

Evaluating the effect of product marketing mix on the export of mineral products

Seyed Ali Hoseini¹, Mohammad Haghghi^{2*}

¹Ph.D, Department of Management, Payame Noor University (PNU), P.O. Box, 19395-3697, Tehran, Iran. ²Faculty member, Department of Management, Payame Noor University (PNU), P.O. Box, 19395-3697, Tehran, Iran.

Correspondence: Mohammad Haghghi, Faculty member, Department of Management, Payame Noor University (PNU), P.O. Box, 19395-3697, Tehran, Iran.

ABSTRACT

The aim of this article is to evaluate the effect of promotional activities of the marketing mix elements (p4) on exports of mineral products. The existence of more than 68 types of mineral products in Iran meets the domestic needs. It is also considered as an advantage for the export of mineral products to foreign countries and increasing the trade balance. The research population includes all people who have experience in the field of mineral products in Iran and are somehow dealing with the process of distribution and export of mineral products. The statistical sample was determined as 400 people using a sample size determining table in a limited population. They were selected by stratified random sampling. Questionnaires were used to collect data. The validity and reliability of the questionnaires were confirmed by reviewing. The test of ratios was used to analyze the data. The results showed that the score of the role of the product variable on mineral exports was 2.7% to moderate to 97.3% high and very high, so this variable has a great impact on mineral exports and thus the diversity of mineral products with the maximum acceptable ratio. 88.92% of the first rank and sub-variables of mineral quality with a maximum ratio of 86.24% and the effect of the appearance of most minerals with a maximum acceptable ratio of 77.26% were in the second and third ranks respectively of the impact on mineral exports.

Keywords: Marketing mix, product, export

Introduction

Nowadays, using marketing techniques and specialized marketing research is essential to stay in competitive world. Studies have shown that one of the main causes of companies' failure is their inability in applying marketing techniques. These companies prefer gaining more profits over customers' satisfaction and monitoring market changes and changing the tastes of customers. As Albert Emery stated, marketing is a war, a civilized war where companies often succeed in more desirable and better use of words of thought and intellectual order. In

other words, they try to have organized and up-to-date marketing management in order to take steps towards competition arenas. ^[1] Marketing is a new science that dates back to the twentieth century. Staying in today's competitive world and continuous operation of companies depend on two factors of customer satisfaction and selling more profit. Thus, to achieve two advantages mentioned above, investigating and analyzing marketing mix elements is required. Cutler believes that in order to manage the market, most companies tend to cut costs while lack of investing in marketing will increase the costs ^[2]. Market management is one of the major areas of organization management that examines the relationships between the components of the organization and their interaction with each other in a systematic manner in order to identify the internal and external factors in the marketing research. Marketing is a human activity performed to meet the needs and desires through the exchange process. ^[3] Marketing is conscious endeavor for optimal allocation of resources and creating a kind of specialty in market. ^[4] Marketing means searching for the best and most appropriate

Access this article online

Website: www.japer.in

E-ISSN: 2249-3379

How to cite this article: Seyed Ali Hoseini, Mohammad Haghghi. Evaluating the effect of product marketing mix on the export of mineral products. *J Adv Pharm Educ Res.* 2020;10(2):203-8.
Source of Support: Nil, Conflict of Interest: None declared.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

market in which a company can have a continuous, useful and effective operation. Marketing mix was first introduced by Nil Borden under the title of p4. It is a set of market intervention tools operating dependently, so that they apply the necessary or desired impact on the market.^[5] Marketing mix elements include price, promotion, distribution, and product and sub-elements of each of them are basis for the activity of marketers. After selecting a target market, marketing managers should develop a systematic plan to sell to customers and build long-term relationships.^[6] Marketing managers must allocate company resources to marketing mix elements to achieve high profitability.^[7] Marketing mix means that a systematic approach is needed among all factors in the marketing process to convince customers. In other words, right product at the right price, with the right distribution, and with the appropriate methods should be provided for the customer. Tools of the companies are means to survive in market and gaining more success compared to competitors.^[8] In the marketing mix, the element of product includes a physical object, service, organization place, even an idea^[5] or something that is supplied to market to buy or satisfy a need. The most important factor in selecting a product is customer knowledge of the product and characteristics such as competitive price, product name, manufacturer name, quality of product, color, packaging, etc. are essential to gain knowledge on a product.^[9] Production management is one of the most important elements of the product. Production strategy requires coordination between product types, packaging, and labeling. Product can be viewed from 5 perspectives 1) the main benefits of the purchase 2) the benefits the buyer receives through the purchase of the product 3) the expectations of the goods 4) the benefits of the goods and services 5) the potential goods: a set of new facilities and services which may be added to the goods ready to be sold. The goods are classified according to their durability into non-durable and durable types. Consumed goods are divided based on customer's purchasing habits (convenience of purchase, goods characteristics and form). Industrial goods are classified based on their entry to the manufacturing process into raw materials, capital goods, and repairs and services. The production mix of most companies are more than one goods and its four dimensions that are tools for designing a company's strategy are described by length, width, depth and homogeneity of product and these four dimensions are the tools of production strategy design. Various production lines are periodically evaluated to measure profitability and potential growth. In the production of goods, decisions should be made for their support and their convenience, and so on. The law of trade in industrialized countries has required the writing of minimum product information on labels. Hence, we refer to 15 factors related to product in the export of mineral products in this study:

1. The role of diversity of mineral products
2. Quality of mineral products
3. Production level of mineral products
4. Effect of appearance of mineral products
5. Trade position of Iran
6. Effect of packing of mineral samples

7. Effect of product design
8. Effect of product size
9. Effect of quality guarantees of mineral products
10. Effect of acceptance of mineral returns
11. Effect of re-purchase offers on used products
12. The role of pre-sale services
13. The role of after-sales service
14. Effect of using the experiences of other countries
15. The role of after-sales service to get the necessary share

Therefore, given what was stated above, we conclude that the element of product and its related variables in the target market have a very effective role in export of mineral products. Thus, given increasing competitive conditions of market, the main aim of this study is to evaluate the effect of applying the element of product and its 12 variables on increasing the export of mineral products. Marketing is very important and many studies have been conducted in this area, but no new research has been conducted on elements of marketing mix in recent years. Therefore, we refer to some of the latest studies conducted in this regard. Kaplan and Haenlein (2009) investigated the importance of marketing development in an article.^[10] In this article, they focused on the role of public marketing in public places and considered this sector of marketing important in advancing the goals of organizations. In an article entitled "Cutler and Borden are still alive, the myth of marketing relation and their honesty in four elements of marketing mix", Zineldin and Philipson (2007) investigated the relational marketing as a new paradigm.^[11] Teerling and Pieterse (2010) studied multi-channel marketing in a way that governments interact with their citizens in different ways and seek to help them.^[12] They consider electronic development as the best opportunity of government for the use of advertising in a way that they consider the objective of their research as the impact of advertising through government electronic service channels. Anderson (2005) investigated the relationship between marketing and brand on the web. It means that the use of the web for advertising is increasing and the need for the web in brand marketing success is inevitable.^[13] Domegan (2008) investigated the status of social marketing has focused on social elements in marketing and viewed it as the most important elements of marketing.^[14]

Methodology

This research is an applied study and descriptive in terms of method. The research domain is a micro study and it is cross sectional in terms of time. Hence, in this study, descriptive-analytical method was used to recognize the statistical population. The research population included all people who had required experience on mineral products and are involved in the process of production, distribution and export of mineral products. Their total numbers was about 400 people, but it was considered N=20 given the time and spatial domain of a limited population. Using the method of ratios and coding methods and the success ration, sample size was considered 138 people, but considering the probability of dropout, it was finally considered

160 people. A list of companies and experts in the field of mining was obtained from the Ministry of Industries and Mines and the standard questionnaire was distributed among the selected sample at a specific time. Stratified random sampling was used so that all subjects to have an equal chance. To collect data, a researcher-made questionnaire with a five-point Likert scale was used. To determine content validity, marketing experts and

professors' views were used and to determine its reliability, twenty questionnaires were distributed in the sample and finally confirmed with 85%.

Results

Table 1: questions related to product element variables

Number of questions	Question title	Relative frequency (%)					N
		Very high	high	moderate	low	Very low	
1	diversity of mineral products	48.3	44.1	4.2	1.9	1.5	160
2	Quality of mineral products	48.4	40.2	7.6	2.6	1.2	160
3	Production level of mineral products	15.9	30.3	25.6	20.1	8.1	160
4	Effect of appearance of mineral products	39.3	39.7	12.2	6.4	2.3	160
5	Trade position of Iran	23.1	49.4	18.7	6.9	1.9	159
6	Effect of packing of mineral samples	30.8	37.6	17.4	10.6	3.6	160
7	Effect of mineral products design	28.4	35.3	19.2	10.9	6.2	160
8	Effect of mineral products size	22.6	39.3	24.2	11.2	2.7	158
9	Effect of quality guarantees of mineral products	40.7	20.1	24.6	12.9	1.7	160
10	Effect of acceptance of mineral returns	20.8	23.8	35.9	11.4	8.1	160
11	Effect of re-purchase offers on used products	12.8	10.6	40.8	22.6	13	157
12	The role of pre-sale services	18.8	37.3	31.2	9.5	3.2	160
13	The role of after-sale services	27.8	25.1	25.2	16.5	5.4	160
14	Effect of using the experiences of other countries	25.2	26.2	35.6	5.6	7.4	160
15	The role of after-sales service to get the necessary share	24.8	23.1	30.6	16.4	5.1	160

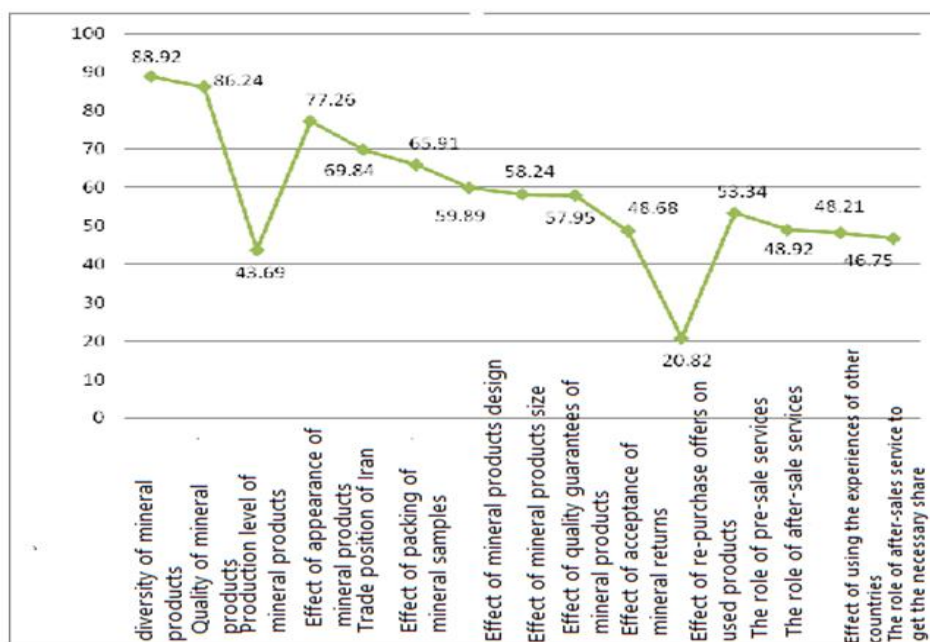
Table 2: distribution of relative frequency (Percentage) of response to secondary variables of product element

Number of question	Title of question	High and very high	Very low to moderate	(N)
1	diversity of mineral products	92.4	7.6	160
2	Quality of mineral products	88.6	11.4	160
3	Production level of mineral products	46.2	53.8	159
4	Effect of appearance of mineral products	79	20.9	160
5	Trade position of Iran	72.5	27.5	160
6	Effect of packing of mineral samples	68.4	31.6	160
7	Effect of mineral products design	63.7	36.3	160
8	Effect of mineral products size	61.9	38.1	158
9	Effect of quality guarantees of mineral products	60.8	39.2	160
10	Effect of acceptance of mineral returns	44.6	55.4	160
11	Effect of re-purchase offers on used products	23.4	76.4	157
12	The role of pre-sale services	56.1	43.9	160
13	The role of after-sale services	52.9	47.1	160
14	Effect of using the experiences of other countries	51.4	48.6	160
15	The role of after-sales service to get the necessary share	47.9	52.1	160

Table 3: Maximum acceptable ratio (to high and very high responses) in the study population with 95% confidence and rank of product element function variables

Number of question	Name of secondary variables	Number in sample	Maximum acceptable ratio with 95% confidence	Rank
1	diversity of mineral products		88.92	1
2	Quality of mineral products		86.24	2
3	Production level of mineral products		43.65	13
4	Effect of appearance of mineral products		77.26	3
5	trade position of Iran		69.84	4
6	Effect of packing of mineral samples		65.91	5
7	Effect of mineral products design		59.89	6
8	Effect of mineral products size		58.24	7
9	Effect of quality guarantees of mineral products		57.95	8

10	Effect of acceptance of mineral returns	41.68	14
11	Effect of re-purchase offers on used products	20.82	15
12	The role of pre-sale services	53.34	9
13	The role of after-sale services	48.92	10
14	Effect of using the experiences of other countries	48.21	11
15	The role of after-sales service to get the necessary share	46.75	12



Curve 1- Maximum acceptable ratio of product element function variables

Table 4: Distribution of relative frequency of product score among the mix elements

Number	class	Percentage of relative frequency
1	Low to moderate	2.7
2	High to very high	97.3
3	No response	0
Sum of columns		100
N=160		

Analysis of secondary variables of product orderly in terms of priority of effect on export of mineral products:

1. In response to the question of the role of diversity of mineral products, majority of respondents (92.4%) stated that the diversity of mineral products is at good or very good status, and only 3.4% of respondents reported that the diversity of mineral products is at low and very low status. In the table presenting the analysis of the maximum acceptable ratio (for very high and very high responses) in the statistical population with 95% confidence for the product element, the role of diversity of mineral products with a maximum ratio of 88.92% ranked first, so it has the highest effect on increasing mineral exports.
2. In response to the question of effect of quality of the mineral products in Iran compared to that of other countries, 3.8% of the respondents considered the quality of the mineral products produced in Iran at low and very low compared to other countries, while 88.6% of the respondents considered it very or very high. In the table presenting the analysis of maximum acceptable ratio (for

high and very high responses) in the statistical population with 95% confidence for the product element, quality of mineral products with the highest ratio of 86.24% ranked second and it has a high effect on exports.

3. In response to the effect of the appearance of the mineral products, 8.7% of respondents considered the effect of the appearance of the Iran's mineral products introduced to global market compared to other countries low and very low, while 79% of respondents considered it at high and very high level. In the analysis of table presenting the maximum acceptable ratio (for high and very high responses) in the statistical population with 95% confidence for the product element, the appearance of the mineral samples with 77.26% ranked third and it has a significant effect on exports.
4. In response to the question of Iran's trade position in the world market, 72.5% of respondents considered the Iran's trade position compared to other countries at high and very high levels, while 8.8% of respondents consider at low and very low level. In the table presenting the

analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 69.84%, Iran's trade position in the world market ranked fourth and it has a significant effect on exports.

5. In response to the question of the effect of packaging of Iranian mineral samples on its position in the world market, 68.4% of the respondents considered the effect of the packaging of Iranian mineral samples, compared to other countries, at high and very high level, while 14.2% of the respondents considered it at very low level. In the table presenting the analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 65.91%, this secondary variable ranked fifth and it has a significant effect on increasing the exports.
6. In response to the question of the effect of Iran's mineral product design on its export rate, majority of respondents (63.7%) considered the effect of Iran's mineral product design on its export rate at high and very high level, while 17.1% of them considered it at low and very low level. In the table presenting the analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 59.89%, the variable of Iran's mineral product design ranked sixth and it has an effect on increasing the exports.
7. In response to the question of the effect of Iran's mineral product size on its exports, majority of the respondents (61.9%) considered the effect of Iran's mineral product size on the world market at very high and very high, while 13.9% of the respondents considered this effect at low and very low level. In the table presenting the analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 58.24%, the variable of Iran's mineral product size ranked seventh and it has an effect on increasing the exports. It means that with increasing the production, the economic return also increases and the average cost and its total price decrease and Iran will have a greater competitive power in the global market.
8. In response to the question of the effect of Iran's mineral quality guarantees on its exports, majority of the respondents (60.2%) considered the effect of Iran's quality guarantees at high and very high level, while 14.6% of them considered this effect at very low and low level. In the table presenting the analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 86.83%, the variable of Iran's mineral quality guarantees ranked eighth and it has an effect on increasing the exports.
9. In response to the question of the effect of Iran's pre-sale services on its exports, almost half of the respondents (56.1%) evaluated the role of pre-sale services in increasing export of mineral products at high and very high level and 12.7% of them evaluated it at low or very low level. In the table presenting the analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 53.34%, the variable of Iran's pre-sale services ranked ninth and it has an effect on increasing the exports.
10. In response to the question of the effect of Iran's mineral after-sales services on its export, 21.9% of the respondents evaluated the effect of Iran's after-sales services on its exports at very low or low levels, while majority of them (52.9%) evaluated its role at high and very high levels. In the table presenting the analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 48.92%, the variable of Iran's mineral after-sales services ranked tenth and it has no much effect on increasing the exports.
11. In response to the question of the effect of the use of other countries' experience on Iran's mineral exports, 51.4% of the respondents evaluated using the experiences of other countries producing mineral products at high and very high level, while 13% of the respondents evaluated it at low and very low level. In the table presenting the analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 48.21%, the variable of use of other countries' experience ranked eleventh and it has no much effect on increasing the exports.
12. In response to the question of the effect of after-sales services to get the necessary share in the global mineral market, almost half of the respondents (47.9%) evaluated the effect of after-sales services to get the necessary share in the global mineral market at high and very high and 21.5% evaluated it at low and very low levels. In the table presenting the analysis of the maximum acceptable ratio (for high and very high responses) in the study population with 95% confidence and the maximum ratio of 46.75%, the variable of after-sales services to get the necessary share in the global mineral market ranked twelfth and it has no much effect on increasing the exports.
13. In response to the question of rate of mineral production, about 46.2% of respondents evaluated the effect of this variable in increasing the export in global mineral market at high and very high and 28.2% evaluated it at low and very low level. In the table presenting the analysis of the maximum acceptable ratio in the study population with 95% confidence and the maximum ratio of 43.65%, this variable ranked thirteenth and it has no much effect on increasing the exports.
14. In response to the question of the effect of Iran's mineral returns to its market, 19.5% of respondents evaluated the effect of Iran's mineral returns to its global market position at low and very low level, while 44.6% of

respondents evaluated it high and very high level. In the table presenting the analysis of the maximum acceptable ratio in the study population with 95% confidence and the maximum ratio of 41.68%, this variable ranked fourteenth and it has no much effect on increasing the exports.

15. In response to the question of the effect of the offers of re-purchasing Iran's mineral products on its export, 23.4% of the respondents evaluated the offers of re-purchasing Iran's mineral products compared to other countries at high and very high levels, while 35.6% of the respondents evaluated at low and very low levels. In the table presenting the analysis of the maximum acceptable ratio in the study population with 95% confidence and the maximum ratio of 2082%, this variable ranked fifteenth, so it has no much effect on increasing the exports and more advertising is needed for more recognizing of it. As seen in the table of relative frequency distribution of the product element, 2.7% of the respondents evaluated the role of the product in the marketing mix at low to moderate level and 97.3% evaluated it at high and very high level. Therefore, the product element has a high effect on the export of mineral products. Therefore, according to the statistical analysis and above tables, diversity in mineral products with maximum acceptable ratio of 88.92% ranked first, quality of mineral products with a maximum acceptable ratio of 86.24% ranked second, and the appearance of mineral products with a maximum acceptable ratio of 77.26% ranked third. Therefore, the sub-hypothesis of research that considers the effect mineral products design on mineral exports at first rank is rejected.

Discussion

Given the high importance of the marketing mix, providing techniques for value creation to exporters and sellers that helps to retain loyal customers and as the product element as one of the four elements of the marketing mix plays an important role in development of marketing strategy and increasing sales and change in market share, it is necessary to analyze the role of this element and its related factors in the export of mineral products.

Therefore, in this study, the effect of product element on the export of mineral products was investigated. Testing the research hypotheses showed that the product element has a great impact on the export of mineral products and its related factors, including diversity of mineral products, quality of mineral products, and appearance of mineral products, respectively, ranked first to third. One limitation of this research was shortage of research data. Moreover, despite the high value of mineral products, extensive studies have not been conducted in this area. Thus, lack of adequate and comprehensive information, lack of cooperation of relevant

organizations, staff and experts are the major problems in the area of working with mineral products.

References

1. Constantinides E. Influencing the online consumer's behavior: the Web experience. *Internet research*. 2004 Apr 1;14(2):111-26.
2. Cutler, Ph (1), *Cutler in Market Management*, Translated by Abdolreza Rezaeinejad, Tehran, Nashrfara Publications, First Edition
3. Kotler P, Armstrong G. *Principles of Marketing*, translated by Ali Parsaeian. Publication Office of Cultural Research. 2001.
4. Ebrahimi M, Venus D, Rusta A. *Marketing Management (2)*. SAMT Publication. 2009.
5. Moheb Ali D, *Market management*. Amir Kabir Publication, . 2002.
6. Devlin J, Ennew CT. Understanding competitive advantage in retail financial services. *International Journal of Bank Marketing*. 1997 Jun 1;15(3):73-82.
7. Goldsmith RE. The personalised marketplace: beyond the 4Ps. *Marketing Intelligence & Planning*. 1999 Jul 1;17(4):178-85.
8. Ranjbarian, H. *Marketing and Market Management*, Commercial Publication Company, First Edition, 1999.
9. Blouryan Tehrai, M. *Marketing and Market Management*, Commercial Publications, First Edition; 1999.
10. Kaplan AM, Haenlein M. The increasing importance of public marketing: Explanations, applications and limits of marketing within public administration. *European Management Journal*. 2009 Jun 1;27(3):197-212.
11. Zineldin M, Philipson S. Kotler and Borden are not dead: myth of relationship marketing and truth of the 4Ps. *Journal of consumer marketing*. 2007 Jul 3;24(4):229-41.
12. Teerling ML, Pieterse W. Multichannel marketing: An experiment on guiding citizens to the electronic channels. *Government Information Quarterly*. 2010 Jan 1;27(1):98-107.
13. Andersen PH. Relationship marketing and brand involvement of professionals through web-enhanced brand communities: The case of Coloplast. *Industrial marketing management*. 2005 Apr 1;34(3):285-97.
14. Brodie R, Brady M, Domegan CT. Social marketing: implications for contemporary marketing practices classification scheme. *Journal of business & industrial marketing*. 2008 Feb 1.