EXPLORING THE APPLICABILITY OF THE MKTOR SCALE IN PREDICTING UNIVERSITY PERFORMANCE: A FOCUS ON UNIVERSITIES OF TECHNOLOGY IN SOUTH AFRICA

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-Abstract-

Since 1990, there has been a growing body of research that portrays marketing as a philosophical foundation of the discipline and invariably market orientation as the operationalisation of the marketing concept. However, there is limited empirical evidence that supports the link between market orientation and University performance. Hence, the study was conducted with the main objective of exploring the applicability of the MKTOR scale as a social learning approach in predicting university performance. The study is located within a quantitative stream of research, and a sample of 507 fulltime employed academics who are au fait with the functioning of their institutions was conveniently chosen within the six universities of technology in South Africa.

The statistical analysis of the collected data included descriptive statistics, correlation analysis and factor analysis. Lastly, structural equation modelling was undertaken to assess the relationship between the extracted dimensions of MKTOR scale (through exploratory factor analysis) being the predictors and university performance as an outcome. The results of the study support and confirm the applicability of the scale in predicting university performance among universities of technology in South Africa. The author further provides the possible recommendations emanating from the findings as well as limitations, and suggests future research opportunities.

Keywords: Social learning theory, university performance, customer orientation, competitor orientation, inter-functional coordination

JEL : Classification : M31, M30, M39.

1. INTRODUCTION

One of the most important themes in the contemporary marketing research is the positive influence of market orientation on organisational performance. A sequel to marketisation and deregulation of universities globally is that most institutions of higher learning have now adopted marketing theories and concepts, which are used in the business world in an effort to gain a larger share of the international market (Hemsley-Brown & Oplatka, 2006).

It is widely assumed that in the context of increasing competition, universities need to market themselves. In recent years, organisational performance has become one of the most important aspects both in profit and in non-profit sectors. Market orientation is portrayed as an independent variable since it can make a critical contribution to organisation performance and company survival. The implementation of the marketing concept by universities, independent of whether it is applied within the private or public sector, should be based on its performance improvement. Akonkwa (2009) argues that universities should not be construed as mere commercial organisations but that the marketisation philosophy can be appropriate to sustain these institutions efforts to address changes and pressures from their business environment. A critical element in the marketisation of universities is based on a market orientation approach, which is prominent within the contemporary marketing literature (Maringe, 2012).

Within the scenario of higher education institutions (HEIs), in South Africa, a new public landscape has been established since 2004 that incorporates an institutional nomenclature, notably Universities of Technology (UoTs), which are essentially career-focused. In this regard, a logical response by UoTs is to adopt a market or focus-oriented approach that impacts on the activities of an institution's quest for improving performance by focusing primarily on the student in order to improve the customer-service interface relationship.

This study is part of a broad stream of continuing research that explores market orientation within HEIs and its potential impact on university performance. It is significant in that its results may provide information that may be used by South African HEIs to initiate approaches that enhance the overall performance in the highly competitive higher education sector in the country.

2.   PURPOSE OF THE STUDY

The study was conducted with the main objective of exploring the applicability of the MKTOR scale as a social learning approach in predicting university performance among UoTs in South Africa.

3.   PROBLEM STATEMENT

One of the most critical challenges facing HEIs is to create the culture and the climate that maximises organisational learning, resources and capabilities to create superior university performance prescribed by Department of Higher Education and Training. While the concept of market orientation has been studied by many researchers in a variety of contexts, there is a lack of consensus about how it can be harnessed to maximise organisational performance. Given the specificity of market orientation domain, a knowledge gap still exists.

To the researcher's knowledge, no study has explored the MKTOR scale with reference to university performance in a South African context. Therefore, the importance of considering how market orientation manifests itself in relation to university performance warrants this study. Further empirical enquiry was also substantiated by the paucity of evidence regarding the influence of the three core components of the MKTOR scale viz competitor orientation, inter-functional coordination and customer orientation on university performance within the context of South African HEIs. The researcher thus chose to use the Narver and Slater (1990) cultural or attitudinal model of market orientation because it has been studied less frequently in the higher education environment in South Africa. As a result, an empirical examination of market orientation components within the social learning paradigm will add value to the existing body of knowledge within higher education marketing literature.

4.   LITERATURE REVIEW

4.1   Review of social learning theory

Slater and Narver (1995), drawing from Bandura (1969)   social learning theory underscored the importance of fine-grained research that examines individual and group market-driven learning processes. The social learning theory is devoted to a social analysis of how patterns of behaviour are acquired and how their expression is continually regulated by the interplay of self-generated and other sources of influence (Bandura, 1971).

Pursuant to this theory, new concepts of social learning are being formed as contemporary trends in HEIs programmes emerge. Analysing how people learn and merge information with distance learning and blended learning contexts can be a challenge as well as an opportunity for academics to explore in their quest to offset barriers to market orientation. In fact, instructional designers, educators and researchers are already discovering and forming new patterns of cutting edge learning and learning tools that have not been practised before (Mokoena, 2015) Previous research has reported that social learning theory is an envoy in the workplace to ensure pervasiveness and diffusion of market orientation paradigm (Beers, Van Mierlo & Hoes,2016; Lam, Kraus & Ahearne,2010;). The general assertion of the study, is that UoTs should combine market orientation with a strong learning orientation in order to achieve highest benefits through superior university performance in line with Zhou (2014).

4.2   Market orientation an overview

It is interesting to note that there are inconsistencies in the use of the terms "market orientation" versus "marketing orientation". However, both refer to customer orientation and targeting, profit through customer satisfaction and integration of efforts in all areas of organisations (Perrault & McCarthy, 2002). Two market orientation perspectives dominate the marketing literature and have been fundamental in providing a definition of market orientation; namely, the Kohli and Jaworski (1990) information-processing perspective as well as the Narver and Slater (1990) cultural or attitudinal perspective.

Narver and Slater's (1990) perspective suggests three behavioural components that a market oriented organisation will exhibit, namely: customer orientation; competitor orientation; and an inter-functional coordination along with two criteria of long-term focus and profitability. At the core of this perspective is a cultural distinction that reflects market orientation through the values and attitudes of the organisation in providing greater customer value and business performance (Narver & Slater, 1990). The assumption is that organisation culture that most effectively and efficiently creates the necessary behaviours of superior value for consumers will consequently contribute to continuous superior performance for organizations.

4.3   University Performance

Universities have shown more interest in developing and maintaining a favourable distinctive image or reputation in response to greater intensity of competition
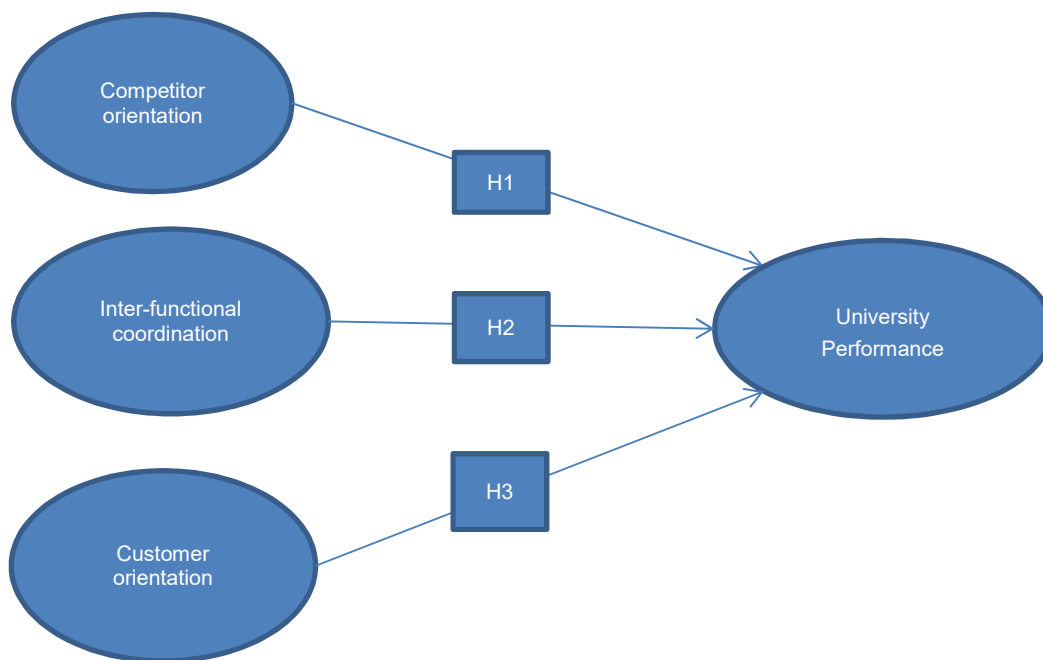
(Maringe, 2012; Hemsley-Brown & Oplatka, 2016). According to Abu-Jarad, Yusof and Nikbin (2010), the central issue has been the identification of factors that influence performance in order to take concrete measures in those directions. . Studies by Ma and Todorovic (2011); Niculescu, Xu, Hampton and Peterson (2013), to name a few, provided empirical evidence that universities' performance is significantly related to the degree of their market orientation practices.

Currently, HEIs employ performance indicators to play the role of promoting quality education, ensuring the maintenance of the operational standards of the university and promote competitiveness (Chang, Wang & Yang, 2009). These performance indicators were identified by Van Staden (2010), as follows: research and innovation, national and international impact and recognition, sustainability in engagement and practice, technology based programmes and sustainability in engagement and practice

5.   CONCEPTUAL FRAMEWORK

Based on the above theoretical insights, the conceptual framework presented in Figure 1 is proposed by the author:

Figure 1 Conceptual model

Three main hypotheses are employed to encapsulate the essence of this study as indicated in Figure 1,

H1Competitor orientation is positively associated with university performance

H2 Inter-functional coordination is positively associated with university performance

H3 Customer orientation is positively associated with university performance

6.   RESEARCH METHODOLOGY

6.1   Research design

The hypothesised relationships were explored through a descriptive cross-sectional survey design to capture the required data. A quantitative research methodology was used in the study as the researcher sought to ensure the usage of multivariate techniques to explore the research context.

6.2   Sampling procedure

The sample relevant to this research were permanent, fulltime-time academics who were employed for more than three years within the participating university of technology in South Africa and deemed to be *au fait* with the functioning of their institutions. A non-probability convenience sampling approach was used to recruit the respondents due to their availability and financial constraints

6.3   Data collection instrument and method

The study used a structured, self -administered questionnaire to obtain the required data. The scale used for measuring market orientation was adapted from MKTOR measures developed by Narver and Slater (1990), and further developed and validated by Zebal (2003). Lastly, for measuring university performance, the researcher employed the scales adapted from Todorovic, McNaughton and Guild (2005) and Ma and Todorovic's (2011) studies. As the researcher employed and adapted the instrument, efforts were undertaken to align these measures with the conceptual aspects of each construct in the current study. Respondents were requested to rate their level of agreement of the scale items on a five-point Likert scale ranging from 1= strongly disagree to 5= strongly agree. Ethical clearance was obtained from the Research Directorate of the participating UoTs before the

research project commenced. Data was collected in two phases, namely a pilot study to aid in refining the survey instrument and then a subsequent primary data collection. The questionnaire was piloted on a sample of fifty (50) academics who were excluded from the analysis. Out of the 1250 questionnaires distributed by trained fieldworkers in the participating institutions, a total of 507 questionnaires (response rate of approximately 42%) was used for analysis, which according to Fincham (2008), is acceptable in quantitative research.

7.   RESULTS

7.1   Sample characteristics

Upon analysis of the demographic details of respondents, it emerged that most of the respondents were males (n=289; 57%) compared to females (n=218; 43%). The majority of the respondents were between 30-39 years of age (n=172; 34%), followed by those between 40-49 years of age (n=160; 32%), between 50-59 years (n=81; 16%), less than 30 years (n=66; 13%); 60 years and older (n=28; 5%). Regarding educational background, the largest group of respondents (n=197; 39%) were holders of a Master's degree, which is currently the minimum requirement needed to become an academic. With reference to their respective faculties, the respondents were from the faculty of Management Sciences (n=196; 37%), then the Engineering faculty (n=110; 22%), followed by the faculty of Humanities (n=99; 20%) and lastly   the faculty of Applied Sciences (n=73; 14 %).

7.2   Exploratory factor analysis

Factor analysis was used to establish the minimum number and nature of factors that would account for the maximum variance in the data collected measuring the respondents' beliefs about the constructs in the conceptual model (Malhotra 2010). Key assumptions were verified prior to conducting the Exploratory Factor Analysis (EFA) procedure. Both the Kaiser-Meyer-Olkin Measure of sampling adequacy and the Bartlett's Test of Sphericity results shown in Table 1, affirmed that the data was satisfactory for an exploratory factor analysis procedure. Consequently, an exploratory principle component analysis using varimax rotation procedure was performed. Resulting from the subsequent analysis, the three market orientation factors extracted accounted for 67.33(>50%) percent of the total variance while the university performance items (uni-dimensional) accounted for 71.40(>50%) percent of the total variance respectively, as shown in Table 1.

Table 1: Results for Exploratory Factor Analysis of the Research Constructs

Constructs	Bartlett's tests of sphericity Sig	KMO (sampling adequacy)	% of variance	Eigen-values	No of items
Market orientation dimensions					
Competitor orientation	.000	.926	67.33	8.410	7
Inter-functional coordination				1.884	5
Customer orientation				1.152	5
University performance	.000	.826	71.40	2.856	6

7.3   Correlation analysis and descriptive statistics

Tests for normality in the data collected, indicated that the data were not normally distributed. Therefore, Spearman's non-parametric correlations were computed in order to ascertain the association between the constructs being explored.

Table 2: Correlations Matrix and Descriptive Statistics

Factors	COA	IFC	CSO	UNP	MEAN	STD
COA	1.000	.546**	.626**	.574**	3.61	1.05
IFC	.546**	1.000	.604**	.608**	3.63	1.01
CSO	.626**	.604**	1.000	.618**	3.58	0.979
UNP	.574**	.608**	.618**	1.000	4.52	1.39
** Correlation is significant at the 0,01 level (2-tailed). COA=competitor orientation, CSO= Customer orientation, UNP=University performance; IFC=Inter-functional coordination.						

The results of the correlation analysis reported in Table 2 revealed moderate to strong positive correlations, ranging from r=0 .546 to r=0.626 at the 0.01 significant level.

Taking cognisance of the mid-point of a five-point Likert-type scale, the descriptive statistics shown in Table 2 confirm high and strong levels of agreement (>3) as evidenced by the recorded overall mean scores.

7.4   Psychometric properties of the scale

A confirmatory factor analysis (CFA) using AMOS 24.0 version was conducted to assess the accuracy of the measurement scales. The results of the CFA are presented in Table 3.

Table 3. Reliability and Accuracy Statistics

Research construct		Cronbach's test		CR	AVE	Shared variance (SV)	Factor loadings
		Item-total	α Value				
Competitor orientation (F1)	COA_1	.740					.721
	COA_2	.749					.687
	COA_3	.742					.702
	COA_4	.731	.923	.914	.563	.394	.714
	COA_5	.697					.721
	COA_6	.770					.745
	COA_7	.776					.748
Inter-functional coordination (F2)	IFC_1	.621					.624
	IFC_2	.759					.621
	IFC_3	.842	.814	.823	.503	.374	.678
	IFC_4	.801					.638
	IFC_5	.778					.662
Customer orientation (F3)	CSO_1	.695					.739
	CSO_2	.701					.745
	CSO_3	.691	.841	.841	.513	.394	.710
	CSO_4	.562					.543
	CSO5	.549					.605
University performance (UP)	UNP_1	.741					.729
	UNP_2	.796					.779
	UNP_3	.703	.904	.893	.614	.382	.717
	UNP_4	.796					.844
	UNP_5	.764					.838
	UNP_6	.628					.712

The internal consistency (i.e. construct reliability) of each scale was checked in the light of the recommended value of above 0.7 for both the Cronbach alpha as well as the composite reliabilities (CR) values (Pallant, 2010). Both values were found satisfactory as shown in Table 3.

To check the validity of the research instrument employed in the study, the four criteria normally used for this purpose were applied. First, the content validity was ascertained through the piloting phase where modifications and refinement of the scales were effected. Second, it is submitted that all items loaded strongly (>0.50) and significantly (p<0.01) on respective constructs thus indicating sufficient construct validity (Anderson & Gerbing, 1988). Third, convergent validity was established through high correlation values (r>0.50 and r<0.80), which provided evidence of convergence between the subscales (Fraering & Minor 2006). Fourth, as seen in Table 2, all SV values were lower than the AVE values, confirming discriminant validity (Fornell & Larcker, 1981).

7.5   Measurement model assessment

Confirmatory factor analysis (CFA) was performed prior to testing the hypotheses in order to confirm and validate the measurement model with regard to model fit. The measurement model chi-square was 384.037 with 191 degrees of freedom significant at p=0.000<0.01. The text output results for the structural equation model supported the adequacy of the proposed model: Structural model fit: CMIN/DF=2.011; GFI=0.937; AGFI=0.916; CFI= 0.976; IFI=0.974; TLI=0.971; and RMSEA=0.045 (Anderson & Gerbing, 1988).

7.6   Structural model assessment and hypothesis testing

The structural model was estimated to validate the proposed conceptual model. The structural model chi-square was 368.529 with 182 degrees of freedom significant at p=0.000<0.01. The text output results for the structural equation model: Structural model fit: CMIN/df=2.024;GFI=0.948; AGFI=0.914; CFI= 0.973; IFI=0.974; TLI=0.971; and RMSEA=0.045 which supported the adequacy of the proposed model (Fornell & Larcker 1981).

Following the satisfactory results of the assessment of the measurement and structural models, the next stage involved the process of testing the hypothesised relationships in the study. The study utilised the structual equation modelling (SEM) to verify the posited hypotheses. Table 4 provides a summary of the SEM hypotheses testing results.

Table 4: The Hypotheses Test Results

Paths	Hypothesis	Path coefficient	Standardised estimate	CR (t-values)	P	Decision
COA →UNP	H1	0.130	0.056	2.334	0.02	Supported
IFC → UNP	H2	0.263	0.048	5.447	***	Supported
CSO →UNP	H3	0.546	0.090	6.072	***	Supported

Note 1*** p- value 0.01;2. Using a significance level of 0.05 critical ratios (t-value) that exceed 1.96 would be called significant. *significant at $p<0.001$ ** significant at $p<0.05$. COA=Competitor orientation, UNP=University performance, IFC= Inter-functional coordination and CSO= Customer orientation.

8.   DISCUSSION

Consistent with **hypothesis one (H1),** results computed (β= 0.130; t=2.334), supported by a correlation of (r= 0.574; $p < 0.01$) indicate that there is a strong positive relationship between competitor orientation and university performance. These results confirm previous research results that confirm that the greater the extent of competitor orientation, the higher the performance of an organisation, and vice versa; (Njeru & Kibera 2016; Darmanto, Choerudin,Rahayu & Wardaya 2017).

Notably also, **hypothesis two (H2)** postulated a positive relationship between inter-functional coordination and university performance. The standard coefficients ($\beta = 0.263$; t=5.447) supported by a correlation of (r = 0.608; $p < 0.01$ provided an affirmative response to Wang, et al (2017) assertion that streamlining IFC is key and leads to a better business performance. From this view, inter-functional coordination implementation leads to an improvement in market orientation and to a better business performance (Zebal & Goodwin 2012; Kanovska & Tomaskova 2012; 2015; 2016; Bartosek & Tomaskova 2013). It seems appropriate, therefore, to support the adequacy of H2.

Likewise, as can be seen from Table 4, the results provide evidence to support the third **hypothesis (H3)**. Based on the standard coefficients of ($\beta = 0.546$; t = 6.072) supported by a correlation of (r = 0.618; $p < 0.01$), the researcher is justified to attest to the validity of **hypothesis 3(H3)**. The outcome of this study, therefore, reinforces the positive association between customer orientation and business performance as found in previous studies (Ali, Leifu & Rehman, 2016; Bramulya, Primiana, Febrian & Sari, 2016; Hamzah, Othman & Hassan, 2016).

9.　　　LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

The author acknowledges that the findings are specific to UoTs and therefore the transferability of the conclusions to other HEIs are limited but not meaningless.

The restricted sample size of 507 academics posed a noticeable limitation, ruling out the question of generalisability. Firstly, the study may be replicated and should include respondents that were not represented in this study like non-academics to provide further evidence of the generalisability and robustness of the scale. Secondly, a similar type of study among comprehensive and traditional universities in South Africa is to be conducted for improving the robustness of the scales

The study was also limited by its method used in choosing respondents, that is, a non-probability convenient sampling method. It is therefore recommended that future research in this context uses a probability sampling technique so that subjects of the population get an equal opportunity to be selected as a representative sample.

10.　RECOMMENDATIONS

Although the marketing concept and market orientation have been highlighted in current studies for over five decades, organisations that want to become market oriented need to revise their outlook on the markets they serve. It is in this light that the following is recommended. First, an in-depth understanding and awareness of the three pillars of market orientation proposed by Narver and Slater (1990) MKTOR scale ought to be instilled, particularly to all academics, university administrators, faculty and other stakeholders. There is a need to align these marketing orientation components as part of the academics predetermined objectives in line with the vision and mission of the UoTs. Second, the development of a framework that integrates the services marketing and corporate marketing principles is recommended. This framework should strike a balance between achieving institutional objectives (i.e. own interests) on the one hand and those of their stakeholders and of society on the other hand. Towards accomplishment of this initiative, management should take cognisance that while the main objective is to construct a favourable image or reputation, the mentioned aspects do not always go hand in hand.

Lastly, it is recommended that the top management of UoTs, must disseminate effectively the market oriented culture across all organisational levels and to all employees in order to attain sustainable competitive advantage and superior performance. The market orientation paradigm should permeate the whole organisation.

11.   CONCLUSIONS

The degree of competition among institutions of learning in South Africa has been increased by the transformation of the HE landscape, which has evolved since 1994. The aim of this study was to determine the extent to which market orientation in HEIs influences university performance. The results of the study confirms a positive and significant association between market orientation and university performance. Therefore, the success of UoTs largely depends on their abilities to devise and implement those strategies which effectively respond to the pressures within the HE environment. Devising an effective market orientation strategy for survival and enhancing a possible response to its competitor orientation, customer orientation and inter-functional imperatives, is the objective of any organisation.

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