REVISTA INNOVAR JOURNAL

Market orientation at universities. Construct and exploratory validation

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La orientación al mercado en las universidades. El constructo y su validación exploratoria

RESUMEN: Ante un panorama de competitividad creciente en el cual las universidades están obligadas a conseguir recursos por su propio desempeño, el concepto de Orientación al Mercado se presenta como una solución apoyada por amplia literatura. Sin embargo, la literatura existente se basa principalmente en el sector lucrativo y las publicaciones en el sector educativo aún son escasas. El propósito de nuestra investigación exploratoria es desarrollar y validar una medida de Orientación al Mercado en una muestra de universidades españolas. La escala integra y expande las proposiciones teóricas de investigaciones previas, muestra aceptables niveles de fiabilidad y validez y permite establecer líneas de investigaciones futuras en el área.

PALABRAS CLAVE: Orientación al mercado, marketing de universidades, formación del profesorado universitario, marketing no lucrativo.

L'orientation vers le marché dans les universités. Construction et validation exploratoire

RÉSUMÉ: Face au panorama de compétitivité croissante dans lequel les universités sont obligées à rechercher des ressources pour leur propre développement, le concept d'Orientation vers le Marché se présente comme une solution proposée par beaucoup. Cependant, les documents existant se basent principalement sur le secteur lucratif et les publications du secteur éducatif sont peu nombreuses. L'objectif de notre recherche exploratoire est de développer et de valider une mesure d'Orientation vers le Marché sur un échantillon d'universités espagnoles. L'échelle intègre et développe les propositions théoriques de recherches antérieures et montre des niveaux acceptables de fiabilité et de validité, permettant d'établir des lignes de recherches futures dans ce domaine.

MOTS-CLEFS: Orientation vers le marché, marketing d'universités, formation du professeur universitaire, marketing non lucratif.

A orientação ao mercado nas universidades. O constructo e sua validação exploratória

RESUMO: Ante um panorama de competitividade crescente no qual as universidades estão obrigadas a conseguir recursos por seu próprio desempenho, o conceito de Orientação ao Mercado apresenta-se como uma solução apoiada pela ampla literatura. Não obstante, a literatura existente baseia-se principalmente no setor lucrativo e as publicações no setor educativo ainda são escassas. O propósito de nossa pesquisa exploratória é desenvolver e validar uma medida de Orientação ao Mercado em uma amostra de universidades espanholas. A escala integra e expande as proposições teóricas de pesquisas prévias, mostra aceitáveis níveis de confiabilidade e validade e permite estabelecer linhas de pesquisas futuras na área.

PALAVRAS CHAVE: Orientação ao mercado, marketing de universidades, formação do professorado universitário, marketing não lucrativo.

CLASIFICACIÓN JEL: A22, M14, M39

RECIBIDO: octubre 2009 **APROBADO:** enero 2010

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CITACIÓN: Rivera-Camino, J. & Molero Ayala, V. (2010). Market Orientation at Universities. Construct and Exploratory Validation. *Innovar, 20*(36), 125-138.

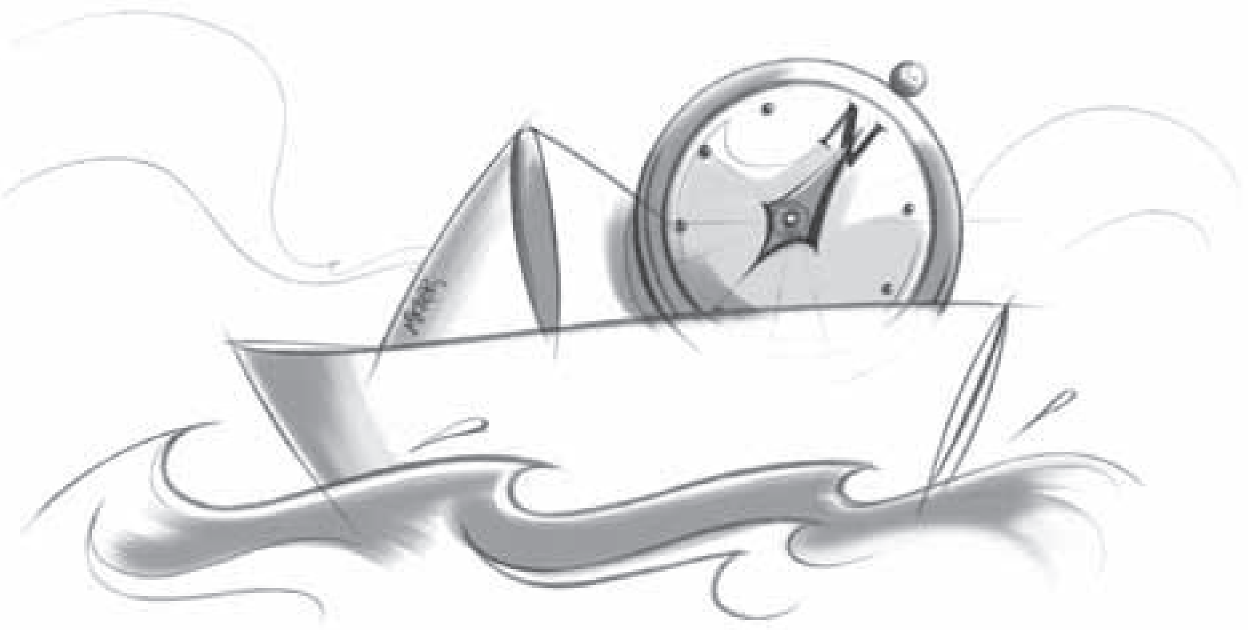
ABSTRACT: Faced with a panorama of growing competitiveness in which universities are forced to get resources on their own, the concept of market orientation can be seen as a solution backed by ample literature. However, the existing literature is based principally on the profit-making sector with the publications in the educational field being still scarce. The purpose of our exploratory research is to develop and validate a market orientation measure in a sampling of Spanish universities. The scale integrates and expands the theoretical proposals from previous research; it shows acceptable levels of reliability and validity while allowing the setting-up of future lines of research in the area.

KEY WORDS: Market orientation, marketing universities, teaching education, nonprofit marketing.

INTRODUCTION

Marketing literature recognizes market orientation (MO) as one of the most important concepts of the last decades (Kara et ál., 2005). This recognition has been translated in numerous research studies destined to improve its definition as construct, upon assessing its impact on the results of a company and studying its applicability in different sectors. Although a certain amount of confusion still exists with regards to the definition and measurement of MO (see Hult et ál., 2005; Matsuno et ál., 2005), all the literature, however, agrees on the positive influence of MO on the high economic results of companies (see Kirca et ál., 2005; Ellis, 2006) given that this influence seems to be consistent worldwide (Rodríguez et ál., 2004). At the same time, over the last few decades a growing tendency in publications dedicated to the application of MO in different contexts, such as services, development of new products, organizational aspects, brand creation, and international exports, can be appreciated (among some, see Hooley et ál., 2003; Wren et ál., 2000; Homburg y Pflesser, 2000; Homburg et ál., 2007; Ind y Bjerke, 2007; Racela et ál., 2007). However, this tendency has been centered mainly on profit-making organizations, and little research has been developed in the context of not-for-profit organizations, and even less so in the field of education[1] (Wood et ál., 2000).

[1] For rare exceptions, see Caruana et ál. (1998); Flavián and Lozano (2006); Oplatka et ál. (2007) and Siu and Wilson (1998).



The study of MO in the field of education is important because universities face new competitive situations for which they are not prepared. Globalization, new technologies, (Mazzarol, 1998) and the recognition of education as a source of competitiveness among countries (Donà, 2005) represents for the universities internal and external pressures which require new strategies in order to face these challenges (Welsh y Metcalf, 2003). However, and in spite of these demands, the review of the literature shows that these institutions still do not have available valid models that help them to be more competitive in the education sector. (Srikanthan y Dalrymple, 2003).

In order to fill this void, we present exploratory research with the following objectives: (i) propose a definition of MO backed by a specific theoretical framework for the education sector; (ii) develop a reliable and valid operationalization of MO; (iii) analyze what the obstacles are so that it will help universities to develop MO.

Our study is based on a sampling of Spanish universities. Several reasons justify our choice. First of all, European universities should be more and more oriented towards their markets (Cordis, 2007) in order to be able to compete with American universities (Aunión, 2006, Gauthier y Shenton, 2005; Pawlowski, 2004) and in order to get the necessary resources for their subsistence (Martínez, 2005). Secondly, Spanish universities are faced with a competitive situation marked by an increase in both national and international educational offers, the reduction of enrolment and the opening of the European Space of Higher Education (Castillo y Trabadela, 2008).

In order to achieve our objectives, the article uses the following structure. In the first part we justify our model and MO operationalization theoretically. In the second part, we present our approximation methodology as well as the main characteristics of the sampling and the questionnaire used in the research. Afterwards, we analyze the results obtained after validating the model. In this part we also assess the relationship between our MO model and the obstacles of its organizational development, such as external validation of the research. Finally, in the last part, the conclusions and the future lines for possible MO research in the education sector are pointed out.

THEORETICAL FRAMEWORK

Current Perspectives on the MO Construct

Perspectives in the Profit-making Sector

A revision of the literature shows that publications dealing with MO are characterized by the difference of opinion between authors with regards to the nature and focus of MO. For some authors, MO publications can be divided by its approach to marketing or market depending on whether they concentrate on the unit of marketing or the actions of an entire organization (Gray et ál., 1998). Whereas for others, both approaches describe the implementation of the concept of marketing throughout the organization (Wrenn, 1997). Hence, a large amount of the literature is based on the concept of marketing and its implementation in the enterprise (Harris, 2000; Martin y Grbac, 2003; Hult et ál., 2001). However, all of this perspective is criticized by the authors who point out that there is not a universally accepted definition of marketing (Thomas, 1994; Webster, 1994), that the definitions used have not been validated empirically (Lado et ál., 1998), and that the traditional concepts of marketing ignore competitors and other forces which might influence the customers´ needs (Kok et ál., 2002; Kohli et ál., 1993).

For other authors, publications dealing with MO can be put together under a cultural perspective. For example, MO can be considered a business culture (Narver et ál., 1990; Han et ál., 1998; Hurley y Hult, 1998). It can also be seen as an organizational culture based on customer satisfaction (Liu et ál., 2002) or as the implementation of a corporate culture or business philosophy (Gray y Hooley, 2002). This perspective is not free of criticism either as some authors point out that the culture construct is used in a superficial way in publications (Deshpandé y Webster, 1989). Similarly other authors remind us that this construct has not been validated in publications dealing with MO and that their perceptions are solely based on that of management more than on the assessment of cultural values shared by the organization (Homburg y Pflesser, 2000).

Finally, after summarizing the most important attempts to define MO, some authors conclude that the construct is difficult to define and they recommend studying what makes up an MO in more depth (Lafferty y Hult, 2001), given that this is the field of study which remains in continuous evolution (Harris, 2000) and that the measurement scales must still be improved (Farrell, 2002).

Perspectives in the Education Sector

The literature about the application of MO in the education field is also characterized by the diversity of perspective and by the scant theoretical and empirical development. The main divergence is found in the fact that some consider that MO is not appropriate for profit-making organizations (Andreasen y Kotler, 2003; Graham, 1995; Harding, 1998). Whereas other writers indicate that MO is indeed appropriate for these kind of organizations (Shoham et ál., 2006), while others indicate that a definition specific to MO in not-for-profit sectors should be developed (Sargeant, 2002).

Despite these differences, in the literature we find some publications about the different aspects of MO in education. For example, the positive influence of MO in the activity at universities has been researched (Caruana et ál., 1998) as well as the organizational antecedents of MO at schools and universities (Wasmer y Bruner, 1999). The factors which influence the level of MO adopted by teachers in their lessons, research and cultural dissemination have also been studied (Flavián y Lozano, 2006). At the same, the benefits of MO and the way to implement its culture in our schools have been assessed (Oplatka y Hemsley-Brown, 2007). These authors coincide in pointing out the need to expand the concept of MO to the variety of clients that educational organizations have. In this way, some authors indicate the need to include students, companies, administration and society (Flavián y Lozano, 2006) while others indicate that MO should consider a variety of dimensions: customer orientation, competitor orientation, organizational coordination and global market orientation (Webster et ál., 2005) as well as donors´ orientation and follow-up of environment (Siu y Wilson, 1998).

However, these publications about MO in education are not without criticism as these publications have the same defects as those identified in the MO literature in the money-making sector (Brady y Johnson, 2000). Consequently, a definition of Mo which takes into account the specifications of the new context needs to be developed (Liao et ál., 2001; Gainer y Padanyi, 2005). In order to fill this void, we present our model which defines MO as a competitive strategy of the organization and integrates more components in this construct as proposed in the previous literature.

Our Market Orientation Model in the University Sector (UMO)

From a conceptual perspective, our definition of MO as a competitive strategy is based on the original work done by Rivera-Camino (1995) which has been validated in different sectors and countries (see Lado, 1995; Lambin 1996; Lado et ál., 1998; Lado y Maydeu-Olivares, 2001; Rivera-Camino y Molero, 2006).

In this model, MO is considered as a competitive strategy or as an organizational model which is maintained by the recurring behavior of workers or routines (for further information see Rivera-Camino y Molero, 2006). In contrast to the definitions that consider MO as the implementation of the concept of marketing or of a business culture and/or philosophy, this model conceives MO as a management choice. This perspective overcomes the criticisms that state that a strong culture can be dangerous because it is hard to change (Alvesson, 2002; Kotter, 1996; Trice y Beyer, 1993) and offers a guide to universities that need a fast response to market demands.

From an empirical perspective, we rely on the extension of MO proposed by the Rivera-Camino model as its operationalization integrates and expands the MKTOR and MARKOR scales (Armario y Cossio, 2001). This MO operationalization takes into account the actions which the organization develops to research and takes competitive steps in four markets. In this way, these actions plus the intra-organizational coordination allow MO to be operational in nine components: final client, distributor, competition, and environment analysis, inter-functional coordination, strategic actions aimed at the final client, distributor, competition, and environment.

As a result, from this empirical perspective we take as a basis this definition because different writers reach the same conclusion, that is, the need to broaden MO. For example, recent literature about MO suggests the need to integrate different pressure groups or stakeholders in its definition (Greenley, 2005; Schlosser y McNaughton, 2007). At the same time, the literature dealing with non-profit making organizations supports recommending stakeholders´ satisfaction (Hsieh et ál., 2008; Dees et ál., 2002; Herman y Renz, 2004). This tendency to broaden MO is also found in the previous literature about the application of MO in the education sector (Siu y Wilson, 1998). Consequently, our UMO operationalization integrates the analytical and behavioral dimension of the strategy-plus the element of coordination- to then propose the following components: (1) student orientation, (2) worker orientation, (3) competitor orientation, (4) company-donor orientation, (5) environment orientation, and (6) inter-functional coordination. A more detailed analysis of these orientations follows:

Student Orientation

The literature shows the importance that the client has for the definitions of MO in different profit-making sectors (see Lafferty y Hult, 2001). In the non-profit sector, the literature about MO also recognizes the importance that clients or direct beneficiaries have for the existence of the organization (Morris et ál., 2007), and for that reason, MO should look for ways to satisfy their needs (Álvarez et ál., 2002). There still exists a debate, however, as to whether or not a student should be considered a customer. Some authors hold that a student is a customer because he purchases educational services (Ritzer, 1998) and ought to be treated as such because of its importance in the coproduction of his learning (Armstrong, 2003; EFQM, 1995; Lengnick-Hall, 1996; Gallagher y Smith, 1997) while others consider that it is a mistake to attribute so much importance to students (Barret, 1996; Lewis y Smith, 1994; Svensson y Wood, 2007). In spite of this unresolved debate, we find in the MO literature applied to the educational context authors who all agree on considering students as a market to be satisfied because this is the very essence of the organization (Morris et ál., 2007; Flavián y Lozano, 2006; Hammond et ál., 2006). As a result, according to the theory previously revised it is reasonable to assume that student orientation can be considered a component of UMO.

Worker Orientation

The importance of workers in the creation of market value has been widely recognized in traditional MO literature (Conduit y Mavondo, 2001; Narver et ál., 1998; Lukas y Maignan, 1996; Zheng et ál., 2004), to the extent of suggesting the existence of an internal market orientation as an antecedent of MO (Lings, 2004; Lings y Greenley, 2005). The previous literature dealing with the application of MO in the non-profit making sector also suggests the advisability of treating workers as a market. This suggestion is based on considering that their satisfaction and personal commitment is important in the delivery and quality of non-profit making services (Bennett, 1998; Schmid, 2004).

The publications about MO in the education context also emphasize the importance of workers as a market to satisfy. Although in this literature professors or workers as part of the internal market are also included (Flavián et ál., 2006; Plewa y Quester, 2006), due to the situation faced by universities (Franke, 2001) and because their commitment is important for the quality of the educational service (Boo, 2006; Morse y Santiago, 2000; Watty, 2003). In this way and according to these authors, worker orientation can be considered a logical component of UMO.

Donor Orientation

Although the definition of donors can be viewed in a wide sense: private donors, foundations, government agencies, corporate clients, volunteers, and others (Wolf, 1999), all the literature gives credence to the importance these have for the non-profit making organizations (Miree, 2003; Morris et ál., 2007). These kind of organizations also operate in an area of scarce resources, thus they require strategies to get the necessary means from their donors in order to achieve their organizational ends or missions (Blois, 1993).

The importance of donors has also been pointed out in MO literature applied to the non-profit making sector. Some research shows a positive contribution of the donor orientation in organizational results (Bennett, 1998; Vásquez et ál., 2002), although others do not support these findings (Balabanis et ál., 1997). However, there does exist a relation between actions taken in regards to donors and MO (Álvarez et ál., 2002; Gainer et ál., 2005; Macedo y Pinho, 2006).

In the MO literature applied to the educational context suggestions for including donors can also be found (Siu et ál., 1998). It is even recommended to include in this category companies that can hire students who have graduated (Nicholls et ál., 1995), because they value the institutional image as hiring criteria (Parameswaran y Glowacka, 1995) and because students choose universities for their reputation among companies (Soutar y Turner, 2002; Maringe, 2006). Consequently, it is reasonable to suppose that donors can be considered as components of the UMO definition.

Competitor Orientation

Even though some authors indicate that the excessive focusing on competition can negatively alter company strategy (Han et ál., 1998), the literature reaches the same conclusion that orientation to competitors is an important MO component (e.g. Han et ál., 1998, Gray et ál., 1998; Narver y Slater, 1990). In the non-profit sector there also exists a variety of conceptions about competitor orientation. While some writers suggest that it is inappropriate to consider similar organizations as competitors (Bruce, 1998), others draw attention to the importance in the strategies of this kind of organizations (Voss y Voss, 2000) and in the MO applied to this sector (Webster et ál., 2005).

In the education sector, competitor orientation is also considered necessary. Universities compete for students (Comm y Labay, 1996; Landrum et ál., 1998), and the restrictions on resources force them to act as corporations (Brookes, 2003; Veloutsou et ál., 2004) which must use strategies in order to compete in their markets (Bok, 2003; Nicholls et ál., 1995; Kirp, 2003). Hence, competitor orientation should encourage discussion about competition to then assess strategies and detect opportunities for institutional improvement (Drysdale, 1999). In the European context, previous literature also points out the importance that competitor orientation has because of the restrictions that European universities face (Binsardi y Ekwulugo, 2003; Franke, 2001). We can then assume that competitor orientation is a natural component of UMO.

Environment Orientation

Organizational literature presents environment as a force which influences critical aspects of a company, such as the control system and function structuring as well as competitive strategy and results (Miller y Shamsie, 1996; Slevin y Covin, 1997). On the other hand, the literature dealing with strategy presents environment follow-up as a key factor so that enterprises can develop and keep a competitive advantage (Daft et ál., 1988; Auster y Choo, 1994). This influence of environment follow-up has also been recognized in MO literature where the incorporation of environment as a component of this construct is recommended (Heiens, 2000; Rivera-Camino y Molero, 2006). Furthermore diverse publications on the subject of MO in the profit-making sector have shown that the environment can have an influence on the customer and the competitor orientation (Pelham y Wilson, 1996; Slater y Narver, 1994; Jaworski y Kohli, 1993) as well as in MO relation and results (Matsuno y Mentzer, 2000; Kim, 2003; Slater y Narver, 1994).

Recently it has been noted that non-profit making organizations face environments of increasing complexity and competitiveness (Schmid, 2004; Tayart, 2005; Thompson, 2002). For this reason, they have begun to study the moderating influence of environment on MO and on the results of this kind of organizations (Bennett, 2005).

Considering that globalization presents a new environment for educational institutions (Unesco, 2004; McBurnie, 2001; Middlehurst, 2001), and that only the institutions that know how to adapt to the new conditions will endure (Van der Wende, 2001; Hemsley-Brown y Oplatka, 2006), therefore it is reasonable to suppose that environment follow-up should be incorporated in a MO in this sector.

Inter-functional Coordination

Inter-functional coordination means the capability of a company to achieve the cooperation of the different units in market value generation. This coordination implies the spreading of information in order to develop shared decisions (Narver y Slater, 1990; Song y Montoya-Weiss, 2001) and integrates formal and informal social adaptation mechanisms (Zahra y George, 2002). Because of its importance for the operation of an organization, some writers consider that inter-functional coordination is an orientation toward the inner workings of an enterprise as it allows for satisfied and efficient employees (Harris, 2000) and it facilitates the joint work of functional areas (Kahn, 1996). It also allows for the developing of complex tasks (Akgun et ál., 2005) and integrates different skills for a quick organizational response (Tessarolo, 2007), such as actions which require MO.

The MO literature in the profit-making sector also recognizes the importance of inter-functional coordination and has integrated it as a component of a variety of MO definitions (Jaworski y Kohli, 1993; Celuch et ál., 2002; Golann, 2006; Lafferty y Hult, 2001; Helfert et ál., 2002). Moreover, previous empirical research has shown that inter-functional coordination is a variable which influences the MO level in for-profit organizations (Pelham y Wilson, 1996) and non-profit (Inhofe, 1997; McDermott et ál., 1993). In this kind of literature, the importance of the inter-functional coordination has been highlighted because it allows company responsiveness (Tay y Tay, 2007), development of innovations (Woodside, 2005) and competitive advantage (Narver y Slater, 1990; Ross y Minsky, 2002; Ussahawanitchakit, 2007). In the world of education, at a theoretical level, including inter-functional coordination in MO has been proposed (Siu y Wilson, 1998), and at an empirical level, its influence in the implementation of customer orientation has been studied (Kennedy et ál., 2003). Consequently, this is a critical component for the definition of MO applied to education.

Finally and taking into account our theoretical framework, we can generate a hypothesis to validate the proposed interrelationships between the items of the 6 components of UMO which have been described. Therefore, the hypothesis is the following:

Hypothesis 1: UMO is a latent one-dimensional construct made up of six components.

Obstacles for Developing a UMO

According to the previous literature, individual and organizational variables exist which can impede the implementation of company strategies and projects (Pinto y Prescott, 1990; Weimer y Vining, 1989). Among the most important variables mentioned we have: little clarity of goals and general directives, lack of support from top management, scant definition of individual actions needed for projects, scant provision of resources and relevant information for the part-takers.

Although the topic has barely been studied in MO literature, we do find authors who also mention similar variables. For example, lack of support from top management in market actions (Day, 1994) , presence of cultural components which inhibit MO (Harris, 1996), lack of a common model shared by the organization (Harris y Watkins, 1998), absence of communication between organizational levels (Harris y Piercy, 1999) and lack of material resources and management support (Harris, 2000). Therefore, according to these antecedents we can formulate the following hypothesis:

H 2. The level of Obstacles is negatively associated with a level of UMO.

RESEARCH DESIGN AND RESULTS

Sample Distribution

As no database meeting our criteria exists, we had to create our own data pool where we integrated lists from websites of Spanish universities and lists of professors who attended marketing congresses. We chose those professors who could be reached by e-mail or post. Questionnaires were sent by e-mail to all the professors from our database, with a cover letter stating the objectives of the research. For those who expressly requested it, the questionnaires were posted to them.

Ultimately, we received 176 questionnaires from out target population which corresponds to a response rate of 14 % (5 had to be eliminated due to incomplete answers). The distribution of the sample is as follows: 135 male professors (76.70 %) and 41 female professors (23.30 %). Based on work experience, they are distributed as follows: 20 professors with 1-4 years of experience (11.36%), 75 professors with 5 - 10 years of experience (42.61 %), and 81 with more than 11 years of experience (46.02 %).

In order to analyze whether the size of the sample is sufficient to accept the results inferred in the research, we used the procedure recommended by Lambin (1994). This author suggests that if you know the standard maximum deviation of the variables used in the research, the minimum size of the sample can be calculated, with a certain margin of acceptable error. The size of the samples should permit covering the information needs of the variables with the lowest standard deviation. In our case, the variable with the largest standard deviation is "Let's analyze competitive strategy" (*Competitor* o*rientation*, question 1), with the following characteristics: Average (3.74); Standard Deviation (2.80); Typical Error (0.23). Applying the proposed formula, for all of the variables, we consider the same level of significance (0.05 = 1.96) and an error of 0.5 (in a scale of de 1 to 7). Therefore, $n = (1.96 \times 2.80 / 0.5)^2 = 120$. Hence, the size of the samples used in our research (176) is considered sufficient.

Questionnaires

UMO Questionnaire. From what we know, the scales used in our research have no antecedents. As a result, given the originality of our study, all of the scales followed a similar procedure: revision of the literature, drawing up of items, discussion with experts (marketing professors, executives and students) and filtering of items to improve reliability and validity of the scales. For the quantitative filtering, we analyzed the internal consistency of the reliability of the constructs based on the exploratory factorial analysis and Cronbach´s alpha (Nunnally y Bernstein, 1994).

The preliminary set of items was developed by taking as a basis those presented by the Rivera-Camino model (1994). Afterwards, these items were reformulated with the help of the previously mentioned literature, and so we had a set of 40 items which after the filtering process, both exploratory and confirming, 25 items were left to measure the 6 components of UMO.

The people questioned were asked to select our proposals that matched with the real functioning of their educational institutions for each of the 6 components. For each component of UMO, the answers were assessed on a scale from 1 to 7, where 1 = No coincidence; 4 = More or less coincidence; 7 = Total coincidence. The overall scale obtained a high degree of reliability with a 0.9128 Cronbach´s alpha. By components, the exploratory, factorial analysis indicated the one-dimensionality of each of them (88.5, 82.6, 80.0, 72.4, 74.8, 80.4 % variance, respectively), and the indexes of Cronbach´s alpha in the 6 components were 0.955, 9253, 9140, 8269, 9130, 9182, respectively.

UMO Obstacles. In order to write up the items of this scale, the earlier literature was also revised (Day, 1994; Harris, 1996; Harris y Watkins, 1998; Harris y Piercy, 1999; Harris, 2000). Although initially there were 13 items, after the filtering process only 6 remained. One of the items which were surprisingly eliminated was the *Low Demand of Quality Courses/Programs Market*. Thus, the degree or level of impediment was assessed using a scale from 1 to 7, where 1 = No coincidence; 4 = More or Less coincidence; 7 = Total coincidence. This scale got an exploratory, factorial analysis of 71.95 and a 0.8787 Cronbach´s alpha.

ANALYSIS AND RESULTS

Statistical Analysis

The statistical analysis was developed in three stages. The first stage presented the descriptive results of the variables and the correlation matrix of these. The second stage was aimed at confirming the measurement models and assessing whether the observed variables are related to latent variables. The third stage was developed to validate the degree to which the facts fit the structural model proposed by the hypotheses. In this stage the external validity or generalization of our results was also assessed. This validity can be measured relating UMO to other variables (obstacle) to prove that the construct works as predicted by theory (Lucas, 2003).

In order to assess the measurement model as well as the structural one we used the following indexes: SRMR (Standardized Root Mean Square Residual: Steiger, 1990); GFI (Goodness-of-Fit Index: Jöreskog et ál., 1996); CFI (Comparative Fit Index: Bentler, 1990). Following the commonly accepted practice, a value greater than 0.90 in GFI and CFI (Tabachnick y Fidell, 1996) and a SRMR 0.08 or less, were considered goodness-of-fit indicators of the specified model (Hu y Bentler, 1999). For the estimation model, we used the correlation matrix of product-moment (Pearson). This kind of matrix was chosen because it is unchanging given changes in scale; it does not give greater weight to those variables which have greater variability so that the results are not distorted. Also, the interactive method of minimum squared weights was used because it does not require a supposition of normalcy.

Results

In keeping with what has been mentioned previously, the outcome of our research is presented in three parts: descriptive measurements and correlations, construct validity test, and hypothesis validation.

Descriptive Measurements and Correlations. In table 1 averages, standard deviations and correlations between the variables of the model are presented.

Construct Validity Test

Discriminate Validity. According to the facts from the correlation matrix, it can be suggested that the components of UMO comply with, exploratory, discriminate validity. Traditionally, it was accepted that this kind of validity between two constructs was complied with if their correlation was not too high. According to Campbell y Fiske (1959) for discriminate validity to exist, the correlations must be less than 0.85. Another procedure which confirms discriminate validity can be found in Bohrnestedt (1977). According to this author, to know if a construct only measures what it should measure, its association with other constructs must

TABLE 1. Descriptive Measurements of the Variables Used in the Study

	MEAN	STD DEV	1	2	3	4	5	6
Students	4.03	1.60	1.0000					
Workers	3.04	1.48	.5835**	1.0000				
Donors	3.47	1.67	.6269**	.6094**	1.0000			
Competitors	3.56	1.96	.5238**	.4940**	5605**	1.0000		
Environment	3.99	1.67	.6255**	.5877**	5780**	.5582**	1.0000	
Coordination	2.96	1.58	.5778**	.7621**	7296**	.6215**	.6519**	1.000
Obstacles	3.01	1.00	-.3320**	-.3283**	-.2590**	-.2023*	-.3138**	-.2651**

TABLE 2. Validity of Content and Variable Convergence of Forming UMO

LATENT VARIABLE	COEF. STAND	T-STUDENT	ERRO VARIANCE	R^2	GFI	CFI	SRMR
Regarding students					0.98	0.99	0.02
Analyze level of satisfaction	0.90	12.36	0.19	0.81			
Analyze changes in needs	0.87	11.65	0.24	0.76			
Offer programs adapted to needs	0.97	14.14	0.05	0.95			
Update programs constantly	0.90	12.26	0.20	0.80			
Regarding workers					1	1	0.00
Analyze what can affect satisfaction	0.89	12.08	0.21	0.79			
Analyze impact of satisfaction in performance	0.98	14.26	0.04	0.96			
Develop efficient personnel policies	0.87	11.59	0.25	0.75			
Promote on-going training	0.75	9.40	0.43	0.57			
Regarding donors-corporate clients					0.99	1	0.06
Analyze level of satisfaction	0.87	11.52	0.24	0.76			
Analyze changes in needs	0.94	13.13	0.11	0.89			
Opinion influences market strategies	0.81	10.41	0.34	0.66			
Adapt educational programs to needs	0.89	12.34	0.21	0.79			
Regarding competitors					1	1	0.00
Analyze competitive strategy	0.93	13.10	0.13	0.87			
Analyze marketing policies	0.91	12.58	0.17	0.83			
Act to defend students and employees	0.90	11.89	0.19	0.81			
Act to defend donors/ corp.clients	0.97	15.09	0.05	0.94			
Regarding environment					0.98	0.99	0.06
Analyze impact on students	0.92	12.75	0.14	0.86			
Analyze impact on employees	0.73	8.96	0.46	0.54			
Analyze impact on donors/ corp.clients	0.83	10.68	0.31	0.69			
Act to influence stakeholders	0.77	9.53	0.41	0.59			
Act to manifest social worth	0.83	10.78	0.31	0.69			
Regarding inter-functional coordination					0.99	1	0.00
Seek consensus as basis for strategies	0.74	9.47	0.45	0.55			
Develop marketing plan process	0.83	10.72	0.30	0.70			
Promote commitment for MO actions	0.88	11.57	0.23	0.77			
Use market information in tasks/actions	0.90	12.12	0.18	0.82			

be compared. In our study the level of correlation between UMO components and the obstacles for its implementation are compared. The basic premise was that the correlations among UMO components must be higher among themselves (because of their conceptual similarity) than with other constructs with which it is hoped that there is also a certain conceptual and empirical relationship.

Content and Convergence Validity. In order to assess the content validity, we used factorial confirmation analysis which shows us how useful the items are for measuring latent variables (Bollen, 1989; Jöreskog, 1993). The convergence validity was analyzed in accordance with the significance of the regression coefficients as proposed by Anderson y Gerbing (1988). According to the data shown in tables 2 and 3, both kinds of variable validity which make up our UMO model were found as well as the obstacle construct, given that all of the items and variables were significant and showed an acceptable R^2 level.

UMO Model Validation. For the proposed hypothesis validation, the global model fit and the t-value of relationships were used.

Hypothesis 1 predicted that UMO is a latent construct made up of six components. In order to validate this hypothesis, we used a factorial confirmation analysis (FCA). Initially, we got a model with partially good results as they showed that some indexes of the model fit were satisfac-

TABLE 3. Validity of Content and Variable Convergence Forming Obstacles

LATENT VARIABLE	COEF. STAND	T-STUDENT	ERROR VARIANCE	R^2	GFI	CFI	SRMR
UMO obstacles					0.97	0.98	0.06
Lack of clarity in instructions and goals	0.56	4.13	0.69	0.31			
Lack of support from superiors	0.70	5.54	0.51	0.49			
Lack of distribution of responsibilities	0.89	8.03	0.21	0.79			
Lack of information about process advances	0.89	7.99	0.21	0.79			
Lack of qualified human resources	0.71	5.73	0.50	0.50			
Scant financial backing of program	0.76	6.40	0.42	0.58			

tory. (GFI = 0.90; CFI = 0.92), although other indexes did not present an optimal fit of the available data (SRMR = 0.984). To stimulate the second model we eliminated 3 items to increase its fit (2 items from Inter-functional C. and 1 from M. Environment Orientation). The second FCA presented a model with better indicators (X^2 = 98.30, p > 0.5). The GFI and CFI (0.93; 0.95, respectively) exceeded the limit of 0.90 suggested by Tabachnick and Fidell (1996). Besides, a good adaptation of the residuals is appreciated (SRMR = 0.069), and consequently, it can be stated that the relationships put forth in this model are those which best adapt to our data. Likewise, we found that all of the parameters are significantly different from 0 as the t-values were ≥ 2. In table 4 the standardized coefficients and the t-values for the foreseen relationships in the final structural model are shown. Hence, the results obtained allow us to assert that the one-dimensionality of UMO is proven because the final model is made up of only one latent construct. The component items of this scale can be found in Annex 1.

External Research Validation

Hypothesis 2 predicted the negative influence of obstacles in the UMO level developed by the universities from our sampling. According to the results presented in table 5, we

TABLE 4. Standardized Coefficients and T-values Obtained in UMO Model

VARIABLES	COEF. STAND.	T-VALUE	ERROR VAR.	R^2
Student orientation	0.79	7.01	0.38	0.62
Worker orientation	0.81	6.89	0.35	0.65
Donor orientation	0.78	6.60	0.39	0.61
Competitor orientation	0.90	6.36	0.19	0.81
Environment orientation	0.94	4.61	0.11	0.89
Inter-functional coordination	0.95	4.81	0.09	0.91

TABLE 5. Results of Influence of Obstacles in UMO

VARIABLES	COEF. STAND.	T-VALUE	ERROR VARZ.	R^2
Student orientation				0.61
Obstacles for UMO	-0.78	-7.00	0.39	
Worker orientation				0.64
Obstacles for UMO	-0.80	-6.89	0.36	
Donor orientation				0.64
Obstacles for UMO	-0.80	-6.63	0.36	
Competitor orientation				0.80
Obstacles for UMO	-0.89	-6.44	0.20	
Environment orientation				0.87
Obstacles for UMO	-0.93	-4.99	0.13	
Inter-functional coordination				0.90
Obstacles for UMO	-0.95	-4.16	0.10	

can attest to the validness of this hypothesis. The indexes found ($X^2 = 56.37$, $p > 0.5$; GFI = 0.94; CFI = 0.96) and the size of the residuals (SRMR = 0.057) let us conclude that the model fit is satisfactory. In the same way, the standardized coefficients and the t-values (≥ 2) of the relationships found allow us to validate the hypothesis.

CONCLUSIONS

The main purpose of this article is to look in greater depth at the knowledge of MO as applied to the context of education. Given that the empirical research on the topic is scarce; our study has sought to validate the theoretical and empirical identity in a sampling of Spanish universities. In order to achieve our goal, we developed a questionnaire which gathers the main actions that educational institutions can use to orient themselves to the market. The questionnaire presents acceptable levels of reliability and psychometric validity and suggests UMO is a one-dimensional construct although made up of the six proposed components. Our results reach the same conclusions as authors who suggest that universities should expand the customer concept (Giacobbe y Segal, 1994; EFQM, 1995), that MO should include more stakeholders (Greenley, 2005; Schlosser y McNaughton, 2007), and that it validates empirically the proposed theories of the few existing models of MO applied to the educational context (for example, Siu y Wilson, 1998).

In order to prove the external validity of our research, we had to deal with another barely developed topic in literature: factors which can make the development of a UMO more difficult. As a result, we also developed and validated a scale which allows for the identifying of the main administrative mechanisms which can hinder or enhance its use in educational institutions. Our results coincide with previous research from other areas and with studies about MO obstacles in profit-making contexts. Because of this, all of the scales developed can be considered as a contribution towards the application of MO in other sectors and towards the awareness of organizational dynamics which can hinder its development.

Our research presents important results for those in charge of market actions at educational institutions. Although we found that the surveys coincide, in that their universities develop actions oriented to the market, the level of these is medium-low (average = 3.54/7; standard deviation = 1.38). If we analyze the UMO level by components, we see that universities take more into account external components (students, donors, competitors and environment), than internal ones (workers and inter-functional coordination).

These results should be a source of reflection for those in charge given the new competitive situation of universities where aside from needing a greater orientation towards the market; they also will need to develop a competitive advantage. According to different authors, the sustainability and difficulty in imitating an advantage is based on the personnel and internal resources of a company, aspects much ignored by the universities from our sampling. This assertion is backed by a recent publication which points out that at the Spanish public university, professors agree on emphasizing that their work situation presents negative elements which significantly outweigh the positive ones both quantitatively and qualitatively (Frías, 2006).

The main limitation of our research is the methodology used to gather information. Our results come from a survey that assumes specific limitations of an interval scale of the subjective answer of those surveyed. But we can assume that the results have a certain credibility and representativeness of the reality of the samples. We base our assertion on the fact that our findings coincide with previous MO proposals in other contexts and with publications from other areas. Besides, the psychometric characteristics of the scales and the empirical contrasting of the model with other variables reduce the risk of obtaining biased results.

In future lines of research it would be advisable to separate results by kinds of organizations. It seems reasonable to suppose that public and private universities have different market perspectives as well as those of organizational variables or obstacles when developing a UMO. Another aspect to develop for future research is to analyze the impact that UMO can have in different competitive results of universities. Furthermore, what organizational variables are controlled by those in charge of education who also promote implementation of this construct in their institutions could be analyzed in further depth. In any case, the scales as well as the results presented by this research can be used as a starting point for a later study of how to assess MO with objective measurement and with competitive criteria in the long term.

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