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Influence of Process Innovation on the Performance of Coffee Cooperatives in Kenya

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Abstract

Purpose: The purpose of this paper was to assess the influence of process innovation on the performance of coffee cooperatives in Kenya.

Methodology: A descriptive research design was applied. The target population was 525 coffee cooperative societies in Kenya registered with the Commissioner for Cooperatives and licensed by AFFA (Coffee Directorate) as at 30th of October 2016. The sample size was 227 respondents which was arrive at using stratified random sampling technique. Structured questionnaires were used to collect primary data. Descriptive statistic such as means scores and standard deviation and inferential statistics such regressions were used.

Findings: The study found that there was a positive relationship between process innovation and the performance of the coffee cooperatives (β=0.591, p=0.027). This implied that an improvement in the aspects related to process through which the firm operates relatively multiplies the performance outcomes of cooperatives in a positive manner. Investing in process innovation was found to have the largest and most significant effect compared to investing in organization, marketing and product innovations.

Recommendation: The study recommends that for prioritization purposes, coffee societies should prioritize investing in process innovations compared to other innovations, especially if there a limited budget. Policy makers should ensure a favorable environment for process innovations.

Keywords: *Process innovation, performance, coffee cooperatives*

JEL: L25, M1, O3

INTRODUCTION

The capacity to innovate is a constant factor that can be added to the accomplishment of organization. Associations that use the fundamental assets in their possession, offer an incredible motivation to develop and grow. In addition, an organizational climate that would permit and support innovative ideas are actually those which will advance rapidly and effectively (Tajeddini, 2020). Theoretically, Mensah (2017) defines innovation with regard to bringing new concepts regarding products, processes, market and organization to make the resources utilized valuable, rare, inimitable and non-substitutable. Tesfaye and Kitaw (2018) then terms it as new thoughts that comprise of: new items and administrations, new utilization of existing items, new markets for existing items or new advertising strategies. This is substantiated by diffusion of innovation theory whose thought of advancement includes both information creation and dispersion of existing information (Kahn, 2018).

As indicated by Mbithi, Muturi and Rambo (2015), innovation, as far as new items are concerned, as well as the selection of new procedures through bundling and marking, brings about improved execution in total output turnover, deals amount, capacity utilization and profitability after tax. Process innovation has created a new mode of operations, which are still to be examined by employability in the respective branch of procedures. This method can also be illustrated by new ways of dealing with a product in the market place (Teece, 2018). Process improvement has proved to be a crucial aspect of any business overall performance. Process innovation is the improvement in the framework and the creation of a new mode of business and the approaches to handling business systems. This method can also be shown on the marketplace by new ways to handle a product (Jederström & Andersson, 2017).

Process innovation is a mix form for exploiting probable occupation with a state of clearing and superior outcomes (Mohammad et al., 2020). Process innovation necessitates examining the general business objective and considering whether the current technique for doing things is appropriate in achieving objectives and if not, having an improvement or new approach of completing things to achieve objectives. Process innovation means conducting an activity in a new way and implies the use of specific tools of change, and the transformation of business processes (Scafuto et al., 2018). Technology advancement has created a new style of operation, which has led to the reconfiguration of processes and systems (Khan, 2018). System creativity has proved to be a crucial aspect of any businesses ' overall performance. Therefore, the current study refers to process innovation as the technique of carrying out tasks and processes in different ways.

Due to the importance of innovation and its direct connection to ability and production, it is very important for coffee cooperatives to diversify in all directions in order to sustain their growth, profits and revenues in both the short and the long run. Technological innovation capabilities (TICs) which include process innovations are important (from the Malaysian perspective) for firms to acquire skills and expertise and to upgrade the competitive capabilities of a firm (Rahim & Zainuddin, 2019). The coffee industry in Kenya has continued to experience a decline in performance in terms of quality and quantity, despite the above trends. For example, reports indicate that the amount of coffee produced in Kenya dropped from 128,700 tons in 1987/1988 to 39,800 tons in 2013/2014 (Kenya National Statistics Bureau, 2020).

Empirically, there has also been abundance of research that has attempted to tackle the relationship between process innovation and performance of organizations. However, few if any specifically

address coffee cooperatives, particularly in Kenyan context. Adom, Boateng and Gnankob (2019) focused on the role of innovative capabilities on firm performance of the University of Cape Coast administration in Ghana. However, there was little focus on coffee firms in Kenya. Onwu (2016) focused on the effect of technological innovation capabilities on firm performance of the South African media and entertainment industry but this did not include coffee firms in Kenya. The research therefore sought to investigate the relationship between process innovation and coffee cooperative performance in Kenya in order to address those gaps.

LITERATURE REVIEW

The Resource Based View (RBV) Theory

The Resource Based View (RBV) of the firm was originated by Barney (1991). It stated that for an organization to acquire sustained competitive advantage, it has to do so from resources and capabilities that are within its control. Such resources and capabilities should be rare, imperfectly imitable and not substitutable. Such resources and capabilities constitute a collection if tangible and intangible assets, the management skills, the process, systems and routines of the firm, not to mention the information and knowledge assets at its disposal. Barney, Wright and Ketchen (2001) argue that RBV theory has shortfalls or gaps in various fronts. From a human resources perspective, it fails to clarify how and whether strategic human resource practices translate into creating rare and inimitable resources by change the behavior and skill sets of workforces, which lead to sustainable competitive advantage. As a result, it is suggested that a better link would be to look at core competencies, dynamic capabilities and knowledge serve and how this bridge the link between strategic human resources practices and sustainable competitive advantage.

From a finance and economics point of view, RBV theory fails to clarify how corporate governance as a resource-based practice may bring about organization capabilities (Lockett & Thompson, 2001). It fails to underscore the dynamics of transaction costs and how they evolve and also how the behavior of the firm changes radically to generate capabilities. From an entrepreneurship point of view, RBV recognizes the entrepreneur skills and orientation as a resource in its own right but fail to consider the causal ambiguity and dynamism that occurs when entrepreneurs' skill set, competence in identifying opportunities increase as a result of experience and interaction with the society (Alvarez & Busenitz, 2001). It's for this reason that dynamic capabilities are best used to explain this resource.

From a marketing perspective, RBV recognizes the existence of market-based assets, that is the processes that creates and bring goods to the customer, but fails to explain how it can generate sustainable customer value (Srivastava, Fahey & Christensen, 2001). For instance, cross-selling and bundling maybe dynamic market practices that add extra value to customers and create sustainable competitive advantage. For such to be achieved, a dynamic combination of the marketing mix is required. It is this apparent weakness of the RBV theory that is addressed by dynamic capability theory. However, despite its apparent weaknesses, RBV forms a good basis for explaining process innovation and the relationship between process innovation and organization performance. This is because any process consists of bundle of resources, which if well organized, would yield superior value.

Empirical Review

Studies on relationship between process innovating and organization performance are abundant, although they may not have clear cut conceptualization, scopes and consistent relationships. Goedhuys and Veugelers (2012) analyzed several similar development strategies embraced by both the businesses in Brazil. The findings showed that technological acceptance had a considerable influence on the effectiveness of policies for creativity. In essence, the study reported use of methods and process for customer use technologies considerably increased the proliferation and growth of the institutions. The report raised a theoretical discrepancy in light of the current study as it focused on the manufacturing sector whilst the current study concentrated on coffee cooperative.

Omesa (2015) looked at the effect of system improvement on Kenyan utility companies. The thesis was indeed a case study with Kenya Power and Lighting Company as its subject. The thesis used descriptive research design. The findings showed a considerable positive correlation between process improvement and performance of the company. The analysis raised a methodological discrepancy, as it was a case study while a survey the current paper results are based on a survey.

Competent and creative executives are a future market bearer and have been viewed as an important commodity. Therefore, these skills can be seen when designing processes, such as developing new goods, making business partnerships, implementing strategic decisions that help companies succeed in rapidly changing markets. This consistency allows the business to come up with some good and enduring views about the target consumers and whether the service will really succeed at the particular market prices (Trantopoulos et al., 2017). Operating procedures, mainly involve reorganizing internal or external competencies and shaping the company's operating practices (Teece, 2018). Most concepts of dynamic capability refer to the value of creativity as well as transition and organizational learning, which is linked to process development, innovative processes, process management, and process implementation. Nevertheless, the definition of dynamic capabilities is sufficiently extensive to allow the phenomenon to be interpreted differently and competently (Giniuniene & Jurksiene, 2015).

Integrated skills enable industries to identify new possibilities and turn organizational capital into physical and intellectual assets. Since many corporations ' prime objective is to earn profits, the process must materialize and being cost-effective, by efficiency improvements and productivity (capturing expense, time, and revenue). This represents the capacity of the company to develop, expand and adjust the current resource base at an ideal level of production (minimum expenditure and maximum revenue). Process dynamic capabilities use this ability by reinstating current processes and fostering creativity to respond to the rapidly changing world (Žitkienė, Kazlauskienė & Deksnys, 2018).

Research Gaps

A theoretical gap occurs when theoretical framework in the study provides a different perspective on the issue discussed. For instance, Goedhuys and Veugelers (2012) evaluated the various innovation practices adopted by Brazilian manufacturing companies. Descriptive Research Design was used. The study targeted 1642 manufacturing firms in Brazil. Data for the periods 2000, 2001 and 2002 were collected through intensive interviews with owners and managers of firms. The results found that, successful process and product innovations occur mainly through acquisition of

technology. The study focused on Brazilian manufacturing firms and the findings are not generalizable to coffee firms in Kenya. Likewise, the study was grounded on the Solow model (Solow, 1956) which does not address the tenets of innovation therefore, presenting a theoretical gap. Omesa (2015) evaluated the impact of process innovation in utility companies in Kenya. Descriptive research design was used alongside secondary data from year end 2005 to 2014 for KPLC. Data collected was analyzed using descriptive and inferential statistics to interpret the data. The results found a significant positive connection between process innovation and financial performance. The study focused on the context of KPLC whereas little evidence is provided with regard to coffee firms in Kenya.

METHODOLOGY

Descriptive research design was applied. The target population of this study was 525 coffee cooperative societies in Kenya registered with the Commissioner for Cooperatives and licensed by AFFA (Coffee Directorate) as at 30th of October 2016. The sample size was 227 respondents. Stratified random sampling was used to classify the coffee cooperatives into strata according to their regions in order to select the particular coffee cooperatives to be used in the research. Stratified random sampling was used in each stratum. This involved randomly selecting the coffee cooperatives from a given region (stratum) until the sampled size was attained. The study targeted the board chairpersons/ assistant chairpersons of each of the coffee cooperatives in Kenya. Structured questionnaires were used to collect primary data from the selected respondents.

Quantitative data was analyzed descriptively and inferentially. Descriptive data was analyzed through measures of central tendency including means, standard deviations, frequencies and percentages. Data was processed using the SPSS version 21. Regression analysis was done to establish the causal effects of the predictor variables on the dependent variable. It was also done to show the magnitude of the effect of independent variables on the dependent variable. The magnitude was measured by use of beta coefficients, F and t statistics which at 95% confidence interval (0.05 significance level), implying little room for chances of error. At 5%, there is little risk of error probabilities.

RESULTS

Descriptive Statistics

The respondents were required to indicate whether they agree or disagree with the following statements relating to process innovation. The results are as shown in table 1.

Table 1: Descriptive statistics on process innovations

Statement	1	2	3	4	5	Total	Mean	S. D
The organization's technical team develops new programs and process from time to time	1%	4%	19%	61%	15%	100%	3.84	0.76
The organization updates and improves its programs and process on regular intervals	1%	4%	10%	47%	38%	100%	4.16	0.87
The organization does not hesitate to replace existing programs and process in case of failure.	2%	1%	8%	43%	46%	100%	4.29	0.82
The organization adopts modern technology in the development of new processes.	1%	3%	5%	39%	52%	100%	4.37	0.83
Process innovations are key to the effective operation of the cooperatives.	2%	2%	7%	36%	53%	100%	4.36	0.85
Average							**4.20**	**0.83**

The results in table 1 revealed that 76% of the respondents agreed with the statement that the organization's technical team develops new programs and process from time to time. The results were also supported by a mean score of 3.84, which in scale of 1 to 5 implies agreement. The variation of the responses to this statement was low as shown by a standard deviation of 0.76 (lower than 1). The results further show that, 85 % of the respondents agreed that the organization updates and improves its programs and process on regular intervals. A mean score of 4.16 revealed that the majority agreed with this statement and the reported standard deviation of 0.87 indicated low variation in responses.

Moreover, 89% of the respondents also agreed with the statement that the organization does not hesitate to replace existing programs and process in case of failure. A mean score of 4.29 demonstrated agreement while a standard deviation of 0.82 demonstrated low variation of responses. In addition, 91% of the respondents agreed that the organization adopts modern technology in the development of new processes. This was supported by a mean score of 4.37 and a standard deviation of 0.83 which shows low variation in responses. Furthermore, 89% of the respondents agreed that process innovations are key to the effective operation of the cooperatives. A mean score of 4.36 supported the results and standard deviation of 0.85 revealed that the variation of responses was low.

In summary, the average mean of the responses was 4.20 on a scale of five points. This means that the majority of the respondents agreed with the statements and this further implies a high level of process innovation. The standard deviation is 0.64 implies that there was low variation in the responses since the standard deviation was lower than the threshold of 1. The findings agreed with those of Goedhuys and Veugelers (2012) who examined the various innovation practices adopted by Brazilian manufacturing companies. The results showed that adoption of process technology was significantly high for Brazilian manufacturing companies.

Regression Analysis

Bivariate/simple regression analysis was conducted so as to establish the influence of process innovation on the performance. The resultant beta coefficient and level of significance were used to evaluate the hypothesis associated with process innovation.

Table 2: Model of fitness for process innovation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.525a	0.275	0.272	0.5418

a Predictors: (Constant), Process Innovation

	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.773	1	24.773	84.396	.000b
Residual	65.165	222	0.294		
Total	**89.938**	**223**			

a Dependent Variable: Performance

b Predictors: (Constant), Process Innovation

	β	Std. Error	Beta	t	Sig.
(Constant)	1.691	0.273		6.198	0.000
Process Innovation	0.591	0.064	0.525	9.187	0.027

Table 2 presents the fitness of model of regression used in explaining the study phenomena. Process innovation was found to be essential in the performance of coffee cooperatives in Kenya. This was further supported by the coefficient of determination R square of 0.275. This shows that process innovations explain 27.5% of the firm's performance. Table 2 shows the analysis of the variance (ANOVA). The results show that the model was statistically significant. The results indicated that process innovation is a good predictor for the firms' performance. This is supported by the F statistic of 84.396 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level where, $F_{statistic} = 84.396 > F_{critical} = 3.89$ (1,222).

Table 2 above shows the regression of coefficients which revealed that process innovation and organizational performance are positively and significantly related (**β**=0.591, p=0.027). This implies that improvement in 1 unit of the aspects related to process innovation leads to an improvement in the performance by 0.591 units.

Hypothesis Testing for Process Innovation

The hypothesis was tested using the bivariate regression as shown in the Table 2. The null hypothesis was that there is no relationship between process innovation and coffee cooperatives performance and the alternative hypothesis was that there is a relationship between process innovation and coffee cooperatives performance. Table 2 show that the p-value was 0.000<0.05 and the null hypothesis was rejected. Therefore, the alternative hypothesis was adopted and it was

concluded that there is a significant relationship between process innovation and performance of coffee cooperatives in Kenya. The findings agree with thoseby Omesa (2015) who evaluated the impact of process innovation in utility companies in Kenya. The results found a significant positive connection between process innovation and financial performance

CONCLUSION AND RECOMMENDATIONS

Conclusion

It was possible to conclude that there is a high-level of high level of process innovation in cooperatives. The study concluded that there was a relationship between process innovation and the performance of coffee cooperatives in Kenya. The implication is that an improvement in the aspects related to process through which the firm operates relatively multiplies performance of coffee cooperatives. The process innovation is exhibited through new ways of handling a commodity in the marketplace. As it has been noted, theoretically performance go hand in hand with profits since as the company sells more of its products, the more the company generates income. However, the process of doing this requires that the company to look at the cost of operation as a recurrent expenditure which impacts negatively on profits. Thus, the study noted that communication is one of the fundamentals of ensuring that the link between the company and the customers stays strong and reliable. As such for a company to deliver its products to the customers in the right quality and quantity at the time required, the process needs to be under constant improvements. Timely updates from the managerial team to the employees and to customers are a big boost to enhance this process. In addition, with the improvement of processes through the advent of new technology such as social media as well as electronic order systems, the cooperatives can benefit as much and this can bring the relationship with the customers closer. This is an indication that developments in the processes of a cooperative firm lead to a more efficient form of operation with the customers (internally and externally). Customers appreciate an efficient and effective system which means that they are willing to be loyal to the company.

Recommendations

The study recommends that resources related to information technology management and knowledge need to be a driving force to achieve sustainable competitive advantage in a cooperative society. This is because the advent of new processes of technological management and knowledge, which is required in research and development, firms are at a better position to forecast and be a step ahead of their competitors in terms of innovation capabilities and performance. It was recommended that cooperatives should invest more and prioritize process innovation. The process innovation requires the cooperative society to look at the cost of operation and cut losses to improve performance.

Thus, this study further recommends that process innovation in the area of communication is fundamental in ensuring link between cooperative society and its internal and external environment. Timely updates from management team to employees and indirectly to customers, are a big boost to enhance process innovation. Utilization of new technology such as social media as well as electronic ordering system is beneficial to the organization and can bring the relationship with customers closer and ensure loyalty to the organization.

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