

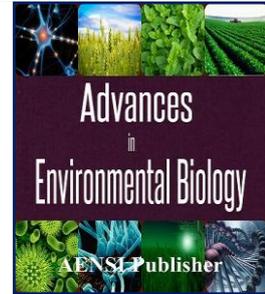


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The Impact of Technology on Marketing and Advertising

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ABSTRACT

Dynamic environment and rapid growth of market and technology advances have been identified in form of "uncertainty of market" and "uncertainty of technology" as two significant features of technology. The uncertainty of technology has to doubt about technological success and ability to meet customer's needs. Therefore, it is mandatory to examine industries through using technology have been changes in order to increase probability of technological success and capability. Accordingly, the present research aims to explore the impact of technology in two fields of marketing and advertising. It is a survey using descriptive and analytical procedures. The population consists of marketing and IT experts. Through the available sampling method, 200 experts of marketing and IT field the questionnaire. The SPSS19 was a means to analyze the data. The results show that the experts believe that applying technology in marketing has affected different aspects of marketing especially advertising and distribution. In a way that using technology while integrated with advertng, has also influenced some other marketing domains like product, price and distributing. Moreover, technology in advertising has influenced more the advertng techniques.

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INTRODUCTION

According to Molar, technology is a set of four interrelated components, namely knowledge, skills, organization of production and the final product. Robins defines technology as a combination of information technology equipment, techniques and processes needed to convert the data to output [2]. Main components of technology components interact with each other include software, hardware, mind mapping software and support network [8].

Entrance of appropriate technology does not mainly implies applying the advanced technology, rather the most appropriate technology is which is consistent with a country's development objectives and in addition to making optimum use of available resources in the country, also has a small cost.

Transfer of technology could be the most useful or useless of transactions and the effective use of transferred technology depends on the recipient country's efforts to adapt to technology, application and its development [3].

New technologies in the last 50 years have a profound impact on the structure and content of production technology centers. In recent decades, different systems and management tools have been provided to improve the structures, goals, and strategies. Attitudes like update production, re-engineering of business, redesigning business, continuous improvement of business, quality management and recruitment of external resources for all organizations [8].

Dynamic and fast-growing environment and market developments and technology in the form of "market uncertainty" and "uncertainty in technology" are two properties are proposed for technology. Technological uncertainty refers to doubt about technology achievement and capability to respond the customer needs [11].

Hence it is necessary to examine industries and areas where entrance of technology changes the in order to enhance the chances of success and capability of technology. One of these areas is marketing.

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Marketing is one of crucial problem for economic and the society. As long as the gap between producer and consumer is slight and manufacturer is familiar enough with customers' needs and interests, there is no need for distribution and marketing agents. Moreover, when production is limited, factors like production planning, distribution strategy, marketing system completion and so one have no room of concern for the manufacturers. However, in case of mass production and when manufacturers target global markets and plan to distribute the products in a global scale, a wider range of marketing activities are required to deliver the product to the consumer. The significance of this issue is to the extent that if marketing occurs efficiently, other organizational activities will be performed in following.

Generally, current world is passing through a single product into a system of thought, which is a direct result of widespread development of technology in information and communication sciences. In the changing environmental conditions, it is expected the existing processes in marketing face with transformations and similarly, it is the condition of the environment causing the success of a marketing plan. Thus, identifying and analyzing environmental factors such as the impact of new technologies in this field is of great importance [9].

Considering the advertisement phenomenon, it must be said, it was first done through verbal messages via face-to-face and street saying. Later, books became the most important means of disseminating information and advertisement and rreligious propaganda were conducted by mosques and minarets, minbar and finial, churches, temples, schools and books. Progress of science and industry, art, literature, and modern technology have led to new ways of advertising with new equipments and tools [10].

In fact, advertising is a marketing technique plays a considerable role in transfer of information (about products, services and business)to consumer. Over time, advertising methods have changed because of new technology.

the internet and mobile technology are presented as new advertising media. Mobile technologies are able to create new markets, change competitive visions of organization, creating new opportunities and changing the status of communication and market structures [12]. So ,every day we see that a number of developing business companies are concentrating their budget on remote advertisement ,fax, Email, web pages and web-focused advertising, and therefore, have developed number of communicative channels and progress of sales. Given the above points, the question of the present study is as follows:

What changes have the entrance of new technology in the marketing and advertising industry created? In other words, the use and application of this technology has greatly influenced what aspects of these two areas?

Review of literature:

The impact of new technology on the marketing and advertising mix:

With the arrival of communication technologies and doing commercial activities electronically in the virtual environment, how to design marketing mixture has been more or less altered. So , the basic elements of the marketing mix have been fundamental transformed while it continues to change and change, ever.

Product mix:

Product packaging and presenting the information via the internet reduces the need for physical testing and leads to saving time and money[7].

In e-commerce, acquisition of the customer's likes and designing product s according to his opinion is facilitated [1].

Price Mix:

customers quick access to other competitors and compare prices, increase price competition between suppliers [13].Also, when it comes to design virtual stores, lack of open costs consequently reduce product cost and the selling price [1]).

Distribution mix:

For buyers, the most important advantage of new technologies such as the internet is easiness of the purchase place. Using new technology, home is a place to buy products [1]. In addition, using technology such as the internet can be removing the distribution networks and get connected to the final customer. Apart from the collection of information from the internet, customer does other tasks such as negotiating with vendors, ordering the product, delivery and payment via the internet. According to Katler these are the distribution network duties that using from advanced electronic tools has been the responsibility of the customer [13].

Advertisement mix:

Advances of propagation tools have changed transfer of data from its most basic form and in the form of verbal messages and face to face interaction to e-mail messages via the internet.

New methods of advertising and marketing using from the latest developments in technology, such as satellite, the internet and ending mass advertising messages on mobile phones have been able to apply all capacities of this instrument for sending advertising messages. New technologies have affected advertising in several domains.

Advertisement instruments:

Development of media has reflected various perspectives of the world around us. TV, satellites and the internet have brought about life experiences of

Development of the media has reflected the world's media reflects life experiences from strange and local cultures into houses. Sometime, TV was an effective mass media in presenting ads. Messages, letters, brochures and e-magazines are of the most recent advertisement instruments in the modern era are accessible through the internet.

Content of advertisements:

Although, information essentially could function as an ad, it must be mentioned that in each add the content of information affects audiences' attitudes and values. This impact occurs in two ways as: presentation of information in form of specific ads could introduce new values in the society and so, creates some desire towards the new values and makes the existing values insignificant.

Also, ads reflect the current values in a society as well as individuals' ideas and desires. Accordingly, Gilin Dayer believes that for years add has been involved in transferring social values and attitudes and less has considered exchange of basic information about goods and services.

Effectiveness of advertising:

One of the most critical features of the internet is its reciprocal nature. When reviewing content of the web, customers can make a mutual relationship and determine how much and what kind of information they require [4]. Changing the communication patterns from in-person to group to group and group to individual are other two properties of ads. It is because of the new technologies like the internet that effectiveness and cost of advertisements are affected. Through changing the communication models, efficiency of the ads will considerably increase [5]. Moreover, diverse colors and images will make the ads more attractive.

MATERIALS AND METHOD

The present study is a type of applied ads survey research. The population consists of all marketing and IT experts including but not limited to university professors, marketing and advertisement managers. The purposeful sampling method was used.

That is, the experts were available and the investigator interviewed with them were selected as the stud sample. Accordingly, 200 questionnaires were completed. The SPSS and Amos software were applied to analyze the data.

Findings:

Demographical data:

The results indicated that 67.5% of samples were male and 32.5% were female. Moreover, the mean age was 39.2 with $Sd=32.5$. also, 35.6% of subjects had B.A. degree, 36.2% M.A. and 28.2% had PhD degree.

Test of data normality: the following hypotheses are addressed. In order to test normality of the data, the Kolmogrov-Smirnov test at the $P=0.05$ was used.

H_0 : the distribution is not normal.

H_1 : the distribution is normal.

If P value is smaller than 0.05, the H_0 is confirmed. In other words, the normality of data is not confirmed, but if the P value is equal or greater than 0.05, the H_0 is rejected and the H_1 is confirmed. The results indicated that level of significance for all variables was greater than 0.05. Accordingly, the normality was confirmed (marketing ix 0.072, advertising aspects 0.661).

Description of the variables:

Table 1 shows mean and standard deviation of the impact of technology on the marketing mix and aspects of advertising.

As it can be seen in the table, in the marketing mix, the lowest mean score relates to the product mix (3.1) and the highest mean score is for advertising mix (4.3). for the propaganda variable, the mean score of advertising instruments is 3.91 which indicate a much improvement of this aspect of advertising in technological advances. Now, it is time to check the variables meaningfulness. To do so, the structural equation model was used.

Table 1: mean and standard deviation.

Variable	mean	Sd.
Product mix	3.16	0.78
Price mix	3.4	0.91
Distribution mix	3.7	1.2
Advertising mix	4.3	0.65
Advertising instruments aspect	3.91	0.95
Advertisement content aspect	2.75	1.35
Advertising effectiveness aspect	3.3	1.2

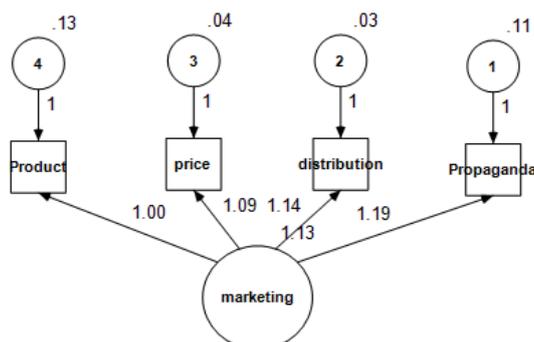
The impact of technology on marketing mix:

First the marketing mix and its aspects were fitted. As it can be observed, the advertising mix with coefficient (1.19) has the greatest changes in the results of entrance of new technologies. After that, the distribution mix with coefficient (1.14) the price mix with coefficient (1.13) and the product mix with coefficient (1.09) received the highest impact from the new technologies entrance into the marketing.

The Chi-Square value (8.3) with $df=2$ is meaningful. Moreover, the fitness indicators are presented in Table 2 indicates the model proper fitness.

How much the RMR index is smaller the fitness is better and zero shows the complete fitness of the model. That in this model, 0.007 is approximately zero. In the NFI index (0.995) the acceptable value for this index is at least 0.9. The TLI index (0.988) the value equals or greater than 0.95 reflects a good model which indicates the variables is properly fitted.

The fitness index or GFI is similar to the correlation coefficient ranges between 0 to 1. How much the value is closer to 1, the fitness of the model will be greater. In this research, this value is equal to 0.979 and confirms a strong fitness.



Chi-square: 8.3 DF: 2

Fig. 1: fitness of marketing mix and the components coefficients.**Table 2:** goodness of fit of marketing mix and coefficients of its components.

GFI	TLI	NFI	RMR
0.979	0.988	0.995	0.007

The relationship between the dimensions of the marketing mix with each other and the impact of the entry and transmission of technology in the field of marketing has been studied.

As can be seen, use of new technology in advertising mix has affected product, price, and distribution mix.

This shows the importance of the advertising mix in using technology in the marketing mix. Also, the impact of technology on advertising has been investigated.

The impact of technology on advertising:

the data analysis shows that Chi-square of the research model is (0) and the degrees of freedom are (0).

When the difference between the sample covariance matrix and the theoretical covariance matrix is zero, then the chi-square s value will be zero. This shows the model fitness is full with data. Different coefficients of the various aspects of advertising show the advertising tool aspect with coefficient (1.05) is greater than other aspects affected by the new technology.

Also, effectiveness of advertising due to the use of technology in terms of respondents' is further influenced by. Thus, in terms of marketing and IT experts, new technologies, have affected advertising effectiveness and tools.

The fitness indices are shown in Table 4, indicating the fitness of the model. RMR partners is much smaller, better fit and a value of zero for perfect fit of the standard model shows.

In this model, a zero value is assigned to them.

how much RMR index is smaller, fitness is better and zero value shows complete fitness of the model (Randal Ey, 2009). In this model, the value is equal zero. The NFI index is equal to (1)(minimum acceptable value for this parameter is 0.9) also demonstrated goodness of fit of the selected criteria.

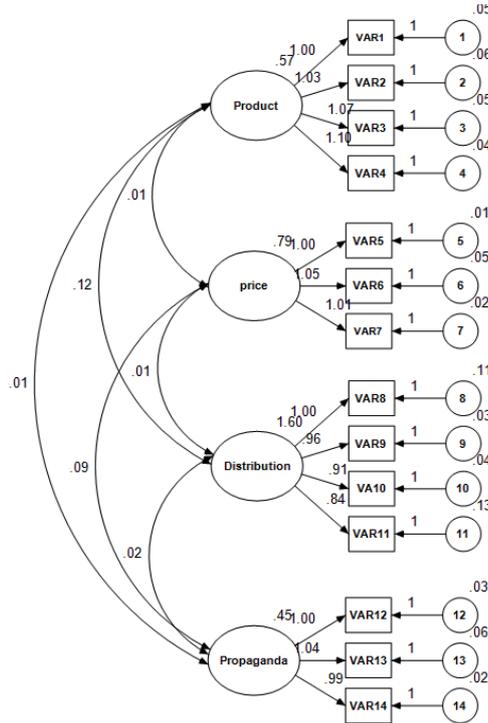


Fig. 2: impact of technology on components of marketing mix Chi-square: 423.3 DF: 71.

Table 3: goodness of fit indexes.

GFI	TLI	NFI	RMR
0.761	0.915	0.934	0.020

The goodness of fit index(GFI)is similar to the correlation coefficient which ranges from zero to one. Much the value is closer to one the goodness of fit index of the model with the data also increases. In this study, this index is equal to 1 and shows the strong fitness.

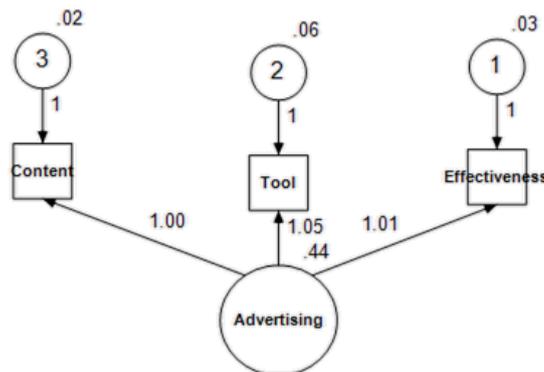


Fig. 3: the impact of technology on aspects of advertising.

Table 4: goodness of fit indexes.

GFI	NFI	RMR
1	1	0.000

Conclusion:

Recent advances in mass media have led to great changes in the contemporary world and new concepts like information technology, explosion of information and information community have been included in the world

languages. Within less than three decades, many outstanding transformations have been occurred in field of mass media. These transformations have also maximized capacity of data transfer either in terms of information volume or transfer speed. The volume of produced information and their transfer speed have faced the modern man with increasing volume of different information . The modern man is “ the information man”.

Now, many countries involvement is not lack of information, rather they seek to find strategies to manage and regulating a large bulk of information are increasingly moment by moment. Now, in the world all social political and economic institutions are doomed to take big steps and get adjusted with the rapid pace of technological advances and try to apply all new instruments in order to prevent from dissipation of national identity. Development of communicative technologies in form of satellites, computers, cable TV , video conferences and computer networks have enabled peoples to access information more rapidly.

Therefore, investigating the impact of technology on different parts of the market and marketing is important. The present research findings indicate that the new technology and its entrance into the marketing have affected different aspects of marketing mix. According to the marketing experts the advertising mix is the first part affected by using new technologies. The major role of advertising is to introduce a broad range of goods publically and so to reinforce the market economy. Accordingly the impact of this part o technology as the results and fitness of different aspects of marketing mix show, have influenced other aspects of marketing mix like product, price and distribution. Moreover, the results indicate that advertising and its components have affected by the new technologies. The advertising instruments according to the marketing experts have received the highest rate of effect.

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