Innovation Strategy and Firm Performance: A Structural Equation Modelling Approach in Selected Industries in Eldoret Town

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Abstract

Most contemporary firms in the 21st century are navigating through murky and iterative environments and in order for them to realize performance they are required to transform competitive advantage into fast mover advantages. This study therefore was geared towards analyzing innovation strategy and firm performance in selected industries in Eldoret town Kenya. The study was guided by Balance Scorecard Model and it employed explanatory research design. A target population of nine hundred and seventy employees with a sample size of two hundred and eighty respondents was used. Stratified and simple random sampling techniques were used. Data analysis was done using inferential together with descriptive statistics and structural equation modeling (analysis of moment structures) was utilized in testing the hypothesis. Results showed that innovation was a significant predictor of firm performance with (β=0.44, CR=6.606, $p<0.001$) which indicates that one unit of innovation results to 0.44 unit increment of firm performance. This study contributed to theoretical perspectives by development of an innovation model and measurement scales. It also recommended that for organizations to cope with dynamism they should adopt research and development and be committed towards its investment and adopt appropriate innovations.

Key words: Innovation, Strategy, Firm, Performance, Structural Equation Modelling

INTRODUCTION

The previous extend of the resource-built opinion into dynamic markets gives a renewed viewpoint for analyzing how organizations come up with fresh abilities to survive through everchanging markets. This hypothetical viewpoint postulates that innovation is a capability to amalgamate, assemble and reorganize internal and external skills to tackle speedily varying environments (Teece *et al.,* 1997). According to Hill and Rothaermel (2003), Dynamic competences enable an organization to identify a possible technological alteration in its capacity to adjust to alteration through innovation. Eisenhardt & Martin (2000) suggested that backgrounds to dynamic competences, which they express as procedures to amalgamate, reorganize, achieve and discharge resources to fit and additionally generate market modification, may be discovered at the network, society or personal level (Zollo & Winter, 2002).

Innovation is the creation, acknowledgement and enactment of fresh thoughts, procedures, goods or services (Thompson, 1965). According to Damanpour (1991), innovation is described as the creation, advancement and execution of fresh behaviours or ideas that may be fresh service or product, a newfangled production progression, a fresh administrative system or structure, or a fresh program that pertains to organizational members. The OECD (2005) described innovation as the implementation of a fresh or significantly improved invention, process, a newfangled marketing technique, or a newfangled organizational way in business

exercises, work area, organization or peripheral associations. Even though various establishments have described innovation in varying ways, a popular thread in the definitions is the thought of generating newfangled/improved procedures/ processes, services or goods.

Innovation offers organizations with a way of familiarizing to the varying environment and is regularly vital for firm longevity and success (Greve, 2007; Thompson, 1965). Baker and Sinkula (1999); Hurley & Hult (1998) and Nonaka (1994) focused on how organizations develop fresh ideas for problem solving and organizational renewal and considered it to creation processes. Innovation has been noted to develop over a period of time in organizations because it is a process of recurrent learning aimed at creation of firm performance (Craig & Moores, 2006).

Further, Innovation is the implementation of newfangled and joint interventions in the grounds of work organization, helpful technologies as well as human resource supervision. It is thought to be corresponding to technological innovation (Pot & Koningsveld, 2009). It is referred as something latest (Gopalakrishnan & Damanpour, 1997) and a system of knowledge (Ries & Trout, 1981). Innovation is pronounced as a way over which organizations react to a diversity of environmental variations (Peters & Waterman, 1982). However, innovation has been portrayed as a newfangled product, idea, service or technique implemented in organizations (Rogers, 2003; Tushman & Nadler, 1986). Additionally, other assemblage of researchers observes innovation as a several-dimensional organizational attribute (Vigoda-Gadot *et al.*, 2005).

Organizational innovation pivots on the knowledge base held by the organization and created through learning organization as stated by Cohen & Levinthal (1990); Nonaka & Takeuchi, (1995). It is a planned variable for companies which are after introducing newfangled products or creating fresh markets since they want to innovate unceasingly so as to withstand extreme competition (Cefis & Marsili, 2005). It is consequently essential to stimulate the advancement of aspects that assist in innovation and enhance the introduction of fresh products, thought, systems or services in front of other opponents in the industry (Lloréns *et al.*, 2005).

Innovation assists creativity, instigates newfangled ideas as well as knowledge and raises the possibility to comprehend and used them, favours cleverness of the organization and creates a basis for inroduction to firm performance (García *et al.*, 2007). Innovation leads to better production effectiveness, improved market share, advanced production growth as well as improved revenue as noted by Shefer & Frenkel (2005). Innovation permits firms to provide better diversity of differentiated goods that can expand financial performance (Zahra *et al.*, 2000). Black & Lisa (2004) avowed that headship at every level will be required to create innovation and transformation within the organization. Bresnahan, *et al.*, (2002) established that the utmost important solitary factor in inspiring innovation is topmost management headship.

Several important elements are necessary to reduce non-innovative initiatives; decreasing of layers within the hierarchy; the inspiration of a culture of pride in the company's peculiar accomplishments; offering amplified information concerning company strategies and the upgrading of crosswise communication (Laursen & Foss 2003). Because access to additional philosophies as well as supplementary innovators is so vital, organizational structures discouraging the communication of

ideas along with flexibility hinder innovation. Firms which unceasingly innovate will most possibly conquer in the projected extreme competitive environment. Nevertheless, for the corporations or the joint-venture multinationals that are on the normal bigger companies, it has been established that innovation is much additionally problematic to discover (Boselie & Boon, 2005). Innovation construct therefore is required to have four factors namely; Strategic alignment, Organizational readiness, Industry foresight and disciplined implementation in order to achieve firm performance. Previous research has revealed that one group of scholars initiated that innovation was in a position to offer optimistic effect on firm performance while alternative group of scholars instituted that there exist no association between firm performance and innovation. To reunite the discrepancies and indecisive findings from former studies, the current study investigated the moderating effect of innovation on firm performance for five manufacturing firms in Eldoret Town and it postulated the null hypothesis:

There is no significant association between innovation strategy and firm performance

METHODOLOGY

The study was undertaken in Eldoret town within Uasin Gishu County utilizing explanatory research design with a target population of 970 and a sample size of 280 in five manufacturing firms. Both simple and stratified random techniques were applied. Measurement scales developed by Booz & Hamilton (1982) was adopted and modified with its internal consistency reliability of 0.78. The items were categorized into four different sub-dimensions: strategic alignment, organizational readiness, industry foresight and disciplined implementation. These four sub-dimensions of innovation impacts were therefore measured on a five-point Likert scale. Missing values in the study were gauged with reference to both variables and cases while the assessment adopted missing completely at random test (MCAR) and t-test (Hair *et al.,* 2006). Further, normality was also assessed by inspecting for the existence of multivariate and univariate outliers and then exploring kurtosis and skewness of the distributions.

Measurement Scales

Strategic alignment
D1. I am fully familiar with innovation
D2. We are supported to take risks
D3. I am aware that employees share innovative potential in our organization
D4. Our organization uses expert consultants in training employees
D5. We are committed to policies nurturing innovation

Organization Readiness
D6. I am fully aware that innovation is part of our strategic objective
D7. Our organization fully invests in research and development
D8. I am confident that employees are fully motivated towards exchange of ideas

Industry Foresight
D9. I am in agreement that innovation is connected with idea sharing
D10. Training promotes innovation in our organization
D11. I am fully aware that lack of financial support in our organization is an obstacle to innovation

Disciplined Implementation

D12. I strive to be creative
D13. Research and development is not our objective
D14. I am fully aware that ideas are not shared in our organization

Analysis of the Measurement Model

A 2-step structural equation modelling process as recommended by Castaneda (1993), Gerbing (1988), and Joreskog (1993) was adopted by the study. To begin with, a measurement model was utilized to lay down the association between latent and observed variables. Then a structural model was applied in specifying the association amid the latent variable so as to determine the indirect and direct effect. Analysis of Moment Structures (AMOS) was applied to undertake CFA and emphasized on the innovation on firm performance. Comparison of the Average Variance Extracted (AVE) value and Correlation Squared (Fornell and Larcker, 1981) was done to assess validity. The second step in assessing the fit of the measurement models was by using a number of fit indices. This study adopted Adjusted Goodness-of-fit index (AGFI), the normed chi-square (χ^2/df), Goodness-of-fit index (GFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) and the chi-square (χ^2) test among others. Fit indices' assessment allowed the model to be modified incase all or a number of the fit indices did not show acceptability. The model was modified by considering two techniques, the Modification Index (MI) and the standardized residual moments.

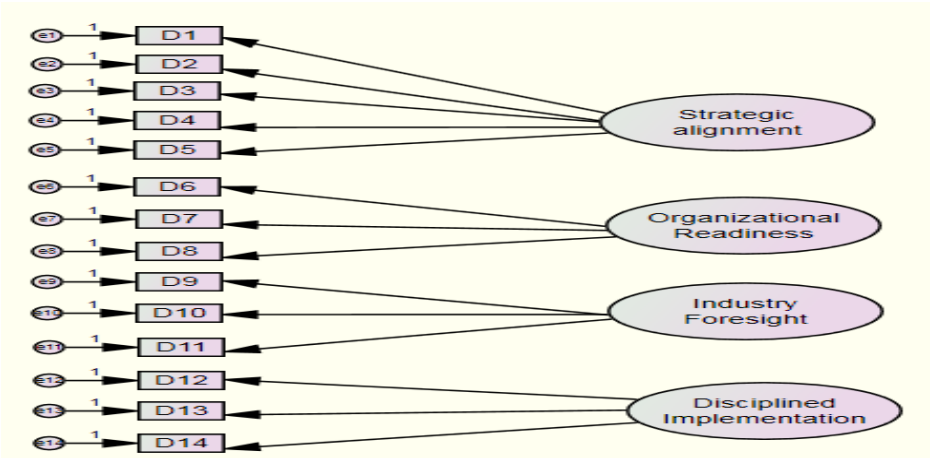

Figure 1: Hypothesized Measurement Model for Innovation
Source: Authors, (2020

RESULTS

The respondents had varied perceptions regarding innovative practices. On the base of the mean response scores, the respondents inclined to agree that training promotes innovation in the organization (M = 3.92, SD = 0.884), that they strive to be creative (M = 3.89), that they strive to be creative (M = 3.89, SD = 0.983), that research and development is their objective (M = 3.87, SD = 0.980), that innovation is connected with idea sharing (M = 3.76, SD = 1.034), that they are aware that lack of financial support in the Board is an obstacle to innovation (M = 3.75, SD = 1.165), and that they are familiar with innovation (M = 3.72, SD = 1.55). They however appeared not certain on whether they are supported to take risks (M = 3.16, SD = 1.274), whether employees share innovation potential (M=3.48, SD =

1.103), whether the organization invests in research and development (M = 3.31, SD = 1.195), and whether the employees are fully motivated towards exchange of ideas (M = 3.49, SD = 1.2).

Factor Analysis

Fourteen objects were anticipated to measure innovation in the organizations as shown in Table 1. From a primary component factor analysis, outcomes of the Kaiser-Meyer-Olkin measure of sampling adequacy test (0.857) and the Bartlett's test of sphericity ($p<0.001$), showed that the data were tolerable for factors analysis. Overall factor loadings were bigger than 0.60 and loaded on four factors namely: strategic alignment, organizational readiness, industry foresight, and disciplined implementation. The four factors explained a cumulative total of 64.15% of the total variances in the scale. The reliability of the fourteen items measuring innovation was 0.871 by means of Cronbach's alpha and exceeded the recommended estimate of 0.70.

Table .1: Factor Analysis on Innovation

Construct and Scales	Loading	Eigen values	Variance explained
Innovation	**0.871***		
Strategic alignment		**5.458**	**39.99%**
I am fully familiar with innovation	0.710		
We are committed to policies nurturing innovation.	0.720		
I am fully aware that innovation is part of our strategic objectives.	0.601		
Our organization fully invests in research and development	0.657		
Employees are fully motivated towards exchange of ideas	0.692		
I am in agreement that innovation is connected with idea sharing	0.735		
Training promotes innovation in our organization.	0.756		
Organizational readiness		**1.202**	**8.85%**
We are supported to take risks	0.796		
Industry foresight		**1.135**	**8.11%**
I strive to be creative	0.654		
Research and development is our objective	0.760		
Disciplined implementation		**1.010**	**7.21%**
I am fully aware that lack of financial support is an obstacle to innovation	0.815		
Kaiser-Meyer-Olkin MSA	**0.857**		
Bartlett's Test of Sphericity	**0.000**		

Source: Survey Data, (2020)

As shown in Table 1, four factors had eigen values above 1, indicating that innovation can be measured by four factors namely strategic alignment, organizational readiness, industry foresight, and disciplined implementation.

Confirmatory Factor Analysis for Innovation

The exploratory phase of the study extracted four factors representing underlying innovation construct. One factor was found to be non-positive defunctive and was deleted from further analysis. The confirmatory measurement model which was to be tested postulated a three-factor structure composed of strategic alignment (7 indicators), organizational readiness (2 indicators), and industry foresight (2 indicators) shown in figure 2.

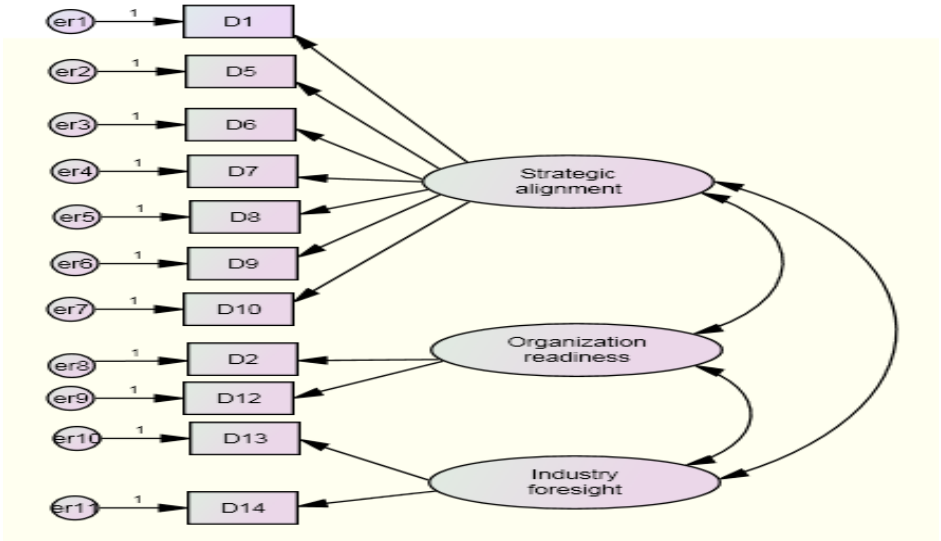

Figure 2: Proposed Measurement Model for Innovation
Source: Survey Data, (2020)

The overall fit of the postulated measurement model for innovation construct was χ^2 (41) = 144.955 ($p<0.001$); χ^2/df = 3/535; GFI = 0.904; AGFI = 0.846; CFI = 0.884; and RMSEA = 0.104. All of these fit indices except for the GFI were outside the acceptable limits. The hypothesized model was therefore not a good fit to the data and correlation was performed. The improved measurement model for innovation (fig 3) was therefore developed by implementing the suggested modifications. The overall fit indices of this modified measurement model were not found to be acceptable. (χ^2 (31) = 58.745 ($p<0.05$); χ^2/df=1.895; GFI=0.959; AGFI = 0.912; CFI = 0.969; RMSEA = 0.062). The improved model was therefore considered a good fit to the data.

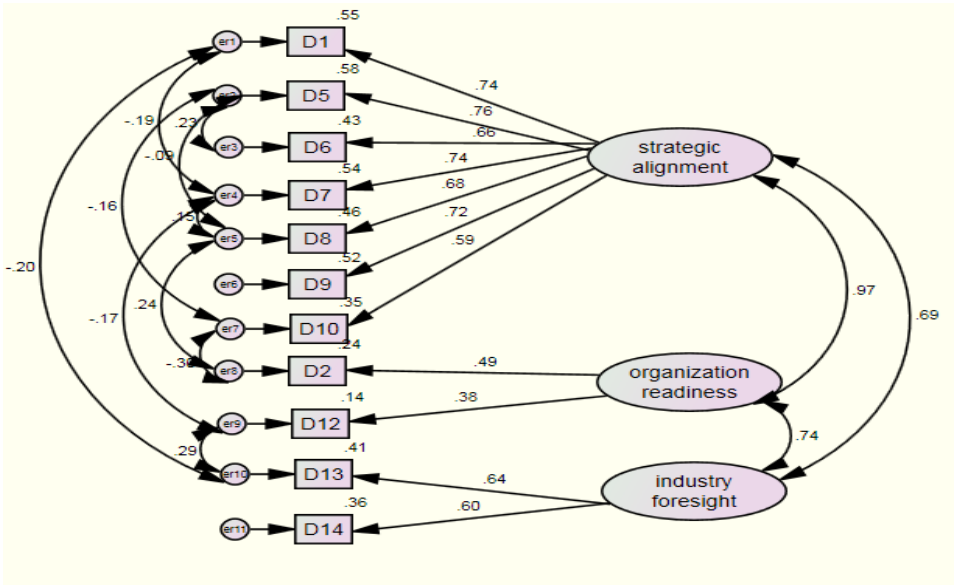

Figure 3: Modified measurements models for innovation
Source: Survey Data, (2020)

DISCUSSIONS

The study posited that there was no significant association between firm performance and innovation. The Structural equation modeling (SEM) results indicated that innovation was a significant predictor of firm performance (β=0.44, CR=6.606, $p<0.001$). The findings that innovation was a significant predictor of firm performance is consistent with the findings of Damanpour, (1991), who employed the framework of financial entities to discover the impression of innovation, and reinforced the suggestion that innovation has a unswerving influence on firm performance. Greve (2007) concurred by noting that innovation presents organizations with a way of adjusting to fluctuating environment and is frequently essential for organizational longevity and success. The reported apathy towards innovation could be derived from the various perspectives of looking at organizational innovation. Most of these perspectives reflect innovation as involving something new/change for which many people are averse to. Damanpour (1991), for example described innovation as the generations acceptance, and execution of fresh thoughts or deeds which may be a newfangled service or product, a fresh production procedure, organizational system or a newfangled structure, or a fresh programme that pertains to organizational members. Rogers (1998) on his part defined it as the adoption of fresh notions to the process, product or any other characteristic of a firm's actions, while Drucker (1992) considered innovation as a definite role of entrepreneurship, the means through which entrepreneurs either create fresh wealth generating resources or endorse present resources with improved possibility of producing wealth. This could be the reason of innovation being a significant predictor of high firm performance in the context of industries.

CONCLUSION AND RECOMMENDATIONS

The study's utmost critical finding is the practical evidence concerning presence of statistically significant, positive association between innovation strategy and firm performance. It cannot be ignored particularly where an organization wishes to either produce latest wealth creating resources or endorsing prevailing resources with improved possibility for generating wealth. Therefore, this study recommends that for firm performance to be attained, organizations should embrace strategic alignment, organizational readiness and industry foresight which will bring innovation

Contributions of the study

The model advanced and examined in this study offers a theoretic foundation for the study in support of innovation. The model may be adopted in comparing industries with various environmental settings to determine changes in firm performance. Consequently, the study modified the measurement scales of innovation and since there is a related strand of the literature the study contributed to its growing by a comprehensive and econometrically defensible analysis of the relation between innovation and firm performance.

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