African Journal Of Business And Management
Volume 6, Issue 1, November 2020 http://aibumaorg.uonbi.ac.ke/content/journal
Pgs 42-51

University of Nairobi
School of Business

AFRICAN JOURNAL OF BUSINESS AND MANAGEMENT

(AJBUMA)

ISSN 2079-410X

FIRM MANAGERIAL CAPABILITIES, SUSTAINABLE OPERATIONS MANAGEMENT PRACTICES AND COMPETITIVE ADVANTAGE OF MANUFACTURING FIRMS IN KENYA

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Abstract

Successful implementation of sustainable practices requires resources and capability (Moldan, Janouskova & Hak, 2012). However, little is known about the moderating effect of managerial capabilities on the relationship between sustainable operations management practices and competitive advantage. Business models are incomplete if they fail to specify moderating variables and they will be unable to solve business problems (Namazi & Namazi, 2016). The main objective of this study was to examine the moderating effect of firm managerial capabilities on the relationship between sustainable operations management practices and competitive advantage. 903 manufacturing firms registered with Kenya association of manufacturer made up the population of the study where a sample of 300 was drawn. The data collected was primary and it was analyzed using covariance-based structural equation modeling. Validity and reliability tests were also done. The finding indicated that managerial capabilities do not moderate the relationship between SOMPs and firm competitive advantage. The findings challenges the notion that experienced managers makes better leaders who improve firm performance and competitive advantages. This requires a second thought and a different view for people who operate on this notion. The relationship is grounded on the Theory of performance frontiers (TPF), Open System Theory (OST) and Resource Based View (RBV).

Keywords: *Sustainable operations management practices, Managerial capabilities, Competitive advantage*

Introduction

Management competences are essential to the process of recognition, implementation as well as deployment of resources into valuable activities of the firm. They help in maintenance of beneficial stakeholder's interactions both internal and external which may lead to diffusion of innovative ideas on environmental management. This is explained by the open system theory which states that an organization cannot be autonomous with respect to critical resources. As organization acquires resources for their survival, this may lead to adoption or diffusion of other partner's sustainable practices resulting to competitive advantage (Sarkis, Gonzalez-Torre & Adenso-Diaz, 2010). Theory of performance frontiers argues that the operating frontiers of firms denote distinctive resources like know-how which are more vital than the asset frontiers in competitive advantage achievement, this is because they are specific to a particular firm, rare and hard to mimic (Vastag, 2000) Through possession of this set of capabilities, management teams are capable of achieving and maintaining competitive edge (Mahoney, 1995). According to RBV, management competences are fundamental to the process of recognition, implementation as well as deployment of resources into valuable activities of the firm leading to competitive advantage (Mahoney, 1995).

Research Problem

In explaining the link between environmental management and firm competitiveness, little is known about the moderating effect of firm managerial capabilities on the relationship between SOMPs and competitive advantage. Business models are incomplete if they fail to specify moderating variables and they will be unable to solve business problems (Namazi & Namazi, 2016). Moderating effect also ensure that scholars and academicians have a further understanding of circumstances shaping the link between SOMPs and competitive advantage.

Research Objectives

Examine the effect of firm managerial capabilities on the relationship between SOMPs and competitive advantage.

Literature review

Managerial capability can be explained as the company's skills, knowledge and experience that enable it to handle hard and complicated roles in management. The RBV theory gives an insight on the relations among internal resources, capabilities and performance. The principal idea of the RBV is that for a firm to achieve competitive advantage then it all depends on its heterogeneous resources, which are inimitable, valuable and non-substitutable. Proactive environmental strategies that go beyond regulatory compliance have a positive effect on firm performance when mediated by valuable firm capabilities (Galdeano-Go´mez et al., 2008; Wagner, 2005). According to RBV, management competences are fundamental to the process of recognition, development, implementation as well as deployment of resources into valuable activities of the firm like SOMPs for achievement of competitive advantage (Mahoney, 1995). Hence, this study argues that the managerial capabilities of a firm positively moderate the relationship between SOMPs and firm competitive advantage. Limited studies focused their

attention on the moderating effect of firm characteristics on the association between SOMPs and firm competitive advantage, they include: Waweru (2008), who investigated the effect of Competitive strategy and on performance in large private sector firms in Kenya. It was a survey, revealed that top management characteristics have no significant impact on organizational performance. Mutuku's (2012), explored the factors influencing relationship between top management team diversity and performance of Commercial Banks in Kenya. The findings indicated that academic qualification, diversity in tenure and performance have a negative association. In the same vein, on a study on leadership and Small Firm performance: The moderating effects of demographic characteristics, Flanigan, Bishop, Brachle and Winn (2017) found out that demographic characteristics had no moderating effects of on firm performance. In all the studies, the concepts were different from the current study. This study context was Kenya and it looked at the moderating effect of managerial capabilities. The study holds that the relationship between SOMPs and firm competitive advantage is moderated by managerial capabilities.

Conceptual Framework

It shows the various relationships of the study, which are: the relationship between SOMPs (product design and development; material use; manufacturing process; distribution; product use; end-of-life) and competitive advantage (cost and differentiation advantage); the moderating effect of firm managerial capabilities on the relationship between SOMPs and competitive advantage

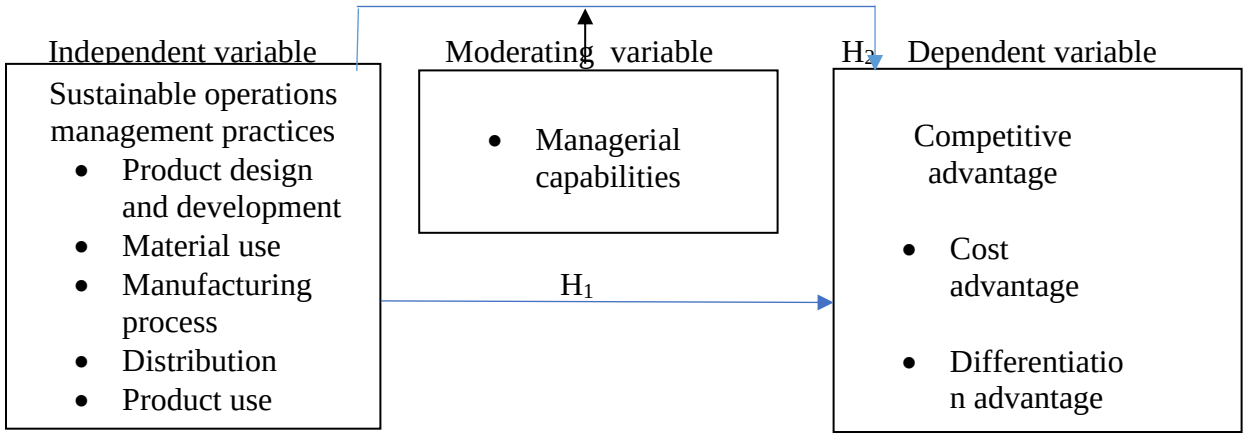

Figure 2. 1 Conceptual Framework

Study Hypotheses

On the bases of the objectives of this study and the conceptual framework, the hypotheses are formulated as:

H_1: Sustainable operations management practices have no significant influence on firm competitive advantage.

H_2: Firm managerial capabilities have no significant moderating effect on the relationship between SOMPs and firm competitive advantage.

Research Methodology

The 903 manufacturing firms registered with the KAM constituted the population of the study. Slovin's formula was used to arrive at a sample size of 277 but to cater for non - response a sample of 300 was use. Primary data was collected and it was analyzed using covariance-based structural equation modeling. Diagnostic, reliability and validity tests were also conducted.

Results and Discussion

Data obtained was from all 13 sub sectors. Food and beverages firms contributed to most of the data at 27.3 percent, while fewest firms were from leather and footwear sector responded. The reason behind this is that a bigger percentage of firms in the sector are food and beverage firms while leather and footwear makes the least number. Regarding the length of operation of the firms, the results show a good percentage of the firms (52 percent) had existed for over 20 years. In terms of size of staff, 54 percent had employees who were below 100 while 46 percent had more than 100 employees. This may be due to harsh economic times which have forced many firms to do more with less by cutting on the number of employees. The two characteristics imply that most of the firms are large and have been in existence for some time, hence have accumulated enough resources to enable them implement SOMPs. The participants also specified their highest level of education and years of experience in the manufacturing firms. Majority of them (75.4 percent) were bachelor's degree holders and above, hence well-educated and knowledgeable; 76 percent had six years and more working experience giving them enough skills and expertise to be able to implement the various SOMPs. This is also an indication that they have a good understanding of the firm and had been there long enough to see the firm implement the practices.

Moderating Effect Of Firm Managerial Capabilities On The Relationship Between Sustainable Operations Management Practices And Firm Competitive Advantage

The objective was to examine the moderating effect of firm managerial capabilities on the relationship between SOMPs and competitive advantage. Managerial capabilities was represented by education level and working experience which were measured separately.

Sustainable Operations Management Practices, Employees Level of Education and Competitive Advantage

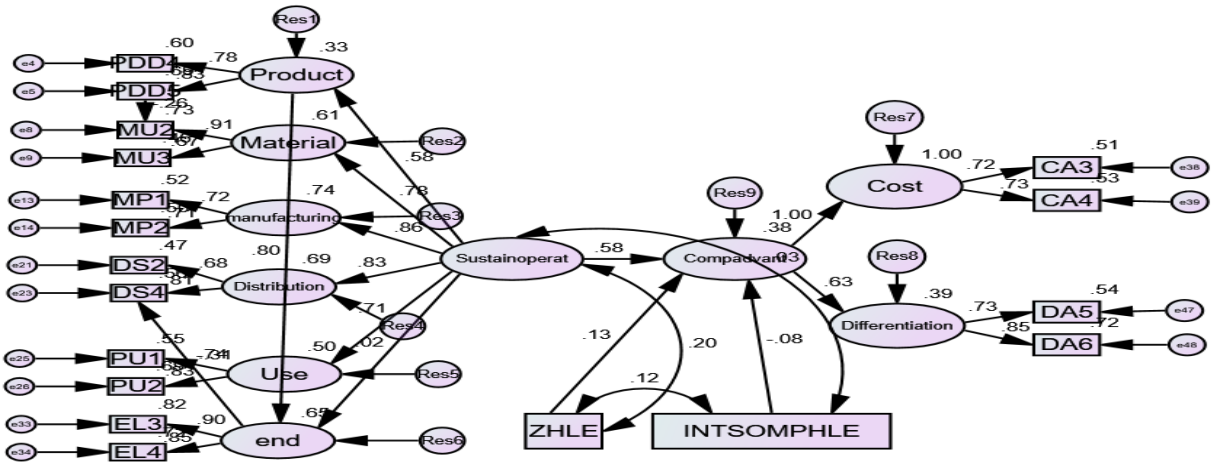

Figure 4.1 Sustainable Operations Management Practices, Employees Level of Education and Competitive Advantage

Figure 4.7 above shows that when sustainable operations management increased by 1 SD, competitive advantage increased by 0.58 SD; when employees level of education increased by 1 SD competitive advantage increased by 0.13 SD; and when the interaction of SOMPs and employees level of education increased by 1 SD, competitive advantage decreased by 0.08 SD. The R^2 value of 0.38 indicated the portion of the variance in competitive advantage accounted for by the predictor variables.

The model was recursive with a sample size of 150. Model variables were 53, 18 observed, 35 unobserved, 28 exogenous and 25 endogenous. Table 4.44 shows that, the model had positive DF (121) and there were 171 distinct sample moments and 50 distinct parameters, leaving 121 (171-50) DF, hence over-identified.

Table 4.1 Analysis of a Moment Structures Output Showing Model Fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	50	96.146	121	0.953	0.795
Saturated model	171	0.000	0		
Independence model	18	983.781	153	0.000	6.430

The fit indices signified a good model fit as seen on Table 4.45. For absolute fitness, GFI obtained was 0.934 and RMSEA was 0.000. The CMIN value appeared to be significant at p-value 0.953. For the incremental fit AGFI) was 0.907 as against the recommended value of above 0.90; NFI, CFI, TLI were 0.902, 1.000, and 1.038, respectively, hence the model showed a great fit.

Table 4.2 Fit Statistics of the Structural Model

Name of Category	Fit Statistic	Recommended	Obtained
Absolute fit	x^2 significance	P > 0.05	0.953
	RMSEA	< 0.08	0.000
	GFI	> 0.90	0.934
Incremental fit	AGFI	> 0.90	0.907
	NFI	> 0.90	0.902
	CFI	> 0.90	1.000
	TLI	> 0.90	1.038
Parsimonious fit	x^2 /df	< 3.0	0.795

For objective 2c, null hypothesis was H_{2c}: employee's level of education has no significant moderating effect on the relationship between SOMPs and firm competitive advantage**.**

Table 4.3 Regression Weight for Hypotheses Tested

			Estimate	S.E.	C.R.	P	Label
Compadvant	<---	Sustainoperat	.657	.165	3.991	***	Significant
Compadvant	<---	ZHLE	.081	.057	1.424	.155	Not significant
Compadvant	<---	INTSOMPHLE	-.055	.059	-.937	.349	Not significant

Note: *** means p-value at significant level is <0.001 in AMOS output

The null hypothesis was rejected since the p-value < 0.001 was less than α-value = 0.05, as seen on Table 4.46 above, hence concluded that the link between SOMPs and competitive advantage was significant. Employees' level of education had no significant effect on competitive advantage since p-value = 0.155 was more than α-value = 0.05; and with the interaction effect, the results were not significant as p-value of 0.349 was more than α-value = 0.05.

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Sustainable Operations Management Practices, Employees' Period of Working and Competitive Advantage

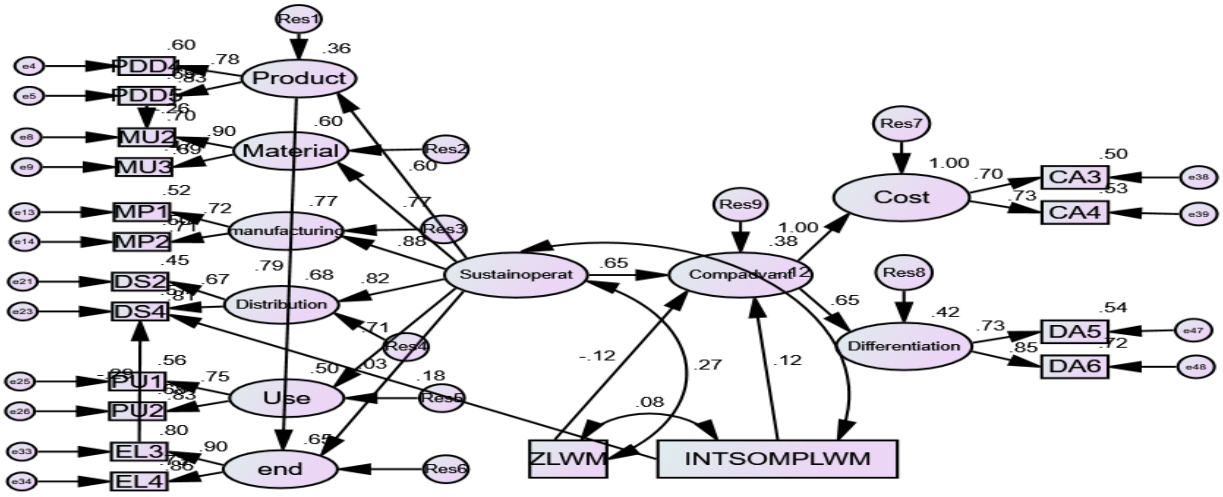

Figure 4.2 Sustainable Operations Management Practices, Employees' Period of Working and Competitive Advantage

Figure 4.8 above shows that when SOMPs increased by 1 SD, competitive advantage increased by 0.65 SD; when employees' period of working increased by 1 SD competitive advantage decreased by 0.12 SD; and when the interaction (product) of SOMPs and employees' period of working increased by 1 SD, competitive advantage increased by 0.12 SD. It was estimated that 0.38 (estimate R^2) variance in competitive advantage was explained by the predictor.

The model was recursive with a sample size of 150. Model variables were 53, 18 observed, 35 unobserved, 28 exogenous and 25 endogenous The model had positive DF of 120 as seen on Table 4.47, and there were 171 distinct sample moments, and 51 distinct parameters, leaving 120 (171-51) DF.

Table 4.4 Analysis of a Moment Structures Output Showing Model Fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	51	101.175	120	0.893	0.843
Saturated model	171	0.000	0		
Independence model	18	998.372	153	0.000	6.525

Table 4.48 shows that, the model fit indices provided a reasonable fit with GFI of 0.931; AGFI of 0.902; NFI of 0.899; CFI of 1.000; and TLI of 1.028. The RMSEA was 0.000 and the p-value was 0.893. Hence, the proposed model fitted the data well.

Table 4.5 Fit Statistics of the Structural Model

Name of Category	Fit Statistic	Recommended	Obtained
Absolute fit	x^2 significance	P > 0.05	0.893
	RMSEA	< 0.08	0.000
	GFI	> 0.90	0.931
Incremental fit	AGFI	> 0.90	0.902
	NFI	> 0.90	0.899
	CFI	> 0.90	1.000
	TLI	> 0.90	1.028
Parsimonious fit	x^2 /df	< 3.0	0.843

The null hypothesis for objective 2d was employees' period of working has no significant moderating effect on the relationship between SOMPs and firm competitive advantage**.**

Table 4.6 Regression Weight for Hypotheses Tested

			Estimate	S.E.	C.R.	P	Label
Compadvant	<---	Sustainoperat	.692	.165	4.203	***	Significant
Compadvant	<---	ZLWM	-.077	.058	-1.335	.182	Not significant
Compadvant	<---	INTSOMPLWM	.064	.049	1.302	.193	Not significant

Note: *** means p-value at significant level is <0.001 in AMOS output

The output on Table 4.49 above, shows that the link between SOMPs and competitive advantage was significant since p-value < 0.001 was less than α-value = 0.05. In addition, employees' period of working had no significant effect on competitive advantage because p-value = 0.182 was more than α-value = 0.05, whereas the interaction effect was not significant since p-value of 0.193 was more than α-value = 0.05, hence it was concluded that the moderating effect of employees' period of working on the link between SOMPs and competitive advantage was not significant and the null hypothesis was, therefore, not rejected.

Discussion of the Results

The theoretical anchorage behind managerial capabilities (experience and education level) moderating the relationship between SOMPs and firm competitive advantage is explained by RBV, which proposes that management competences are fundamental to the process of recognition, development, implementation as well as deployment of resources into valuable activities of the firm like SOMPs for

achievement of competitive advantage (Mahoney, 1995). The finding of this study deviates from RBV argument and it contradicts the notion that manager's experience makes them better leaders who successful leads the firm. Findings by Waweru (2008) revealed that top management characteristics have no significant impact on organizational performance. Mutuku's (2012) findings indicated that academic qualification, diversity in tenure and performance have a negative association. In the same vein, Flanigan, Bishop, Brachle and Winn (2017) found out that demographic characteristics had no moderating effects of on firm performance.

Conclusion and Recommendations

The objective entailed the examination of the effect of firm managerial capabilities on the relationship between SOMPs and competitive advantage. The model was based on the argument that firm managerial capabilities have no significant moderating effect on the relationship between SOMPs and firm competitive advantage. It was established that managerial capabilities had no significant moderating effect on the relationship between SOMPs and firm competitive advantage. It was estimated that 0.38 and 0.38 (estimate R^2) variance in competitive advantage was described by the predictor variables length of working in manufacturing and highest level of education respectively. The variances explained were above moderate hence adequate.

Managerial experience and level of education does not moderate the relationship between SOMPs and competitive advantage. This means that more experienced individuals with high level of education within an organization do not necessarily make better leaders and improve competitive advantages. In other words, managerial characteristics don't play a significant role in design and implementation work of organization, which explains why age, experience, level of education and functional track of managers do not influence organizational performance. This requires a second thought into the notion that experienced managers makes better leaders who improve performance and competitive advantages.

Among the limitation was the limited sample of interviews realized, future research should include larger samples to generate a wider overview. Covariance - based SEM works well with a large sample, with some respondents deeming the information required as confidential, it was difficult to gather enough data for the analysis. The findings were also limited to the sectors analyzed in the Kenyan context.

Previous studies did not consider much of moderating effect on the relationship between the two variable hence future studies should in cooperate other aspects as moderator variables in the model to bring more understanding. Future researchers are also encouraged to assess the model of the study in other contexts and more so extending the study to the various levels of competitiveness to offer a comprehensive view of such commitments.

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