Investigating the main variable of place marketing-mix Effect on the Minerals Export

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ABSTRACT: Minerals are the pillars of sustainable development in any country 's economy infrastructure and industry of community. Human from the very beginning of his creation and during the history, depending on needs and the identification of minerals, exploits the minerals in various ways. [1]The amount and variety of mineral deposits in our country is truly amazing and in this respect the potential capabilities in Iran are far more, compared to many other countries around the world. There are over 68 types of minerals which in addition to domestic needs, is considered to be an advantage for mineral exports and increasing the ***foreign trade balance***.[2]We should also pay attention to the export of processed minerals and increasing the investment in new equipment and technologies of processing and we should not neglect the mineral raw material exports . The necessity of planning in this sector to access the international markets, using the key elements of marketing mix (4p) and secondary (*derivative*) variables related to these elements is necessary and inevitable. *Place   element* with the relative-frequency distribution of 98/4 and *confidence coefficient* of 95 % had an effect on the ***export of minerals and secondary variables*** as following:

1. The effective of presence the international exhibitions
2. The effect of sales offices aboard
3. Effect of foreign sales representative

INTRODUCTION:
      According to many specialists and experts from the mining sector, still many undiscovered reserves are in our countries. Iran's abundant mineral resources includes gold, zinc, copper, iron ore, chromite, coal, and... That also in addition to overcome the internal needs, has the ability to export out of the country.
In recent years, exports of minerals with higher value added has been seriously considered by authorities and the private sector. The private sector in mining sector was more muted in recent years , The private sectors, now with the recent proclamation of Leader of Iran about Article 44, provides their presence in large mines.
Hitherto, Our God-given blessings (minerals) are not used the correctly for any reason and   investments which have been performed in the mining sector   in other parts of the country is less. This should provide a good opportunity for the private sector to be entered the industries that were previously monopolized by the government.

There a high potentials of minerals in Iran. For example when we compare the Sarcheshme copper after investments which have been done in Song on copper mine, we observe that it has more advantages than Sarcheshme copper. In Iron ore the current rate of exploitation cannot be compared with previous years and about the zinc and lead , has been exported raw materials of them (mineral soil) . now , its export is as ingot and in the near future , the exploitation of bar also will be created and we have same state about the gold. These advantages show that in each part of mineral materials that an investment is there , our cost were low and economical.
 Investment in mining sector for optimum utilization from the mines od country and   mineral products processing in addition to provide the employment of indigenous people in different parts of country , will also bring a high added value that underlie the development of the country . The export of minerals during the previous decade had a desired process. For example, we saw a better growth since the release time of cement exports. The important point that is

considered less , is this that fewer goods must be exported , but we should achieve more money .Generally , the countries that have the mass production such as china , japan and other European countries, need the raw materials. While, the most of these countries that have mass production and abundant exports , don't have the raw materials and use *of other countries raw materials* like us (Iran) . hence , we must during the exploitation of raw materials of our country , don't export them in a raw form and export them with more added value minimally by making processes on the raw materials .

To escape from *single-product economy* based on oil exports and diversify the production and exports in order to sustain economic growth and prosperity, mining industry development seriously can be considered as a basic guideline. In most countries , minerals is accounted as the main product of production project and its consumption is one of the certain standards of evaluating the industrial and economic prosperity and development of each country , because the mineral products are applied in most of the agricultural , industrial products .

One of the main factors in determining the production amount of each country is existance of a greater market. One part of this market is the internal market that along with the economic development process will be growing, but gaining more market share in the external market, specially increase of foreign exchange earnings and more positive balance of foreign payments also has the special importance in growth of production rate.

If today, our country in its five-years program claims to get rid of the single-product economy of oil , therefore must identify and used the minerals and obtain the global markets of exports products . therefore , the necessity of research in the field of minerlas export as one of the effective sectors on the growth and development of marketing mix elements effect (place elements) and its sub-variables on the minerals exports of Iran , can be observed as an essential issue.

The research objectives:
Investigating the effect of main element of place   and sub-variables related to the minerals exports of Iran :

Research hypothesis :
Important hypothesis : the promotion element is one of the effective factors in the minerals exports.
Sub-hypothesis : the establishment of free trade has the most effect on the minerals exports amongst the constitutive sub-variables of place element .

Research scope :
Place : this study has been done in the whole country , companies and institutes which were related somewhat with minerals and mineral industries and have a role in the production and distribution   of minerals that include the whole industries , training and academic centers , companies and   public and non-public institutions that are somewhat   effective on the production and sales and exports or supplying the parts and machineries od industries.

Time : the start of the research project in this field was from early 2009 and about 2 years will be continued.
Object: in this research, we study , analyze and prioritize in field of marketing mix of the promotion element and its other constitutive element .

METHODOLOGY
The method used in this study is descriptive-analytical such that during the description of achieved data , we will analyze them and we have a field research . Meanwhile, statistical population of this research includes whole individuals that in our country have an experience in the field of minerals such that have a role in the production, distribution and exports of minerals and they are about 400 individuals.

Sampling and *sample size determining* method:
Our considered method of sampling in this research is stratified- accidental type. Therefore , the whole companies and manufacturing and policy making centers in the minerals sector and associated scientific and academic centers that have a role in the development of *our country mineral industries* , have been identified and listed and experts of it also identified and based on the importance and size of statistical population , some questionnaires were sent to them.

Determining the sample size :
We here use the ratios method , such that initially a primary sample about 20 cases should be distributed and by coding the elements (factors) and marketing mix variables (place) and determining the more and many more answers as the success ratio (prosperity ratio) and for the   marketing mix variable , this ratios was achieved about 85 %. With the confidence level of 95 % and error of 5 % and considering the following formula the sample size is calculated as follow:

$$N \geq 0.85 \times 0.15(1.64/0.05) = >138$$
or
$$N \geq po.qo ((za/ 2)/d)$$

Therefore , the desired number of samples was achieved that was 138 individuals and according to this about 175 questionnaire were sent in which 160 questionnaire were true and acceptable and its results were investigated an used.
Data collecting method:

To collect data we used of questionnaire such that its questions includes 19 questions in which those are for measuring the effect of the *place   factor sub-variables* on the minerals exports .

The measured variables:
To calculate the main marketing mix variable effectiveness of place on the minerals exports totally 19 sub-variables were considered such that for each one of the variables was presented a question that has an acceptable relation with the main factor.
Scaling :
To calculate the aforementioned variables were used of Likert scale (5 -points) such that the range of very high to very low were considered for the question, then will be graded in a range from 1 to 5 and in measuring the main variables is used of the constitutive variables average and then will be encoded as the following:

A) From 1 to 2 converted to 1 titled as very low
B) From 2 to 3 converted to 2 titled as low
C) From 3 to 4 converted to 3 titled as high
D) From 4 to 5 converted to 4 titled as very high

 The validity and reliability of questionnaires:
To authenticate the questionnaires validity , the variables and gauge indices of marketing mix elements have been identifies and in this regard , simple and understandable questions were prepared with collaboration of experts and the project and research process using the   experts opinions were reviewed and modified and for final controlling about 20 questionnaires were sent and ambiguities were resolved. External validity of questionnaires through an overview has been done such that in this case also about 20 cases 0f questionnaires sent and in an interval of 20 days as the number of respondents again answered the questionnaires and obtained results were matched and compared with each other such that statistical analysis showed a correlation between groups of questionnaires about 85 %   that this can confirms the validity of questionnaires.
 Descriptive and statistical analysis method:
Descriptive: in this part by stating the relative frequencies , given responses to each question . and in achieving the marketing mix element , was considered and described the average of all constitutive variables and such that the the data description was in two forms and in the range of very low to very high and in the other one in the range of very low to medium and high to very high .
 We used of the ratios test in the statistical analysis of test table , and in the two spectral classification i.e, low and very low , the percentage of high and very high

responses to each question as the prosperity ratio (P) was considered and this ratio is analyzed as the following .
 Basis and criteria for decision making is the maximum acceptable ratio in the statistical population with confidence of 95 % and according to this , ranking priority of each part in comparison with other parts and each variable with other constitutive sub-variables and each determined element (factor) and this ranking as a criteria for decision making management were considered and was calculated as the following.
 The ratio test:
 As we knew in some cases , the researchers is interested to study the specific ratio in the population, therefore for this purpose is necessary a sample to be taken and desired ratio () to be calculated in this ratio and then it is clamed about the ratio of population that must be tested and evaluated to be confirmed with the confidence of 95 % , therefore , we do the following for this purpose:

First step: research hypothesis and its reciprocal hypothesis:
Claims materialized in the statistical population as the following:

A-
$H.:P \leq P.$
$H1:P > P.$
B-
$H.:P>P.$
$H1:P<P.$
C-
 $H.:P \neq P.$
$H1:P=P.$

Test statistics:
When *n* is greater than 30 or in other words, np and nq are both greater than the number 15 , The test statistic has an approximate normal distribution   and is calculated using the following way:

$$Z = \frac{p - p_o}{\sqrt{\frac{p_o . q_o}{n}}}$$

The maximum acceptable ratio in the statistical population:
When the researcher want to compare together the role of various factors in the research based on the statistical error and obtain the maximum acceptable ratio in the population , therefore should Z be selected such that we to be placed in a boundary that the assumption of zero not to be rejected and this value is the ratio of p (

the maximum 5 percent i.e is 5.15 % that its Z according to the following formula is 1.63 slightly lower than 1.64 .

$$q_o = 1 - p_o$$

In the following formula P_o is unknown and smaller root of below equation is the maximum acceptable ratio.

$$P_o = \frac{-z^2 - 2np \pm \sqrt{z^4 + 4nz^2 p - 4npz^2}}{-2z^2 - 2n}$$

$$Z = \frac{p - p_o}{\sqrt{\dfrac{p_o \cdot q_o}{n}}}$$

1- Achieving the statistics and requisite information can be done strongly
2- The information often is old and not updated
3- Available information is dispersed and island form and has not logical and accurate relation with each other.
4- Lack of accurate relation of mining sector and universities and scientific centers about the role and place of minerals in development of non-oil exports.

RESULTS AND FINDING:

Table 1: **Secondary variables of the Place**

No		The relative abundances (percent)					
		Very high	high	Average	Low	Very low	N
1	The importance of sea routes	48.1	36.5	13.4	1.2	0.8	160
2	The importance of land routes with railing	41.9	39.4	8.7	7.6	2.4	160
3	The importance of distribution by truck	11.8	37.3	21.4	19.7	9.8	160
4	The influence of necessary diversity in many kinds of minerals	32.7	32.2	24.2	9.5	1.4	160
5	The influence of stocks	24.7	32.5	30.4	9.7	2.7	159
6	The influence of stocks in world	24.1	31.7	32.4	8.7	3.1	158
7	The importance of a proper combination of sea and land routes	35.6	44.2	14.7	3.8	1.7	160
8	The influences of containing the mineral supply	28.7	25.2	28.7	8.3	9.1	160
9	The influence of mineral cost	29.2	21.2	34.8	12.8	1.8	160
10	The status of recognition the global buyers	46.2	29.4	12.3	9.3	2.8	160
11	The influence of mineral geographic centers & places	34.1	35.5	22.7	3.5	4.2	159
12	The influence of foreign investment	24.3	38.5	25.3	8.6	3.3	160

Table 2: **the relative abundances percent in response to secondary variables of the location element**

No		The relative abundances (percent)		
		high - very high	very low - average	N
1	The importance of sea routes	84.6	15.4	160
2	The importance of land routes with railing	81.3	18.7	160
3	The importance of distribution by truck	49.1	50.9	160
4	The influence of necessary diversity in many kinds of minerals	64.9	35.1	160
5	The influence of stocks	57.2	42.8	160
6	The influence of stocks in world	55.8	44.2	158
7	The importance of a proper combination of sea and land routes	79.8	20.2	159
8	The influences of containing the mineral supply	53.9	46.1	160
9	The influence of mineral cost	50.4	49.4	160
10	The status of recognition the global buyers	75.6	82.6	160
11	The influence of mineral geographic centers & places	69.6	30.4	160
12	The influence of foreign investment	62.6	37.2	160

Table3 : **the acceptable maximum portion (to high & very high answers) in**
Statistical society with %95confidence rating and the grade of secondary variables of location element in
mixed marketing

No	Secondary variables	The relative abundances (percent)		grade
		Number in sample	The maximum portion in statistical society with %۹۵ confidence	
1	The importance of sea routes	160	81.28	1
2	The importance of land routes with railing	160	78.85	2
3	The importance of distribution by truck	160	46.72	12
4	The influence of necessary diversity in many kinds of minerals	160	63.25	5
5	The influence of stocks	160	54.94	8
6	The influence of stocks in world	160	53.21	9
7	The importance of a proper combination of sea and land routes	160	76.45	3
8	The influences of containing the mineral supply	160	51.35	10
9	The influence of mineral cost	160	48.58	11
10	The status of recognition the global buyers	160	72.81	4
11	The influence of mineral geographic centers & places	160	66.94	6
12	The influence of foreign investment	160	59.13	7

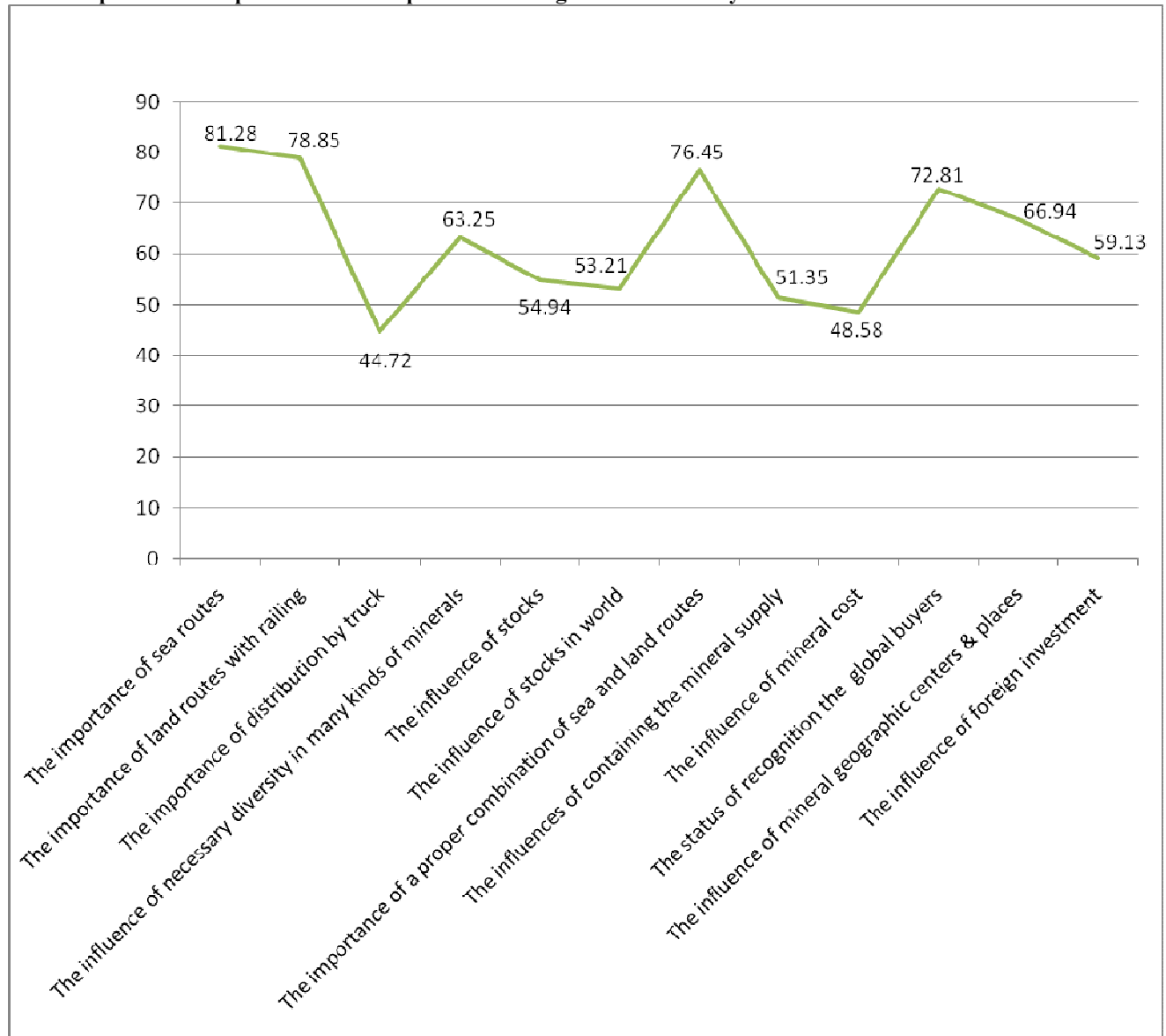**Graph1: The acceptable maximum portion for the grade of secondary variables of location element**

Table of relative distribution frequency of promotion score among the marketing mix factors

Relative frequency percent	class	number
7.2	Low to medium	1
98.2	High to very high	2
-	Without response	3
100	Column total	
	N=160	

The analysis of secondary of location element is described regularly in below.

1. **To answer the question of the importance of sea routes in distribution of Iran minerals on export:**

   The valuated the importance of sea routes in distribution of Iran minerals to be effective in global markets about(%84.6) and the increase of export high and very high and (%2) less.
   In statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and the maximum portion (%81.28) has got the first grade. So, the use of sea transportation impacts on increase of minerals export.

2. **To answer the question, the impact of minerals land routs distribution of Iran through railway on export:**

   (%81.3) of answer said the impact of minerals land routs distribution of Iran through railway on export to be effective in global markets and the increase of mineral export is high and very high, and (%10) said it is low and very low.
   In statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and the maximum portion (%78.85) has got the second grade. So, the importance of land routes with railway is effective to increase the minerals export.

3. **To answer the question, the importance of suitable combination from sea and land routes on mineral export in Iran:**

   (%79.8) of answers said that the importance of suitable combination from sea and land routes to be effective in global markets and to increase export is high and very high, and (%55) said it is low and very low.
   Is statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and the maximum portion (%76.45) has got the third grade. So, the importance of suitable combination from sea and land routes according to geographic situation of buyer has an influence on increase of minerals export.

4. **To answer this question:** low global buyers recognize the minerals of Iran.
   %12.1 answers said the recognition of minerals buyers in Iran through the world is low and very low, even if %75.6 said it's high and very high.
   in statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and the maximum portion (%72.81) has got the fourth grade. So, the recognition of global mineral buyers effects on increasing export.

5. **To answer this question:** the importance of necessary diversity in many kinds of minerals on minerals export of Iran.

About (64.9) explained that the importance of necessary diversity in many kinds of minerals on minerals export to share in global markets and increase of export is high and very high, and (%10.9) said it is low and very low.

Is statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and the maximum portion (%72.81) has got the fifth grade. So, necessary diversity of many kinds of minerals effects on the increasing of mineral export.

6. **To answer this question:** the importance of location and geographic center of Iran minerals on increasing the export:

%69.6 of answers said the location and geographic center of Iran minerals on increasing the export is high and very high and %7.7 said it's low and very low.

In statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and the maximum portion (%63.25) has got the sixth grade. So, the importance of location and production of geographic centers is very high according to new transportation vehicles that make near the different parts of world.

7. **To answer this question:** the importance of foreign investment on minerals export of Iran:

About %62.8 said the importance of foreign investment on minerals export is very high and high, and %11.9 said it's low and very low.

In statistical society, the exam table, maximum acceptable portion (to high and very high answers) was studied with % 95 confidence, and the maximum portion (%59.13) has got the seventh grade. So, the importance of foreign investment effects on increasing minerals export.

8. **To answer this question:** the importance of stock on the increasing of Iran minerals:

%57.2 said the importance of stock on the increasing of Iran minerals in proper amount is high and very high, and %12.4 said it's low and very low.

In statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and maximum portion (%59.13) has got the eighth grade. So, having stock effects on the increasing of minerals export. Especially when there's a sudden demand.

9. **To answer this question:** the importance of stocks in different parts of world on mineral export in Iran.

%55.8 said that the importance of stocks in different parts of world on mineral export in Iran is high and very high, and %11.8 said it's low and very low.

In statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and maximum portion (%59.2) has got the eighth grade. So, having stocks in all of the world effects on minerals export.

10. **To answer this question:** the importance of continuity of minerals supply in Iran on export: %53.9 said the importance of continuity of minerals supply in Iran on export is high and very high and, %17.4 said it's low and very low.

In statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and maximum portion (%59.13) has got the eighth grade. So, the continuity of minerals supply effects on global buyers.

11. **To answer this question:** the importance of minerals costs in Iran on export:

50.4 said that the importance of minerals costs in Iran on export compared to the cost of manufactures from other countries on Iran competitive ability and the increasing of minerals export is high and very high and %14.6 said it's low and very low.

In statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and maximum portion (%59.13) has got the eighth grade. So, the minerals costs and change economic to produce, cannot effect on increasing the export.

12. **To answer the question:** the importance of mineral distribution routes by truck to increase of Iran minerals export:

%49.1 said that importance of mineral distribution routes by truck to be in global markets and the increasing of export is high, %29.5.

In statistical society, the exam table, the maximum acceptable portion (to high and very high answers) was studied with %95 confidence, and maximum portion (%59.13) has got the eighth grade. So, the use of truck doesn't effect on increasing the minerals export.

As you see in distribution relative abundances of location element table, %7.2 said the role of location in mixed marketing in low to average, and %92.8 said it's high and very high. So, location element affects on export of minerals products. And the theory approvals.

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