Interactive Control Systems and Strategic Orientation on Competitive Position of Sugar Firms in Western Kenya

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Abstract: Despite strategic management advocating for the use of strategic control practices to improve the implementation of strategic plans and competitive position, establishing the strategic control-performance relationship has been problematic, suggesting failure by researchers to consider contingent variables. This study used data, collected during the period November 2008 to May 2009 from 109 senior managers in a census survey of 45 firms in the sugar value-chain in western Kenya, to examine the moderating effect of strategic orientation on the relationship between belief control and competitive position. Descriptive statistics, bi-variate regression analysis and moderated regression analysis were used to analyze data. The findings revealed moderate prevalence of Interactive control mean 2.86, std dev 0.83. The most prevalent strategic orientation was the reactor (60%), followed by defender (24%); prospectors (9%) and analyzers (7%). All the four levers were positively and significantly related to competitive position (interactive $\beta = 0.393$, $p < 0.01$). The results of this study suggest that urgent measures are required by the firms in the study to design interactive control systems to cope with the changing business environment. The study contributes to validation and upgrade of the existing belief control theory. For managers, the study sheds light on the design and use of belief controls and also for public sector managers in guiding the strategic change. It is recommended that future studies focus on the specific firms in sugar value chain and adopt longitudinal case-study designs to establish causal relationships among variables.

I. Introduction

Background of the study

Competitive position and its improvement has been the focus of almost all ‘management studies’ (Jaeger & Baliga 1985). Current thinking in these management studies is dominated by strategic management paradigm, with widespread practices, in small businesses, multinational corporations, manufacturing and service organizations, public sector, not-for-profit sector, and, professional service sector (Johnson & Scholes, 2002; Kazmi, 2002).

Despite emerging economies embracing strategic management concepts (Gimenez, 1999; Aragon-Sanchez & Sanchez-Marín, 2005; O’Regan & Ghobadian, 2006; Hassan, 2010) most studies have focused on Western countries (Hoskisson et al., 2000). Few studies have been done in Kenya (Ogollah & Bolo, n.d; Ogollah et al., n.d) which is rather surprising in view of the widespread practice of business entities preparing strategic plans. Consequently, there are hardly any studies focusing on the sugar industry in Kenya. This lacuna extends to the concepts of interactive control systems and strategic orientation, both pivotal factors that influence the implementation of strategic plans.

Interactive Control system

Simons, (1990, 1991, 1995), define Interactive Control System as ‘a management system used to provide strategic feedback, track new ideas, trigger new organizational learning, and to properly position the organization for the future: incorporating process data into management interaction, face-to-face meetings with employees, challenging data, assumptions and action plans of subordinates”.

It is one of the four (4) levers of control described by Simons to manage the tension in organizations between profit, growth, risk and control besides Belief Systems, Boundary Systems and Diagnostic Control Systems” (Kreitner, 2004; Schendel & Hofer 1979). Its chief hallmark, therefore, require that control must accommodate both intended strategies as well as strategies that emerge from local experimentation and independent employee initiatives. A number of models have been proposed to guide the practice of interactive control system (e.g., Horovitz, 1979; Lorange, 1980; Schreyogg & Steinmann, 1987; Preble, 1992; Feigner, 1994; Scherer & Dowling, 1995; Simons, 1995; Ittner & Larcker, 1997). This study adopts the model known as “Levers of Control” (LOC), developed by Simons from several case studies (Simons, 1990, 1991, 1995), asserts

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that strategic control is achieved by integrating four levels of control: belief systems, boundary systems, diagnostic systems and interactive control systems. Bruining et al., (2004) lauded this model as a coherent and comprehensive body of strategic control theory. However, with limited research in strategic management in emerging economies (Hoskisson et al., 2000) little is known about either interactive control system or their competitive position consequences in Kenyan sugar firms. It is, therefore, important to study interactive control system and their competitive position consequences in the sugar industry in Kenya.

Neither the interactive control system nor strategic orientation or their competitive position consequences are known in Kenyan sugar firms. As a result, it is essential to study interactive control system, strategic orientation and their competitive position consequences in sugar firms in Kenya.

Strategic Orientation

One of the basic assumptions underlying much of the strategic management literature is that successful firms engage change in their strategies to attain a better fit with the environment (Audia, Locke & Smith, 2000). According to strategic management theorists (Gatignon & Xuereb, 1997; Matsuno & Mentzer, 2000), strategic orientation may broadly be defined as a strategy type or a generic pattern of response at the business unit level pertaining to the product-market domain, choice of performance criteria, and marketing execution. Studies report that businesses that properly configure the internal arrangement and external alignment will increase chances to accomplish competitive position (Hambrick, 1983; Luo & Park, 2001). Engelland and Summey (1999) point out that strategic orientation is useful because it defines the organization’s dominant competitive posture and provides a synthesis of the cognitive mental models of its key strategists.

Researchers suggest that different types of strategic initiatives involve different degrees of uncertainty and might therefore imply appropriately designed control systems (Bruggeman & Van der Stede, 1993). According to Goold and Quinn (1993), strategic implementation and control requires alignment of strategies with processes that implement strategy, most critical being interactive control system. A robust construct and measurement of strategic orientation would, therefore, enhance an understanding of this interrelationship interactive control system and competitive position. Once again, the limited research in strategic management in emerging economies (Hoskisson et al., 2000) has not supported illumination of this concept or its performance consequences. It is, thus, necessary to study strategic orientation of sugar firms in Kenya.

Competitive position

Competitive position and its improvement has been a dominant theme in strategic management and practice. Venkatraman and Ramanujam (1986) viewed competitive position as a complex and multidimensional phenomenon asserting that no single performance measure is inadequate to represent overall business performance. In support, Walker and Ruekert (1987) assert that appropriate competitive position dimensions must include effectiveness, efficiency and adaptability, suggesting existence of vital linkages between interactive control system, strategic orientations and competitive position.

The measurement of the performance impact of strategies has, however, been reported to be problematic in emerging economies, Kenya included (Hoskisson et al., 2000). Such researchers attribute the situation to unconventional financial reporting that make comparisons over time and across firms difficult. This problem is compounded unethical financial reporting practices (EBRD, 1998; Shama & Merrell, 1997). Previous research that focuses on competitive position of sugar firms in Kenya is limited. All these issues underline the need and challenge of researching on competitive position in sugar firms in Kenya.

The Sugar Industry in Kenya

According to Kenyan sugar industry reports (GOK, 2008, KSB, 2010) the dominant firms in the sugar-value chain comprise the sugar manufacturing companies, the molasses processor companies, farmers’ outgrower firms and the fixed-crusher artisanal jaggeries. The nine sugar manufacturing firms are: Chemelil, Mumias, Miwani, Nzoia, South Nyanza, Muhoroni, West Kenya, Kibos and Soin. Proposed sugar manufacturing firms are: Butali, Kwale, Transmara and Tana. There are two molasses processor companies: Agro-Chemical Food Company and Spectre International. The twelve farmers’ outgrower firms comprise the following: Busia, Butali, Chemelil, Kibos, Miwani, Mumias, Nandi Escarpment, Nzoia, Soin, South Nyanza, West Kenya and Muhoroni. In addition, there exists over 300 fixed-crusher artisanal jaggeries.

Besides the government, other stakeholders include private investors, farmers, millers, employees and tax payers. Oversight in the industry is undertaken by Kenya Sugar Board (KSB), a public body under the Ministry of Agriculture set up by the Sugar Act of 2001, the Kenya Sugar Research Foundations (KESREF), and the Sugar Arbitration Tribunal (SAT). Other influential players are the Kenya Bureau of Standards (KEBS), the Kenya Society of Sugarcane Technologists (KSSCT), the foremost forum for research dissemination. The various advocacy groups include Kenya Sugar Growers Association (KESGA), Kenya Association of Sugar
The Kenyan sugar industry was chosen as a context of the study for several reasons. First, the sugar sub-sector has a great potential for impacting the overall economy of Kenya. It is one of the largest contributors to the agricultural Gross Domestic Product (GDP), supporting at least 25% of the Kenyans population, produces over 520,000 metric tonnes of sugar for domestic consumption (saving the economy in excess of US$ 250 million or Kshs 20 billion in foreign exchange annually, (GOK, 2008, KSB, 2010).

Secondly, the sugar sub-sector has is currently undergoing fundamental change occasioned by liberalization and deregulation in the operating environment. These policy reforms have led to the freeing of sugar prices and marketing, the elimination of agricultural subsidies and placing the parastatal entities under management contracts to prepare them for privatization.

Thirdly, with the substantial state holdings, Government of Kenya has spearheaded key policy initiatives by formulating the National Policy on Sugar Industry (2001), Agriculture Sector Development Strategy (2009-2020), Kenya Sugar Industry Strategic Plan 2004-2009 and Kenya Sugar Board Strategic Plan 2010-2014. These initiatives have seen most of the sugar firms adopt strategic plans and performance contracting. Some researchers (Ojera, 2001; Mutua et al., 2009) have, however, pointed out that these policies have not elicited the positive intended outcomes intended of lowering cost of production and attaining higher efficiency and global competitiveness. On the contrary, the Sessional Paper No. 4 paints a gloomy scenario of unsatisfactory performance by firms in the sugar industry: Nzoia sugar has debts estimated at Kshs 16 billion (technically insolvent); South Nyanza Sugar owes Kshs 2.9 billion; Chemelil, Kshs 1.3 billion; Busia Sugar, Kshs 373 million (with no factory); Miwani Sugar, Kshs 8.1 billion (in receivership); Muhoroni sugar, Kshs. 11.1 billion (in receivership). Mummias Sugar, Agro-Chemical Company, the privately owned East African Spetre and West Kenya Sugar, though with varying debts, are considered financially stable. The outgrower firms and, to a lesser extent, the jaggeries, are also indebted to the government.

A fourth reason for choosing the Kenyan sugar industry is that some researchers (Wanyande, 2001; Mireri et al., 2009; Odek, et al., 2003) have attributed the poor performance in the sugar industry on poor management, corruption and vested political interest. Finally, there is an impending threat arising from the free trade Common Market for Eastern and Southern Africa (COMESA) arrangement which has hitherto shielded Kenya from regional competition.

It is not all gloom, however, since business commentators in the press have depicted some positive developments in the sugar industry. Mumias sugar has consistently reported profits, has modernized equipment and processes and built the strongest brands in East Africa. Now largely privatized, the firm has diversified into power production and has expanded to the Tana Delta, and has also won the best prize for environment management at Company of the Year Award (COYA); (Mogusu, 2006; Mireri et al., 2008). The other sugar firms are depicted with mixed financial performance. Nevertheless, most firms are reported to be undertaking various strategic projects relating to plant expansion and diversification. It is significant to note that since the mid-nineties there has been no donor involvement in the Kenyan sugar sector.

Despite such significant strategic activity, the industry still faces several challenges as evidenced by incessant court litigation, workforce strikes and resultant factory shutdowns and widespread opportunistic behaviors relating to corruption and bribery, suggesting weak institutional infrastructures to support a market-based system (KACC, 2010). All these concerns highlight the importance of effectively managing the internal firm and external environmental interfaces. In such situations, Muralidharan (1997, 2004) called for strategic control systems to focus on strategy implementation, allow managers to monitor performance and redirect organizational action.

Interactive control systems and strategic orientation, both concepts in strategic management, are tools that can be useful to management in such situations (Muralidharan 1997, 2004; Preble, 1992, 1997; Miles & Snow, 1978). However, studies focusing on strategic management in general and interactive control system and strategic orientation, in particular are scarce in emerging economy context. (Hoskisson et al, 2000). Consequently, little is known about interactive control system, strategic orientation typologies or their performance of Kenyan sugar firms.

**Statement of the Research Problem**

Prescriptive theory asserts that adoption of interactive control system and viable strategic orientations will improve implementation of strategic plans and competitive position, even for Kenyan sugar firms. Despite this assertion, the perennial poor performance of firms in the Kenyan industry suggests that their applicability or suitability to Kenyan sugar firms is doubtful. Apart from some limited studies on strategic orientation in different sectors in Kenya, no known studies have been reported relating to Kenyan sugar firms with regard to the extent of adoption of strategic control practices, strategic orientation or their respective competitive position consequences.
Furthermore, previous researchers in western countries have acknowledged that establishing the strategic control-performance relationship has been problematic, with research findings from such studies revealing mixed results and low statistical power. In consequence of lack of prior studies that have focused on interactive control system in the Kenyan sugar industry, there have been, inevitably, no research on the interactive control system-competitive position link. Meanwhile, scholars in western countries have posited that this tenuous link suggests that failure to consider contextual variables in previous studies, for example strategic orientation, may have masked this linkage, resulting in low explanatory power.

More so, the studies in western business settings have only focused on correlating contingency or contextual variable with design of interactive control system, with few attempts to relate the interaction effect of interactive control system and the contextual variable directly to competitive position.

Several reasons have been advanced for this apparent state of theory impoverishment. These include lack of consensus over the conceptualization and dimensionality of the key constructs of interactive control system, strategic orientation leading to use of crude measurement instruments with low reliability power to operationalize constructs, limitations in modeling of the relationships investigated and, even, competitive position. In addition it has been suggested that the link between interactive control system and strategic orientation may not be tenable at the strategic-choice level, but at the organizational capabilities level. In order to capture more variables that explain how interactive control system is designed and used, it has been observed that further research focus on the possibility that the interaction of interactive control system and strategic orientation would be statistically significant.

The lack of theory development has led to the concern that practicing managers in general, and managers in Kenyan sugar firms in particular, have little in terms of guidelines by which to design and manage their interactive control system or develop viable strategic orientation. This is particularly harmful in turbulent business environment of Kenyan sugar firms brought about by industry deregulation and characterized by increasing competition brought about by globalization leading to saturated markets, changes in customer needs, shorter product life cycle, competition, both price-based and non-price-based. This study seeks to examine the impact of interactive control system practices and strategic orientation on competitive position of sugar firms in western Kenya.

Objective of the Study
The purpose of this study is to examine how interactive control system and strategic orientation affect competitive position in the sugar firms in western Kenya.

Conceptual Framework
Strategies and related strategic processes are executed in anticipation of some type of expected outcome. Strategic control practices are hailed as tools for improving the implementation of strategic plans and competitive position. This study seeks to examine the impact of interactive control system practices and strategic orientation on competitive position of sugar firms in western Kenya. The conceptual framework consisted of hypothesized relationship.

H01: There is no significant direct relationship between interactive control system and competitive position moderated by strategic orientation.

Interactive control system have been hailed as tools for improving the implementation of strategic plans and competitive position. This study examines how interactive control system affect competitive position. Rather than examining the direct relationship between the two, which is responsible for the hitherto tenuous link, the study argues that the relationship is moderated by strategic orientation. This is based on research that indicates that performance can be improved when key variables are correctly aligned (Chenhall, 2003). The basic premise of this contingency theory is that there is no universal system applicable to all organizations and all circumstances and, therefore, suggests that the effectiveness of organizations is a function of the fit between their structures and the environment in which they operate (Galbraith, 1973; Donaldson, 2001).

Consequently, the conceptual framework includes two sets of hypothesized relationships. The first set of hypotheses posits a direct relationship where the greater use of strategic control practices (independent variable) will lead to greater competitive position (dependent variable).

II. Research Methodology
The study describes the methods and procedures used to address the research problem relating to the tenuous link between strategic control and competitive position. In this regard, the overall objective of the study which was to examine how interactive control system and strategic orientation affect competitive position in the sugar firms in western Kenya.

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Research Design
This study used a cross-sectional survey design to acquire relevant data in order to engage a correlational and analytical approach. This approach facilitated the development of a broad industry-based understanding, rather than a study of individual firms, of the moderating influence of strategic orientation on the interactive control system-competitive position relationship.

Study Area
This study focused on the firms in the sugar industry value-chain involved in the production and marketing of sugar and sugar by-products in western Kenya, comprising the administrative provinces of Nyanza, Western and part of Rift Valley.

Target Population
The unit of analysis is the firm. The study population was 45 firms comprised a total of 9 sugar manufacturing firms, 2 molasses processing firms, 10 outgrower companies and 24, jaggeries each of which has a fixed crushing capacity of at least 20 tonnes of cane per day (TCD). Seven firms were eliminated from the study because, though they were listed as registered by the Kenya Sugar Board, there were no operational activities evident on the ground.

The studies adopted a census, since the units of study are not too many, are concentrated in Western Kenya and, therefore, accessible, and not prohibitive in terms of cost, time and other resources (Saunders et. al., 2007; Sekaran, 2000). Furthermore, a census survey is suited to the research objectives of establishing the hitherto enigmatic strategic control-performance relationship in an industry perennially beset with challenges has been problematic, suggesting failure by researchers to consider contingent variables.

Data Collection
Primary data was collected using a self-administered questionnaire on the firms’ interactive control system, strategic orientation and competitive position. Published reports from the Kenya Sugar Board and the business press were also reviewed to extract secondary data.

Data Collection Procedure
The researcher and research assistants personally made visits to the firms. This procedure was preferred due to the geographical dispersion of the units of study, being scattered throughout western Kenya.

Instrument for Data Collection
The instrument for data collection was the questionnaire.

Methods of Data Analysis
Data analysis involved correlation and regression analysis. Pearson correlation analysis was conducted to determine the direction, strength, and significance of the bivariate relationship between strategic control practices and competitive position. Moderated regression analysis was used to determine the moderating effect of strategic orientation (Sharma, Durand & Gur-Arie, 1981).

Model Specification
The moderated regression analysis used to test data is mathematically presented below:

\[ Y = a + b_1X + e \] (1) … 3.1
\[ Y = a + b_1X + b_2Z + e \] (2) … 3.2
\[ Y = a + b_1X + b_2Z + b_3XZ + e \] (3) … 3.3

Where Y is the dependent variable (competitive position), X is the theoretically-defined independent variable (Interactive control system), Z is the theoretically-defined moderator variable (strategic orientation), and XZ is the interaction term, while b are the regression coefficients. The error terms for equation (1), equation (2) and equation (3) are e (1), e (2) and e (3), respectively.

III. Results And Discussion
Characteristics of Sugar Firms in Western Kenya
Out of the 135 expected respondents for the 45 surveyed firms, 109 questionnaires were completed, a response rate of 82%.
Interactive Control Systems

The responses were on a 5-point scale and revealed that all the variables measuring interactive control system have mean values slightly below the mean point of three. The overall mean of 2.86 suggest that interactive control system are moderately practiced in sugar firms in western Kenya.

On the whole, it is evident that although the prevalent view among the respondents was that strategic control systems exist in the surveyed sugar firms, they are only moderately practiced as all the responses for specific dimensions on a 5-point scale and reveal that all the variables have mean values around or slightly below the mean point of three. Indeed the mean composite strategic control system measure was 2.90 (standard deviation = 0.66, minimum 1.67, maximum 4.40, skewness= 0.35, kurtosis= -0.38)

Strategic Orientation of the Sugar Firms in Western Kenya

In this study strategic orientation was measured by classifying the firms by strategic type. Respondents were asked to score the firms on 11-dimensions using the “majority-rule decision structure”. The scores were modified by converting these strategic classifications to an interval-type scale to yield a continuum of low versus high orientation toward change. This procedure provided the following measure of a firm’s strategic orientation: 1 = Reactor, 3 = Defender, 5 = Analyzer, and 7 = Prospector. Most of the firms were found to be reactors (60%), followed by defenders (24.4), analyzers (6.7%) and prospectors (8.9%).

The survey responses indicate that most of the firms in the sugar industry in western Kenya (60%) are reactors, 24.4% of the firms are defenders; 6.7% of the firms are analyzers whilst the least prevalent are prospectors (8.9%). This trend was discernible across firms. Jaggeries with reactor orientation were 62.5%, defenders 29.2%, analysts 8.3% with no prospectors. Similarly, sugar manufacturers were predominantly reactors (55.5%), with defender and analyzer being 11.1% each whilst prospectors orientation was 22.2%. The survey further found that sugar outgrower firms to be 60% reactors, 30% defenders, 10% prospectors and no analyzers. Molasses processors were 50% reactor and 50% prospector. These results suggest that, as is characteristic of reactors, most firms in the sugar industry do not follow a particular strategy.

Competitive position of Sugar Firms in Western Kenya

In order to measure competitive position of the sugar firms, the respondents were asked to rate the performance of their organization’s relative performance on a five-point Likert-scale, anchored by “1” Lowest 20% to “5” Top 20%. Most of the respondents perceived their organizations to be performing moderately well as indicated by the overall mean of 2.99.

From the correlation matrix, interactive control system was significantly and positively correlated with competitive position as measured by interactive control system(r= 0.55, p< 0.01). On the contrary, competitive position was not significantly related to strategic orientation (r= 0.25). Moreover, strategic orientation was not significantly related to interactive control system as measured by interactive control system (r= 0.11).

Interactive Control System and Competitive position

After entry of interactive control system scale at step 2, the total variance explained by the model as a whole was 35.7 %, Adjusted R²= 0.327, F (2,42) = 11.675, p< 0.001. Interactive control explained an additional 11.0 % of the variance in competitive position, after controlling for firm size, R squared change = 0.110, F change (1,42) = 7.185, p< 0.01. In support of H₁D, interactive control system was positively and significantly related to competitive position (B = 0.383, p < 0.01). The results indicate that 35.7% of the variance in competitive position was explained by the model. According to Cohen (1988), this is a large effect.

Composite Strategic Control System and Competitive position

After entry of composite strategic control system scale at step 2, the total variance explained by the model as a whole was 38.0 %, Adjusted R²= 0.351, F (2,42) = 12.896, p< 0.001. Composite strategic control explained an additional 13.3 % of the variance competitive position, after controlling for firm size, R squared change = 0.133, F change (1,42) = 9.023, p< 0.01. In support of H₁E, composite strategic control system was positively and significantly related to competitive position (B = 0.531, p < 0.01). The results indicate that 38.0% of the variance in competitive position was explained by the model. According to Cohen (1988), this is a large effect.

Testing for Hypothesis

Having examined the main effects of interactive control system on competitive position, the next step was to test whether the relationship between strategic control practices and competitive position is moderated by strategic orientation. This involved testing the hypotheses that the relationship between each interactive control system dimension and competitive position is moderated by strategic orientation. Such interaction effects were tested using moderated regression analysis (MRA). The intent was to examine whether interactive control
system would be contingent on strategic orientation. This is based on research that indicates that performance can be improved when key variables are correctly aligned. Furthermore, Luft and Shields (2003), for example, stated that a weak relationship between two variables may be remedied to expose effect by incorporation of appropriate intervening or moderation variable.

The contingency effects of strategic orientation on the relationship between strategic control practices involved for subsets of H2 as below:

**H2A**: The relationship between interactive control system and competitive position is moderated by strategic orientation.

**H2B**: The relationship between composite control practices and organizational performance is moderated by strategic orientation.

**Moderating Effect of Strategic Orientation on the Interactive Control System-Competitive position Relationship**

H2D proposed that the positive relationship between interactive control system and competitive position is moderated by strategic orientation. The full model that includes the firm size as control variable, interactive control system as the independent variable, strategic orientation as the moderator, and the interaction effects. This model is significant at (RX² = 0.374, Adjusted RX² = 0.311, F(4,40) = 2.687, F- change = 5.964, p < 0.05). Compared with the reduced model, which only includes the control variable, predictors and moderators (step 2), the addition of interaction terms in the full model significantly increases the RX² (increase in RX² = 0.126, p < 0.05).

The moderating effect of strategic orientation is statistically significant. Thus, the hypothesized contingency model explains 37.4% of the variance in competitive position.

**Moderating Effect of Strategic Orientation on the Composite Strategic Control System-Competitive position Relationship**

H2E proposed that the positive relationship between composite strategic control system and competitive position is moderated by strategic orientation. The full model that includes the firm size as control variable, the independent variable of composite strategic control system, the moderator of strategic orientation and the interaction effects is significant at (RX² = 0.438, Adjusted RX² = 0.382, F(4,40) = 4.526, F- change = 5.964, p < 0.01). Compared with the reduced model, which only includes the control variable, predictors and moderators (step 2), the addition of interaction terms in the full model significantly increases the RX² (increase in RX² = 0.191, p < 0.05). The moderating effect of strategic orientation seems significant. The hypothesized contingency model explains 43.8% of the variance in competitive position.

**Summary of the Hypothesized Empirical Framework and Results**

Hypothesis 1 entailed the testing of main effects which comprised of five sub-hypotheses relating to H1A, H1B, H1C, H1D and H1E to determine the relationship between dimensions of strategic control practices (belief control systems, boundary control systems, diagnostic control systems and interactive control systems) and competitive position.

Hypothesis 2 tested whether the relationship between strategic control practices and competitive position was moderated by strategic orientation. Once again, this involved the testing of moderating effect of strategic orientation on the relationship between each strategic control dimension and competitive position.

The results suggest that strategic control practices positively influence competitive position and that the relationship between strategic control and competitive position does vary with strategic orientation found in the sugar companies surveyed. In the latter case, while the relationship for the both boundary control systems and diagnostic control are significant, this is not the case for belief control systems and interactive control systems. Table 4.26 gives a summary of hypotheses testing, both for main effects and interactive effects.

**Discussion of Findings**

The overall objective of this study was to examine the moderating effect of strategic orientation on the relationship between strategic control practices and competitive position in the sugar firms in western Kenya. The study reported an overall mean 2.86 suggesting that interactive control systems are somewhat moderately prevalent in firms in the sugar industry in western Kenya. Interactive control systems are the controls top management use to follow up with organization-wide dialogue about threats that can jeopardize current strategy, thereby managing the strategic uncertainties of the firm, (Quinn, 1996). The distinguishing advantage of interactive control is its support for double-loop learning (Tuomela, 2005).

The finding of less than moderate prevalence is not consistent with the literature that has generally reported greater use of interactive control systems. Moulang (2007) found a mean of 3.96 (on a scale of 1 to 7), Mohamed et. al., (2008) found a mean of 3.9 on a five-point scale, Widener (2007) reported a mean of 5.00, (scale of 1 to 7) while Abernethy and Brownell (1999) on an absolute a scale of 4 to 28, reported a mean of
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This study in section 4.4 reported that most of the firms in the sugar industry in western Kenya adopt the reactor strategic orientation (60%), followed by defenders (24%); prospectors (9%), with the least prevalent being analyzers (7%). Strategic orientation is defined as “how an organization uses strategy to adapt and/or change aspects of its environment for a more favorable alignment” (Manu & Siram, 1996, p. 79). The critical underlying variable in the Miles and Snow (1978) strategic orientation typology is the organization’s rate of change in its products or markets (Di Benedetto & Song, 2003). Miles and Snow (1978) opined that organizations develop relatively enduring patterns of strategic behavior to co-align the organization with the environment. These are classified as prospector, analyzer and defender. In this scheme, reactors are deemed to lack any coherent plan for competing and do not exhibit the mechanisms or processes for adapting to the marketplace. The results of this study suggest that, as is characteristic of reactors, most firms in the sugar industry in western Kenya do not have a discernible strategy. This finding is inconsistent with the literature regarding the distribution of strategic orientation types in a typical competitive environment. The literature has long held the Miles and Snow (1978) proposition that the most prevalent strategic orientation in any industry are defender, analyzers and prospectors with reactors being the least infrequent (Snow & Hrebiniak, 1980; Conant et. al, 1990; 2009; Slater & Olson, 2000; McDaniel & Kolar, 1987; Shortell & Zajac, 1990; O’Regan & Ghobadian, 2005; DeSarbo et. al., 2007; James & Hatten, 1995; Hinson et. al., 2009; Di Benedetto & Song, 2003).

Inconsistent with the Miles and Snow (1978) prediction, Hinson et. al., (2009), in a study based in Ghana, found the prospector strategy most prevalent (40%), followed by the analyzer strategy (35%) and the defender strategy (25%). A comparative study of Malaysia and Singapore, Teoh and Sim (2000) revealed a similar distribution. Out of 96 Malaysian firms the distribution was: 36 (37.5 per cent) prospectors, 35 (36.5 per cent) as analyzers and 25 (26.0 per cent) defenders. In the 69 Singaporean firms were 26 (37.7 per cent) prospectors, 23 (33.3 per cent) analyzers and 20 (29.0 per cent) defenders. In addition, the three strategy types occurred across the range of industries researched. Furthermore, it was reported that the higher prevalence of prospector and analyzer types in the two countries depicted the fast growing business environments markets, necessitating prompt responses to market complexities. Lastly, there was no significant difference in the national distribution of strategy types, indicating similar strategic responses to development in their markets.

Some researchers have omitted the study of reactors altogether (O’Regan & Ghobadian, 2005; Doty, Glick, & Huber, 1993; Shortell & Zajac, 1990; Miller et. al, 1997; Golden, 1992). Anzaya (2007), while confirming the existence of the Miles and Snow (1978) typology in Kenya , omitted the reactor strategy and also failed to report on the relative prevalence of the other three types. Few studies have explicitly reported on reactor strategy. Slater et. al., (2006) studied 380 firms in manufacturing and service businesses operating in 20 different industries and found that prospectors were 125 (33.9%), analyzers 93 (24.5%) and defenders 135 (35.5%), reactor 27 (7.1%). Parnell et. al., (2000) in the unique study, incorporated an additional classification called ‘balance’ and featured the following distribution for 137 businesses: prospectors 28 (20%) analyzers 32 (23%), defenders 26 (19%), balancers 17 (12%), and 34 (25%) reactors. Likewise, in a study of 104 across industries of firms producing industrial and consumer products in Thailand, Tamalee et. al., (2008) found that reactors (20%) were third in prevalence, beating analyzers (15%) to fourth place after prospector (35%) and defenders (31%). Snow and Hrebiniak (1980), in a study of 247 firms by industry also reported similar results. Some studies have even found absence of the so-called regular types but the presence of reactor. For example, Rajagopalan and Finkelstein (1992) in a study of 50 investor-owned electric utility firms in the US did not find
any analyzers but reported prospectors (28%) and defenders (34%) and reactors (34%). In a study of 75 firms across industries and 9 countries with 3 cultures Hoffman (2007) found that defenders (9.7%) and reactors (8.2%) were least prevalent whilst analyzers (47.7%) and prospectors (33.3%) were most prevalent.

Scholars opposed to exclusion of reactors advance the view that they have been found to outperform the other three types in environments characterised by a low degree of movement or change among their components and by the lack of connection among these components (Zabre & Pearce, 1990; Snow & Hrebiniak, 1980). Rajagopalal (1997) claimed that reactors are not efficiency-oriented as prospectors nor as innovative as defenders, indications of a lack of focus arising from failure to develop clear competencies. According to Miles and Snow (1978) the reactor strategy is not viable in the long run due to failure or unwillingness of top managers to articulate a clear strategic direction. In other words, they do not develop the distinctive competences, organizational structures, and management processes required by a particular strategy. Such inconsistencies can be exhibited in rankings. For example, while studying the veracity of the retrospective technique in strategic management research, Golden (1992) reported that the prevalence of the reactor strategy changed from last to second last in ranking from period one to period two, respectively.

**Competitive position of Sugar Firms in Western Kenya**

The study reported an overall mean 2.99 suggesting that most firms in the sugar industry in western Kenya are in the middle 20%, that is, average performers. This finding is viable due to the considerable challenges faced in production and marketing of sugar and sugar related products being experienced in the industry.

Although published comparative studies that focus specifically on competitive position of firms in the sugar industry in Kenya are virtually non-existent, extant literature on operational benchmarks or assessment of performance based on rates of change in consumption and sales, provide some insight. But even these studies exhibit mixed results. Odek, et. al., (2003) reported that the operational benchmarks in the sub-sector revealed below competitive levels in terms of optimal factory capacity and milling efficiency. Obange (2008) analysed the performance of the Kenyan local sugar manufacturing firms, based on rates of change in consumption and sales during the period 1996-2005 and found that sugar production fell below local market demand, leading to sugar importations, thus worsening the performance of the local industry due to lack of product uncompetitiveness. Mulwa et. al., (2009) in a case study, examined efficiency level and productivity trend at Mumias sugar factory for the period 1980-2000, with the aim of comparing efficiency performance pre- and post-liberalization. The findings indicate decline in efficiency levels from 1992, with 1998 featuring the lowest levels. However, from 1998 efficiency levels began to increase, the positive impact being attributed to the firm’s successful adjustment to the competitive international production and marketing standards. Wanyande (2001) lamented worsening performance in sugar manufacturing firms despite the involvement of factories in sugar-cane production through nucleus farms, noting that it was only in 1979 that the national goal of self-sufficiency in sugar production was achieved. He blamed poor management, corruption and vested political interest.

The situation is not any different elsewhere in Africa. Masuku and Kirsten (2003), in a study of 124 smallholder cane growers in Swaziland found average performance results, again attributed to lack of efficiency in the production process. Besides production inefficiencies, external factors have also been blamed, particularly instability in world prices, trade barriers to accessing the United States of America and European Union, wild swings in free market sugar prices (Odek et. al., 2003). The removal of price controls and tariffs, concomitant with market liberalization has additionally been blamed in Kenya for ushering in competition from low cost sugar producers within COMESA (Odek et. al., 2003).

**The Moderating Effect of Strategic Orientation on the Relationship between Interactive Control Practices and Competitive position**

While it was established that strategic orientation moderated the relationship between interactive control system and competitive position, $H_{2D}$ ($B = 0.042$) the relationships was, nonetheless, not significant. Similar to belief, the implications is this interactive controls are ‘higher order’ levers, that operate independent of contextual variables. Scholars single out interactive controls as those that top management focus on to follow up with organization-wide dialogue about strategic uncertainties and, thereby, engender double-loop learning (Quinn, 1996; Tuomela, 2005). They have been hailed as pivotal in new product development and, hence, strategic renewal (Davila, 2000). Simon (1995) postulates that different MCS designs would have varying effects on the organizational innovation and performance due concern for firm-specific strategic uncertainties. Studies have reported that interactive use of MCS can ameliorate disruptive performance during change of strategy (Bruining et. al., 2004, Davila, 2000). In the same vein Bisbe and Otley (2004), in their research on whether the effect of innovation on performance is moderated by the style use of MCS, established that the relationship is significantly stronger when MCS are used interactively than otherwise.
Interactive Control Systems And Strategic Orientation On Competitive Position Of Sugar Firms...

Due to their special requirements for top management attention, interactive use of control is costly in time consuming (Simons, 1995). A consequence of an interactive use of control, for example, performance management system, is that by increasing the visibility of actions it may trigger resistance to change (Tuomela, 2005).

IV. Summary, Conclusions And Recommendations

The fact that all components of strategic control are moderately practiced leads to the conclusion that, though used in a complementary fashion, the levers of control are not entrenched in sugar firms.

With regards to strategic orientation, it was found that most of the firms in the sugar industry in western Kenya adopt the reactor strategic orientation, followed by defenders; prospectors, with the least prevalent being analyzers. The conclusion from this finding is that firms in the sugar industry do not have discernible or viable long-term strategies (Miles & Snow, 1978). This has been variously attributed; to failure or unwillingness of top managers to articulate a clear strategic direction (Rajagopalan, 1997).

The study further revealed that most of the sugar firms were average performers. This finding suggests the sugar firms are faced with considerable challenges that have constrained efficient production and marketing of sugar and sugar related products. The implies the need to revitalize management systems and strteies to mitigate corruption and vested political interest.

The finding of the study showed that the positive relationship between interactive control system and competitive position was moderated by strategic orientation. Individual levers of control, however, revealed varying magnitude of effects. Whereas it emerged that the positive relationship between strategic control system and competitive position was significantly moderated by strategic orientation for boundary control systems and for diagnostic control systems the research found that it is not the case for the relationship between belief control and interactive controls systems. The conclusions in respect of each research objective are elucidated in the following section.

Conclusions for Research Objective
Interactive Control System, Strategic Orientation and Organizational Performance of Sugar Firms in Western Kenya

Strategic orientation was found not to significantly moderate the positive relationship between interactive control system and competitive position. It can be concluded from this result that the interaction between strategic orientation and interactive control does not enhance the relationship between interactive control system and competitive position. Certain implications can be derived from this result. The implication of all these is that management needs to pay greater attention to design and use of interactive control systems.

Recommendations of the Study
Interactive Control Practices and Competitive position of Sugar Firms in Western Kenya

Drawing from the conclusion that style of use of levers of control is important in enhancing competitive position, it is recommended that managerial attention be increasingly directed towards adoption of a commercial orientation, particularly aspects that monitor and mitigate strategic uncertainties.

Interactive Control System, Strategic Orientation and Organizational Performance of Sugar Firms in Western Kenya

Facets of interactive control systems include building information networks to monitor uncertainties and contingencies that could threaten current strategy. It is recommended that management facilitate employees to participate industry conferences and seminars where such emerging knowledge is disseminated.

References

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