the context of intellectual capital (Hejazi et al., 2018). Therefore, successful implementation of intellectual capital strategies by the KTDA leads to R&D and services that permits organizations to improve intangible assets, therefore becoming distinct. This theory shows that tea processing firms can use existing resources, abilities and primary skills to achieve and support competitiveness. Thus, this study applies the RBV as a dominate theory that accepts intangible assets are more likely to lead to organizational performance.

Intellectual Capital and Organizational Performance

In 1969, John Kenneth an economist discovered intellectual capital. John Kenneth was a believer intellectual capital is a pure intellect than unification in intellectual actions. Intellectual capital since 1969 has turned to be prominent in various studies because of expansion of current economy that is knowledge-based (Schweisfurth & Raasch, 2018). Scholars like Subramaniam & Chelliah (2019), described intellectual capital as a compendium of nontangible or non-physical assets and resources of an organization, as well as its procedures, copyrights and the implied knowledge of its employees and their network of partners and contracts. Hence, in processing firms, intellectual capital is viewed as the possession of knowledge, practical experience, organizational engineering, client relationships, and professional skills that provide a firm with a competitive edge in the market and is accountable for organization's renewal and value creation.

Previous research has recognized three prominent components of Intellectual Capital viz.; human capital, structural capital and /relational capital. At the primary level, the conceptual (Chen et al., 2016). More significantly, it is the conceptualization of different characteristics of IC that offers managers a means to parsimoniously synthesize the methods to which knowledge is accrued and applied in organizations

Human Capital

According to Chen et al. (2016) the principal component of IC is human capital and Information is inherent to human capital. Human capital represents what a single employee brings into the value adding processes and encompasses specialized skill, social competence, employee motivation, and leadership capability (Schweisfurth & Raasch, 2018). As human capital is one of the strategic resources vital to firm success in terms of continuous innovation, human capital needs to be nurtured to improve employees' skills and knowledge which ultimately increases firm performance (Hsu & Wang 2012). Firms desire certain qualities of human capital in order to withstand competitiveness and adaptable to the volatile commercial environment. In these circumstances, employees require human capital to be inventive, bright and skilful, expert in their roles and functions as well as a provider of new ideas and knowledge. The bright and skilful workforce are able to interrogate prevalent customs in firms (Chen et al., 2016). For organizations involved in innovative technology, experienced personnel possessing high problem resolving skills are vital in effective decisions making. As employees acquire efficiency and effectiveness in communication, explicit knowledge, skills and capabilities, this will reduce errors in decision making and result in superior quality and high organizational performance (Hsu & Wang, 2012).

Human capital is normally associated with the knowledge, skills, capabilities of a person, attained from training, knowledge and specific skills. According to Agostini et al. (2017) this shared view is identified as 'explicit knowledge' important for the selection of an worker Soo et al. (2017) averred

that explicit knowledge can be communicated orally, expressed in writing and demonstrated in drawings. Knowledge used to resolve a variant equation in this case is described as explicit knowledge (Beheshti & Beheshti, 2010). Nevertheless, various scholars have posted that explicit knowledge is copied easily by rivals given the features of a knowledge-based economy and modern environment, which brand training, skills and experience reduce in value rapidly. Though, explicit knowledge is essential for organizations, it is inadequate for attaining the possible advances from human capital.

Organizational Capital

Chen, Lin, & Chang (2016) believe that structural capital denotes to the system, structure, current trade practices of an organization, which regularly includes all non-human knowledge in the organization such as R&D cost, innovation, patent right, trademark and processes.. It is an organizational way of doing business which is stated to as organizational culture which involves values, beliefs, and norms of behavior that are communal and accepted by workers of organization. In addition, behavioral norms are unprinted rules that have stressed on issues such as the appearance of the staff and their cooperation with each other. The essentials of organizational capital comprise information systems, infrastructure, procedures, processes and organizational culture (Gatimbu et al., 2020). Therefore, since organizational capital is codified, its formation, preservation and improvement basically result from designed and repetitive activities of processing.

Preserved knowledge is significant for processing firms, as once valuable knowledge is accumulated and codified, it can be transmitted and disseminated for extra use in new circumstances (Chen et al., 2016). Having proper management of organizational capital, whereby institutionalized information and codified experiences are stored correctly in catalogue, routines, structures and freely available for members in the processing firm, enables the firms to exploit the knowledge and act towards successful innovations (Mohammadi & Taherkhani, 2017).

Conserved knowledge is significant for organizations, since valuable knowledge is accrued and codified, it can be transferred and dispersed for more applications in current contexts (Mohammadi & Taherkhani, 2017). With good management of organizational capital, whereby entrenched knowledge and codified capabilities are stored properly in catalogues, customs, and structures and readily accessible for employees in the firm, permits the firm to apply the knowledge and act towards effective innovations.

Social Capital

Social capital is the information used by interactions amongst persons and networks of inter-relationships (Agostini et al., 2017). Social capital includes information in sets and networks of persons that are never restricted to interior information substituted amongst workers but similarly protracted to relationship with exterior parties linked to organizations including clients, contractors and associates (Schweisfurth & Raasch, 2018). An organization's societal capital advances quality team work quality richness of knowledge discussion amongst team associates (Hejazi et al., 2016). Societal capital is never owned by persons or firms. It adopts an interrelating role for intellectual capital leveraging information in sets and people's network significant to organizations (Chen et al., 2020). Two main dimensions of group capital prevail in literature; structural aspect and interpersonal dimension. Structural aspect of societal capital concentrates on whole design of relations amongst stakeholders that is connected to density, connectivity and hierarchy of connections whereas interactive dimension stresses assets generated and leveraged by associations through trust and

trustworthiness (Zerenler et al., 2008). Trust stimulates mutual efforts (Paputungan et al., 2020) as cited in (Sofian et al., 2020). Therefore, when trust is recognized between parties, they are ready to share assets and turn to be cooperative. This leads to amalgamation of assets which in turn increases innovation (Kipkosgei et al., 2020). Because of the aforementioned thinking, the current study concentrates on relational dimension of societal capital anchored on the argument that innovations draw on the quality of associations that exists amongst people that are involved in systems than from density, connection and hierarchy of associations. From the reviewed the studies on IC, mainstream authors believes that IC is made up of three components namely; human capital (HC), structural capital (SC) and /relational capital (RC).

Soo et al. (2017) investigated the influence of intellectual capital on processing firm market share value and performance. The study utilized secondary data. The testing and analysis of data was done using regression and relationship models. The result of the study was not able to agree with the study hypothesis despite the fact that "IC" was acknowledged to be an essential instrument in sustaining competitiveness. The study concluded that intellectual capital influence Greek markets growth and economic strength. Nevertheless, research encountered certain challenges including unavailability of adequate data to allow research to continue, strain in accessing employees' data for analysis, publicity expenditure, value addition intellectual coefficient (VAIC) approach applied to assess IC was not reliable because studies utilized such methods failed to establish association between IC and firm value.

Baloch, Meng, & Lodhi (2018) conducted a study to establish effect of IC financial performance of insurance firms. The study adopted a descriptive research design. The study utilized secondary data from insurance firms registered in Jakarta Stock Exchange. Presentation and analysis of data applied descriptive statistical methods while an inferential method was used to test the strength and interpreted by using weighted average analyses. The analysis of data was done using SPSS software. The outcome of the analysis indicated that IC positively affects performance. Furthermore, this research determined that IC generates organizational value, wealth, organizational knowledge and expertise is recognized and distributed. Nonetheless, this research generated gaps including lack of relevance in relation present study. Additionally, this research was done in Indonesia and therefore can never provide a rational opinion about Kenyan tea processing firms and thus generating a physical gap.

Hejazi et al. (2018) conducted a study on effect of intellectual capital on organizational performance of processing firms in Nigeria. The study utilized questionnaires to collect primary data and structured sheet was utilized to collect secondary data. The study adopted a descriptive study while a descriptive statistical technique was used to analyze and interpret data. Data were analyzed using Statistical Package for Social Sciences (SPSS) software to better understand whether intellectual capital affects processing firms and whether intellectual capital enhances organizational performance. T-test statistic was calculated for intellectual capital and the outcomes confirmed that IC was statistically significant of intellectual capital on processing firms in Nigeria. In addition the study revealed that, the levels of the firm's reputation, knowledge sharing, market share, and intellectual capital of processing firms proved to be very high. The study found a strong limitation, the study did not give details of the various components of intellectual capital, and secondly and in this research there was lac of facts on whether there existed structures for workforce growth. Lastly, this research created a physical gap because the research was carried out in Nigeria.

A study conducted by Zerenler et al. (2018) on the effect of intellectual capital disclosures and organizational performance by South African processing firms and applied descriptive statistical techniques. Data was tested and interpreted using inferential statistical methods and the results was analyzed using correlation analysis. The main determination of their study was to examine the extent and nature of intellectual capital disclosures in "Top 20" South African companies over a 5 year period (2002–2006). The results revealed that intellectual capital disclosures in South Africa have increased over the 5 year study period with certain processing firms recording considerably more than others. Out of the three broad categories of intellectual capital disclosures human capital was the most popular among the category. The methodology used was relevant.

Henk, Volberda et al. (2010) explored the effect of intellectual capital strategy, business philosophy and performance of firms registered at Nairobi Security Exchange. Presentation and analysis of data was done using descriptive statistics and inferential statistics. The interpretation of independent variables was using standardized coefficient tables through selecting the β -values and p-values to establish significance of variables. Research confirmed revealed that, intellectual capital strategy made a significant contribution to value formation and raising the firm's performance. The study also agrees that processing firms have to put more effort to improve their intellectual capital efficiency. Moreover, as the study also discloses that a significant key effect of intellectual capital is also achieved, it also implies that employees in processing firms have higher intellectual capital level and also a higher level of knowledge sharing. The study concluded that Managers have to provide an environment that is conducive for the minds of the employees. The study created some gaps; the study focused on intellectual capital strategy and corporate culture, leaving a gap on the components of intellectual capital and its applications, especially in processing firms, finally, the study did not give details as to how intellectual capital strategies may be translated into practical management guidelines and knowledge sharing.

Research Methodology

Research Design

Survey design was employed in this study. Survey design was ideal and appropriate to this study because the population under study is spread over a wide region (Cooper & Schindler, 2010) Also survey design enables a researcher to collect quantitative data enabling one to use descriptive statistics Saunders et.al (2015). Above all it is effective, cheap, and easy to conduct

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Vasileiou et al. (2018) adopted the same formula in their study that yielded 30% of the target population and used a purposive sampling technique in identifying the respondents and this was in line with this study. A study by Saunders et al. (2012) used the same formula to calculate the sample size of (398) by adopting multistage stratified sampling to select the respondents. Mwangi (2014) used the same formula in their study that yielded 30% of the target population and used a purposive sampling technique in identifying the respondents and this was in line to this study.

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Data Analysis and Presentation

Data collected was analyzed using descriptive statistics Descriptive analytical tools included frequencies, percentages, mean and standard deviations. The analysis of these objectives was also improved by conducting T-tests on, intellectual capital, and organizational performance. Towards this end, statistical tests were conducted at three levels of significance, 0.05, 0.01 and 0.001 respectively. second, Correlation analysis, The Pearson Product moment correlation was used to establish the strength of the relationship of intellectual capital strategy and organizational performance of tea processing firms in Kericho and Kisii highlands, Kenya, third, Inferential analysis, a multiple linear regression analyses were used to establish the influence of strategy and organizational performance of tea processing firms in Kericho and Kisii highlands, Kenya.

Results and Discussion of Findings

Response Rate

The study collected 320 filled questionnaires. Data cleaning process was taken in order to prepare the data for analysis. Data cleaning was done to eliminate outliers. The questionnaires were edited to determine any irregularity, oversight and ambiguity before coding. The study used descriptive statistical techniques to code the collected data in the codebook using SPSS in order to screen for any code discrepancies. All the questions were entered and the results from data screening showed that the data met the required edge.

Table 1: Respondents' Response Rate

Questionnaire	No	%
Given out	403	100
Returned	320	79.4

Source: Research data 2020

Response rate in a research context refers to the size which the collected set of data includes all sample members of the targeted population (Fowler, 2004). Data analyzed in this chapter was obtained from 24 tea processing firms. A total of four hundred and three (403) questionnaires were distributed to the study sample. Out of four hundred and three questionnaires, three hundred and twenty (320) were completed and returned translating to a response rate of 79.4% as indicated in Table .1 above. This response rate was adequate as it compares fundamentally well with other studies conducted in the same context (Aya et al., 2018). (Shin et al., 2017a), in their study to investigate what could be a logical response rate in academic research observed that the average response rate was 55.6 percent. According to Kothari (2014) a response rate of 65 percent is acceptable for such studies. Based on these assertions, this implies that the response rate for this study was adequate.

Research findings, data analysis and discussions

The study sought to establish the demographic data of the respondents in terms of gender, educational qualifications, length of service and age profile. This assisted the researcher to determine demographic issues in tea processing firms. The findings are represented in Table 2(a)

Table 2 (a) Demographic Data

Aspects	Response	Frequency(n=402)	Percent (100%)
Gender of respondents	Male	225	70.3
	Female	95	29.7
Educational qualification	Secondary	12	3.8
	Diploma	153	47.8
	Bachelors	132	41.3
	Masters	22	6.9
	Doctorate	1	.3

The results indicated that the majority 70.3% were males while 29.7% were females. The top management at KTDA managed factories was dominated by male factory unit managers. The distribution as indicated in the research findings revealed the correct picture of gender composition within the tea processing firms as per the sampling frame used by the study.

The findings of educational qualification indicated that 47.8% of the respondents had at least a diploma qualification, 41.3% were degree holders and 6.9% had master’s qualifications and 3.8 % had secondary educational qualifications. The high literacy rate is also explained by the fact that the respondents are the middle level managers in factories managed by KTDA in Kenya. It is normal in KTDA to occupy lower rank when joining as trainee management joining services as a fresher from college, then as one gains experience, one move into the top level management. This means that the KTDA tea processing firms have good level of intellectual capital and thus it can be argued that they are capable of implementing and making innovation decisions.

Table 2 :(b) Showing respondents length of service and gender

Aspects	Response	Frequency(n=402)	Percent (100%)
Employee length of service	Less than 1 year	17	5.3
	Between 1 and 5 years	125	39.1
	Between 5 and 10 years	101	36.1
	Between 10 and 15 years	50	15.6
	Between 15 and 20 years	19	5.9
	Over 20 years	8	2.5
	Between 10 and 20 years	15	4.7
Age of respondents	Between 21 and 30 years	89	27.8
	Between 31 and 40 years	103	32.2
	Between 41 and 50 years	85	26.6
	Over 51 years	28	8.4

From table 2. (b), 5.3% had been with the factory for less than 1 year, between 1–5 years 39.1%, between 5-10 years 36.1%, between 10-15 years 15.6%, between 15-20 years 5.9%, and over 20

years 2.5%. had worked in the respective factories for 2 years and above Besides, the respondents have stayed fairly in their workplace and have good knowledge of their areas of operation, strategic management skills ,and they can give reliable information, make strategic decisions and understand innovation R&D implementations. About 5.3% of the respondents had worked less than 1 year at the tea processing firms, confirming that there exist association between length of service and R&D strategies implementation of KTDA managed tea processing firms. In an attempt to realize better returns and prizes, KTDA undertakes frequent review of her staff postings fairly regularly given that this staffs are the top management who direct strategic policy and strategic issues. Majority of the respondents were aged between 31 and 40 years with an overall of (32. 2%).While, the age bracket of between 21 and 30 years (27.8%). Respondents (26.6%) fell within the age of between 41 and 50 years and over 50 years (8.4%) , meaning that most of the tea processing firms, directors and top level management does not have young people. This could be attributed to reason that majority of these managers have a wide experience hence, this enhances strong strategic decision making.

Intellectual Capital Findings

This section examined effects IC strategy on organizational performance of Kenyan tea firms. Respondents were required specify how R&D intellectual capital influences firm performance in selected tea processing firms in Kenya using a five -point Likert Scale of 1-5. Table 3: presents the findings.

Table 3: Responses on intellectual capital strategy

	N	Mean	Std. Deviation
Our employees are highly skilled.	320	4.21	.814
Our employees are creative and bright.	320	4.18	.705
Our employees are experts in their particular jobs and functions.	319	4.22	.822
Our employees develop new ideas and knowledge.	320	3.63	1.154
Our organization uses patents and licenses as a way to store knowledge.	320	3.52	1.228
Much of our organization's knowledge is contained in manuals, databases etc.	320	3.48	1.242
Our organization's culture (stories, rituals) contains valuable ideas, ways of doing business etc.	320	3.84	.986
Our organization entrenches much of its knowledge and information structures, systems and processes.	320	4.03	.817
Our employees interact and exchange ideas with people from different areas of the firm.	320	4.19	.724
Our employees apply knowledge from one area of the company to problems and opportunities that arise in another.	318	4.15	.852
GRAND MEAN		3.95	

Source: Research data, 2020

According to the findings, the respondents revealed that majority of tea firms' employees were highly skilled with a (mean=4.21, SD=±0.814). The respondents further agreed that employees were creative and bright (mean=4.18, SD=±0.705). Similarly, the respondents agreed that employees were experts in their particular jobs and functions (mean=4.22, SD=±0.822). Also the respondents agreed that employees interact and exchange ideas with people from different areas of the firm (mean=4.19, SD=±0.724). Further, respondents agreed that employees apply knowledge from one area of the firm to problems and opportunities that arise in another (mean=4.15, SD=±0.852). These are evidenced by the quality tea that were produced and new products from most tea firms like green tea, and instant tea from Itumbe, Tiregaga, Latin, Kipkoros tea firms. The results were in agreement with World Tea News Market Report (2016), which affirmed that the changing habits of consumers' results to increase in quality teas and in the diversification of products and hence organizational performance.

The findings confirmed that tea firms entrench much of its knowledge and information structures, systems and processes (mean=4.03, SD=±0.817), tea firm's culture (stories, rituals) contains valuable ideas, ways of doing business (mean=3.84, SD=±0.986). Further, findings shad varied opinions that employees develop new ideas and knowledge as reflected by (mean=3.63, SD=±1.154). The study findings thus agree with study findings by Mbui (2016), which found out that Kenyan tea firm's employees do not develop new ideas as most decisions are made from the head offices hence, affecting individual firm performance.

Also, findings confirmed varied opinions that much of an organization's knowledge is contained in manuals, and databases (mean=3.48, SD=±1.242), implying that the results agreed but with varied opinions between agree and disagree though on average the respondents were neutral. Similarly, results had varied opinions that organization uses patents and licenses as a way to store knowledge as reflected by (mean=3.52, SD=±1.228). Meaning that the results agreed with varied opinions that organization uses patents and licenses as a way to store. The study findings agree with the study findings carried out by Tea Board statistics of India 91 (2016), which pointed out that most tea processing firms' information is contained in manuals, its knowledge and information is not entrenched in structures and knowledge sharing is scanty apart from team briefing. The study findings conform to study, report by Papatungan et al.(2020) which pointed out that Kenyan tea firms require databases, structures and development of new ideas.

Intellectual Capital and Organizational Performance.

In establishing intellectual Capital, and its influence on organizational performance, the study was meant to determine whether the firms in question have any R&D measures in place, and if so, and how they influence the performance of these firms. The Mean and Standard Deviation were computed as shown in Table 4.

Table 4: Intellectual Capital on organizational performance

	N	Minimum	Maximum	Mean	Std. Deviation
Our firm operates continuously in tea processing	320	1	5	4.08	.804
Our firm has expanded its services for the last 5 years	320	1	5	4.17	.736
Our firm Provides products that offer unique benefits superior to those of competitors.	319	1	5	4.08	.833
Our firm has expanded its tea products (orthodox tea)	320	1	5	3.72	1.075
The firm assets have increased in the last five years	319	1	5	4.15	.779
Our firm has increased its market share	317	1	5	4.18	.773
Our firm produces quality tea products	319	1	5	4.34	.714
Our firm has retained most of our customers	318	1	5	4.29	.681
Our customers get high satisfaction in our services	320	1	5	4.24	.808
Our organization constantly monitors the level of employee commitment to serving customers' needs.	320	1	5	4.07	.802
Our strategies are driven by the need to create customer value.	320	1	5	4.17	.810
The objectives of our firm are driven by the need to achieve high customer satisfaction.	315	1	5	4.26	.775
Our firm always meets the target of our customers	319	1	5	4.23	.669
We are very active in developing new technologies	213	1	5	3.58	1.277
Our firm has maintained sales growth	319	1	5	4.19	.797
Our firm has maintained growth for the last five years	318	1	5	4.06	.834
Our firm is experiencing good high productivity	319	1	5	4.11	.727
Our product development programs are more ambitious than our competitors	320	1	5	3.94	.880
Our firm always satisfies target market of our customers	318	1	5	4.23	.651

We are very active in developing new technologies	319	1	5	3.54	1.331
Our firm has growth in sales volume	317	1	5	4.18	.681
All functions are integrated in serving the needs of our target market	319	1	5	3.88	1.001
Our firm has increased in sales volume in the last five years.	318	1	5	4.10	.831
GRAND MEAN				4.08	

Source: Research data, 2020

Drawing from the findings of Table 4. The findings confirmed that tea firms have increased their market share (mean=4.18, SD=±.773) which indicates agreement in opinions and also, that tea firm assets have increased by (mean=4.15, SD=±.779). This signifies an increase in lines of production and other modern machines. At the same time, the results confirmed that tea firms have expanded their services for the last 5 years (mean=4.17, SD=±.736), concurring that most tea firms Provide products that offer unique benefits superior to those of competitors (mean=4.08, SD=±.833). The study results agreed that tea firms have expanded their tea products (orthodox tea) as reflected by (mean=3.72, SD=±1.705), agreeing with the Annual market Survey Report carried out by Tea Directorate of Kenya (2016). This confirmed that most Kenyan tea processing firms have undertaken product development strategy and adoption by creating new products targeted at its existing markets to achieve performance. The product developments are obtained by value addition, product differentiation, standardization and product diversification of the existing tea products.

Customers get high satisfaction fared better than the rest (mean=4.24, SD=±0.808), implying that achieving high quality of customer service has become increasingly critical in the service, tea processing and has been the focus R&D strategy. Results agreed that tea firms produce quality tea products (mean=4.34, SD=±0.714), and have retained most of their customers (mean=4.29, SD=±0.681). The results confirmed that tea firms' strategies are driven by the need to create customer value (mean=4.17, SD=±0.810), and that their objectives are driven by the need to achieve high customer satisfaction (mean=4.26, SD=±0.775). The study findings were in agreement with a research study conducted by (Indahsari et al., 2016) on Export Trends in Global Tea Trade with reference to Sri Lankan and Indian Tea Industry which asserted that in the most of the tea consuming countries consumer inclinations was inclined towards value added tea products such as teabags, instant tea, green tea and organic tea. Consequently, preference towards loose tea was dropping while demand for value added tea was recording an upward trend.

Organizations in this sector are customer-focused hence are keen on ensuring a high level of customer satisfaction, service quality and greater efficiency in service delivery. This is because satisfying customers are critical to a firm's success. Firms that cannot satisfy their customers are likely to lose market share to rivals who offer better products and services. These findings are in line with other Scholars who found a positive relationship between a firm's own customer satisfaction and its performance (Soo et al., 2017). Overall, the results agreed that there is a positive relationship between a firm's own customer satisfaction and organizational performance since customer

satisfaction is linked to increased revenues (Gómez et al. 2014; Simon et al., 2013) and more inelastic demand (Hejazi et al., 2018a).

Results generally agreed that tea firm always meets the target of their customers and have maintained sales growth (mean=4.23, SD=±0.669). Sales growth is a strategic management decision making and enhance organizational performance. At the same time findings confirmed that tea firms are experiencing good high productivity (mean=4.11, SD=±0.727, and have maintained growth for the last five years (mean=4.19, SD=±0.797). Similarly, the study agreed that tea firms' product development programs are more ambitious than their competitors (mean=3.94, SD=±0.880). This signifies that making a strategic decision regarding product development programs involve making trade-offs between multiple objectives to select an alternative that best meets the values of the intended clients. The findings of the study showed that their firms have increased in sales volume in the last five years (mean=4.10, SD=±0.831) and growth in sales volume (mean=4.18, SD=±0.681) signifying consumers' preference to Kenyan tea, increase in Market share and hence positive organizational performance. At the same time, results confirmed that tea firms always satisfies target market of their customers as reflected by (mean=4.23, SD=±0.651). On whether functions are integrated in serving the needs of the target market, the results agreed that tea firms have integrated (mean=3.88, SD=±1.001), and that tea firms were very active in developing new technologies and this had (mean=3.54, SD=±1.331). These findings establish that Satisfying customers are critical to tea firm's performance. This is demonstrated by product diversification, product management, customer satisfaction, service quality and greater efficiency in service delivery. In regard to these findings, it is apparent that tea processing firms have to embrace R&D strategy and monitor strategic decisions that ensure firms are able to satisfy customers because this has got an impact on organizational performance.

These findings are consistent with previous studies conducted by other scholars, including (Beheshti & Beheshti, 2010b) who affirmed that efficiency and effectiveness in utilization of firm resources and the accomplishment of organizational goals increase organizational performance. Dale, Bamford, & Wiele (2016) concur that non-financial strategies are linked with increased firm performance and is seen as providing an important competitive advantage by generating repeat sales, positive word of mouth feedback, customer loyalty and competitive product and service differentiation.

Correlation analysis

Testing of Research Hypotheses

Objective one was to examine the influence of intellectual capital, research and development and organizational performance of Tea firms in Kericho and Kisii highlands (Kenya)

H_{01b}: Intellectual capital, research and development do not have a significant influence on the organizational performance of Tea Firms in Kericho and Kisii highlands (Kenya)

Intellectual Capital and Organizational Performance

The study was to investigate the influence of intellectual capital, research and development and organizational performance of tea firms in Kenya. Here, the following hypothesis was tested:

H_{01c}: Intellectual capital, research and development has no significant influence on the organizational performance of Tea Firms in Kericho and Kisii highlands Kenya. The Pearson's product moment correlation was used to test the study strength of the relationship between intellectual capital and

organizational performance of tea processing firms in Kenya Table 5 shows individual values are (B values, t statistics values, and p values).

Table 5: Intellectual Capital and Organizational Performance

Beta Values	R	t-Values	Sig.
0.180	0.534	4.559	.000

Source: Research data, 2020

Table 5 shows that intellectual capital has a strong positive and significant relationship on organizational performance ($R=0.534$, $\beta= 0.180$, $t=4.559$; $p<0.05$) indicating a unit increase in intellectual capital yielded 0.180 changes in organizational performance at the 5% level of significance. According to this finding, we reject the null hypothesis, since there is a significant relationship of intellectual capital strategy on organizational performance of tea firms in Kenya.

These findings are in agreement with the absorptive capacity theory which affirms that when a firm invests in intangible assets (knowledge based assets) improve firm performance. This theory confirms further, that when firms apply new scientific skills for the purpose of innovation and product development there is an increase in organizational performance. The embracing of intellectual capital strategy by processing firms obtained at 0.180. This is a clear indicator of approval that intellectual capital can lead to superior organizational performance through the resources and information obtained from the social networks established. At the individual level, intellectual capital can influence new skills and the creation of human capital in the firms (Oanh et al., 2020). Studies by Seo & Kim (2020) found that intellectual capital can reduce transaction costs, enhance cooperation, facilitate entrepreneurship, and strengthen supplier relations, regional production networks, and inter-firm learning. The resource based view theory is linked to this strategy because the resources deployment of the firm is influenced by maximizing the employee skills for higher productivity

Conclusions

This study has examined the influence of intellectual capital strategy and organizational performance of tea processing firms in Kenya. We conclude that IC have a positive and significant relationship on organizational performance. Our results show that human capital is a significant contributor towards tea processing firms' performance through R&D. According to organizational learning theory, what is learned and experienced is reserved and leads to organizational performance enhancement. The finding is consistent with the results obtained by Henrik, Volberda et al. (2010) arguing the significance and the influence existing between intellectual capital, R&D and organizational performance.

Hence, a well-designed employee training and enlargement system is expected to improve employee's abilities and knowledge level. Based on our findings we conclude that having well-informed, knowledgeable and trained workers, which engage in job sharing and flexible working hours, can contribute to tea processing firms' performance enhancement. Tea processing firms' managers are threatened with significant competitive barriers from innovative producing countries. The study findings indicate that structural capital together with a focus on the creation of R&D culture make a significant contribution to tea processing firms' performance.

Also, it is considered that the results of this study concurred with the results of the preceding studies such as (Agostini et al., 2017). Thus, the expense of intellectual capital strategy is outweighed by the benefits it generates in the form of internal capability of innovation and enhanced performance.

Policy Implications

Processing firms should train employees in order to enhance their skills and capability for undertaking organizational tasks better and for exchanging knowledge and new ideas. Secondly, use of intellectual capital and information systems, procedures and generating processes to, and also utilizing processes for creating current knowledge from the existing knowledge about competitors'. Lastly, in order for tea firms to gain status in knowledge-based assets, policymakers from public and private sector organizations should consider financial and non-financial assistance related to firm innovation investment in knowledge-based assets.

Recommendations for Further Research

Arising from the findings in this study, the following issues are important:

- i. Since the number of tea processing firms that declared to embrace the various components of intellectual capital strategy seemed to be a bit higher, more research is needed on the scope and quality of the intellectual capital introduced by the processing firms. The study suggests that the quality of the innovations could be investigated by looking at whether the innovations were minor, major or radical and establish the link between the innovations introduced and patent acquisition.
- ii. Further research is needed to examine the relationships amongst knowledgeable human capital, knowledge management capabilities, and organizational performance in terms of creativity and research and development.
- iii. From the practical point of view, the study suggests that stakeholders /managers pay more attention to the investigation of intellectual capital to enhance organizational performance of tea processing firms.

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