Prioritization of entrepreneurial marketing dimensions: A case of in higher education Institutions by using entropy

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Abstract. One of the major benefits associated with entrepreneurial marketing concept is its ability to respond to the ever changing environment. Lack of attention to this concept can be a challenge for businesses. So present study aimed to prioritize aspects of entrepreneurial marketing in higher education institutions in Tehran. 49 institutions were selected using random sampling and questionnaires were distributed among active managers of these institutions. The data were collected using questionnaires and using the Shannon entropy weighting and ranking of priorities was discussed. The results showed that the dimensions of entrepreneurial marketing in the statistical community have different priorities. So, to managers, the calculated risk taking dimension had the highest weight and priority and dimensions of value creation and customer intensity with little difference had the lowest weight and priority.

Keywords: ENTREPRENEURIAL MARKETING, PROACTIVENESS, OPPORTUNITY FOCUS, VALUE CREATION, ENTROPY, HIGHER EDUCATION.

1. Introduction

Changes and transformations of social - economic systems in this era rooted in science and technology progress and changes. Assurance and the survival of organizations need finding solutions and new ways of dealing with problems which very dependent on innovation, invent, create products, processes, and new methods. What has become increasingly apparent to researchers is that conventional marketing practices are not always available, or appropriate, for entrepreneurial firms. When pursuing new opportunities with limited resources, the entrepreneur must use innovative approaches in the face of these uncertainties (Becherer & et al., 2008 ).

)Traditional marketing may not be adequate for firms to compete in this highly dynamic business environment. Recent studies propose firms to be more entrepreneurial in their marketing when dealing with market uncertainty and ambiguity. A growing collection of evidence suggests that the more successful companies over time are those that are involved in entrepreneurial activity in the higher levels. In their study of 59 firms from Sweden and the US, Hills et al. (2008) found that firms with entrepreneurial marketing orientation exhibit a different strategic orientation, commitment to opportunities; opportunity recognition would tend to use formal market research while entrepreneurial marketing firms tend to rely on experience, immersion and intuition. Further, entrepreneurial marketing firms are less constrained by budgets and have adaptive strategies whereas non-entrepreneurial marketing firms are more oriented to using budgets and
top-down corporate planning driven by financial metrics. In this research we use seven dimensions of entrepreneurial marketing which was used by Becherer et al. (2008). In their research they examine how the use of entrepreneurial marketing varies as a result of the experience and motivations of the owner/operator and how the SME was started or acquired. But, in this research either we explain about every dimension or we examine and prioritize these dimensions in the training industry and among higher education institutions to understand what their priorities in higher education institutions are and to understand the importance of each of these dimensions. And help managers to focus on the most important ones, achieve their goals and thereby answer Latent demands and future demands in the best way and create a significant competitive advantage. So the main question of this study is what are the priorities of aspects of entrepreneurial marketing in higher education institutions?

2. Literature review

2.1 Entrepreneurial Marketing

The importance of entrepreneurs and entrepreneurship are widely recognized. The entrepreneur has become a hero in recessionary times. And the ability to operate, and often also to grow, a business in a challenging business environment is important for society. So there is a need for scholarly studies of entrepreneurship and its intersections with other academic disciplines, such as marketing. The basic idea of linking Marketing and Entrepreneurship has been discussed for many years. Early authors linking the two fields together were, for example, Murray (1981) and Tyebjee et al. (1983). In the 90s, both education at various university levels and published research in entrepreneurial marketing (EM) grew significantly. We find more courses, conferences and symposia organized than ever before (Hills and Hultman, 2011). For many years, the American Marketing Association did not change their definition, but revisions were made in 1935, 1982 and 2004, and the latest modification came in 2007. The definition of marketing has evolved from being focused on performing business activities (1935) to focus on activities, institutions and processes for value-creating offerings. At the time of the first Marketing and Entrepreneurship Symposium in 1982, mainstream marketing, as defined by the American Marketing Association in 1981, was very different from discussions of entrepreneurial marketing. However, the gap has been reduced by the way the American Marketing Association changed the definition in 2004 and in 2007 (Jones and Rowley, 2011). Review of existing research about marketing and entrepreneurship indicate that Knowledge of Marketing and Entrepreneurship has always been two attractive research areas for many researchers. So, On the one hand, raise awareness about the impact of entrepreneurship and innovation in Businesses and the role of marketing in obtaining of success in the other hand led to the combination of these two disciplines and creation of entrepreneurial marketing concept. Entrepreneurial marketing is described as the interface between entrepreneurship and marketing. Entrepreneurial marketing is very complex and is related to the highly competitive and dynamic environment (Hills and Hultman, 2006). This form of marketing tends to be responsive and reactive to competition and opportunistic in nature. Indeed, empirical evidence suggests that there exists a significant correlation between an enterprise’s marketing and entrepreneurial orientations, both widely being
responsible for corporate success (Jones and Rowley, 2011). In one of the most comprehensive discussions on entrepreneurial marketing to date, Morris et al. (2002) propose that entrepreneurial marketing is composed of a proactive organizational focus on customer satisfaction through innovative and efficient value creation throughout the value chain (Miles and Darroch, 2004).

2.2 Dimensions of Entrepreneurial Marketing

2.2.1 Proactiveness

Bateman and Crant (1993), for example, argue that proactivity is a personal behavioural construct that exhibits a “relatively stable tendency to effect environmental change”. Frese and Fay (2001) bring this further in proposing that proactivity will have a positive impact on individual as well as organizational performance. Given all this it is to be expected that proactivity will enhance organizational performance, also in terms of the working environment. Proactivity, in a working environment context, can be defined as a continuous organizational process that aims to anticipate, improve and evaluate occupational health and safety practices (Andersen et al., 2010). Proactiveness reflects entrepreneurial willingness to dominate competitors through a combination of proactive and aggressive moves, e.g., introducing new products or services ahead of competition and acting in anticipation of future demand to create change and shape the environment. Moreover, having a proactive orientation involves discovering and satisfying the latent, unarticulated needs of customers through collecting customer- and competitor-based information (Keh et al., 2007). Proactiveness is concerned with implementation of something new, doing what is necessary to anticipate and act upon an entrepreneurial opportunity.

2.2.2 Opportunity Focus

Recognition and pursuit of opportunity are marketing actions critical to SME success. Market potential is generally evaluated by degree of fit relative to the capabilities and resources of the firm. It is the ability of the firm to select the “right” opportunity that determines success (Becherer et al., 2008). Although opportunity can arise randomly, entrepreneurial marketers are known for proactively searching for new opportunities. Being forward looking and having the will to become pioneers makes entrepreneurial firms able to serve unsatisfied needs and capture emerging opportunities before their competitors can. Innovation and creativity are crucial tools that help entrepreneurial firms to turn opportunities into realities (Kilenthong et al., 2010).

2.2.3 Calculated Risk Taking

The power of risk taking including willing to using substantial resources for exploiting of opportunities with using Business strategies Based on the results may be very uncertain (Morris et al., 2004). Firms that have adopted entrepreneurial marketing processes take calculated, rational, measured risks. Firms that have adopted entrepreneurial marketing processes are not gamblers but
risk accepters who understand that innovation in the current social, technological, and economic environments is inherently uncertain and requires rational betting on long shots. One method for managing risk is to work in alliance with other parties, which these firms believe will both provide complimentary capabilities and help shift the risks to other parties (Miles and Darroch, 2004).

2.2.4 Innovativeness

Innovation-focused marketing actions allow the firm to concentrate on new ideas that lead to new markets, products, or processes. The degree to which a successful organization emphasizes innovation in its market actions can range from the highly innovative new market creator to the incremental market builder. The market creator must break with past solutions to offer the customer a radically different value. The incremental innovator builds on existing customer relations and market knowledge. SMEs may choose to focus on innovative means of marketing since the firm may not have the resources to break with industry standards (Becherer et al., 2008). Entrepreneurial marketing entrepreneurs tend to be innovation-oriented (that is driven by ideas and intuition) rather than customer-oriented (driven by assessments of market needs) and tend to use informal networking rather than formalized research and intelligence systems (Morrish, 2011). Innovativeness refers to a firm's tendency to engage in creative processes, experimentation of new ideas, which may result in the institution of new methods of production and/or bringing new products or services to current or new markets. The innovativeness aspect of entrepreneurial orientation would promote change and creative behaviors, which encourage active exchange of ideas, increase information flows and novelty in new product development.

2.2.5 Customer Intensity

The dimension of customer intensity builds on what is often viewed as a central driving force of marketing in the organization: a “customer-centric” orientation employing innovative approaches to create, build, and sustain customer relationships. Many studies suggest successful organizations are those that place a greater emphasis on customer intensity. However, it has also been suggested that extreme customer orientations might inhibit the breakthrough of innovations that create markets and disrupt equilibrium, since these radical changes are out in front of customers (Becherer et al., 2008). Customer orientation has its roots in early services marketing literature in which the importance of customer-focused employees was a tangible sign of quality for the firm and its services. Since then, the concept of customer orientation within firms has been investigated by a number of authors and researchers; indeed, some authors view customer orientation as the ‘pillar of marketing’ (Jones and Rowley, 2011).

2.2.6 Resource Leveraging

One of the key challenges of marketing in new ventures is scarcity of financial and personnel resources. This scarcity demands a strict monitoring of marketing costs, and restricts the range and intensity of marketing activities a new venture is able to pursue. Entrepreneurs can either alleviate this problem by trying to acquire additional resources, such as venture capital or bank.
loans, or by trying to achieve a maximum effect of these scarce resources. Findings on this topic can be categorized in two groups: strategies and tactics for reducing the amount of resources that must be spent for particular marketing activities (“let others pay”); and strategies and tactics that require only few resources, yet have a high impact in the marketplace. Strategies and tactics for reducing the amount of resources spent for particular marketing activities include the free-riding strategy as well as the strategy of forming alliances with other organizations.

The second group of findings focuses on strategies and tactics that require only few resources yet promise to produce a high impact in the marketplace. These strategies/tactics include the adoption of a niching strategy, a gradual “step by step” development of marketing activities, and low-cost “guerrilla” tactics in marketing (Gruber, 2004). At its most basic level, leveraging means more work with less. Marketers must develop a capacity for resource leveraging. The ability to recognize an under-utilized resource, to see how a resource could be used in a non-conventional way, or to convince those that control a resource to let the marketer use it, requires insight, experience, and skill (Morris et al, 2004).

2.2.7 Value creation

The focal point of entrepreneurial marketing is innovative value creation, on the assumption that value creation is a prerequisite for transactions and relationships. The task of marketers is to discover untapped sources of customer value and to create unique combinations of resources to produce value (Morris et al, 2002). Because of the superior ability to identify and exploit opportunities, we argue that firms that adopt entrepreneurial marketing processes are better able to identify attractive entrepreneurial opportunities and exploit them by leveraging innovation to enhance the offering’s benefits and/or decrease the offering’s costs, resulting in a superior value for the customer (Miles and Darroch, 2004).

3. Methods and theoretical framework

A basic concept in the physical sciences, social sciences and systems is the entropy. Entropy represents the uncertainty arising from the content of a message. In other words, entropy in information theory is an index to measure the uncertainty that is expressed by a probability distribution (Shannon, 1984).

Building upon the pioneering work of Leo Szilard (1925/1972, 1929/1972), Shannon and Weaver (1949) developed what is now called information theory. This theory formalizes the intuitive idea of information that there is more "information" in rare events, such as winning the lottery, than in common ones, such as taking a breath. Shannon defined the entropy for a given system as the weighted average of the probability of occurrence of all possible events in the system. Entropy, used in this sense, is defined as a measure of our uncertainty, or lack of information, about a system (May et al., 1994). The entropy method is the method used for assessing the weight in a given problem because, with this method, the decision matrix for a set
of candidate materials contains a certain amount of information. In other words, the entropy method works based on a predefined decision matrix. The entropy idea is particularly useful for investigating contrasts between sets of data. This method has its roots in information theory and was introduced in 1948 to provide a quantitative measure of the “uncertainty” represented by a discrete probability distribution. Entropy analysis is based on three measures: entropy ($E_j$), degree of divergence ($d_j$), and degree of influence or weight of importance ($w_j$) that this method consists of the following procedure: (Vazifedost and Taghipouryan, 2011).

**Step 1:** Normalizing the decision matrix:

$$ p_{ij} = \frac{r_{ij}}{\sum_{i=1}^{m} r_{ij}} \quad i = 1,2,\ldots, i \quad j = 1,2,\ldots,j \quad (1) $$

**Step 2:** Calculating the entropy with data for each criterion, the entropy of the set of normalized outcomes of the $j$th criterion is given by:

$$ E_j = -k \sum_{i=1}^{m} [p_{ij} \ln (p_{ij})] \quad i = 1,2,\ldots, i \quad j = 1,2,\ldots,j \quad (2) $$

**Step 3:** weights of criteria:

$$ D_j = 1 - E_j $$

$$ W_j = \frac{d_j}{\sum_{j=1}^{n} d_j} \quad \forall j \quad (3) $$

**4. Results**

In this research were used 7 dimensions of entrepreneurial marketing which was used by Becherer et al. (2008) included Proactiveness, Opportunity Focus, Calculated Risk Taking, Innovativeness, Customer Intensity, Resource Leveraging, and Value Creation. Respondents were asked to score their opinions about the importance degree of each dimension based on score of 1 to 100. To test the reliability of instrument, we computed Cronbach alpha coefficients. Although the ideal Cronbach alpha value of a scale should be above 0.7, the minimal Cronbach alpha value of 0.6 suggested by Robinson et al. (1991) was accepted (Hoare and Butcher, 2008). Cronbach’s alpha for constructs are: Proactiveness: 0.728, Opportunity Focus: 0.724, Calculated Risk Taking: 0.764, Innovativeness: 0.779, Customer Intensity: 0.720, Resource Leveraging: 0.778, Value Creation: 0.750. The samples include active managers of higher education institutions of Tehran province in Iran. 103 questionnaires were completed and were ready for analyzing. The samples of 103 respondents were 56.3 percent male (n=58) and 43.7 percent female (n=45) and 61.2 percent were graduated (n=63) and 35 percent with MA degree (n=36) and 3.9 percent with Ph.D degree (n=4).
5. Discussion and Conclusion

To rank the dimensions of entrepreneurial marketing we used Shannon entropy. Results of the research have shown that these dimensions have different priorities among managers. Dimensions Weight is shown in Figure (2).

As shown in Figure 2 Calculated Risk Taking dimension had the highest weight and priority and dimensions of value creation and Customer Intensity with little difference had the lowest weight and priority. Considering these results and considering the competitive environment, today, customer satisfaction is an important issue for organizations. Being a winner or loser is based on the percentage of customers that they have retained. This is why many scholars and researchers have continually stressed the importance of customer satisfaction. On the other hand, customer is one of the most important stakeholders in any organization because, without the customer, the organization probably will not succeed. Considering that reviewed institutions are among the service agencies and considering that in the Service Industry, Survival depends on customer satisfaction and create value for them, and considering that the two dimensions of customer intensity and value creation have the lowest priority and dimension of Calculated Risk Taking has the highest weight and highest priority so these institutions for survival and creating competitive advantage Should pay more attention to these dimensions and should implement some programs such as, recognizing the importance of satisfying their customers, and use Innovative ways to communicate with their customers, and consider Programs to communicate with customers, and create more value for them than their Competitors with the best services and the best values, providing superior customer value became a goal for them; create a good pricing structure in their institutions, and increase their risk taking power, and then use of less conservative styles. Using these programs and strategies can lead to achieving competitive advantage in education market. So, considering entrepreneurial marketing in higher education institutions can coordinate the challenges and limitations imposed by their environment and would show the best ways of achieving their missions and visions.
References


Appendices

FIGURE 1. SEVEN DIMENSIONS COMPRISING THE CONCEPTUALIZATION OF ENTREPRENEURIAL MARKETING

FIGURE 2. WEIGHTS OF SEVEN DIMENSIONS BY ENTROPY

Source: Authors’ research