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# ANALYSIS OF THE EXPORT OF BARBERRY: PERCEPTIONS OF IRANIAN EXPORT FIRMS

## ABSTRACT

This small pilot research examines perceptions about key success factors among Iranian firms which export barberry a fruit grown in KhorasanJonobi (South Khorasan). We contrast two sets of marketing elements, marketing actions the firm takes, mostly oriented toward product and marketing communications, and foreign market experience and knowledge. In addition, firms assessed the role of various forms of government support. A total of 35 firms returned questionnaires.

On average, most items rated fairly high (around 4 on a 1-5 scale), but the firms cluster into three distinct groups distinguished by high, medium, or low ratings across most of the elements on the questionnaire. Within the levels, however, there are strong differences in exactly what factors are considered most or least important. We name the groups high expertise (based on their use of marketing elements), medium expertise, and low expertise. The use of marketing professionals ranked first in the 'high expertise' group, and government support ranked last. In the 'low expertise' group, these two were reversed – government support ranked as most important while the use of marketing professionals was considered least important.

**KEY WORDS:** barberry export, success factors, marketing factors, government support, Iran

## INTRODUCTION

Exporting has long been recognized as a useful element which can contribute to economic growth in developing economies (e.g., Sheehey 1992; Mo 2010; Hessels& van Stel 2011). Indeed, sometimes it is considered one of the most critical driving factors for economic development. Some export, of course, is State-managed, but for the most part, in most countries it is private firms which must compete in international markets. Research on factors firms use to achieve export success can roughly be characterized as focusing mainly on internal resources and capabilities (Beleska-Spasova et al 2011; Kaleka 2012), or on the nature of the firm's interaction with the market, i.e., mainly marketing strategy and tactics (Leonidou et al 2002; Morgan et al 2012). Both of these approaches will be summarized below.

In addition, it is often assumed that government plays an important facilitating role, in terms of developing and maintaining various necessary infrastructures, and supplying many support functions, especially for smaller businesses that venture into international markets (e.g., Shamsuddoha&Ndubisi 2009). "Especially, in the case of LDCs, the government's role seems essential to enhance local firms' international competitiveness" (Awuah&Amal 2011, p. 124).Indeed, the very successful East / Southeast Asian development model is usually considered to be based primarily on strong export orientation with a strong government role in building supporting physical and institutional infrastructure, and providing programs to support exports (e.g., Krueger 1990; Adams & Davis 1994).

However, Ahmed et al (2012) note that there is some inconsistency in results from developing countries about factors which contribute to export success. This suggests a need for more careful examination of the issues, as it is not difficult to imagine that different success factors may be relevant to firms with different characteristics. In the case of Chile, for example, Martincus&Carballo (2010) show that one set of government support activities, export promotion programs, does indeed have differential impact. One important difference is that smaller and less experienced firms may gain greater benefits. They also note that this sort of issue has not received very much attention by researchers.

We examine perceptions about the importance of several key factors for export success among barberry exporters in Iran. Barberry (*Berberis vulgaris*) is a fruit used in cooking; this variety of the shrub is mainly grown in KhorasanJonobi (South Khorasan), Iran. It has the advantage of being well adapted to arid conditions, including the salinity that can build up in arid soils. Barberry production also generally gives farmers a better return on investment than most other commercial crops that are viable in

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Khorasan, across a number of measures, including capital expenditure, labor input, and water requirements(Golmohammadi&Motamed 2012). Barberry export plays a relatively minor role in Iran's overall economy, but it is an important niche product, especially to farmers in Iran's arid eastern region of Khorasan (Borimnejad 2008).

The goal in this research was very simple; this is pilot work in which we aimed to determine whether there is some segmentation in terms of how exporting companies view the success factors. If there is, then this example would provide strong evidence that government policy needs some sophisticated fine-tuning if it is to be very useful for the whole range of companies which contribute to exports. For niche products, it may be especially important to get it right – poor policy may not affect the overall economy very much, but it certainly would affect the livelihood of farmers in a region of where little of Iran's oil revenue reaches

**Success factors in the export of agricultural products**

There is a fair amount of research about the key factors companies need to use as they develop their exports. Much research can roughly be characterized as focusing mainly on internal resources and capabilities, or on the nature of the firm's interaction with the market, i.e., mainly marketing strategy and tactics. The resource-based view (RBV) of the firm is sometimes applied to exporting; this approach assumes that sustainable competitive advantage is generated from a bundle of firm-specific resources and capabilities (e.g., Beleska-Spasova et al 2011; Kaleka 2012; Ritthaisong et al 2012). The other common approach focuses primarily on aspects of marketing strategy and implementation (e.g., Leonidou et al 2002; Morgan et al 2004; Morgan et al 2012).

Of course, sometimes there is also considerable overlap between these two approaches. Kaleka, for example, follows the RBV approach, but nevertheless defines some key capabilities as "dynamic marketing capabilities whose deployment shapes export performance" (Kaleka 2012, p. 94). Morgan et al take the marketing approach, but talk about "the firm's ability to use its available resources and skills to translate its intended export marketing strategy decisions into realized export marketing actions" (Morgan et al 2012, p. 272). Wheeler et al simply categorize the sorts of resources commonly used in RBV as 'characteristics and resource base', and the marketing strategies as 'competencies and strategies'. They group both sets as two categories of 'internal firm environment' (Wheeler et al 2008, Figure 1).

Both the RBV theory and the marketing approach have sometimes been applied to agricultural and agribusiness exports. For example, Ritthaisong et al (2012) use mainly internal resources and capabilities, without much reference to marketing, to examine rice exports by Thai rice mills. Ahmed et al (2012) use a similar set of internal resources and capabilities applied to exports of processed food products from Thailand.Mbaga et al (2011) look at marketing issues related to distribution channels in assessing date export performance in Tunisia and Oman. Karelakis et al (2008) examine mostly marketing strategy elements in assessing export performance of Greek wines. The mixed approach is also used; e.g., Boughanmi et al (2007) apply a mix of internal and marketing factors to fish export from Oman.

The role of government in supporting firms which aim to engage with the international market has also received some attention for agricultural and agribusiness products. For example, Skallerud& Olsen (2011) look at various institutional organizations for export in several agricultural products industries in New Zealand. In their meta-analysis of research on marketing strategies and export performance, Leonidou et al (2002) pointed out that export operations are not static, but evolve as firms gain experience. They noted that inexperienced firms would tend to rely more strongly on external guidance, while experienced firms would maintain stronger control over their marketing. The external guidance that Leonidou et al (2002) specifically noted was customers; however, the same pattern is likely to hold for government.

**Barberry production in Iran**

Iranis a middle income developing country of about 75 million people, with a nominal per capita income of about US$ 4530, or US $11,420 at purchasing power parity (WB 2012). Although the performance of non-oil economic sectors has been mixed during the past few decades, oil exports have kept living standards relatively high, and Iran is actually about the 18$^{th}$ largest

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economy in the world by purchasing power parity (PPP). In recent years the country has begun economic reform. This seems to be stimulating stronger non-oil growth and job creation, although recent price reforms in domestic energy, among other things, still masked the positive impact in 2009 and 2010 (e.g., IMF 2010, 2011; Jbili et al 2007). Nevertheless, average annual growth in GNP over 2000-2010 was about 5.4 percent (WB 2012). Iran's agricultural sector is fairly strong, and Iran is a major producer of a number the most commonly traded agricultural products (Borimnejad 2008).

KhorasanJonobi is a relatively new political subdivision on the eastern side of Iran. It was created in 2004 when the former Khorasan province was divided into three parts. The region of Khorasansits astride a number of ancient trade routes, and has enjoyed a long, rich history as a prominent trade hub. The areahas also long produced several important niche agricultural products (Moghaddam et al 2007; Borimnejad 2008). In modern Iran, however, Khorasan is somewhat removed from the main centers of Iran's population and economy further west.

Barberry (*Berberis*) is a shrub which grows in temperate and subtropical regions of most continents. It occurs in very many varieties, many of which are used in landscaping (e.g., Golmohammadi&Motamed 2012; OSUDH 2012), although sometimes it is considered a nuisance shrub (e.g., RNZIH 2010). In some cultures, local species are used in traditional medicine, and modern medicine has recognized that there are, in fact, a number of beneficial medicinal properties (e.g., Fatehi et al 2005; UMMC 2011; Golmohammadi&Motamed 2012). One species, *Berberis vulgaris*, produces berries which are widely used as a food additive in Iranian cooking (Batmanglij 2007; Alavi&Mazloumzadeh 2012; Golmohammadi&Motamed 2012). We specifically look at export of berries from this particular species, which is mostly produced in the province of KhorasanJonobi (South Khorasan), Iran.

The government seems to have been quite willing to provide some support to firms which export minor agricultural products (e.g., Borimnejad 2008), but barberry is not a major product either in terms of export volume or importance on the domestic market. Thus, it has not received very much specific attention compared to a few agricultural products which are felt to be strategic, such as, e.g., rice (Mosavi&Esmaeili 2012).

## METHODOLOGY

The questionnaire was developed without explicitly following the literature, since there is little research on small to medium agricultural products export firms in Iran, or in other developing countries in similar situation. Even when concepts are fairly well understood in Western context, there is no guarantee that they will fit other cultural contexts (e.g., Douglas and Nijssen 2003). We relied on judgment founded on extensive interaction with these sorts of small exporters in Khorasan. Nevertheless, the end result was a set of questions that are mostly represented in the literature (e.g., Leonidou et al 2002), at least from the marketing side of success factors. These exporters tended to focus on interaction externally, rather than on the RBV issues.All questions asked about the importance for developing good exports of various aspects of the firm's marketing or the government's role. The scale on each of the questions ranged from 1 = very low (importance) to 5 = very high (importance).

The exporters were identified from government lists of exporters in KhorasanJonobi who are known to export Barberry, and questionnaires were distributed to them personally. The family of the first author of this paper grows barberry, so could claim some small degree of connection to encourage response. (Srijumpa et al 2004 note that access to data, particularly in research on firms, often depends on some sort of connections in Asian societies.) A total of 35 firms responded.

## RESULTS

We ran exploratory factor analysis on the questions to check discriminant validity in distinguishing the marketing issues from the government issues. Government issues were indeed perceived as a separate dimension, but the marketing issues showed some sub-structure. Thus, we examined them in a separate factor analysis. Two distinct dimensions are apparent, which we call 'firm marketing actions' and 'foreign market experience and knowledge' (Table 1). Except for one questionnaire item, there was not

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very much cross-loading; where there was some non-trivial cross-loading on a few questions, the magnitudes of the loadings differed substantially enough that the item could be assigned to one or the other dimension. The marketing actions are about product and promotion issues, while the other dimension is about knowledge and direct contact with the foreign market.

However, the item 'use of marketing professionals' loaded equally on both of these dimensions. Rather than artificially assign it to one or the other, we simply separated it out as a distinct issue; apparently managers in the export firms generally perceive a need for marketing professionals in any kind of activity related to marketing. Composite variables were constructed for the two marketing dimensions by taking the mean across items which loaded on the respective factor, and the 'marketing professional' item was kept separate. The two composite variables showed high Cronbach alpha, indicating high reliability. Table 2 shows the mean of each item, organized by the two dimensions. Respondents rated all items moderately important on average, but items representing product issues tended to have the highest ratings. 'Improving product quality', for example, rated 4.57 on the 1 – 5 scale, and 'product appearance' and 'hygiene of processed product' were at 4.46 and 4.43, respectively.

| | Component | |
|---|---|---|
| | 1 | 2 |
| D8_firm improving product quality | **.686** | |
| D9_firm product appearance | **.822** | |
| D10_firm hygiene of processed product | **.845** | |
| D6_firm proper packaging | **.788** | |
| D7_firm correct grading | **.665** | .434 |
| D20_firm use of advertising media | **.603** | |
| D21_firm participation in international exhibitions | **.676** | .437 |
| D11_firm brand on the export product | **.735** | .512 |
| | | |
| D16_firm sales agency in target market | | **.815** |
| D14_firm knowledge of structure of foreign market | .482 | **.770** |
| D19_firm using proven marketing methods in leading markets | | **.846** |
| D2_firm knowledge of market prices | .473 | **.593** |
| | | |
| D17_firm use of marketing professionals | **.595** | **.592** |

**Table 1: Factor analysis dimensions of questionnaire marketing items**

NOTE: principal components factor extraction with Varimax rotation

The composite variable representing government was constructed from the mean of items about government. The factor analysis did not show substructure on these items, and the Cronbach alpha was high, indicating that the items are reliable in capturing a range of issues that all represent government's role in the perceptions of respondents. No item stood out as distinctly more important than others; most items scored near 3.9 – 4.0. Two items, producer education and improving road systems, were considered somewhat less important than all the others (Table 3).

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| n = 35 | mean | standard deviation |
|---|---|---|
| **firm marketing actions (Cronbach alpha = .915)** | | |
| D8_firm improving product quality | 4.5714 | .55761 |
| D9_firm product appearance | 4.4571 | .85209 |
| D10_firm hygiene of processed product | 4.4286 | 1.03713 |
| D6_firm proper packaging | 4.3143 | 1.07844 |
| D7_firm correct grading | 4.2000 | 1.05161 |
| D20_firm use of advertising media | 4.1143 | 1.07844 |
| D21_firm participation in international exhibitions | 4.1143 | 1.05081 |
| D11_firm brand on the export product | 4.0000 | 1.23669 |
| **foreign market experience & knowledge (Cronbach alpha = .849)** | | |
| D16_firm sales agency in target market | 4.1429 | .97446 |
| D14_firm knowledge of structure of foreign market | 4.0286 | 1.01419 |
| D19_firm using proven marketing methods in leading markets | 3.8286 | 1.20014 |
| D2_firm knowledge of market prices | 3.6000 | 1.11672 |
| **professional expertise** | | |
| D17_firm use of marketing professionals | 4.0571 | .87255 |

**Table 2: Means of marketing items (by dimension)**

| government role (Cronbach alpha = .831) | mean | standard deviation |
|---|---|---|
| D1_gov financial support from government | 4.0571 | 1.10992 |
| D28_gov collaboration with other exporting countries | 4.0286 | 1.04278 |
| D22_gov government inventive policies | 4.0000 | .97014 |
| D27_gov export trade unions | 4.0000 | 1.02899 |
| D13_gov access to export terminals | 3.9714 | 1.17538 |
| D23_gov inviting foreign diplomats and foreign traders | 3.9429 | 1.02736 |
| D26_gov business assistance consultations | 3.9143 | .95090 |
| D24_gov currency policies | 3.7143 | 1.01667 |
| D12_gov producer education & promotion for proper cultivation | 3.4000 | 1.21752 |
| D15_gov improving road transport system | 3.2571 | 1.01003 |

**Table 3: Means of government role items**

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The three composite variables (firm marketing actions, foreign market experience & knowledge, government role) and the separate item 'marketing professionals' were used in cluster analysis to identify groups of companies with similar response patterns. As Churchill and Iacobucci (2005) noted, most segmentation is usually derived from cluster analysis. Using Ward's method with squared Euclidian distance, three distinct clusters were identified, based on visual inspection of the cluster dendogram (see Churchill &Iacobucci, 2005). It would be necessary to move to a substantially lower level of separation before one of these three clusters further separates into two, so the use of more clusters did not seem justified.

Figure 1 shows that the three clusters represent three distinct segments in terms of how the respondents rate the importance of marketing aspects and government's role. We named the clusters high expertise in foreign markets, medium expertise, and low expertise. The medium category contained the majority of firms (20), while the high category had 10, and the low category had 5. The pattern was that ratings tended to be higher on all of four variables used in the cluster analysis for the 'high expertise' category, and tended to be low on all variables in the 'low expertise' category.

However, within each category, the relative ordering of elements considered more vs. less important differed substantially. To bring this out clearly, we constructed the ratio for each of the four variables to the overall mean within the group. For example, using only 'medium expertise' firms, the overall mean across the four variables was 4.05. The value on 'foreign market experience & knowledge' was 3.88, so the index on this factor was 100*(3.88-4.05)/4.05 or -4.32, i.e., 4.32 percent below the overall rating of factors by this firm.

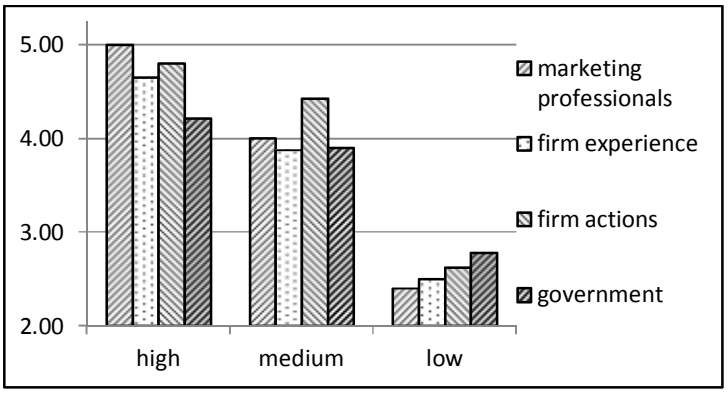


**Figure 1: Means of dimensions by expertise in international markets**

NOTE: vertical axis is mean of the questionnaire items in each category

Figure 2 shows the patterns of these indices. Within the group of high expertise firms, the use of marketing professionals rated very high relative to other elements, and government support rated very low. This was reversed among 'low expertise' firms, which relatively, rated government support very high, and use of marketing professionals very low. The medium expertise firms rated firm actions very high compared to any other element.

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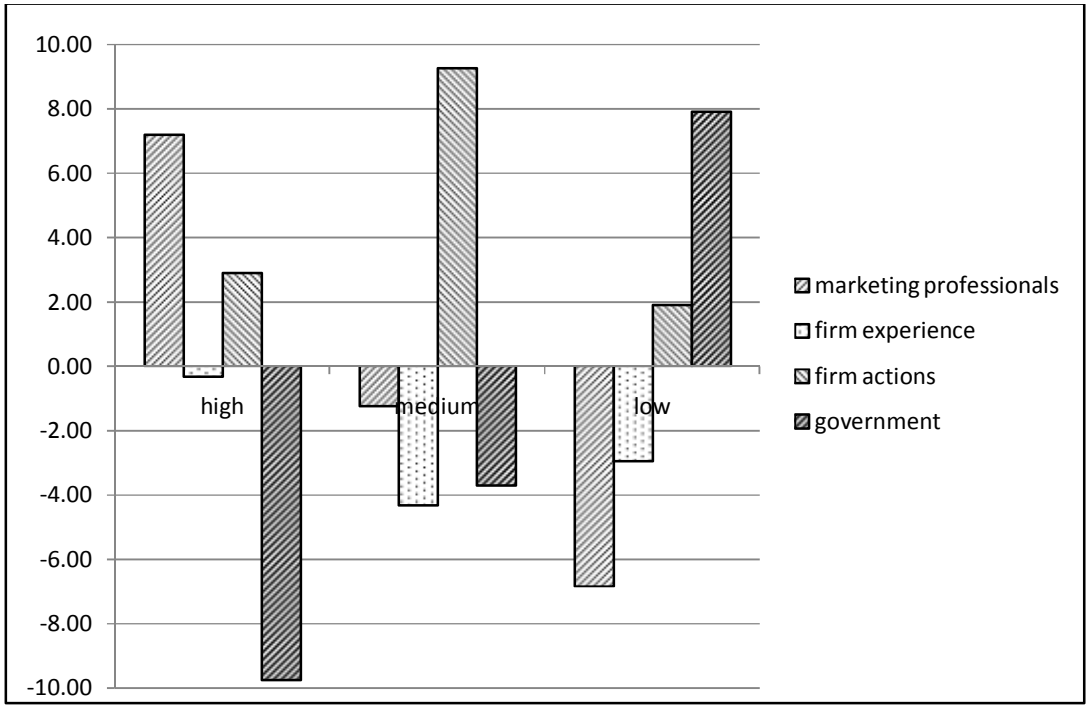


**Figure 2: Indices of dimensions withininternational market expertise categories**

Note:vertical axis is percentage above or below mean across the four dimensions

The elements which the three groups of firms deem relatively most important vs. least important seem to suggest different stages of engagement with international markets as Iran reforms its economy. Iran, of course, is in transition to a market economy. Iran is doing what many experts recommended a few years ago; e.g., the IMF: "the next phase of reforms would need to strengthen the foundations of private-sector-led growth in a context of greater integration with the world economy in order to achieve higher levels of efficiency and competitiveness" (Jbili et al 2007, p. xiii).

Parts of the discussion in Blanke-Ławniczak (2009), who describes stages of internationalization in the food industry duringPoland's transition to a market economy, seem relevant here. That discussion shows the initial shock as the economy opened and foreign products came in, when most Polish companies were not prepared for competition. Gradually some companies upgraded operations to regain domestic markets, began exporting, and some even eventually became investors in agribusiness ventures internationally. Elements of that discussion seem relevant to the three categories of companies we can see in the data from Iran.

Of course, Iranian barberry faces negligible competition from foreign imports, because nearly all barberry fruit on the world market comes from Iran. The 'low expertise' companies in our sample seem to lack much knowledge of how to compete on the international market. They do not rate any of these elements very important at all compared to the other two categories of barberry exporters. Nevertheless, even at their low level of interest, relatively, they clearly believe government is the most important thing in driving their exports. They do not apparently see much need for professional marketing people in the firm to help build exports.

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We might associate the 'middle expertise' companies with intermediate stages of the internationalizationin Blanke-Ławniczak (2009). In this sample, these companies seem to focus on marketing activities - doing. The 'high expertise' companies in the sample seem more likely to focus on getting the right people in place – marketing professionals.

## CONCLUSION

This small pilot did show some of the key success factors as perceived by barberry exporters in Iran. Further, it confirmed that the perceptions are not uniform, but that there are distinct segments, which seem to relate to the extent of expertise in foreign markets. In terms of policy, it is clear that government support is considered important by some companies, but others seem to have reached a stage where they rely mostly on their own expertise and actions, rather than on the government. This suggests the need for nuanced export support policies, with a range of government actions that can help relatively inexperienced firms, as well as things that can facilitate smooth operations for those firms that do not really need direct government support.

Of course, there are a few important limitations to this pilot work, notably, that the survey did not obtain data on performance, actual length of involvement in exporting, or the depth of involvement. The very specific objective in this study was simply to understand what the key success factors are to these companies, in preparation for a more substantial survey covering a wider range of agricultural products. With the discovery of this distinct segmentation in the thinking of exporters, it is clear the future work will need to explore how companies at different stages of international engagement perceive key factors in developing strong exports.

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