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INVESTIGATING TWO MIXES OF PRODUCT AND PROMOTION (ADVERTISING) FROM MIXED ELEMENTS OF MARKETING WITH AN OUTLOOK OF THE SALES RATE IN 6 AVERAGE AND SMALL KNOWLEDGE-BASED COMPANIES (NANO COMPANIES)

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ABSTRACT

A good or product is something that is produced in a factory. Product is considered as the heart of marketing. Sales promotions in marketing are defined as a set of practices whereby the company attempts to increase the sales of its products. The main goal of marketing is to possess a mix in the market that efficiently and effectively meets the customers' needs for a particular product along with maximizing profitability. To achieve this goal, appropriate marketing mix plays an essential role in actualizing of marketing strategies. In the present study, two mixes of product and promotion (advertising) from marketing mix elements with an outlook of sales rate in 6 average and small knowledge-based companies (nano companies) were investigated. After effective factors in choosing and purchasing nano products were specified using the Expert Choice Questionnaire, elements of the two mixes of product and promotion (advertising) from certain marketing mix elements were weighed. Each of the two effective sub-elements on the sales resulted in achieving a bigger share of the market and as a result more profit for average and small knowledge-based companies, which respectively had the mentioned rank and average. The present research was a cross-sectional descriptive-analytical study of practical type with an emphasis on correlation and goal-oriented method. **Independent variable:** the two mixes of product and promotion (advertising) from marketing mix elements and **dependent variable:** the sales of the selected nano companies.

Keyword: Marketing Mix; Market Share; Nano Companies

INTRODUCTION

The strategic position of Iran as a free and independent country with national determination to enhance production, improve distribution, and have successful presence at international markets entails paying special attention to marketing literature in order to provide whatever the economic researchers, experts, managers, and entrepreneurs need in the field of production and distribution, and so that Iran's independence-seeking trend can reach the most appropriate circumstances in the shortest period of time. The managers and strategists of service and production units should equip their researchers and initiate organizational operations, aiming at far and near markets and predicting their sales rate, market share, and certain income, which can only be possible through scientific approaches and methods of marketing.

Our economic activists should get to know available opportunities, make use of advantages and capacities, adopt and implement appropriate strategies, and develop exports, and get free from raw and bulk sales in order to make creation of utmost value added inside the country and foreign trade possible. In the present study, the researcher has investigated two mixes of product and promotion (advertising) from marketing mix elements with an outlook of sales rate in 6 average and small knowledge-based companies (nano companies).

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Significance of the Study

Without communicating with their customers and getting aware of their views and attitudes about their performance, today's institutions will not be able to survive. These institutions should acquire enough knowledge determining and dividing a market and providing products and services that meet the needs of some parts of the market selected as their targets. Advertising and promoting the products such that the customers are fed with enough knowledge about the goods and get evoked to buy them are among other practices that these units need to pay special attention (knowledge about the 4 P's) (Kotler, 2011). On the other hand, one of the most important problems of the country is its dependence on oil revenues and its very low rate of non-oil goods export. Since nano industry has a high potential, it can be hoped that development and promotion of this industry not only help to increase employment rate and domestic markets boom but also can result in higher efficiency in the global competitive context. In addition, as a non-oil good it can play a greater role in the country's export. Taking a look at the socioeconomic system of most developed and neo-developed countries clarifies this point that creating and supporting average and small enterprises is one of the essential priorities in economic development plans in these countries. Despite the fact that these economic enterprises need less investment, they have higher efficiency and play a significant role in creating jobs, establishing appropriate circumstances for innovations and inventions, and raising export rate in these countries. In global markets, there are still constraints in front of trading knowledge-based products, especially those of developing countries. Complicated process of introduction to the market, lack of appropriate brand, high tariffs, need for acceptable standards, and non-tariff barriers are among the problems within the knowledge-based markets. According to the importance of access to the market in commercialization of knowledge-based product, the necessity of introducing high-technological products into the global markets and resolving the barriers is highly felt.
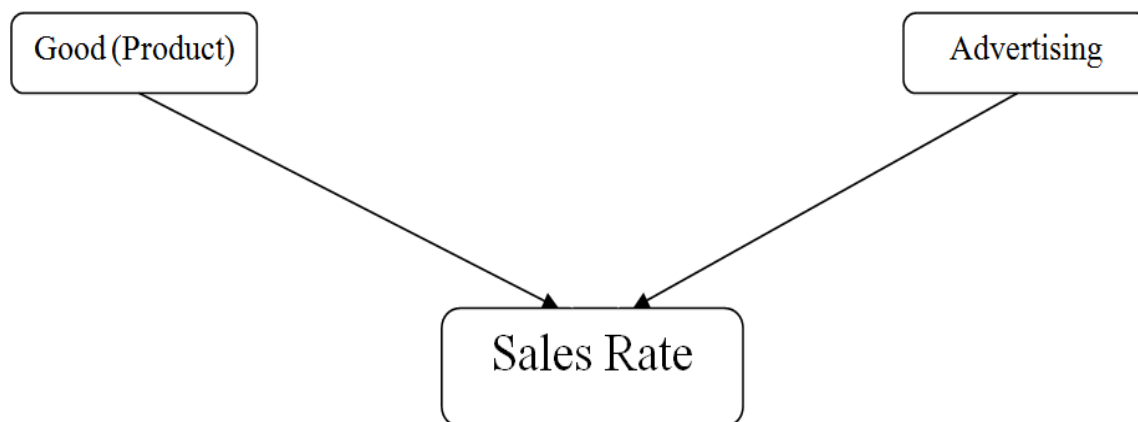
Theoretical Framework

Figure 1: Conceptual and analytical model based of the study hypotheses

Good (Product)

A good is something that is produced in a factory (Kotler, 2012). It included products and services that a company provides in its target market. The components of a product include product diversity, quality, design, features, brand, package, size, services, and returned goods (Heidarzadehm 2003). Product is considered as the heart of marketing. There are numerous definitions for this term. In Kotler and Armstrong's opinion, product refers to anything that can be introduced to the market in order to attract attentions, possession, use, or consumption and meets a need or a desire. Scholars have considered product as all artifacts that can be recommended to a market in order to attract attentions, possession, use, or consumption and meets a need or a desire. In definition of product, tangible and intangible elements of the product or service are emphasized. However, the is a remarkable difference between services and physical products, such that services are intangible, diminishing, and inseparable and are quicker to be provided to the costumer compared to physical products.

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Advertising (Promotion)

The world of advertising abounds ambiguities, questions, complexities, and sometimes imported concepts that are created due to a lack of scientific knowledge and correct understanding of the concepts among the new or old practitioners of the field. Commercial Advertising is a specialized in trading discipline in the branch of humanities, this field of study is based on social and human relationships (Bolourian, 2007). Sales promotion in marketing refers to a set of practices whereby the company tries to increase the sales of its products. These practices include: advertising, public relations, sales promotion, personal sales, and direct marketing.

Research Hypotheses

1. There is a relationship between product and sales rate.
2. There is a relationship between promotion mix (advertising) and sales rate.

Statistical Population

Since the present study was aimed at investigating the two mixes of product and promotion (advertising) from marketing mix elements with an outlook of the sales rate of average and small knowledge-based companies (nano companies), the statistical population of the study included all customers and consumers of the 6 average and small knowledge-based companies with nano products. Due to the large number of the statistical population, simple random sampling was utilized. In so doing, the researchers referred to the agencies of the nano companies and distributed questionnaires among the individuals who referred to these stores and agencies and showed their tendency to purchase the products. This query was carried out in 2012-2013. Due to the fact that the statistical population was countless, sampling was conducted through the formula of determining the unlimited sample size was applied, then the questionnaires were distributed among these individuals, and their opinions were analyzed. Cochran's sample size formula was as follow:

$$n = \frac{Z^2_{\frac{\alpha}{2}} P (1 - P)}{\varepsilon^2}$$

Where, *P*=0.5 is the ration of the society success, $\varepsilon = \%5$ is the assessment precision, and $\alpha = 0/05$ is the error level.

And the sample size was calculated as follow:

$$n = \frac{z^2_{\alpha/2} \times p \times q}{e^2} = \frac{(1.96)^2 \times \frac{1}{2} \times \frac{1}{2}}{(0.05)^2} = 384.16 \approx 384$$

Table 1: The number of samples of each company

Company	The Sample Number of the Customers
1. Meghias Nano Innovators (Nano Filters)	64
2. Pars Nano System (Nano Scope Equipment)	64
3. Iran's Rif (Nano Colors)	64
4. Vahid Group (Sound-Proof Pipes)	64
5. Artash Composite (Composite)	64
6. Rose String (Antibacterial Strings)	64
The Total Number of the Distributed Questionnaires	384

In the analysis phase, 11 questionnaires were crossed out due to being incomplete. Therefore, 373 questionnaires were included in the final analysis.

Examining Cronbach's Alpha indicated that the reliability of the questionnaire was relatively high. The reliability was calculated through the following formula:

$$\alpha = \frac{n}{n-1}\left[1 - \frac{\sum s_i^2}{s_x^2}\right] \Rightarrow \alpha = \frac{20}{19}\left[1 - \frac{23.174}{100.663}\right] = 0.811$$

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Where, s_x^2 is the variance of each question and $\sum s_i^2$ is the variance of the whole questionnaire.

Literature Review

In a study entitled, "Analysis of marketing management as a promoter in modeling the marketing mix in independent reports of research companies", Max (2011)stated that marketing is generally composed on two sections: 1) Marketing mix that includes the product, price, place, and promotion. Marketing of the product is outstanding. 2) Service market mix – service marketing consists of three variables of people (the major part), physical evidence, and process.

Khodadad and Razavi (2009) conducted a study entitled, "Modeling fuzzy marketing mix: The industry of vehicle battery". Their study was aimed at determining the value and the share of each of the effective variables in the marketing mix in relation to the marketing goals and strategies of the company. Using a fuzzy approach in modeling, resorting to real data of performance, and analyzing the experts' views, this study tried to solve the lack of generalizability of 4 P's.

In the thesis entitled, "Investigating the effects of service marketing mix factors on encouraging the payers to pay the tax", Rashidpouriaei (2007) indicated that from service marketing mixes there was a significant relationship between time and place, price, staff and promotion advertising and education and encouraging the payers to pay the tax; however, there was no significant relationship between the process, quality, and physical evidence and encouraging the payers to pay the tax. It is necessary to pay attention to the mentioned 4 factors in tax affairs organization.

In his thesis entitled, "Investigating the marketing mix (4 P's) approaches in successful export companies of Iran", Hosseinikia (2001) indicated that among the marketing mix elements (4 P's) product and price and their variables placed the first, followed by promotion and place.

In her thesis, Hezarkhani (2013) investigated the effects of marketing factors on the intention to purchase solar power products.

The results of her study showed that there was a positive significant relationship between appropriate advertising, suitable public relations, appropriate in-person sales, and sales. There was also a positive significant relationship between promotion of appropriate sale and sales. In other words, the more appropriate the direct marketing, the higher the rate of the sales will be.

Fakhimiazar *et al.,* (2011) studied the effect of marketing mix (4 P's) on the increased sales of the water heaters produced by Ghainar Khazar Company. The results of their study indicated that marketing mix and the 4 constituent mixes had an effect of the increased sales of the water heaters produced by Ghainar Khazar Company. Moreover, the priority of the effect of 4 P's on the sales rates was product, promotion, place, and price.

Table 2: Demographic distribution of the study sample

Variable	Distribution (%)
Gender:	
Female	52.5
Male	47.5
Age:	
20-25	3.2
26-35	46.1
36-45	29.2
46-55	12.9
Over 56	8.6
Education:	
Primary school	17.2
Guidance school	24.4
High school	25.2
University	30.3

Source: The Study Findings

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According to the results of analyzing the collected data, it was observed that 52.5% of the participants were female and 47.5% were male. It was also observed that 3.2% of them aged 20-25 years, 46.1% were 26-35 years old, 29.2% were 36-45, 12.9% aged 46-55, and 8.6% were over 56 years of age.

The results also indicated that 17.2% of the participants had primary education, 24.4% guidance education, 25.2% high had a diploma, and 30.3% had university degrees.

The results showed that the highest frequency is related to those participants who had a university degree.

Describing the factor variable of the product

Questions 1-6 deal with the factor variable of the product.

Table 5: The importance order of the factor variables of the product in the customers' view

Rank	Variable	Mean
1	Quality of the Products	3.54
2	Reputable and Known Trademarks	3.38
3	Reliability of After Sales Service	3.18
4	Physical Appearance	2.77
5	Package Type and its Quality	2.26
6	Use of Modern Technologies	2.17

Source: The Study Findings

As was seen in Table 5, the variable of the product has 6 features. Among these 6 features, the quality of the products is the most important one in regard with the variables of the product. Moreover, reputable and known trademarks and reliability of after sale service place in the second rank, followed by the physical appearance, package type and it quality, and use of modern technologies which had less effect of this variable.

Describing the factor variable of promotion (advertising)

Questions 18-20 are related to the factor of promotion (advertising).

Table 6: The importance order of the factor variables of the promotion in the customers' view

Rank	Variable	Mean
1	Good Relationship with Sales Agencies	3.73
2	Mass Media Advertising	3.33
3	Gifts for Buyers	3.21

Source: The Study Findings

As was observed in Table 6, the promotion variable includes three factors. Among these three factors, good relationship with sales agencies is the most important factor in the promotion variable. In addition, mass media advertising and gifts for buyers are assigned as the second important factors.

Table 7: Descriptive statistics of the study variables

	N.	Min.	Max.	Mean	SD
Product	373	1	5	3.28	0.74
Promotion (Advertising)	373	1	5	3.31	0.71
Dependent Variable (Sales Rate)	373	1.67	4.5	3.25	0.53

Source: The Study Findings

Describing the Sales Rate of the Nano Companies

In today's world, measuring the sales rate has gained a high level of significance. Collecting data for this process is carried out through questionnaires and other different techniques (Rezaee, 2004). Questions 1-6 of the questionnaire that were designed for the managers of the companies presented an outlook for the sales rate of the target companies.

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Table 8: The importance order of the factor variables of sales rate in the managers' view

Rank	Variables Used for Sale	Mean
1	Match between Sale and the Company's Planning	3.42
2	Success in Gaining the Market Share	3.36
3	Responsiveness to the Society's Need	3.33
4	Potential of Production Rise	3.27
5	Satisfaction with The Company's Sales	3.23
6	Predicting the Future Sales	3.17

Source: The Study Findings

Table 9: The sales percentage of each company

Company	Sales Percentage (%)
1. Meghias Nano Innovators (Nano Filters)	14
2. Pars Nano System (Nano Scope Equipment)	16
3. Iran's Rif (Nano Colors)	21
4. Vahid Group (Sound-Proof Pipes)	20
5. Artash Composite (Composite)	18
6. Rose String (Antibacterial Strings)	11
Total	100

Source: The Study Findings

Testing the Hypothesis
Hypothesis 1: There is a significant relationship between product and sales rate.

Table 11: Spearman correlation coefficient of the relationship between the product factor and sales rate

		Product Factor
Sales Rate	Spearman Correlation Coefficient	0.672
	Sig.	0.000
	N.	373

Source: The Study Findings

According to the significance level indicated in Table 11 (p=0.000) and comparing it with the acceptable error of 0.05 (p<0.05), the null hypothesis, suggesting there is no relationship between the product factor and sales rate, is rejected with a confidence level of 95%. Therefore, according to Spearman correlation coefficient presented in Table 11 (0.672), it can be concluded that this relationship is straight and positive, and the second hypothesis is accepted.
Hypothesis 2: There is a significant relationship between promotion mix (advertising) and sales rate.

Table 12: Spearman correlation coefficient of the relationship between the promotion factor and sales

		Promotion Factor
Sales Rate	Spearman Correlation Coefficient	0.634
	Sig.	0.000
	N.	373

Source: The Study Findings

According to the significance level indicated in Table 12 (p=0.000) and comparing it with the acceptable error of 0.05 (p<0.05), the null hypothesis, suggesting there is no relationship between the promotion factor and sales rate, is rejected with a confidence level of 95%. Therefore, according to Spearman

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correlation coefficient presented in Table 12 (0.634), it can be concluded that this relationship is straight and positive, and the second hypothesis is accepted.

Comparing the Sales of the Companies

There was a significant difference between the sales rates of the studied companies.

In the following table, from the 100% of sales, each of the 6 companies has devoted a percentage, which led to their ranking. It should be noted that due to different productions of the companies, comparing the rate of their sales cannot be captured through the rational understanding questionnaire. However, by ranking them, the effects of the marketing mix elements can be examined to a large extent, and it will be come to light that which company has performed more successfully in selling its products.

Table 13: Ranking the companies in terms of sales rate by considering the effect of marketing mix

Companies	Ranking in Terms of Sales Rate (%)
1. Rose String (Antibacterial Strings)	13
2. Meghias Nano Innovators (Nano Filters)	15
3. Artash Composite (Composite)	16
4. Pars Nano System (Nano Scope Equipment)	17
5. Iran's Rif (Nano Colors)	18
6. Vahid Group (Sound-Proof Pipes)	21
Total Sales	100

Source: The Study Findings

According to the secondary data, the sales rate from the least to the most ones is as follow:

1. Rose String (Antibacterial Strings), 2. Meghias Nano Innovators (Nano Filters), 3. Artash Composite (Composite), 4. Pars Nano System (Nano Scope Equipment), 5. Iran's Rif (Nano Colors), and 6. Vahid Group (Sound-Proof Pipes)

Since the results of Kolmogorov-Smirnov test indicate that the data of sales rate do not follow a normal distribution, Kruskal-Wallis non-parametrical test is employed to test the above hypothesis.

Table 14: The results of Kruskal-Wallis test in comparing the sales rates of the companies

Statistical Indices	Calculated Values
Ch-Square Test	11.354
df	5
Sig.	0.045

Source: The Study Findings

According to the significance level presented in Table 14 (p=0.045) and comparing it with the acceptable error of 0.05, the null hypothesis suggesting there was no significant difference among the companies is rejected with a confidence level of 95%. Therefore, it can be stated that Meghias Nano Innovators (Nano Filters), Pars Nano System (Nano Scope Equipment),Iran's Rif (Nano Colors), Vahid Group (Sound-Proof Pipes), Artash Composite (Composite),and Rose String (Antibacterial Strings) do not have equal sales rates.

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