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Universities of Technology in Transition: In Search of the Inhibiting Factors to Market Orientation in a Developing Country

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ABSTRACT There are growing signals in higher education, which acknowledge that universities of technology (UoTs) are grappling with immense challenges and their existence depends primarily on how they choose to market and to respond to their environments and remain competitive. Against this perspective, the paper attempts to identify the barriers that impede the implementation of market orientation within UoTs in South Africa. A factor analysis procedure revealed three factors, namely, internal personnel functional, market forces and inter-organisational dynamics dimensions that inhibit the implementation of market orientation among UoTs. With UoTs in transitional stages in South Africa, there is a need for an interface of key role players (academics, government, business and top management of UoTs) so that UoTs do not fall behind their counterparts (comprehensive and traditional universities) in their mandate to provide quality education and marketing their programme offerings. Through these interfaces, constraints can be addressed.

INTRODUCTION

The understanding of organisations and customers is a frequently explored theme, given the expanse of literature among business managers and corporate practitioners with emphasis of customers becoming one of the focal points within business environments (Kumar et al. 2011; Zablah et al. 2012; Mazreku 2015; Tarabieh et al. 2015; Khalili et al. 2016). Whilst these affirmations may be realistic in business environments there is sufficient empirical evidence , which points to the seminal works of pioneers (Kohli and Jaworski 1990; Narver and Slater 1990), which may be a source to challenge unfamiliar higher education environments in developing economies. Extensive commentaries on market orientation and business performance have been further asserted in empirical studies (Jyoti and Sharma 2012; Shehu and Mahmood 2014; Otache and Mahmood 2015; Hussain et al. 2016a; Hussain et al. 2016b) in profit-making business environments.

It is noteworthy that the role of marketization in the higher education sector, has recently received attention (Mokoena 2015; Mokoena et al. 2015; Mokoena and Dhurup 2016). Within the higher education (HE) landscape, the marketing role of UoTs is still in its infancy and deliberately dedicated within the hallways of universities, partially because of early stages in the development as a university in South Africa (Maringe and Foskett 2002; Maringe 2005; Maringe and Gibbs 2009; Mokoena 2015). Akonkwa (2009: 313) contended that "the way business market orientation model is straightforwardly transported in empirical studies seems irrelevant and likely to reduce the potential of the strategy to help higher education institutions to effectively realise their mandate".

Arguably, it is the development of market orientation and its associated improvements in the efficiency and effectiveness of exchanges that are critical to the success of HEIs (Qu and Ennew 2003). Although market orientation is critical in HEIs because of its positive impact on performance, there are also associated several inhibiting factors that impede its adoption and implementation within the HE landscape (Mokoena et al. 2015). There is growing evidence to show that top management are grappling with a wide of constraints in the implementation of market orientation in their organisations, partially because of their own inhibitions or because of institutional hurdles. Hence, key research areas include examining the conditions required for implementing the marketing concept as well as the impediments thereof.

Thus, the study is aimed at identifying the possible factors that hinder the implementation

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of marketing orientation within UoTs. This study on the barriers prevalent within UoTs towards market orientations is prefaced against the restructuring of the HE landscape in South Africa. Although HE institutions were distributed unevenly across the country, they broadly follow the distribution of economic activity and were tasked with coordinating the provision of programmes in line with local needs (Wiese 2008).

One of the many redefinitions of repositioning and restructuring of HEIs that was initiated within the HE system was the renaming of technikons (an old adage used within the pre-apartheid South African environment) into UoTs.

Once technikons were transformed to UoTs they could, among other things, also offer degree-awarding programmes and benefitted by ensuring that UoT diplomas and degrees received recognition and credibility, particularly in the international arena. This had to be achieved through the recruitment of desired quality teaching and research staff, both locally and internationally, obtaining funding in respect of research grants and postgraduate programmes so that they could be in a better position to respond to the increasing quantum of knowledge required. There was a need to offer higher levels of learning through technically infused programmes both on undergraduate and postgraduate levels (Council on Higher Education 2010). UoTs, notwithstanding challenges, rose to the cause, redefined their programme offerings and submitted their new programme quality mix (PQM) through appropriate HEIs.

Since the introduction of the redefined UoTs as a new dispensation in HE in South Africa, there is a paucity of research focussing on their accomplishments and failures in various aspects of their existence, almost 14 years thereafter. Without critical inquiry, debates and discourses, the existence and acceptance of UoTs of being a new type of institution within the South African HE landscape is important. Hence, from a marketing perspective, this study provokes research on UoTs on the inhibiting factors to market orientation as one of the critical components. Moreover, a gap exists for this type of research within a South African HE context. There is also a need for more systematic research aimed at unearthing the true nature of barriers in the execution of the marketing orientation philosophy within UoTs.

Literature Review

Numerous studies suggests that the barriers to market orientation could be classified into internal barriers, external environment barriers and organisational environment barriers (Wong et al. 1989; Meldrum 1997; Harris and Watkins 1998; Bisp 1999; Harris and Piercy 1999; Simkin 2002; Mokoena 2015).

Internal Barriers

Tomaskova (2009) aptly classified the internal barriers of market orientation through a synthesis of previous research studies (Trueman 2004) into top management barriers, inter-functional coordination barriers and employee-connected barriers. Although top management should be astute and detect barriers, they themselves become a barrier and often find it difficult to deal with the internal marketing issues. The personality of top management is possibly the foremost barrier that was intimated by the pioneers of market orientation studies. Barriers associated with top management entail their lack of knowledge, skills, experience, commitment, management style and risk-prone evasiveness, which impact on all inter-connected functions of a university.

Furthermore, top management may influence most spheres in the organisation in ways that match their personal aspirations for power and control.

Lastly, coupled to that is market ignorance of other future and/or potential customers resulting in a failure to accommodate for such needs.

A significant number of researchers have identified inter-functional coordination as a barrier because the real threat lies in the integration and coordination of all institutional functions, such as the process of assimilating and operationalising the marketing concept (Zait et al. 2012).

These barriers could be divided further into corporate culture barriers and information coordination barriers (Tomaskova 2009).

- Corporate culture, which encompasses system, structural, communication and procedural barriers, for example centralisation and formalisation (Tomaskova 2009). Departmentalisation can lead to information competition within a university, which may result in

the destruction of the organisation. Interdepartmental conflict is due to the tension among departments, which arises out of incongruity of actual desired responses and may result in reduced inter-functional performance (Aggarwal 2003).

- Information coordination barriers include lack of communication and integration, and lack of inter-functional dependency, which decrease the degree of coordination and consequently, the inappropriate responsiveness. This ultimately will result in a negative influence on decision-making processes (Kanovska and Tomaskova 2012).

The behaviour of an employee may constitute a barrier, which impedes the adoption and implementation of market orientation. Mokoena (2015) highlighted the following barriers connected to employees: personality of employees; knowledge; skills; experiences; and reward systems (coupled with recruiting and training of personnel skills). The interaction of these employees could result in interdepartmental conflict among groups of employees who have different views and their own interests at heart.

Organisational Environment Barriers

The way in which an organisation is structured can have implications for the implementation of market orientation. The working environment, within which top management and employees operate, may often be a deterrent to market orientation (Harris 2000). At the infrastructure level, strategies, systems and structures are considered essential for the effectiveness of market orientation.

Organisational systems in the form of rigid formalisation of rules and procedures and centralisation may also act as a deterrent to market orientation (Aggarwal 2003).

External Environment Barriers

External environment barriers refer to all variables over which HEIs have, in theory, limited influence of action. Consistent with other researchers, Pleshko and Herens (2000) contended that there is a need to consider the external environment factors

- Competition acts as a market mechanism, which propels technological innovation especially within a university environment (Strydom et al. 2000).
- Market turbulence refers to instability and unpredictability in business environments (Zebal 2003). Examples of threats that cause instability and market turbulence include major recession that may decrease enrolment and private funding, population shift from major centres and declining demands for certain programmes.
- Emphasis on technological and innovation orientation as a means of competing may impede the implementation of market-orientated focus (Zebal 2003). The accelerating pace of technology and innovation change, unlimited opportunities for technology and innovation, varying research and development budgets and increased regulations of technology and innovation among universities may impede or foster market orientation (Kotler 2000).
- Policy and legislative measures and excessive government regulations may also constitute a barrier towards an organisation becoming market oriented (Qu and Ennew 2003).
- Finally, HEIs are also constrained by economic factors such as inflation, unemployment levels, growth rate of an economy and exchange rate fluctuations, which impact on the spending power and behaviour of the service providers of a country (Zebal 2003).

METHODOLOGY

Located within a quantitative research paradigm, a cross-sectional survey approach was adopted to collect data among academics from UoTs in South Africa through a structured questionnaire. A non-probability, convenient sampling method was chosen in consistent with previous studies (Harris and Piercy 1999; Simkin 2002; Zebal 2003; Voon 2008).

Instrumentation and Data Collection

The barriers to market orientation items were adapted for a HE context from a scale developed by Zebal (2003). The respondents were requested to denote their perceptions regarding barriers to market orientation within their institutions to each item on a five-point Likert scale. The questionnaires were sent by courier to the contact lead person of the participating institution for administration. A cover letter was attached to the questionnaire to highlight the purpose of the study and associated ethical issues. The tar-

get population for this study was restricted to academicians who were employed for more than three years, since they were *aufait* with the functioning of their institutions and their various structures. Of the 1250 questionnaires distributed, 507 of the returned questionnaires were processed for the main study.

Reliability and Validity

Reliability tests were completed on all the factors to confirm the internal reliabilities of the instrument used in the study. The Cronbach alpha values, as reported in Table 1, exceeded the recommended threshold of 0.7 (0.886; 0.769 and 0.826 respectively) suggesting that all the items in the scale tap into the underlying constructs (Hair et al. 2010). Similarly, composite reliabilities (Table 1) ranged from 0.725 to 0.865; recorded values greater than the benchmark value of 0.70 further confirming satisfactory reliabilities.

Content validity was ascertained through a thorough literature review, pre-testing by a panel of professors and piloting the instrument with academics. Minor adjustments were made to the scale items. Convergent validity was ascertained by examining item loadings and correlation coefficients. Item loadings for each corresponding barriers' scale were above the recommended value of 0.5 (Aldalaigan and Buttle 2002). In Table 2, the item loadings ranged between 0.586 and 0.844 and all correlations were significant at $p<0.05$. All the average variance extracted (AVE) estimates in Table 2 are higher than the threshold of 0.50, indicating validity for the various construct measures. An analysis of the correlations between the factors was undertaken to assess discriminant validity. As shown in Table 1, the inter-correlation co-efficient among the factors was less than a unit or 0.80 as recommended by Fornel and Larcker (1981), providing evidence of discriminant validity. Furthermore, the SV values (0.133, 0.200 and 0.274) as reported in Table 2 were lower than the corresponding AVE (0.564, 0.349 and 0.578) thus establishing discriminant validity.

RESULTS

Sample Composition

Male respondents constituted a larger part of the sample (n=287; 57%) with females (n=220; 43%) comprising the remainder of the sample. The majority of the respondents ages ranged between 30 to 39 years (n=172; 34%), followed by the age group between 40 and 49 years (n=160; 32%), the age group between 30 to 39 years (n=81; 16%), the age group between 50-59 years (n=66; 13%) and the age group of over 60 years (n=28; 5%). A large segment of the respondents reported to be junior lecturers (n=246; 49%) who are in possession of a B Tech/Honours qualification (n=197; 39%). The majority of the respondents have worked in HE (n=239; 47%) between three to six years.

Descriptive Statistics and Correlations Analysis

The data were captured and analysed using SPSS version 22 and AMOS 22.0. Spearman's non-parametric correlations were computed to examine the association among the factors. The results of the correlation matrix are shown in Table 1.

Notably, the correlations of the three barriers to market orientation were significant with correlations of r=0.364, r=0.448 and r=0.523 respectively at $p<0.01$ level of significance affirming a positive relationship among the constructs. Moreover, the examination of the correlation matrices suggested that multi-collinearity was not a problem in this study since none of the correlations co-efficients were >0.80 (Pallant 2010).

On examining the means, the values were 3.41, 3.43 and 3.50 respectively for each barrier, suggesting that respondents agree that these factors were the main underlying dimensions of

Table 1: Descriptive statistics and correlation matrix results

Factors	*BA1*	*BA2*	*BA3*	*Means*	*Standard deviation*	*Variance*
Internal personnel function barriers (BA1)	1	.364**	.448**	3.43	0.960	0.922
External environment barriers (BA2)	.364**	1	.523**	3.41	0.802	0.644
Organisational environment barriers (BA3)	.448**	.523**	1	3.50	0.873	0.761

Note: **Correlation is highly significant at the 0.01 level (2 tailed)

the inhibiting factors to market orientation in their institutions. The standard deviations are also similar across the factors relative to the means. Overall, relatively high means, low standard deviations and variances for this data set, give a reliable indication of the responses.

Exploratory Factor Analysis (EFA) and Psychometric Properties of the Scale

In order to ascertain that the data captured was suitable for EFA, the Kaiser-Meyer Olkin (KMO) test and the Bartlett's test of sphericity were conducted. The KMO test yielded a sampling adequacy value of 0.862, which is acceptable as it is above 0.5 (Malhotra 2010). Similarly, the Bartlett's test yielded an approximate chi-square of 3451.400 with 91 degrees of freedom (*df*) at a significant level of <0.000. All these values affirmed that EFA is suitable for the data set (Kaiser 1974).

The factor analysis procedure produced three factors (eigenvalue >1.0), which explained approximately 64 percent of the total variance. Loading ≥ 0.50 on a factor was considered satisfactory (Cooper and Schindler 2011). Table 2 reports on the psychometric properties of the scales.

Measurement Model and Confirmatory Factor Analysis (CFA)

CFA was performed in order to establish the goodness-of-fit of the data to the research model using the AMOS programme. Measurement items were omitted if they had weak factor loadings (<0.50). The following model fit indices were used: chi-square (χ^2) and CMIN/DF with values between one and three show acceptable fit; normed fit index (NFI), increment fit index (IFI), Tucker-Lewis index (TLI), comparative fit index (CFI), goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI) with values equal to or greater than 0.90 were considered acceptable model fit. Finally, the root mean square error of approximation (RMSEA) value equal to or less than 0.08 is considered an acceptable fit (Bagozzi and Yi 1988; Hu and Bentler 1999).

CFA results revealed a satisfactory Chi-square (χ^2) of 170.059 with 59 degrees of freedom at a p-value <0.05. Overall model fit measures were as follows: CMIN/DF = 2.882, NFI=0.952,

Table 2: Factor analysis and psychometric properties of the scale

Description of scale items	*Exploratory factor loadings*			*Item-total correlation*	*CFA loadings*	*CR*	*AVE*	*SV*
	Factor 1	*Factor 2*	*Factor 3*					
Top management's reluctance	**.786**	.120	.207	.616	.647	0.865	0.564	0.133
Formal market education/ training	**.803**	.155	.102	.586	.774			
Organizational support systems	**.765**	.234	.160	.640	.824			
Formalization	**.776**	.202	.148	.622	.843			
Innovativeness and creativity	**.834**	.004	.189	.565	.642			
Reward systems	.248	**.635**	.096	.483	.627	0.726	0.349	0.200
Quality and competence	.371	**.633**	.058	.539	.673			
Competition within HEIs	-.054	**.728**	.274	.428	.472			
Market turbulence	-.006	**.778**	.308	.513	.595			
Top management risk aversion	.218	**.633**	.156	.496	.569			
Corporate culture	.128	.312	**.727**	.560	.670	0.845	0.578	0.274
Interdepartmental conflicts	.084	.367	**.740**	.567	.825			
Organisational political behaviour	.227	.143	**.809**	.575	.749			
Information coordination	.421	.072	**.698**	.606	.787			
Eigen value	5.635	2.085	1.212	Goodness of fit measures:				
Total variance explained	40.248	14.896	8.654	• Chi-square				
Cumulative variance explained	40.248	55.144	63.798	(÷²) CMIN/DF =2.882				
Cronbach alpha co-efficient	0.886	0.769	0.826	• NFI=0.952				
				• IFI=0.968				
				• TLI=0.950				
				• CFI=0.968				
				• GFI=0.956				
				• AGFI=0.921				
				• RFI=0.925				
				• RMSEA=0.061				

IFI=0.968, TLI=0.950, CFI=0.968, GFI=0.956, AGFI=0.921, RFI=0.925 and RMSEA = 0.061. (Fornell and Larcker 1981).

DISCUSSION

With reference to the EFA, factor one, labelled, *internal personnel functional barriers* (eigenvalue = 5.635), explained 40.248 percent of the total variance. This factor comprised five variables with factor loadings ranging from 0.765 to 0.834 and incorporated specific barriers that are associated with the internal environment of a UoTs domain. These variables relate to top managements' reluctance to implement formal market-oriented strategies, marketing and education on what it is to be market-oriented within a HE context, the support systems that are put in place to support market-oriented initiatives, formalisation of market-oriented systems and the lack of innovativeness and creativity in implementing marketing initiatives.

It seems that the internal UoT environments are dependent primarily on a number of interrelated factors, which affect the success of operations. These results are consistent with other researchers who also found that top management structure, which includes style of approach, personality and perception of marketing affects the implementation of marketing practices (Tomaskova and Kopfova 2012; Zait et al. 2012; Mosadeghrad 2014; Alsughayir 2016). Failure of innovativeness and creativity refers to top management behaviour that restricts creativity. Manifestation of these conditions can be a destabilising factor in the process of assimilation and operationalisation of market orientation within an institution's practice. Previous research has demonstrated that weak organisational support is linked to top management reluctance to implement a market orientation philosophy (Harris 1998; Gaskill and Winzor 2014). This behaviour results in reluctance to the adoption of innovative practices aimed at improving the organisation's ability to remain competitive especially in uncertain and turbulent market environments.

Factor two, labelled *market forces* (eigenvalue=2.085), explained 14.896 percent of the total variance. This factor consists of five items with loadings ranging from 0.633 to 0.778. This factor relates to reward systems afforded to academicians compared to other HEIs, top management risk aversion strategy, quality and incompetence, competition and market turbulence (Kumar et al. 2011; Venter and Jansen van Rensburg 2014). The salient negative role of market turbulence, poor quality and incompetence impede the inculcation of a market-oriented culture (Wood and Bhuian 1993; Hill and Wright 2001; Zebal 2003; Tomaskova 2009; Felgueira and Rodrigues 2014; Ismail et al. 2016; Zafar et al. 2016). In addition, the level of competition of HEIs can deter operations and hence become a barrier (Maringe and Gibbs 2009; Favalaro 2016).

Factor three, labelled *inter-organisational dynamics* (eigenvalue=1.212), explained 8.654 percent of the total variance and a comprised four items with factor loadings ranging from 0.698 to 0.809. This barrier relates to the corporate culture, cooperation between departments and their underlying conflicts, current political behaviours and the transmission of and coordination of information. This barrier is accentuated primarily by stakeholders at the organisational level and encompasses structural, strategic and systems impediments. Futility of market orientation is conditioned largely by the stage of development of the institution and the behaviour of corporate culture carriers, especially employees (Kwaku and Satyendra 1999; Kumar et al.2011 Gluic and Mihanovic 2016). Linked to culture are other inter-organisational characteristics such as political behaviour, lack of communication and deficient integration, inter-organisational conflict and non-adherence to policies and procedures, which also contributes to the impediments of market orientation (Harris 2000; Harris and Ogbonna 2001; Kotler and Armstrong 2011; Felgueira and Rodrigues 2014; Venter and Jansen van Rensburg 2014; Ravelomanana et al. 2015).

CONCLUSION

The study provides an exposition towards ascertaining the barriers that are prevalent in UoTs with regard to market orientation. It should be emphasised that this study attempted to identify the barriers to market orientation from perspectives of academics within UoTs in South Africa. Based on the literature review and empirical evidence, conditions that are not conducive and discourage application of market orientation philosophy were identified as inhibiting factors to market orientation.

The results of this study suggest a three-dimensional structure of the inhibiting factors that impede the execution of the marketing orientation among UoTs in South Africa. The measuring instrument is robust enough to justify further research. In South Africa, the emergence of private and corporate universities has grown because the demand for learning space in public universities significantly exceeds supply. There is also a need to conduct research and a comparative analysis with public universities. Further research initiatives should be undertaken focussing on diagnosing and remedying to inhibiting factors to market orientation within HEIs.

LIMITATIONS

While the study offered valuable insights into the inhibiting factors to market orientation within the context of UoTs, it is predisposed to limitations. Due to the nature of non-probability convenience sampling, the generalisation to a broader South African HEIs academic population should be viewed with caution. Further studies should be conducted so that comparisons between different HEIs within South Africa could be made on how academicians perceive the existence of barriers to market orientation within their institutions. In this regard, comprehensive and traditional universities could be included in the sample. Academicians might not been fully aware of some or all market orientation barriers and might have given inaccurate responses. Future studies should also include non-academic staff of universities in order to strengthen external validity of the measuring instrument. A single, cross-sectional research design was employed in the study, which consequently lacked the depth of a longitudinal study. A longitudinal study is recommended, as it would provide valuable information concerning any changes in the factors that determine the academic perceptions towards the barriers to market orientation among UoTs, taking into consideration that they are a new type of university in South Africa.

RECOMMENDATIONS

Notable among the recommendations is that future studies should be geared at unearthing possible suggestions to diagnose and overcome the barriers that have been identified in the study. Most authors agree that overcoming the barriers to market orientation begin with organisational development. Among key development initiatives are participative or supportive leadership towards market-oriented behaviour, market oriented behavioural norms, values and competence management in anticipation of market-oriented capabilities. Development of management systems and organisational structures, which includes planning, management development and control systems that cater to daily operations, should also be incorporated.

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