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Market Orientation and its Measurement in Universities

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Historically, the measurement of market orientation has proved to be difficult, due to the low external validity of the concept. Existing scales exhibit acceptable properties in measuring market orientation in business organizations, but are less accurate in the context of higher education institutions. This paper compares the performance of three scales – the MARKOR scale, the MKTOR scale, and the University MARKOR scale – in the context of academic organizations. Results indicate that the MARKOR and the MKTOR scales need modifications, in order to accurately measure the construct in the new context. Evidence suggests that the student-oriented University MARKOR scale outperforms existing scales in predicting university performance.

Keywords: market orientation, higher education, MARKOR scale, MKTOR scale, University MARKOR

INTRODUCTION

Market orientation is a business philosophy directed toward employing all departments and subdivisions of the organization to discover and better serve consumer needs at a profit. It implies optimal implementation of business activities and mechanisms that generate, disseminate, and respond to market intelligence pertaining to the consumer (Kohli, Jaworski, & Kumar, 1993). Such a focus can allow organizations to increase their overall performance and, ultimately, achieve competitive advantages over rivals (Jaworski & Kohli, 1993; Kirca, Jayachandran, & Bearden, 2005). Subsequently, the philosophy has been embraced by various organizations and applied across cultures (e.g., Gray et al., 1998; Kirca & Hult, 2009) or in diverse settings – such as healthcare (White, Thompson, & Patel, 2001), tourism (Greenley & Matcham, 2001), retail banking (Papasolomou-Doukakis, 2002), or manufacturing (Anderson, Fornell, & Rust, 1997), among others. Its wide applicability has also stimulated scale development to address measurement inconsistencies across contexts, either by adapting existing scales to new contexts (e.g., MARKOR; Kohli, Jaworski, & Kumar, 1993), or by creating new context-specific scales (e.g.: Hampton, 2007), with no consensus regarding the superiority of one strategy over the other (Matsuno, Mentzer, & Rentz, 2005). In this context, the purpose of this paper is to examine the role of market orientation in a non-business context—that is, higher education—and to assess the relative merit of three scales in this role.

LITERATURE REVIEW

There is probably no one universally accepted and fully definitive conception of the market orientation concept (Kirca, Jayachandran, & Bearden, 2005; Kohli, Jaworski, & Kumar, 1993). For example, Avlonitis and Gounaris (1999) have suggested that this orientation should include both attitudinal and behavioral aspects. On the other hand, Lado, Maydeu-Olivares, and Rivera (1998) have emphasized the influence of distributors and environments on market orientation and defined it as a two-dimensional structure, including an overall market orientation and a country-specific residual. Meanwhile, Sharp (2001) has argued that market orientation should consider both the customer and product development, while Hult, Cravens, and Sheth (2001) regard market orientation as a phenomenon that

describes elements in the “market value chain” of “culture–behaviors–processes–actions–performance.” Finally, Matsuno, Mentzer, and Rentz (2005) posit that the perception of market orientation should embody influencing factors such as social, regulatory, and macroeconomic factors. The above-cited perceptions are indicative and by no means exhaustive of the diversity in views that exist (see Lings & Greenley, 2009).

Among all of the studies, market orientation theories set forth by Kohli, Jaworski, Narver, and Slater may be the most widely-accepted (Kohli & Jaworski, 1990; Narver & Slater, 1990). Their definitions of “market orientation” are extensions of the ‘marketing concept’—defined as a set of values and beliefs that always consider customers first and foremost (Webster, 1994, p. 203). According to them, marketing orientation is a process of continuous creation of superior value for customers. More specifically, Kohli and Jaworski (1990) view market orientation as the implementation of the marketing concept philosophy, which is centered on customer needs and organization profits. This view includes the generation of need-related intelligence on consumers, the dissemination of this intelligence to management, and the responsiveness to this intelligence in an organization, as well. However, Narver and Slater (1993, p. 243; 1990, p. 21) describe market orientation through a different perspective: as a type of business culture. They have noted that culture creation is the indispensable element for creating continuous superior value for customers and for obtaining sustainable competitive advantage. Hence, they have proposed that the marketing orientation is comprised of three components – customer orientation, competitor orientation, and inter-functional coordination. These considerations lead to a discussion of the merits of market orientation.

Advantages of Market Orientation

Why has market orientation been studied by so many scholars? Why has the strategy been widely accepted by both practitioners and researchers in recent years? Previous studies outline and demonstrate its advantages.

Perhaps most importantly, market orientation can work—it often produces notable business performance. Some researchers have uncovered a robust positive relationship between market orientation and business performance (Jaworski & Kohli, 1993; McNaughton, Osborne, & Imrie, 2002; Noble, Sinha, & Kumar, 2002). Further, Dawes (2000) has deconstructed market orientation and found that one element – the competitor orientation component – is positively correlated to company profitability. He also has noted that customer orientation and responsiveness were important ingredients to business success. This finding was corroborated by Zhou, Brown, and Dev (2009). Finally, Brown et al. (2002) analyzed the customer orientation component of market orientation and found that it exerted a positive impact on overall customer performance ratings. Similar results have emanated from the work of Ledwith and O’Dwyer (2009).

There are other advantages forthcoming from the application of market orientation. Some studies show that this orientation can increase customer perceived value, and as a corollary, result in customer satisfaction and loyalty (McNaughton, Osborne, & Imrie, 2002; Reichheld & Sasser, 1990). In turn, this orientation is correlated with firm’s growth objectives driven by the identification and subsequent exploitation of untapped market opportunities (Baker & Sinkula, 2009). It also can lead to coordinated decision making and action between different organization departments and divisions (Lings & Greenley, 2009), and may serve as a means of more adequately uncovering customer needs in e-business (Borges, Hoppen, & Luce, 2009). In addition, some researchers have found that it can create effective means of achieving competitive advantages (Hunt & Morgan, 1995; Morgan, Vorhies, & Mason, 2009), more effective service innovation (Ordanini & Maglio, 2009), improved organizational commitment in the public sector (Caruana, Ramaseshan, & Ewing, 1999, p. 65), wealth for the owners of a firm (McNaughton, Osborne, & Imrie, 2002), and an increase in new product success (Slater & Narver, 1994). Others have reported that market orientation can induce superior customer value and assist the organization in achieving effective and efficient experiential learning and enhanced supplier partnership status (Soehadi, Hart, & Tagg, 2001). Further, this strategy can lead and motivate front line employees to more adequately serve customers (Herington & Weaven, 2009). Finally, market orientation can assist in enhancing necessary leadership capabilities, and in attracting and retaining profitable customers (Narver & Slater, 1990). Given these advantages to business firms, can this orientation serve non-businesses, in general, and higher education institutions, in particular, in a beneficial manner?



Applications of the Marketing Orientation to Universities

There are a number of indications that suggest that a marketing orientation has potential benefit for universities. Studies have indicated that this philosophy may be applicable to nonprofit organizations and that it may also be related to superior organization performance (Duque-Zuluaga & Schneider, 2008). In this regard, managerial ideology has provided a range of discourses and practices originating in the corporate world to higher education. Kolsaker (2008) has conducted research that suggests that managerial modes of operation can be beneficial to academia, provided that autonomous niches can be protected.

Of course, it is well-recognized that students are the primary focus of the university. That is, university education should aid in fulfilling their significant needs and not be directed merely toward immediate popularity with those students who enroll in individual professors' classes. This latter process can be counter-productive to effective teaching and learning core values (Schuck, Gordon, & Buchanan, 2008). These needs include both immediate skills required for the first job, and philosophies, perceptions, insights, motivations, and other mental capabilities that are useful throughout one's career (Walkenhorst, 2008). In turn, a true student-oriented marketing effort places the university ideology at the center of its efforts and uses marketing-specific tools to communicate such ideologies. In this case, a market orientation is closely related to relationship learning in much the same way as relationship development is in the corporate domain (Lai et al., 2009).

The benefits of applying market orientation in university settings include creating an environment that is student oriented. Customer orientation, competitor orientation, and inter-functional coordination are values that can help administrators and instructors to better understand and structure the school environment (Oplatka & Hemsley-Brown, 2007). For this orientation to be effective, however, both administrators and instructors must be convinced that the impact upon students will be favorable. The results of implementing this philosophy are likely to include better service for customers (i.e., students) and competitive advantage over rival institutions (Voon, 2007). In turn, evaluations of market orientation require measuring instruments, usually scales, either adapted from the business environment (e.g., MARKOR; Kohli, Jaworski, & Kumar, 1993), or created for the higher education specific context (e.g., Hampton, 2007). Next, we summarize the most popular scales developed to measure market orientation.

Marketing Orientation Scales

Although most researchers understand the nature of market orientation and are aware of the probable benefits, the cognitions on how to best measure market orientation are diverse. Kohli and Jaworski's (1990) seminal article that defined market orientation was followed by more same-author research to construct a market orientation scale and its corresponding business performance measurement scale. This scale is labeled as the "MARKOR" scale and contains 32 items. At the same time, Narver and Slater (1990) created a competing scale based on their understanding of market orientation and its components. This new measurement device was entitled the "MKTOR" scale, and included 15 refined items that captured three dimensions. Deng and Dart (1994) expanded Narver and Slater's conceptualization to incorporate profitability as the fourth component of market orientation, and then produced another market orientation scale with 30 items. Later, Matsuno, Mentzer, and Rentz (2005) extended the scope of market orientation and created an expanded scale (EMO) embodying 22 purified items. Finally, Lado, Maydeu-Olivares, and Rivera (1998) generated a two-dimensional structure scale with 30 items as components.

Obviously, there are diverse outlooks on market orientation measurement, as well as the effectiveness and efficiency of each scale. On the one hand, some researchers (Siguaw & Diamantopoulos, 1995) have questioned the authenticity of Narver and Slater's MKTOR instrument. They conducted an exploratory research and found that Narver and Slater's original items were just partially related to the proposed dimensions, and illustrated that the scale did not fit the data well.

On the other hand, research by Chakrabarty and Roge (2003) and Han, Kim, and Srivastava (1998) have supported the Narver and Slater's MKTOR scale and argued that individual dimensions of this scale fit the data adequately. Additionally, Mavondo and Farrell (2000) compared the reliability of the MARKOR and the MKTOR scales and suggested that the MKTOR scale was superior to the MARKOR instrument in cross-culture, cross-industry studies. Finally, Soehadi, Hart, and Tagg (2001) contrasted the MARKOR and Deng & Dart (1994) scales and found that the latter of the two

exhibited higher reliability and validity.

Although there have been numerous studies relating to market orientation scales, these studies have focused more on business than on nonprofit organizations. In particular, few studies have emphasized the university context and its unique needs. An exception, the University MARKOR scale (Hampton, 2007; Hampton et al., 2009), described below, was generated to fulfill this gap.

The University MARKOR scale measuring student-focused market orientation is based on previous works designed to measure market orientation (Caruana, Ramaseshan, & Ewing, 1998, 1999; Kohli, Jaworski, & Kumar, 1993) and customer orientation (Brady & Cornin, 2001; Saxe & Weitz, 1982). The scale development resulted in a focus shift from an organizational and top management level to a faculty level perspective. The purpose was to concentrate on those market oriented activities faculty commonly engage in when they interact with students. The 44-item instrument assesses several dimensions of student orientation (see Appendix). Intelligence generation and responsiveness are similar to the dimensions in the MARKOR scale. In addition, the intelligence dissemination dimension in MARKOR was replaced with two new factors: 1) advising and mentoring of students, and 2) department head role or leadership, as these two were important activities of professors in their educational service delivery. While similar to items in the market orientation scales, the new factors are clearly student-oriented and pertain to faculty activities.

The development of this student-oriented scale may be the result of inconsistent measurement via traditional market orientation scales and suggests that research analyzing the performance of adapted and context-specific market orientation scales in universities is at the point where further progress is needed. This leads us to an examination of the unique needs of these institutions.

Market Orientation Scales in the Context of Universities – A Comparison

Universities have different features from those found in business enterprises. For example, university activities are related to and heavily dependent upon a knowledge-based culture. Thus, existing marketing orientation scales may not have the capability to appreciate the nature of university goals and functions. Therefore, market orientation scales suitable to businesses may not be entirely appropriate for universities.

In order to be of assistance to institutions of higher learning, an assessment of competing university scales is vital. The authors modified the original 32 items of the MARKOR scale and the 15 items of the MKTOR scale to adapt them to the university context (see Appendix). Then, a comparison was made of these two scales and the student-directed University MARKOR scale (Hampton, 2007). The aim of this research is to evaluate the effectiveness of the three scales in the context of universities and to find out which best predicts university performance. The methodology involved survey research and structural equation modeling, as discussed below.

METHOD

Sample and Procedure

Three hundred randomly chosen faculty members of a southwestern U.S. university were invited to participate in voluntary field surveys over an eight month period. One hundred and eighty of these professors responded positively to the invitation and were periodically given a set of questionnaires on several topics, including the measurement of marketing orientation via three independently developed scales: (1) MARKOR (Kohli & Jaworski, 1993), (2) MKTOR (Narver & Slater, 1990), and (3) University MARKOR (Hampton, 2007; Hampton et al., 2009) scales. In addition, we separately measured perceived organization performance. Tenured and tenure-track faculty from 45 different segments of the university completed the surveys, and yielded a total of 122 usable questionnaires.

Measurement

The sample respondents were asked to complete paper-and-pencil surveys. In turn, they read a set of instructions, and then completed multi-item measures of the various constructs of interest. Next, the sample members provided general comments relating to their department's performance over the last five years in an open-ended section. The final portion of the survey constituted requests for demographic information.

Market Orientation Scales. The authors assessed marketing orientation by applying three existing scales: a refined 25-item MARKOR scale by Kohli and Jaworski (1993), a 15-item scale by Narver and Slater (1993), and a 44-item scale developed by Hampton (2007). All three use 7-point Likert type ratings (i.e., 1 = strongly disagree, 7 = strongly agree). To enhance reliability, the scales were cleaned of items with low loadings (i.e., $\lambda < 0.50$) through confirmatory factor analysis: items loading below 0.50 indicated insufficient accuracy in construct measurement. Cronbach's alpha values measuring scale reliabilities were $\alpha = 0.76$, $\alpha = 0.89$, and $\alpha = 0.90$ for the clean MARKOR (22 items), MKTOR (10 items), and University MARKOR (16 items) scales, respectively.

Organization Performance. The authors indirectly measured three dimensions of organization performance – (1) overall performance, (2) retention and recruiting, and (3) fund raising and grant generation – via a 10 item seven-point Likert scale (scale reliability $\alpha = 0.89$).

Table 1. Descriptive Statistics and Correlations

Construct Dimensions (# of scale items)	M	SD	AVE	Overall performance	Funds	Retention	IG Markor	ID Markor	Responsive Markor	CO Mktor	COMP Mktor	IC Mktor	ADM Univ. Markor	ADV Univ. Markor	IG-R Univ. Markor
Overall Perf. (5)	26.73	6.07	68%	(0.92)											
Funds (2)	8.85	3.18	49%	0.58*	(0.65)										
Retention (3)	14.67	3.66	68%	0.67*	0.37*	(0.85)									
IG Markor (8)	33.47	8.85	38%	0.72	0.44	0.40	(0.82)								
ID Markor (6)	22.80	6.99	38%	0.58	0.42	0.36	0.93	(0.78)							
Responsiveness Markor (8)	36.86	8.61	41%	0.81	0.41	0.53	0.98	0.86	(0.84)						
CO - Mktor(4)	21.87	5.71	51%	0.40	0.35	0.46				(0.80)					
COMP-Mktor (3)	14.72	4.71	53%	0.57	0.41	0.53				0.91	(0.74)				
IC - Mktor (3)	12.29	3.57	44%	0.63	0.40	0.46				0.86	0.98	(0.68)			
ADM Univ. (6)	27.88	9.24	75%	0.64	0.38	0.49							(0.95)		
ADV Univ. (6)	37.04	4.45	60%	-0.03	-0.03	0.17							0.10	(0.90)	
IG-R Univ. (4)	16.86	5.51	65%	0.46	0.30	0.37							0.61	0.21	(0.87)

- Notes: (1) N=122 respondents
 (2) Alpha reliabilities reported in parentheses
 (3) Correlations between constructs reported below the diagonals
 (4) M=mean; SD=standard deviation; AVE = average variance extracted; CO = customer orientation; COMP = competitor orientation; IC = inter-functional coordination; ADM = administration leadership; ADV = advising and mentoring; IG-R = intelligence generation and responsiveness; Univ. = University Markor scale (Hampton); Markor = market orientation scale (Kohli & Jaworski); Mktor = market orientation scale (Narver and Slater).
 (5) Significance levels: * $p < .05$; ** $p < .01$.

ANALYSIS AND RESULTS

The authors adopted a two-step approach, as described in Anderson and Gerbing (1982, 1988) to evaluate the competing models. This procedure generated the assessment and refinement of the measurement models, followed by a separate estimation of the structural models.

Measurement Models

The items in the measurement models were refined via confirmatory factor analysis. The item loadings exceeding the recommended 0.5 threshold level suggest acceptable convergent validity (Anderson & Gerbing, 1982). In turn, all of the final scales included in the study displayed evidence of convergent validity. Table 2 presents a summary of fit indices and the results of confirmatory factor analysis.

Table 2. Summary of Measurement Models

	MARKOR	MKTOR	UNIVERSITY MARKOR	Organization Performance
Convergent validity	Yes	Yes	Yes	Yes
Discriminant validity	No	No	Yes	Yes
Dimensions	3	3	3	3
Model fit	$\chi^2_{(204)} = 486.3$ CFI = 0.78 NFI = 0.68 TLI = 0.75 RMSEA = 0.107	$\chi^2_{(30)} = 49.5$ CFI = 0.96 NFI = 0.92 TLI = 0.95 RMSEA = 0.073	$\chi^2_{(101)} = 156.3$ CFI = 0.96 NFI = 0.90 TLI = 0.95 RMSEA = 0.067	$\chi^2_{(32)} = 61.6$ CFI = 0.95 NFI = 0.91 TLI = 0.92 RMSEA = 0.087

Notes: Sample size N = 122.

The authors tested for discriminant validity by comparing the average variance extracted (AVE) against a recommended 50% threshold level (i.e., the variance explained by the items should be higher than the variance due to uniqueness). Next, we investigated whether correlations between constructs were significantly different from 1 (Fornell & Larcker, 1981); in this case, a lower correlation indicated that each dimension measured different aspects of the construct and suggested discriminant validity. The authors found evidence of discriminant validity in the University MARKOR and Organization Performance scales, only. The MARKOR and MKTOR scales passed the convergent validity tests, but failed to produce sufficient discriminant validity, as the construct dimensions almost completely overlapped (see also Table 1 for correlations between construct dimensions).

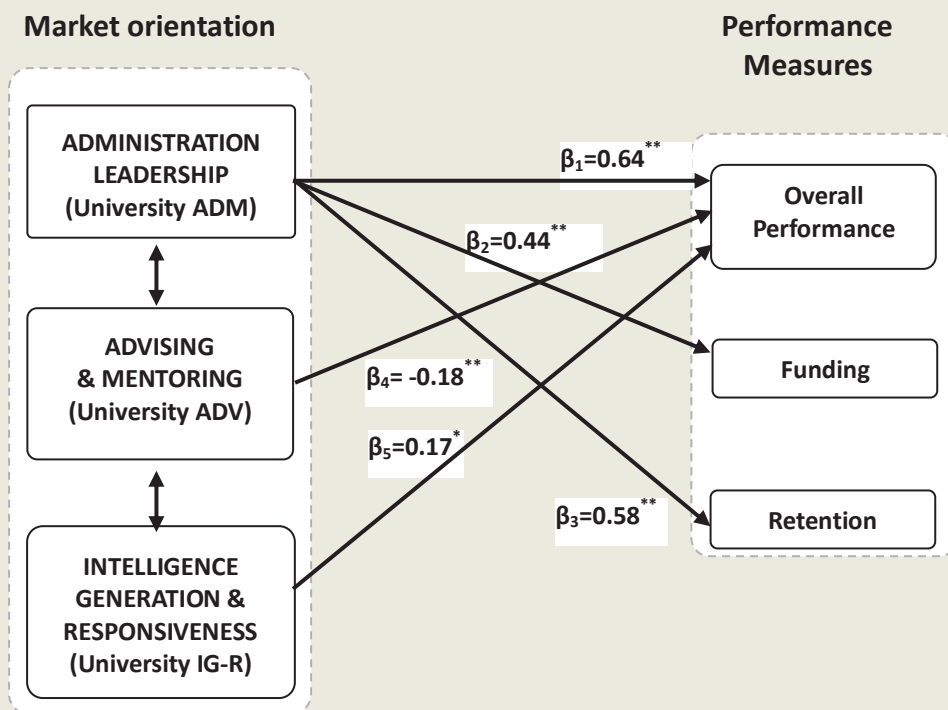
Structural Models

The authors made use of structural equation modeling to assess inter-construct relationships between market orientation and organization performance. Standard practice suggests that accounting for measurement error before the estimation of structural coefficients abates interpretational confounding (Anderson & Gerbing, 1988). The procedure implies that (a) setting the measurement error to $(1-\alpha) \times$ (variance of the sum of items) for each construct dimension and (b) using the sum of the scale items as the construct measure – are appropriate. Significantly, inadequate psychometric properties in the MARKOR and MKTOR scales resulted in impossible estimates in the structural models. Lack of convergence was not a factor when market orientation was operationalized via the University MARKOR scale; the structural model testing the relationships between market orientation and organization performance exhibited adequate fit, with $\chi^2(6) = 6.57$ (n.s.), CFI = 0.99, NFI = 0.97, TLI = 0.99, AGFI = 0.93, and RMSEA = 0.03. The reduced model with path coefficients corrected for attenuation is shown in Figure 1.

Finally, the authors tested for common method variance. As per Podsakoff et al. (2003), they separately loaded all items in the model on a first-order factor to account for same-source common variance. Re-estimated loadings sug-

gest that common method bias is unlikely to play a significant role, as the pattern of relationships remained consistent with initial results even after accounting for common variance.

FIGURE 1. University MARKOR – Standardized Structural Estimates



Structural model: $\chi^2_{(6)} = 6.57$ (n.s.), CFI=0.99, NFI=0.97, TLI=0.99, AGFI=0.93, and RMSEA=0.03
 Note: Significance levels – ** $p < .01$, and * $p < .10$

The Impact of Market Orientation on University Performance

Figure 1 shows that market orientation significantly impacts university performance through its three components measured via the University MARKOR scale: administration leadership (University ADM), advising and mentoring (University ADV), and intelligence generation and responsiveness (University IG-R), respectively. First, administration leadership significantly drives all performance measures (overall performance, $\beta_1 = 0.64$, $p < 0.01$; funding, $\beta_2 = 0.44$, $p < 0.01$; student retention, $\beta_3 = 0.58$, $p < 0.01$). These results suggest that market orientation should focus on strong leadership to make impacts in the competitive market place. It also seems that administration leadership may be an overlooked component that other market orientation scales could adopt to improve their predictive power in the business sectors. While research in the non-profit sector is frequently driven by findings in the business areas, there is no reason to believe that aspects of non-profit business research cannot be transferred to the business sector.

Second, advising and mentoring (University ADV) has a significant impact on overall performance ($\beta_4 = -0.18$, $p < 0.01$). While the negative effect may come as a surprise, we recognize that advising and mentoring takes valuable time. An increase in time spent on advising and mentoring comes at a cost, as this time would otherwise be spent on teaching, an activity that is arguably more beneficial to students.

Third, intelligence generation and responsiveness ($\beta_5 = 0.17$, $p < 0.10$) only has a positive effect on overall performance. The weaker effect relative to that of the other two market orientation dimensions on overall performance may (1) be a particular aspect of the non-profit sector, and (2) explain the poor predictive power of the competing MARKOR scale that shares this component with University MARKOR, but not the components of administration lead-

ership and intelligence generation and responsiveness. The effect also suggests that context-specific scales (e.g., university settings) may be more appropriate to measure market orientation than adaptations of no context-specific scales.

DISCUSSION

Strong evidence in the literature suggests that market orientation often engenders business enterprise profitability and superior performance. It would seem that the strategy could be equally beneficial to nonprofit organizations. Institutions that pursue this game plan can benefit through the usage of marketing orientation assessments. However, the construct can suffer from deficient measurement outside business contexts. Questionable measurement validity is especially prevalent in higher education applications. In this context, the present work compares three scales to assist universities in tracking market orientation with minimal measurement error.

The authors have uncovered evidence that popular scales in the business-to-business sector – such as the MARKOR (Kohli & Jaworski, 1990) and MKTOR (Narver & Slater, 1990) scales – are not appropriate for the assessment of market orientation in universities. The authors contrast the two established scales against a recently generated scale specifically developed for higher education (Hampton, 2007; University MARKOR). In turn, the results of this comparison suggest that a university-specific scale may be more useful in higher education settings, as it was found to outperform established scales in predicting university performance, while exhibiting superior psychometric properties.

From a practical standpoint, administrators in universities are in a position to utilize the market orientation strategy to guide various consequential policy decisions. They may use it to determine superior approaches to the achievement of student satisfaction and educational accomplishment, as well as subsequent improvements in enrollment, prestige, and student retention rates. Such goals are aligned to any university's mission and highly dependent on market orientation in the university. Universities operate in a competitive environment and the market orientation may allow institutions that adopt it to achieve comparative advantages over rivals that do not.

A market orientation stipulates that the university focuses its efforts on students. Of course, these institutions have a number of constituencies, including legislators, employers, students' parents, and the public at large. These cannot be ignored. But a market orientation does not require this. It does stipulate, however, that students are the most important constituent, and that efforts should be extended to satisfy their needs. Failure to do this is likely to result in failure to satisfy needs of the other important publics.

Some university studies may find market orientation in universities, especially their own institution, to be unrelated to performance, and may, in turn, trace inconclusive or even negative results to inefficient measurement. We suggest an instrument that is specifically adapted to the higher education context that may capture aspects otherwise omitted by traditional (i.e., non-specific) or business-based measurement tools.

Finally, this study provides a theoretical and practical foundation to expand research on further applications of market orientation in nonprofit organizations outside academia, such as charitable, religious, and governmental organizations. Some of these possess properties, bearing on top management decision-making, that are analogous to universities.

LIMITATIONS AND FURTHER RESEARCH

Several constraints of the study may pose limitations and conditions upon the generalizability of the findings. First, the study data originated from respondents in one university. This places constraints on external validity findings, and recommendations should pertain mainly to universities of similar size and student population. Second, our sample size – while justified by standard practice “from the perspective of accurate parameter estimation” in the population (Fabrigar, Porter, & Norris, 2010) – may have resulted in missing of other interesting effects, had its size been larger. Some effects may have been omitted from the analysis as they did not reach traditional significance levels. Third, collecting within-subject data at different points in time raises several issues. For example, the findings may be subject to order effects, as scales were completed in the same sequence. However, if sufficient time was allowed to erase this possible bias between surveys, a change in respondents' perceptions about the university from one survey to another would deem the impact of market orientation on organizational performance measures less relevant.



Scale validation and refinement is a never-ending process. This being the case, the authors suggest that further studies should be undertaken to evaluate the market orientation scales in other higher education-related contexts. Future studies could use hierarchical linear modeling to analyze responses to market orientation within and between universities, and at the same time producing higher response rates and bigger sample sizes. Another research route could focus on measuring the impact of market orientation in universities on student-related outcomes, such as student recruitment, student quality, learning outcomes, student turnover, graduation rates, and job placement, or on university fundraising efforts and financial help from donors.

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APPENDIX

MKTOR Scale (adapted from Narver and Slater, 1990)

INSTRUCTIONS

The following set of statements relates to how your department or college relates and responds to students and other universities. For each statement please indicate the extent you agree or disagree by circling a number from (7) strongly agree to (1) strongly disagree. You may circle any of the numbers in between that show how strong your feelings are. There is no right or wrong answer. We are only interested in your opinions. Please respond to all statements using the following scale.

ITEMS:

1. Our objectives are driven by satisfaction of our students.
2. We measure satisfaction of our student systematically and frequently.
3. Those responsible for recruiting students regularly share information with our department concerning our competitors' strategies.
4. Our marketing strategies (such as recruiting and retention) are driven by our understanding of the possibilities for creating value for our students.
5. We respond rapidly to competitive actions that threaten us.
6. We constantly monitor our level of commitment and orientation to students.
7. University administration regularly discusses competitors' strengths and strategies.
8. All levels of administration understand how the entire university can contribute to creating value for students.
9. We give close attention to service of students after enrollment.
10. Our strategy for competitive advantage is based on our understanding of our students' needs.
11. We encourage other staff and faculty outside of our department to meet with our prospective students and their parents.
12. Our department is responsive to serving students.
13. Information on recruiting successes and failures are communicated to members of the department.
14. We share information and coordinate resource use with other departments in the university.
15. We target potential students where we have or can develop competitive advantage.

Note: Items 1,2,4,6,9 measure customer orientation, items 3,5 7, 11, 15 measure competitor orientation, and items 8,12, 13, 14 measure inter-functional coordination. Items in italics were excluded during confirmatory factor analysis.

MARKOR Scale (adapted from Kohli and Jaworski, 1990; Caruana et al., 1998, 1999)

INSTRUCTIONS

The following set of statements relates to how your department or college relates and responds to students and other universities. For each statement please indicate the extent you agree or disagree by circling a number from (7) strongly agree to (1) strongly disagree. You may circle any of the numbers in between that show how strong your feelings are. There is no right or wrong answer. We are only interested in your opinions. Please respond to all statements using the following scale.

Intelligence Generation (IG)

1. In my department we meet with students at least once a year to find out what courses and services they will need in the future.
2. In this department we meet with those that hire our students at least once a year to find out what courses or services they think students will need in the future.
3. In my college we do a lot of in-house market research.
4. We are slow to detect changes in our students' course preferences.
5. We survey students at least once a year to assess the quality of our courses and services.
6. We survey industry at least once a year to assess the quality of our courses and services.
7. We are slow to detect fundamental shifts in tertiary education environments [government regulation, technology, competition, delivery systems].
8. We periodically review the likely effect of changes in tertiary education environment on students.

Intelligence Dissemination (ID)

9. We have inter-departmental meets at least once a semester to discuss market trends and developments.
10. Academic staff in our department spends time discussing students' future needs with other staff in the college.
11. Academic staff in our department spends time discussing industries' future needs with other staff in the college.
12. When something important happens to a student or course, the whole department knows about it within a short period.
13. Data on student satisfaction are disseminated at all levels in this college on a regular basis.
14. Data on industry satisfaction with our graduates are disseminated at all levels in this college on a regular basis.
15. When one staff member finds out something important about a department in another university, he/she is slow to alert other colleagues.

Responsiveness

16. It takes us forever to decide how to respond to fee changes for foreign students by other universities.
17. For one reason or another we tend to ignore changes in our students' course or service needs.
18. We periodically review our course development efforts to ensure that they are in line with what students want.
19. We periodically review our course development efforts to ensure that they are in line with what industry or those who hire our graduates want.
20. Several department heads in my colleges get together periodically to plan a response to changes taking place in the education environment.
21. If a major university were to launch an intensive campaign targeted at our student market, we would implement a response immediately.
22. The activities of the different staff members in this college are well coordinated.
23. Student complaints fall on deaf ears in this department.
24. Even if we came up with a great course initiative, we probably would not be able to implement it in a timely fashion.
25. When we find that students would like us to modify a course or service, the staff members involved make concerted efforts to do so.

Note: Items in italics were excluded during confirmatory factor analysis.



University MARKOR Scale (Hampton, 2007)

INSTRUCTIONS

In this survey you are asked to respond to statements related to student services at [university name]. Using the 1 to 7 scale below, indicate your agreement with each item by circling the appropriate number that reflects how you feel. Please respond to each statement. The seven point scale is [1= strongly disagree to 7=strongly agree].

ITEMS:

Advising and Mentoring (University ADV)

1. In my interaction with students, I try to determine what they need.
2. I try to give students an accurate expectation of what our education program will do for them.
3. I am willing to disagree with a student in order to help them make a better decision.
4. I try to match a student's educational needs with courses that best suit that need.
5. I answer students' questions about our courses and services as correctly as I can.
6. I suggest a program of courses that is best suited to the students' needs.

Administration leadership (University ADM)

7. My department head asks for, and considers, my ideas about improving the quality of our services for students.
8. My department head frequently gives me honest and direct feedback about how well I am serving students.
9. My department head seeks opportunities to try new ways of doing things to serve students better.
10. I know what my department head expects of me in serving students.
11. My department head makes efforts to remove obstacles that hinder serving students well.
12. My department head helps me learn from experiences with students, both successes and failures.

Intelligence Generation and Responsiveness (University IG-R)

13. We use the information we collect from students to identify ways to improve service to them.
14. In our department, we regularly ask our students about their needs, wants, and expectations.
15. We survey students regularly to assess their academic needs.
16. Information from student surveys are regularly used to improve the service we provide to students.

Performance Scale (Caruana et al., 1998 & 1999)

INSTRUCTIONS

In this section we want you to gauge the performance of your department in the last five years. Please use the following scale to rate the performance of your department [1=very poor to 7=very good].

ITEMS:

Overall Performance

1. The overall performance of this department in the last three years has been:
2. The performance of my department in creating student satisfaction in the past three years has been:
3. The level of student services provided by my department in the last three years has been:
4. In relation to the resources committed, the improvements achieved by my department in the last three years has been:
5. The level of cost effectiveness achieved by my department in the past three years has been:

Funding

6. Compared to other departments at this university, the overall ability of my department to raise funds in the past three years has been:
7. The overall ability of my department in obtaining research grants in the past three years has been:

Retention

8. The performance of my department to retain students as majors over the past three years has been:
9. The ability of my department to increase graduation rates in the last three years has been:
10. The performance of my department to recruit students as majors in the past three years has been: