INFLUENCE OF MODERATORS ON THE MARKET ORIENTATION-BUSINESS PERFORMANCE RELATIONSHIP

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ABSTRACT

Numerous studies have dwelt upon the market orientation construct, its implementation and its relationship with a firm’s business performance. Assessment of the environmental moderators which affect the market orientation-business performance relationship has also been carried out. The studies have been conducted in different countries and within different industries and sectors. This paper aims to contribute to existing literature by the evaluation of the environment-mediated relationship between market orientation and business performance within an Indian setting and within a specific industry, namely the seafood exporting industry. Data from 108 firms are analysed to study the impact of environmental moderators on the market orientation-business performance relationship. The study adopts the market orientation measure of the Jaworski and Kohli (1993) study in order to study the relationship between market orientation and the moderators. The moderators studied are market turbulence, technological turbulence and competitive intensity. Results reveal that only competitive intensity affected the market orientation and business performance relationship.

Keywords: Market Orientation, Business Performance, Moderator Analysis

INTRODUCTION

Market orientation has been defined by Kohli & Jaworski (1990) as the organization-wide generation of market intelligence, dissemination of the intelligence across departments, and organization-wide responsiveness to it. Market orientation is thus, a set of behaviour, which are customer-centric, and further entails that the various departments of a firm act in coordination to fulfill the objectives of customer satisfaction and profit making. Kohli & Jaworski (1990) developed a market orientation framework comprising of four sets of factors, namely antecedents, market orientation construct, consequences and environmental
moderators that mediate the market orientation-business performance relationship. Most of the studies conducted are based on this framework (Ellis et al 2006, Kirca et al 2005).

No firm can conduct business in isolation from its operating environment, therefore it holds that external environment plays a strong role in mediating the relationship between market orientation and its business performance. A number of moderating factors have been studied so far. They include market turbulence, technological turbulence, competitive intensity, buyer power, supplier power, strategy type, market growth, demand uncertainty, extent of entry barriers (Kirca et al, 2005).

**CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESES**

The proposition that several environmental factors moderate the market orientation-business performance relationship has been empirically proved (Kohli and Jaworski, 1990; Narver and Slater, 1990; Appiah-Adu, 1998). They include market turbulence, technological turbulence, and competitive intensity (Jaworski and Kohli, 1993). The market orientation construct, as described by Kohli and Jaworski (1990) consists of three components namely, intelligence generation, intelligence dissemination, and responsiveness.

This study uses the Kohli and Jaworski’s (1990) and Jaworski and Kohli’s (1993) view of market orientation as its basis of analysis. Kohli and Jaworski’s view is one of the most widely accepted measures of market orientation (Farrell and Oczkowski, 1997). Some of the studies which have used the above MARKOR scale include Hooley et al. (1990), Cadogan and Diamantopoulos (1995), Maltz and Kohli (1996), Selnes et al. (1996), Avlonitis and Gounaris (1997), Cadogan et al. (1998), Pulendran et al (2000), Ellis (2006) etc.

**Model Specification**

The market orientation model consists of four major components, namely, the antecedents, the market orientation construct, the environmental moderators, which affect the MO-BP relationship, and the consequences.

**Environmental Moderators**

Several environmental factors are believed to moderate the relationship between market orientation (MO) and business performance (BP). Jaworski and Kohli (1993) conceptualized three environmental moderators that might mediate the market orientation-business performance relationship. They include market turbulence, technological turbulence, and competitive intensity. Other moderators, which have been studied less commonly, include supplier power, buyer power, market growth, demand uncertainty, and extent of entry barriers (Kirca et al, 2005). This study focuses on the three moderators, as proposed by Jaworski and Kohli (1993) namely, market turbulence, technological turbulence, and competitive intensity. While market turbulence and competitive intensity are expected to enhance the MO-BP relationship, technological turbulence is believed to diminish the same.

**Business Performance**

The fourth component of the market orientation model is the consequences or the overall business performance. It has been established by extant literature that business performance of a firm is improved by adopting market-oriented principles. This is in line with the measures used by most market orientation studies. The market orientation conceptual framework is as represented in the Fig.1.
RESEARCH METHODOLOGY

Consistent with market orientation literature, a causal research approach is used, which involves hypothesis testing of relationships and their quantification (Aaker et al 1998). The research method employed the use of quantitative data analysis, which involved the testing of hypotheses, identifying causality and replicability (Walker, 1985; Hart, 1987), using survey method. The survey method was carried out using questionnaire as survey instrument. Both mail survey and personal interview methods were used for gathering data. The sampling frame consists of a list of 356 processing (freezing) plants included in the Seafood Exporters’ Directory (2004), published by the Marine Products Export Development Authority. The final sample size was 108 representing a total response rate of 30.34%. The questionnaire included measures of the market orientation scale as prescribed by Jaworski & Kohli (1993).

RESEARCH HYPOTHESES

Hypothesis I

The market orientation-business performance relationship is moderated by market turbulence, technological turbulence and competitive intensity.

Hypothesis Testing using Stepwise Regression Analysis

This section includes the results of the major hypothesis. Hypothesis testing is done by the multiple regression analysis, using the step-wise method. The stepwise regression analysis is based on the variance of the variables. The probability for entry and removal of the variables are specified and accordingly, the variables in the order of importance are loaded onto the model. The probability value for entry into the model is 0.05 while the probability for removal of the variable is 0.1. Stepwise procedures select the most correlated independent first, remove the variance in the dependent, then select the second independent which most correlates with the remaining variance in the dependent, and so on until selection of an additional independent does not increase the R-squared by a significant amount (usually significant = .05).
Hypothesis I

The market orientation-business performance relationship is moderated by market turbulence, technological turbulence and competitive intensity. It is hypothesized that Business performance increases when, technological turbulence decreases, market turbulence increases and competitive intensity increases.

The regression equation for the above hypothesis is as follows:

\[
\text{Business Performance} = \alpha + \beta_1 \times \text{MARKOR} + \beta_2 \times \text{MKTTURB} + \beta_3 \times \text{TECHTURB} + \beta_4 \times \text{COMPINT} + \beta_5 \times \text{MARKOR} \times \text{MKTTURB} + \beta_6 \times \text{MARKOR} \times \text{TECHTURB} + \beta_7 \times \text{MARKOR} \times \text{COMPINT} + e_i
\]

Where MARKOR*MKTURB=the multiplicative interactive term of market turbulence, MARKOR*TECHTURB=the multiplicative interactive term of technological turbulence and MARKOR*COMPINT = the multiplicative interactive term of competitive intensity.


MODERATED REGRESSION ANALYSIS

The hypotheses are first tested with moderated regression analysis as proposed by Sharma, Durand and Gur-Arie (1981). If the relationship is significant this suggests the presence of a moderator effect, conversely the absence of a significant relationship leads to the next step wherein it is determined whether the hypothesized moderator is related to either the predictor or criterion variable.

According to the moderator regression analysis, Sharma, Durand and Gur-Arie (1981) propose that the following three equations be considered for equality of regression coefficients (Zedeck, 1971):

\[
\begin{align*}
y &= a + b_1 x \\
y &= a + b_1 x + b_2 z \\
y &= a + b_1 x + b_2 z + b_3 xz
\end{align*}
\]

They classify hypothesized moderators into three namely, pure moderators, homologizers and quasi moderators. If equations (2) and (3) are not significantly different, i.e., \(b_3=0, b_3\neq0\), then the variable \(z\) is not a moderator variable instead an independent predictor variable. If \(z\) is a pure moderator variable, then \(b_2=0, b_3\neq0\), i.e. equations (1) and (2) are significantly similar, but different from equation (3). Conversely it is a quasi moderator
variable if \( b_2 \neq 0, b_3 \neq 0 \) i.e. if all the three equations are significantly different from each other. Here it is seen that, in the case of market turbulence, \( b_2 \neq 0, b_3 = 0 \). Therefore as Sharma et al (1981) advocate, market turbulence is not a moderator variable instead is an independent predictor variable. Therefore it should be treated as an independent predictor variable. Then the competitive intensity variable is a pure moderator as the values for \( b_2 = 0, b_3 \neq 0 \), pending further analysis as per the framework proposed by Sharma et al (1981).

The framework proposed by Sharma et al (1981) for identifying moderator variables, includes the following four steps:

1. Using the Moderated Regression Analysis (MRA) procedure to determine whether any significant interaction exists between the hypothesized moderated variable, \( z \), and the market orientation variable. If a significant interaction exists, they suggest proceeding to Step 2, and if not, proceeding to Step 3.

The stepwise regression results are given in the table below for the relationships between the overall business performance, and the dependent variables of:

(a) Market orientation,
(b) The hypothesized moderators namely, competitive intensity, market turbulence and technological turbulence, and
(c) The multiplicative interaction terms of market orientation and competitive intensity (MARKOR*COMPINT), market orientation and market turbulence (MARKOR*MKT TURB) and market orientation and technological turbulence (MARKOR*TECHTURB).

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variables</th>
<th>Standardized Coefficient ß</th>
<th>T Value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Business Performance</td>
<td>Market Orientation</td>
<td>0.005</td>
<td>0.026</td>
<td>0.980</td>
</tr>
<tr>
<td></td>
<td>Market Turbulence</td>
<td>-0.178</td>
<td>-2.171</td>
<td>0.032</td>
</tr>
<tr>
<td></td>
<td>Technological Turbulence</td>
<td>0.150</td>
<td>1.283</td>
<td>0.202</td>
</tr>
<tr>
<td></td>
<td>Competitive Intensity</td>
<td>-0.080</td>
<td>-0.516</td>
<td>0.607</td>
</tr>
<tr>
<td></td>
<td>MARKOR * COMPINT</td>
<td>0.533</td>
<td>6.502</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>MARKOR * MKTTURB</td>
<td>0.327</td>
<td>1.225</td>
<td>0.223</td>
</tr>
<tr>
<td></td>
<td>MARKOR * TECHTURB</td>
<td>0.150</td>
<td>1.283</td>
<td>0.202</td>
</tr>
</tbody>
</table>

\( R^2=0.30, \text{ Adjusted } R^2=28.6\% \)

It is noted that only two independent variables contribute significantly to the business performance. One is market turbulence (\( ß=-.178, p=0.032 \)) and the other is the multiplicative interaction term of market orientation and competitive intensity (\( ß=0.533, p=0.00 \)). Since a significant interaction exists, the next procedure will be Step 2.

2. Determining if \( z \), the hypothesized moderator (here, the multiplicative interaction term of market orientation and competitive intensity) is related to the criterion variable business performance. If it is, then \( z \) is a quasi moderator variable, and if not, then \( z \) is a pure moderator.

This is verified by conducting a Pearson’s correlation test among the variables.
Table 2. Correlation Analysis of the Hypothesized Moderators with Market Orientation and Overall Business Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>MARKOR</th>
<th>OBP</th>
<th>MKTTURB</th>
<th>TECHTURB</th>
<th>COMPINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKTTURB</td>
<td>-0.100</td>
<td>-0.133</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>p</td>
<td>0.152</td>
<td>0.085</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TECHTURB</td>
<td>0.244(**)</td>
<td>0.150</td>
<td>0.649(**)</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>p</td>
<td>0.005</td>
<td>0.061</td>
<td>0.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>COMPINT</td>
<td>0.461(**)</td>
<td>0.365(**)</td>
<td>0.285(**)</td>
<td>0.378(**)</td>
<td>1</td>
</tr>
<tr>
<td>p</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>0.000</td>
<td>-</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (1-tailed).**

Competitive intensity shows significant relationship towards both market orientation and business performance. Hence it is not a pure moderator; instead it is a quasi moderator. Market turbulence shows no relationship to either market orientation or business performance. Hence we next proceed to Step 3.

3. Determining if z is related to the criterion variable - business performance or the predictor variable - market orientation, if yes, then z is not a moderator, instead an exogenous, predictor, intervening, antecedent or a suppressor variable. If z is not related to either variable then they recommend proceeding to Step 4.

Here, for those hypothesized moderators which did not yield significant results in terms of their multiplicative interaction terms, namely market turbulence and technological turbulence, it is determined whether they are related either to the criterion variable or the predictor variable. It is noted from the correlation test that technological turbulence is related to the predictor variable market orientation, while market turbulence is not related to either of them. Thus according to Sharma et al (1981), it holds that technological turbulence is not a moderator, while market turbulence needs to be checked to see if it is a homologizer.

4. This step involves splitting the total sample into subgroups on the basis of the hypothesized moderator variable based on the median or similar type of split. Then a test of significance is to be done for differences across the subgroups. If significant differences exist, z is a homologizer, operating through the error term, if not, z is not a moderator and the analysis concludes.

As described above, the subgroup analysis was conducted for testing presence of homologizer by splitting the samples into two halves based on the median, running correlation analysis and testing significance for differences between the correlation coefficients for subgroups. The results for the subgroup analysis shows that there is no difference between the two subgroups of market turbulence. Thus market turbulence is not a homologizer.

Therefore, the only moderator variable mediating the relationship between market orientation and business performance in the seafood industry is competitive intensity. It is positively and significantly related to the market orientation-business performance relationship (Nair, 2007).
CONCLUSIONS

Among the hypothesized moderators, it is noted that only competitive intensity is a moderator. An increase in the competitive intensity in the seafood processing industry leads to a stronger relationship between market orientation and business performance. Market turbulence and technological turbulence have no impact on the relationship between market orientation and business performance. More work needs to be done in the area of environmental moderators. Addition of other factors like strategy type, firm size, etc to the existing moderators, may yield interesting results.

REFERENCES