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AN EMPIRICAL STUDY TO DEVELOP A STRUCTURAL EQUATION MODEL SHOWING THE IMPACT LEVEL OF MARKET ORIENTATION AMONG THE FINANCIAL SERVICES PROVIDERS IN A RESOURCE-BASED ECONOMY

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Abstract

Purpose: This paper attempts to empirically develop a validated structural equation model (SEM) to measure the level of market orientation in a resource-based economy among the financial services providers.

Design/methodology/approach: A structural equation model has been developed and validated with four constructs, namely: corporate culture, strategy formulated and implemented, structure and systems employed, and market-orientated activities. Each of these identified constructs is measured by three items apart from the 'strategy formulated and imple-



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mented' construct, which is measured by four items. In addition, four hypotheses were tested.

Findings: This study provides evidence that market-oriented corporate culture mediates the strategy formulated and implemented in response to the customers' needs and expectations.

Originality/value: Despite the fact that several models were developed and tested in different contexts, this model has been validated through the development of a structural equation model. However, although several researchers have argued the importance of the role played by the market-oriented corporate culture, this study provides evidence that the major role of such constructs is the mediation of the business organizations designed and implemented response to meet the identified customers' needs and expectations.

Keywords: *Market orientation, Service marketing, Resource-based economy, Structural Equation Model*

Article type: Research paper

INTRODUCTION

Based on the qualitative research findings and literature, a suggested scale was developed and content validity was established to conclude that market orientation in this context is multi-dimensional, with four constructs that comprise market-oriented organizational corporate culture, formulated and implemented strategy, organizational structure and systems employed, and market-oriented activities (Al-Shirawi and Hajjar, 2012). This has been taken forward through the conduction of exploratory and confirmatory factor analysis (EFA and CFA) and the results showed that acceptable variances do exist between the four constructs, and the indices obtained through the CFA are significant (Al-Shirawi *et al.*, 2013). Therefore, after the development of an acceptable measurement model (Al-Shirawi *et al.*, 2013), the development of a structural equation model fosters the measurement of the level of market orientation that exists among the financial services providers in this context. While it is assumed that the market-oriented corporate culture and the strategy formulated and implemented are the exogenous variables, the structure and systems employed and the market-oriented activities are the endogenous variables which would be explored and tested through a path analysis and structural equation modelling approach in this study.

Moreover, this study intends to examine the model's goodness-of-fit, validate the constructs reliability (Anderson and Gerbing, 1988), and then try to predict the causal relationships among the study variables (Anderson and Gerbing, 1982; Hair *et al.*, 2010). The measurement model represents the latent variables (corporate culture and the strategy formulated and implemented) and their set of observable variables (the market-oriented activities and the structures and systems employed), the structural equation model (SEM) will describe the dependence relationships and links the hypothesized model's constructs (see Janssens *et al.*, 2008; Hair *et al.*, 2010). Finally, this research will undertake a regression analysis (ordinary least square [OSL]) to examine the extent to which the independent variables (corporate culture and the strategy formulated and implemented) influence the dependent variable (the market-oriented activities and the structures and systems employed). Finally, this study will use SPSS AMOS to explore the mediation relationship of the market-oriented corporate culture and strategy formulated and implemented and the impact of such relationship on both dependent variables.

LITERATURE REVIEW

Different studies have used the Narver and Slater (1990) and Kohli *et al.* (1993) suggested scales of market orientation based on the assumption that these measures have been developed and refined and lead to valid and reliable results (Diamantopoulos and Hart, 1993; McDermott *et al.*, 1993; Greenley, 1995a and b; Pitt *et al.*, 1996; Appiah-Adu, 1997; Harris and Piercy, 1999; Lonial and Raju, 2001; Atuahene-Gima and Ko, 2001; Calantone *et al.*, 2003). Furthermore, Farrell and Oczkowski (1997) question the suitability of MKTOR as a composite measure of market orientation. In fact, they question which of the different dimensions of MKTOR determines business performance. They argue that focusing on the customer versus the competitor may lead to different results that may be based on particular environmental conditions. However, very few studies have attempted to identify the market orientation dimensions within the cultural and economical background in which the studies have been conducted (Al-Shirawi and Hajjar, 2012). Furthermore, Kumar *et al.* (1998) emphasized the importance of the different factors and forces that shape the environment and suggest that each has a distinct influence on organizational performance.

Accordingly, they argued that even though Narver and Slater (1990) made a major contribution in exploring the nature of market orientation and its relationship to performance, ***“their efforts to construct a valid and reliable measure of market orientation were only partly successful”*** (Kumar *et al.*, 1998, p. 202). They further argued that Narver and Slater (1990), in their attempt to validate their hypotheses of the five components, did not meet the scale reliability criteria. Accordingly, they claimed that their own revised and expanded market-orientation scale provides ***“a reliable and valid measure of all the five components of market orientation”*** (Kumar *et al.*, 1998, p. 225). Finally, Raaij and Stoelhorst (2008) argued that even though the Narver and Slater scale (MKTOR) and the Kohli *et al.* scale (MARKOR) have been employed by several researchers either in their original forms or as the basis for adapted scales, both scales have been criticized for various reasons, the most important being that it is not useful as a diagnostic tool (see also Gable, 1995; Wensley, 1995; Steinman *et al.*, 2000; Van Bruggen and Smids, 1995). They argued this on the grounds that the two scales were developed originally to assess the differences in the level of market orientation across companies. However, one can argue that identifying the constructs and various dimensions of market orientation in a given context with different cultural backgrounds and different levels of economical development might enhance the marketing theory and bridge the gap in the literature related to scale generalizability (Al-Shirawi and Hajjar, 2012). Accordingly, and based on the findings of the qualitative study and the literature, a scale was developed, and reliability and content validity was established (Al-Shirawi and Hajjar, 2012). Furthermore, the scale was subjected to exploratory and confirmatory factor analysis (EFA and CFA), and the measurement model was presented (Al-Shirawi, *et al.*, 2013). In addition, such work must be taken further in order to purify and validate this model and establish the various model's constructs reliability.

Hair *et al.* (2006) asserted that exploratory factor analysis (EFA) is employed to explore the dimensions of each construct and to ensure that the individual items were loaded on the corresponding factor as intended. Additionally Janssens *et al.* (2008) suggested that SEM is employed to test the measurement model and structural model (Anderson and Gerbing, 1988; Hair *et al.*, 2010). While the first stage of the two-stage approach recommended by Anderson and Gerbing (1988) was used at an early phase (Al-Shirawi *et al.*, 2013), the second stage including the pat analysis and goodness-of-fit can be evaluated in this study. It is

used to examine the relationships between the dependent variables and independent variables (Hair *et al.*, 1998). Byrne (1998) asserts that SEM incorporates both the observed and latent variables, provides explicit estimates of the measurement errors, and fosters the hypotheses testing. Moreover, as suggested by Hair *et al.* (2010) the convergent validity (the extent to which indicators of a specific construct “converge” or share a high proportion of variance in common) can be examined (Janssens *et al.*, 2008). Furthermore, the construct loadings, variance extracted and construct reliability and the discriminant validity (the extent to which a construct is truly distinct from other constructs) of the model can be examined. However, when examining construct validity, we also look at the reliability of each of the constructs. Construct reliability is a measure of reliability and internal consistency based on the square of the total of factor loadings for a construct.

RESEARCH QUESTIONS

A model was explored and confirmed to show that the constructs corporate culture, strategy formulated and implemented, structure and systems employed, and market-oriented activities played a major role in influencing the level of market orientation in a resource-based economy (Al-Shirawi *et al.*, 2013). Moreover, it was also shown that corporate culture can be considered as a mediator that facilitates the design and implementation of the businesses’ response to their understanding of existing and potential customers’ needs and expectations. The present paper would like to test whether this influence is positive or negative. Therefore, this study aims to focus on this subject by developing a structural equation model to measure the level of market orientation in a resource-based economy. Accordingly, the following questions will be answered at the end of this study:

- 1) How do corporate culture, strategy formulated and implemented, structure and systems employed, and market-oriented activities influence the level of market orientation in a resource-based economy?
- 2) Is there a mediation effect of the corporate culture construct that facilitates the design and implementation of the businesses’ response to their understanding of existing and potential customers’ needs and expectations?

To find answers for these questions, we need to formulate and test the hypotheses that satisfy them.

The qualitative research findings indicate that top management commitment and support reflected by the organizational culture is vital in the process of adopting a market-orientation approach or enhancing the level of market orientation in a business organization (Al-Shirawi, and Hajjar, 2012). In fact, such commitment facilitates the entire organization's involvement in generating and disseminating market intelligence and enhances the departmental connectedness. This provides further support for various studies' findings emphasizing the critical role of management and support (Deshpandé and Webster, 1989; Narver and Slater, 1990; Jaworski and Kohli, 1993; Harris, 1996; Raaij and Stoelhorst, 2008; Kumar *et al.*, 2011). In fact, Jaworski and Kohli (1993) argued that unless the entire organization receives a clear signal from top management indicating such commitment and emphasizing the importance of being market-oriented, the organization is not likely to encourage its members to be in tune with the changes occurring in its environment, share the gathered intelligence, or participate actively in designing and implementing responses to changes. The qualitative findings indicate that an organizational culture that focuses on customer satisfaction and delivering superior value to meet customer expectations is critical to enhancing the business level of market orientation (see also Lichtenthal and Wilson, 1992; Slater and Narver, 1995; Narver *et al.*, 1998; Kennedy *et al.*, 2003; and Gebhardt *et al.*, 2006). Therefore, the resulting hypotheses are:

- H1: *The greater the corporate culture facilitating the entire organization emphasis and customer focus, and guiding its market-oriented activities, the greater its level of market orientation.*
- H2: *The greater the corporate culture fostering flexible structure and employing market-linked systems, the greater its level of market orientation.*

Furthermore, there was consensus among the participants representing the financial sector institutions that business responsiveness to the generated intelligence, including customers' enquiries and complaints, is crucial in the process of becoming a market-oriented organization. Such responsiveness is reflected in the strategy formulated and implemented effectively by the business organization. Such findings support previous studies' findings undertaken in different contexts (Kohli *et al.*, 1993; Ruekert, 1992; Deshpandé *et al.*, 1993; Day, 1990). In addition, the qualitative research findings indicate that the organizational processes and activities facilitating the strategy implementation to create and deliver superior value are crucial. This includes constantly monitoring

and reviewing the organization's commitment to serving its customers, disseminating the acquired feedback on customers' experiences across all the business functions, measuring customer satisfaction and measuring the level of services provided to customers. In addition, qualitative data indicate that obtaining customers' feedback related to the quality of the services provided, and appraising and rewarding employees based on customer satisfaction is of vital importance (Kohli and Jaworski, 1990; Narver and Slater, 1990; Deshpandé and Farley, 1999). Therefore, the next hypotheses are:

- H3: *The greater the formulated and implemented strategy in reflecting the business understanding and responding through its market-oriented activities to existing and future customers' needs and expectations, the greater the level of market orientation.*
- H4: *The greater the formulated strategy and business organizations implementation is tuned with the structure and systems employed, the greater its level of market orientation.*

These hypotheses are initiated to answer the research questions as they are explored and confirmed by Al-Shirawi and Hajjar (2012), and what remains is to validate the developed scale based on these hypotheses. This validation of the explored and confirmed model (Figure 1) is important in order to confirm and prepare it for use in future work. The validation could be done by studying the goodness-of-fit and path analysis tests, by testing the construct loadings, and the discriminant validity (the extent to which a construct is truly distinct from other constructs) of the model.

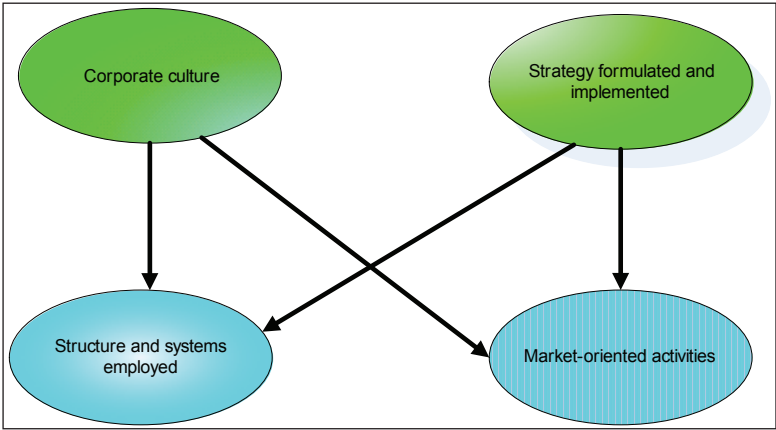


Figure 1.
Preliminary
conceptual model
to measure the
level of market
orientation
from Business
Organization

METHODOLOGY

An empirical
study to
develop a
structural
equation model

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In order to be able to evaluate the suggested developed scale, which consist of five constructs: the corporate culture, strategy formulated, strategy implemented, structure and systems employed, and market-oriented activities (Al-Shirawi and Hajjar, 2012), and in order to explore the model farther after the exploratory and confirmatory factor analysis (EFA and CFA) (Al-Shirawi *et al.*, 2013), a random sample of 139 responses representing the financial services businesses including banks, investment and insurance companies was selected through an online questionnaire distributed through the internet. A letter was sent to each financial services provider listed in the central Bank of Bahrain registration list. A follow-up by telephone calls and emails was carried out. The collected data were subjected to a normality assumption test, path analysis and structural equation modelling. In addition, SPSS AMOS 18 was used to test the mediation effect of the corporate culture construct. However, because there was no missing value except for item 5 of the market-oriented activities construct, which was associated with high missing value, the entire collected data were used.

RESULTS AND DISCUSSION

This section presents and discusses the results of this study survey.

The goodness-of-fit and path analysis

The “goodness-of-fit” and “path analysis” indicators are presented in Tables 1 to 4 (Appendix A). The indicators presented in these tables indicate a relatively significant model with acceptable indicators.

Table 1 (Appendix A) shows that CMIN/DF (normed Chi-square) is a value equal to 2.131, which is between 2 and 5 so is considered acceptable. Table 2 shows that the GFI, an absolute fit index, is 0.892. This value is approximately 0.90, which is tolerable for this model. Likewise, the AGFI, a parsimony fit index, is 0.834, which is also tolerable for this model. Table 3 shows that the CFI, an incremental fit index, is 0.956, and the NFI (0.921), RFI (0.896), IFI (0.957) and TLI (0.942) incremental fit indices indicate acceptable fit. Guidelines indicate that the NFI should be >0.90 for a model of this complexity and sample size. Table 4 shows that the RMSEA, an

absolute fit index, is 0.091. This value is little high and not below 0.08; however, being below 0.1, it is acceptable for a model with 13 measured variables and a sample size of 139 (Hair *et al.*, 2010; Janssens *et al.*, 2008). This also is called a badness-of-fit index. The 90 per cent confidence interval for the RMSEA is between a LO of .069 and a HI of 0.112. Using the RMSEA and the CFI satisfies our rule of thumb that both a badness-of-fit index and a goodness-of-fit index be evaluated. In addition, other index values are supportive. For example, the GFI is 0.892 and the AGFI is 0.834 (Landis *et al.*, 2000; Hu and Bentler, 1999).

Table 1. Normed
CHI-square BO

	NPAR	CMIN	DF	P	CMIN/DF
Default model	32	125.712	59	.000	2.131
Saturated model	91	.000	0		
Independence model	13	1599.356	78	.000	20.505

Table 2. Absolute
fit index and
parsimony fit index
BO

	RMR	GFI	AGFI	PGFI
Default model	.030	.892	.834	.578
Saturated model	.000	1.000		
Independence model	.378	.220	.090	.188

Table 3. An
incremental fit
index and other
incremental fit
indices BO

	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.921	.896	.957	.942	.956
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 4. An
absolute fit
index BO

	RMSEA	LO 90	HI 90	PCLOSE
Default model	.091	.069	.112	.002
Independence model	.376	.360	.392	.000

Next, this study will examine the convergent validity (the extent to which indicators of a specific construct “converge” or share a high proportion of variance in common. To assess this we examine construct loadings, variance extracted and construct reliability and the discriminant validity (the extent to which a construct is truly distinct from other constructs) of the model. When examining construct validity, we also look at the reliability of each of the constructs. Construct reliability is a measure of reliability and internal consistency based on the square of the total of factor loadings for a construct.

Beginning with the convergent validity, Table 5 (Appendix A) shows that loading estimates (standardized regression weights) are significant, providing a useful start in assessing the convergent validity of the measurement model. The guidelines are that all loadings should be at least 0.5, and preferably 0.7; average variance extracted measures should equal or exceed 50 per cent; and construct reliabilities should equal or exceed 0.70. All loadings are significant as required for convergent validity. The lowest is 0.698 (SI3) and there is no other indicator below 0.70.

However, when examining convergent validity, it is recommended to look at two additional measures:

				Estimate
CC2	<---	CORPCULT		.901
SI1	<---	STRFORMIMP		.940
SI2	<---	STRFORMIMP		.932
SF3	<---	STRFORMIMP		.729
SI3	<---	STRFORMIMP		.698
MOA4	<---	MKTORACT		.761
MOA2	<---	MKTORACT		.920
MOA3	<---	MKTORACT		.933
SSE2	<---	STRUCTSYST		.900
SSE3	<---	STRUCTSYST		.953
SSE4	<---	STRUCTSYST		.745
CC3	<---	CORPCULT		.906
CC4	<---	CORPCULT		.770

Table 5.
Standardized
regression weights:
(Group number 1 -
default model)

- (1) Average Variance Extracted (AVE) for each construct.
- (2) Construct Reliabilities (CR).

The AVE and CR are not provided by the AMOS software so they have to be calculated.

In order to calculate AVE, we need to find the sum of the squared loading of each variable.

AVE is computed as the sum of the squared standardized factor loadings divided by the number of items, as shown below. A good rule of thumb is that an AVE of 0.5 or higher indicates adequate convergent validity (Janssens *et al.*, 2008; Hair *et al.*, 2010). An average of less than 0.5 indicates that on average, there is more error remaining in the items than there is variance explained by the latent factor structure you have imposed on the measure. An AVE estimate should be computed for each latent construct in a measurement model.

Calculated average variance extracted

Calculated average variance extracted (AVE = Sum of squared loading / number of items):

$$\text{Corporate culture construct} = 0.901^2 + 0.906^2 + 0.770^2 = 2.225537 / 3 = 0.7418$$

$$\text{Strategy formulated and implemented construct} = 0.6982 + 0.932^2 + 0.940^2 + 0.729^2 = 2.770869 / 4 = 0.6927$$

$$\text{Market-oriented activities construct} = 0.7612 + 0.933^2 + 0.920^2 = 2.29601 / 3 = 0.7653$$

$$\text{Structure and systems employed construct} = 0.9002 + 0.953^2 + 0.745^2 = 2.273234 / 3 = 0.7577$$

Construct reliability is computed from the sum of factor loadings, squared for each construct and the sum of the error variance terms for a construct. The rule of thumb for a construct reliability estimate is that 0.7 or higher suggests good reliability. Reliability between 0.6 and 0.7 may be acceptable provided that other indicators of a model's construct validity are good. High construct reliability indicates that internal consistency exists. This means that the measures are all consistently representing something.

Computation of construct reliability (CR)

$$CR = (\text{sum of loading})^2 / [(\text{sum of loading})^2 + (\text{sum of error variance, Delta})]$$

Delta = 1 minus the item reliability.

$$\text{Item reliability} = (\text{factor loading})^2$$

$$CR (\text{Corporate culture}) = (.901 + .906 + .770)^2 / [(.901 + .906 + .770)^2 + (.19 + .18 + .41)] = 0.89$$

$$CR (\text{Market-oriented activities}) = (.761 + .933 + .920)^2 / [(.761 + .933 + .920)^2 + (.42 + .13 + .15)] = 0.91$$

$$CR (\text{Structure and systems employed}) = (.900 + .953 + .745)^2 / [(.900 + .953 + .745)^2 + (.19 + .09 + .45)] = 0.90$$

$$CR (\text{Strategy formulated and implemented}) = (.698 + .932 + .940 + .729)^2 / [(.698 + .932 + .940 + .729)^2 + (.51 + .13 + .12 + .47)] = 0.90$$

Taken together, the evidence provides initial support for the convergent validity of the four-construct BO measurement model. The previous CFA model shows that all loading estimates are above 0.7, which indicates significant model fit or internal consistency. Moreover,

Items	Factor loading	Item reliability	Delta
CC2	.901	.812	.19
CC3	.906	.821	.18
CC4	.770	.593	.41
MOA4	.761	.579	.42
MOA3	.933	.870	.13
MOA2	.920	.846	.15
SSE2	.900	.810	.19
SSE3	.953	.908	.09
SSE4	.745	.555	.45
SI3	.698	.487	.51
SI2	.932	.869	.13
SI1	.940	.884	.12
SF3	.729	.531	.47

Table 1. Factor loading and item reliability

the average variance extracted (AVE) estimates that all exceed 0.5 and the construct reliability estimates that all exceed 0.7. In addition, the model fits relatively well. Therefore, all the items are retained at this point and adequate evidence of convergent validity is provided.

The next step is to examine the discriminant validity. The BO four-construct CFA model demonstrates discriminant validity if all variance extracted (AVE) estimates are larger than the corresponding squared interconstruct correlation estimates (SIC). In order to calculate SIC, we need to square the Interconstruct Correlations (IC) obtained from Table 6 (Table 6 of correlations in Appendix A).

Table 2.
The Squared
Interconstruct
Correlations
(SIC) from the
Interconstruct
Correlations (IC)

In the columns below this study calculates the SIC (Squared Interconstruct Correlations) from the IC (Interconstruct Correlations) obtained from Table 6, Appendix A)					
				IC	SIC
Corporate culture	–	Strategy formulated and implemented		.713	.508
Market-oriented activities	–	Structure and systems employed		.657	.432
Corporate culture	–	Structure and systems employed		.507	.257
Market-oriented activities	–	Strategy formulated and implemented		.747	.558
Corporate culture	–	Market-oriented activities		.585	.342
Structure and systems employed	–	Strategy formulated and implemented		.688	.473

Table 6.
Correlations:
(Group number 1
BO - default model)

				Estimate
CORPCULT	<-->	STRFORMIMP		.713
MKTORACT	<-->	STRUCTSYST		.657
CORPCULT	<-->	STRUCTSYST		.507
MKTORACT	<-->	STRFORMIMP		.747
CORPCULT	<-->	MKTORACT		.585
STRUCTSYST	<-->	STRFORMIMP		.688

Discriminant validity – compares the average variance extracted (AVE) estimates for each factor with the Squared Interconstruct Correlations (SIC) associated with that factor, as shown below:

	<u>AVE</u>	<u>SIC</u>
CC Construct	.7418	.508, .257, .342
SISF Construct	.6927	.508, .558, .473
MOA Construct	.7653	.432, .558, .342
SSE Construct	.7577	.432, .257, .473

An empirical study to develop a structural equation model

The SIC numbers also are shown in the squared Phi (Φ) matrix, Table 7 (Appendix A). All variance extracted (AVE) estimates in the above chart are larger than the corresponding squared interconstruct correlation estimates (SIC). Therefore, the business organizations (BO) four-construct CFA model demonstrates discriminant validity.

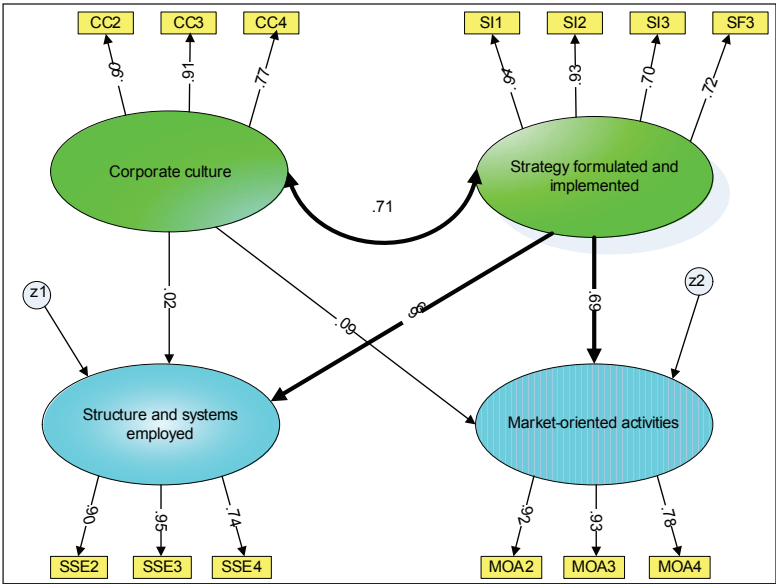
Accordingly, in order to develop SEM, which is a set of dependence relationships linking the hypothesized model’s constructs, SEM determines whether relationships exist between the constructs – and along with CFA enables you to accept or reject the proposed theory (Janssens *et al.*, 2008; Hair *et al.*, 2010). Moreover, in developing models to test using CFA/SEM, the researcher draws upon theory, prior experience and the research objectives to identify and develop hypotheses about which independent variables predict each dependent variable. The theoretically based SEM model is illustrated in Figure 2.

In the above model, the services provider corporate culture that facilitates top management commitment and focuses on creating and delivering superior value for its customers based on thorough understanding of these customers’ needs, wants, and expectations will contribute to the process of becoming a more market-oriented financial services provider. This is reflected in the businesses’ market-

Φ Matrix squared	CC	SISF	MOA	SSE
CC	1.00			
SISF	0.51	1.00		
MOA	0.34	0.56	1.00	
SSE	0.26	0.47	0.43	1.00

Table 7. Phi matrix squared

Figure 2. Business Organizations' SEM original model



oriented activities and the business organizations' structure and systems employed. In addition, the type and nature of the strategy formulated and implemented reflecting such corporate culture and based on understanding customers' needs and expectations in order to create and deliver superior value to its customers will influence the services providers' market-oriented activities and the business organizations' structure and systems employed. Therefore, the strategy formulated and implemented will influence its level of market orientation.

BUSINESS ORGANIZATIONS' SEM MODEL

As is shown in the above model, the exogenous variables (multi-item equivalent of independent variables that are not influenced by other variables in the model which act as independent variables in the model) are the variables corporate culture and strategy formulated and implemented. On the other hand, the two endogenous variables (multi-item equivalent to dependent variables which are affected by other variables in the theoretical model) are market-oriented activities and structure and systems employed. As shown in the above model, the following hypotheses, which have been illustrated above, are to be tested:

- H1: The greater the corporate culture facilitating the entire organization's emphasis and customer focus, and guiding its market-oriented activities, the greater its level of market orientation.
- H2: The greater the corporate culture fostering a flexible structure and employing market-linked systems, the greater its level of market orientation.
- H3: The greater the formulated and implemented strategy in reflecting the business understanding and responding through its market-oriented activities to existing and future customers' needs and expectations, the greater the level of market orientation.
- H4: The greater the formulated strategy and business organization's implementation is tuned with the structure and systems employed, the greater its level of market orientation.

SEM has no single statistical test that best describes the "strength" of the model's predictions. Instead, researchers have developed different types of measures that in combination assess the results.

- ☐ Multiple fit indices should be used to assess goodness-of-fit.
For example:
 - o The χ^2 and the χ^2 / df (normed Chi-square)
 - o One goodness-of-fit index (e.g. GFI, CFI, NFI, TLI)
 - o One badness-of-fit index (e.g. RMSEA).
- ☐ Selecting a rigid cut-off for the fit indices is like selecting a minimum R2 for a regression equation – there is no single "magic" value for the fit indices that separate good from poor models. The quality of fit depends heavily on model characteristics, including sample size and model complexity.
- ☐ Simple models with small samples should be held to very strict fit standards.
- ☐ More complex models with larger samples should not be held to the same strict standards.

The goodness-of-fit test (GOF) indicates how well the specified model reproduces the covariance matrix among the indicator variables – that is, it examines the similarity of the observed and estimated covariance matrices (absolute fit). The initial measure of GOF is the Chi-square statistic. The null hypothesis is "No difference in the two covariance

matrices". Since it is important for the matrices not to be different, this study hopes for an insignificant Chi-square ($>.05$) so the null hypothesis is supported.

By testing the above Business Organizations' SEM with the four-construct model, we get a model represented in Figure 3. This figure shows that two indicator variables do not meet the established criteria: the standardized regression weights for the two indicator variables (Factor Loadings) between corporate culture and market-oriented activities as well as corporate culture and structure and systems employed are respectively 0.09 and 0.02 indicating very low factor loadings.

Although the finding of our qualitative research (Al-Shirawi and Hajjar, 2012) clearly indicates the role of corporate culture in facilitating focusing on customers as the focal point and causing top management and the entire organization to become more market-oriented, it seems that this is done indirectly through the type and quality of strategy formulated and implemented processes. The fact that there is a good covariance between the corporate culture and the strategy formulated and implemented variables justifies such an assumption. Therefore, although there is no direct relationship between the corporate culture and market-oriented activities and structure and systems employed latent variables, one can assume that such a market-oriented culture would facilitate the strategy formulation and implementation that is based on a thorough understanding of customer needs, wants and expectations. This is evidenced by such good covariance between these two variables.

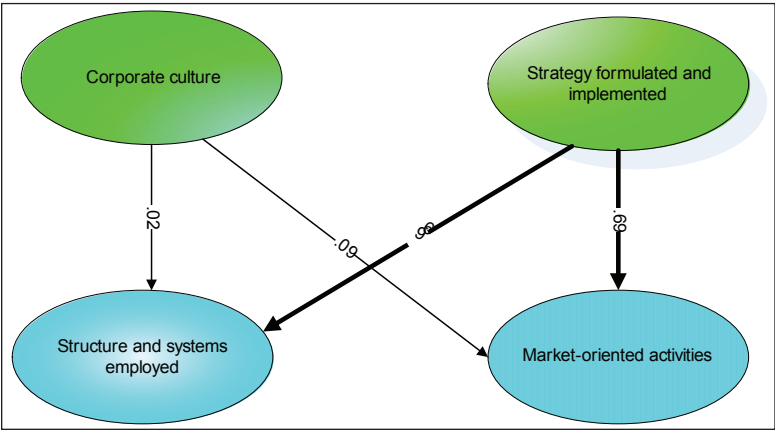


Figure 3.
Theoretically based
BO SEM model

Hence the first two hypotheses H1 and H2 are not supported. Then by modifying the original BO model, an acceptable model is obtained as indicated in Figure 2. This figure shows that all loadings are satisfactory (> 0.70), and this result is supported by Table 8 (Appendix A), which shows that CMIN/DF (normed Chi-square) is a value equal to 2.178, which is between 2 and 5 so is considered acceptable.

Moreover, Table 9 (Appendix A) shows that the GFI, an absolute fit index, is .884. This value is approximately 0.90, which is tolerable for this model. Likewise the AGFI, a parsimony fit index, is .830, which is also tolerable for this model. Note that these measures are approximately the same as with the CFA model. Table 10 (appendix A) shows that the CFI, an incremental fit index, is 0.952, which exceeds the guidelines (>0.90) for a model of this complexity and sample size. Moreover, it shows the NFI (0.916), RFI (0.894), IFI (0.953) and TLI (0.940) incremental fit indices. Table 11 (Appendix A) shows that the RMSEA, an absolute

	NPAR	CMIN	DF	P	CMIN/DF
Default model	29	135.018	62	.000	2.178
Saturated model	91	.000	0		
Independence model	13	1599.356	78	.000	20.505

Table 8. Normed Chi-square model after modification

	RMR	GFI	AGFI	PGFI
Default model	.042	.884	.830	.602
Saturated model	.000	1.000		
Independence model	.378	.220	.090	.188

Table 9. Absolute fit index and parsimony fit index model after modification

	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.916	.894	.953	.940	.952
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 10. An incremental fit index and other incremental fit indices model after modification

fit index, is 0.092. As stated above, this value is a little high and not below the .08 guideline but, being below 0.1, is acceptable for a model with 13 measured variables and a sample size of 139 (Hair *et al.*, 2010). The triple asterisks (***) presented in Table 3 below show statistical significance $\leq .001$ (Hair *et al.*, 2010) indicating that the critical ratios are statistically significant.

In addition, the new weights at the top in Table 12 (Appendix A) are for the two new causal paths to the new endogenous variables structure and systems employed and market-oriented activities. It shows that loading estimates (standardized regression weights) are satisfactory since there are no other indicators below 0.70.

Table 11. An absolute fit index model after modification

	RMSEA	LO 90	HI 90	PCLOSE
Default model	.092	.071	.114	.001
Independence model	.376	.360	.392	.000

Table 3. Regression weights: (Group number 1 - default model)

			Estimate	P	Label
MKTORACT	<---	STRFORMIMP	.723	***	par_11
STRUCTSYST	<---	STRFORMIMP	.782	***	par_12
CC2	<---	CORPCULT	1.000		
SI1	<---	STRFORMIMP	1.000		
SI2	<---	STRFORMIMP	1.009	***	par_1
SF3	<---	STRFORMIMP	.763	***	par_2
SI3	<---	STRFORMIMP	.762	***	par_4
MOA4	<---	MKTORACT	1.000		
MOA2	<---	MKTORACT	1.490	***	par_5
MOA3	<---	MKTORACT	1.333	***	par_6
SSE2	<---	STRUCTSYST	1.000		
SSE3	<---	STRUCTSYST	1.067	***	par_7
SSE4	<---	STRUCTSYST	.830	***	par_8
CC3	<---	CORPCULT	.924	***	par_9
CC4	<---	CORPCULT	.905	***	par_10

				Estimate	An empirical study to develop a structural equation model
MKTORACT	<---	STRFORMIMP		.761	
STRUCTSYST	<---	STRFORMIMP		.702- CFA	
CC2	<---	CORPCULT		.899- 0.901	
SI1	<---	STRFORMIMP		.936-0.940	
SI2	<---	STRFORMIMP		.933-0.932	
SF3	<---	STRFORMIMP		.724-0.729	
SI3	<---	STRFORMIMP		.699-0.698	
MOA4	<---	MKTORACT		.761-0.761	
MOA2	<---	MKTORACT		.923-0.920	
MOA3	<---	MKTORACT		.930-0.933	
SSE2	<---	STRUCTSYST		.903-0.900	
SSE3	<---	STRUCTSYST		.951-0.953	
SSE4	<---	STRUCTSYST		.744-0.745	
CC3	<---	CORPCULT		.907-0.906	
CC4	<---	CORPCULT		.771-0.770	

Table 12.
Standardized regression weights: (Group number 1 - default model)

At this stage we should compare the CFA and SEM loadings to make sure they have not changed substantially. Changes are minor and within expected ranges. Since there are minor changes in loadings estimates when comparing measurement (CFA) and structural (SEM) results, then our measures do not need further development or refinement. Finally, the two hypotheses H3 and H4 are supported. Accordingly, while corporate culture has no direct effect on market-oriented activities and structure and systems employed, strategy formulated and implemented has a direct effect on those latent variables. Therefore, the greater the strategy formulated and implemented processes are based on understanding customer needs, wants and expectations and reflecting changes occurring in the market and customers' preferences, the greater the structure and systems employed and market-oriented activities of the organization. Hence, the greater the strategy formulated and implemented facilitating the achievement of customer satisfaction, the greater the financial services businesses' level of market orientation.

However, one may argue whether the market-oriented corporate culture is mediating the strategy formulated and implemented of the

business organization? Accordingly, SPSS-AMOS was used to test the mediation effect or the market-oriented corporate culture.

Although the results of the tests did not show a direct impact of organizational market-oriented corporate culture on the structure and systems employed nor on the businesses' market orientation, it is possible that there is an indirect influence through the strategy formulated and implemented (i.e. a mediated effect). In addition, because a market-oriented corporate culture was emphasized as an important construct by the participants in the focus groups and in-depth interviews, corporate culture may be a mediator that facilitates the design and implementation of the businesses' response to their understanding of existing and potential customers' needs and expectations. In order to evaluate whether market-oriented corporate culture has this mediation effect, the researcher used SPSS AMOS SEM.

CONCLUSION

The results demonstrate strong support for the final model. The measurement model confirmatory factor analysis showed that the model fit the data acceptably. The CMIN/DF (normed Chi-square) is a value equal to 2.131, which is between 2 and 5, so is considered acceptable. The GFI, an absolute fit index, is 0.892. This value is approximately 0.90, which is tolerable for this model considering the sample size (Janssens *et al.*, 2008; Hair *et al.*, 2010). Similarly the AGFI, a parsimony fit index, is 0.834, which is also tolerable for this model. The CFI, an incremental fit index, is 0.956, the NFI (0.921), the RFI (0.896), the IFI (0.957) and the TLI (0.942) incremental fit indices indicate acceptable fit. Guidelines indicate that the NFI should be >0.90 for a model of this complexity and sample size (Janssens *et al.*, 2008; Hair *et al.*, 2010). The RMSEA, an absolute fit index, is 0.091. This value is a little high, but being below 0.1, is acceptable for a model with 13 measured variables and a sample size of 139 (Tabachnick and Fidell, 2001; Brown, 2006; Hair *et al.*, 2010; Janssens *et al.*, 2008).

The hypotheses related to the model were tested and the results are summarized in Table 5. The results indicate that while hypotheses H3 and H4 were supported, hypotheses H1 and H2 were not supported (not statistically significant).

This study confirmed that although the corporate culture did not have such a direct effect, it has an indirect effect through the process

Hypotheses	Path estimates	Test results
H1: The greater the corporate culture facilitating the entire organization's emphasis and customer-focus, and guiding its market-oriented activities, the greater its level of market orientation.	0.585***	Not supported despite such path estimates
H2: The greater the corporate culture fostering flexible structure and employing market-linked systems, the greater its level of market orientation.	0.713***	Not supported despite such path estimates
H3: The greater the formulated and implemented strategy in reflecting the business understanding and responding through its market-oriented activities to existing and future customers' needs and expectations, the greater the level of market orientation.	0.747***	Supported
H4: The greater the formulated strategy and business organization's implementation is tuned with the structure and systems employed, the greater its level of market orientation.	0.688***	Supported

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Table 5. Results of testing the hypotheses

of designing and implementing the business responses to create and deliver superior value to the customers, being better and faster than the competitors (the strategy formulated and implemented). These two exogenous variables were depicted in the structural model. The other two constructs were the structure and systems employed, and the market-oriented activities. The study results showed that these two constructs (endogenous variables) were influenced by the exogenous variables and determined the business organization's level of market orientation. A measurement model for those four constructs was estimated and fit the data well. The various items loaded on the underlying constructs as predicted, although some items were deleted during the process of the scale purification (Janssens *et al.*, 2008; Hair *et al.*, 2010).

However, although the results of the tests did not show a direct impact of organizational market-oriented corporate culture on the structure and systems employed nor on the businesses' market orientation, it is possible that there is an indirect influence through the strategy formulated and implemented (i.e. a mediated effect). In addition, because a market-oriented corporate culture was emphasized as an important construct by the participants in the focus groups and in-depth interviews (Al-

Shirawi and Hajjar, 2012), corporate culture may be a mediator that facilitates the design and implementation of the businesses’ responses to their understanding of existing and potential customers’ needs and expectations. In order to evaluate whether market-oriented corporate culture has this mediation effect, the researcher used SPSS AMOS SEM. Figure 4 illustrates the model testing partial or full mediation of market-oriented corporate culture in facilitating the quality and effectiveness of the strategy formulated and implemented by the services provider.

This is consistent with other studies (Deshpandé and Webster, 1989; Narver and Slater, 1990; Jaworski and Kohli, 1993; Harris, 1996; Raaij and Stoelhorst, 2008; Kumar *et al.*, 2011). Therefore, the three research questions have been addressed and answered.

Figure 4 illustrates the mediator market-oriented corporate culture, mediating the relationship between the strategy formulated and implemented and both dependent variables (structure and systems employed and market-oriented activities).

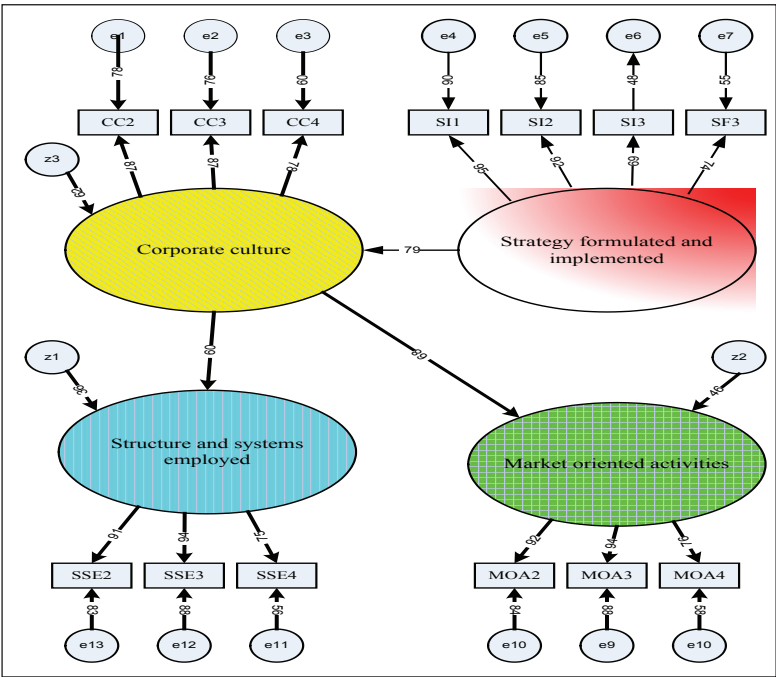


Figure 4. The mediator market-oriented corporate culture, mediating the relationship between the strategy formulated and implemented and both dependent variables (structure and systems employed and market-oriented activities)

The significant paths (Table 6) satisfy the Baron and Kenny (1986) conditions for mediation, obviating the need for the Sobel test (see Sobel, 1982 and 1986).

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IMPLICATIONS OF RESEARCH FINDINGS

The theoretical implications are discussed in the following section, followed by the managerial implications.

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THEORETICAL IMPLICATIONS

This study was conducted on the basis of the gaps found in the literature, i.e. “what constitutes market orientation in a resource-based economy, a measurement scale was developed and its reliability was tested” (Al-Shirawi and Hajjar, 2012). Therefore, this study first explored and confirmed such scales through structural equation modelling. Moreover, while Farrell and Oczkowski (1997) questioned the suitability of the MKTOR scale as a composite measure of market orientation, Gray *et al.* (1998) asserted that academics and practitioners failed to provide a model of market orientation that can be generalized and can adequately measure market orientation in different contexts. Although the Narver and Slater scale has been validated to some degree in a different context (Deng and Dart, 1994; Greenley, 1995a and 1995b), such validation has been done in almost similar contexts.

Furthermore, the cross-national application of a suggested measurement scale and a model is intended to explore whether it can be applied in different contexts (Deshpandé and Farley, 1998). Second, there is a lack of empirical studies on market orientation in a resource-based economy. However, although two studies have been conducted in a resource-based economy (Bhuian, 1997 and 1998) these studies did not attempt to identify the concept constructs in such contexts, and therefore employed an adapted version of an existing scale developed in other contexts. Third, there is a lack of exploratory models and theory-building studies in the area of market orientation in this context. In addition, this study provides evidence that market oriented corporate culture mediates the strategy formulated and implemented in response to the customers’ needs and expectations.

MANAGERIAL IMPLICATIONS

This study has focused on market orientation in the financial services providers operating within a resource-based economy. The financial services sector is expanding, especially in the Gulf region and the Middle East. Although these economies are basically driven by natural and other resources, there are several attempts in various countries to diversify in order to obtain a more sustainable development. These efforts have been combined with economical and political reformations, including liberating the markets, encouraging the private sector to play a major role in the economical development, and privatization of state-owned companies including services such as power supply. For example, the financial services sector in Bahrain has been contributing to the Gross National Product by over 23% during the last three years.

In addition, there is an increasing role and contribution from the manufacturing and resources transformation industry. Therefore, development and purification of such scales and models can help all business organizations, especially those operating or attempt to operate in the international and global markets. Therefore, companies, whether operating within the financial services, other services, or industrial sectors can influence their level of market orientation. This would help them to stay ahead of their customers by anticipating their future needs, manage their expectations, and stay ahead of their competitors. Therefore managers, especially at top management level, should focus on creating and maintaining a market-oriented corporate culture within their organizations. They need to signal to the entire organization their commitment to focus on customer satisfaction, emphasizing that serving customers is the most important facet of their businesses. Such a corporate culture can guide all members of the organization to focus in creating and delivering superior value to the customers. This can also foster the business activities in reviewing their product development efforts in order to ensure that these products or services are in line with what customer want and expect.

LIMITATIONS OF THIS STUDY

All research projects experience certain limitations, and this study has experienced several limitations. Therefore, the following section elaborates on the limitations posted by this research setting, the research design, and measurement issues.

Although this study managed to explore and confirm the construct of market orientation within a resource-based economy, and the endeavour was worthwhile, it was not without limitations.

It is possible that important antecedents, such as employees marketing training, intelligent generation and market conditions mediators were not probably included in the research conceptual model. The strategy formulated and implemented may not have been treated as separate constructs.

A further limitation is that the survey used a combination of items adopted from other measurement scales from the literature, which have been refined by using the results of a qualitative study, and the rest from the findings of the qualitative study (Al-Shirawi and Hajjar, 2012). However, although all the proposed measurements of both scales display relatively acceptable reliability, some measurement items were eliminated during the EFA, CFA and path analysis process.

Furthermore, although the financial services providers' total population was targeted for the main survey, the political situation during 2011 has lead a number of these institutions to shift their offices and operation outside Bahrain, which limited the number of responses received. In addition, some of these financial services providers, such as money exchange institutions and banks representative, are small business organizations that were not fully operating in this context, and therefore did not respond despite the researcher following them up. Moreover, some of these institutions are registered as retailer and wholesaler banks. Therefore, although the total population was over 350 financial institutions, only 139 responses were received. Such a relatively small sample might influence the results analysis using AMOS software.

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