Presenting a mathematics model for the selection of good advertisement channel in production sector of sport industry

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ABSTRACT

In the current era advertisement as an element of promotional mix plays an important role in the sustenance of the organization by identifying and introduction of products. Because advertisement is one of most common marketing tools to develop in the market. In order to choose a good promotional mix in production sector of sport industry, the comments of 30 marketing managers of sport products companies were collected by responding to research-built questionnaires of promotional mix and AIDA model. Validity [face and content validity] of the questionnaire was verified by the related experts and their reliability was proved due to inconsistency ratio of the questionnaires that was less than [0.1]. To analyze the data AHP method and [Expert choice 11] software is used. According to the results at fourth level, in advertisement tools, TV with weight [0.522] was the most important factor. At third level among promotional mix tools, advertisement with the weight [0.396] and at second level in AIDA tools attention with the weight of [0.437] were significant. The results based on AIDA model at fourth level, show that for customers attention and interest and act to purchase, TV with the final weight of [0.510], [0.496] and [0.499] respectively had the highest importance in comparison with other advertisement tools. Also, the results at third level based on AIDA showed that from attention aspect, advertisement with the weight of [0.391], from interest to purchase, sales promotion with the weight of [0.359] and from act to purchase, personal selling with the weight of [0.440] are more significant. Considering the high completion between the companies and rapid growth of markets and also rapid changes in consumers behaviors, choosing a good promotional mix and prioritization of its tools help the promotion of marketing goals.

Keywords: promotional mix, Analytic Hierarchy process [AHP], AIDA model
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INTRODUCTION

Modern marketing is more than just producing good products, suitable pricing and easy access to them [1]. In addition to this producers require to communicate with their customers [2]. Producer of a good or service should combine carefully the communication tools in access to achieve a regular combination of promotional elements, a combination that is influence in achieving communicative and marketing goals [3]. Advertisement is one of the most common tools that companies used for direction of persuasive communications toward buyers and target communities use it 93]. Advertisement is every non-personal presentation of an idea, good or service by an advertiser and it is done by paying money [4]. Business advertisements is a dynamic science that always get a new form by social, economical and political changes [5] and gets special form considering thought, beliefs, tradition,

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culture and religion [6]. Advertisement is not just limited to TV and it also covers other media. Radio, Newspaper, Magazine, Urban advertisement, Internet and etc are important advertisement media [7]. Different media due to unique effects on audience causes different reactions. Today, considering the high completion between the companies and rapid growth of markets and also rapid changes in consumer's behaviors, advertisement is taken into attention as the main tool to inform consumers about the products and services [8, 9]. Every year, billion Toman is spent for different advertisement in different forms and thousands advertisement messages are written to be used. Considering the sensitivity of advertisement and its costly expenditures and their ranking they have special position in each company. In this research, to evaluate advertisement tools in production sector of sport industry, AIDA model as the best scientific models was used. This model uses four stage method including attention, interest, desire and action to lead the customer to purchase.

1. Attention: The first duty of advertisement message is attracting the attention. If advertisement message cannot do this well, the frequency of seeing or hearing the message by audience is void [10].

2. Interest: Making interest in people is difficult in comparison with interest. Here advertisement language and tone is compatible with the experiences and attitudes of target customers [10].

3. Desire: One of the most difficult duties of advertisement message is stimulating people for have or using the required good. The advertiser should communicate with the customer. For doing this well, he should know how target customers are thinking. Then, advertisement message should convince customer that the good that is going to be introduced, can meet the demands of the customer. To stimulate the customers to the product, there are different stimulators that are used depending on the type of product and customers [11].

4. Action: action is the final duty of the advertisement and it is not an easy duty. Considering the researchers done in communication field, it is obvious that one of the most important duties of sellers is action to purchase [10]. Different studies know increasing the information of customers about the services and products in the market to price, various products and their performance direct and modify perception indices of customers, creating a good image of the company and stating its presence and alarming rivals, modification and removing the negative effects, reduction of anxiety of consumers and creating a good mental image[8, 7, 6, 9, 12, 13]. The results of other researches show that there is a positive relationship between advertisement tools and sales promotion with awareness of consumers to the products and services. Here, the effect of advertisement tools in creating demand for more products is one of sales promotion tools [14]. Other studies show a positive relationship between AIDA model dimensions and the company advertisement media and in prioritization of advertisement media TV, newspaper, magazine, radio, Billboard and Internet have the highest positive effect on the company customers [15, 9, 7, 3]. Other researchers emphasized on the necessity of using new communicative tools for introducing goods and service and its result is the increasing trend of using new advertisement tools [12]. Considering the issues raised about the importance of advertisement as one of the marketing mix sector and as in companies and institutions it is costly, it is necessary to do advertisement properly and besides influencing, brings interest and benefit even in long term. The shortage of financial resources in the companies and increasing completion between them, increased being sensitive about the expenditures of advertisement and it is necessary to research about the effect of advertisement. Also, considering the importance of more efficiency in advertisement, ranking of advertisement media in the organization is very important and this prevents to have wrong expenditures in advertisement. So, in this research we attempted to prioritize advertisement media to promote marketing goals in Sport industry production sector.

MATERIALS AND METHODS

In this research descriptive-field method is used and for determination of hierarchical decision tree choices, interview with experts and reviewing books and related journals are used. To collect the comments, researcher-built questionnaire was used [promotional mix based on AIDA model]. Research statistical population is including managers of sport products companies all over Iran. These companies information was collected through official site of industry ministry, trade ministry and sport database in 2010. As AHP method is used for the data analysis, the numbers of samples are not important, so for this research 30 marketing managers of sport products companies were selected randomly and questionnaire were given to them. Considering the topic and purpose of this research, hierarchical decision tree method was identified as the best data analysis method. This method begins by providing hierarchical decision tree. This tree shows the comparing faction ors and the analyzed competing choices in decision-making and a series of paired comparisons are done. These comparisons define the weight of each of the

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competing choices and finally matrices of paired comparisons are combined with each other to take the best decision. As the data analysis is done based on AHP model, at first , inconsistency ratio of paired comparisons of each respondents is controlled and after being assured of acceptable inconsistency ratio 2[less than 0.1], the comments of respondents are combined and paired comparisons of each group is obtained. Consistency ratio indicates the consistency ratio of the comparisons with each other. By determination of inconsistency ratio we can trust in the determined prioritization accepted as experimentally. If inconsistency ratio is less than [0.1], we can accept comparisons consistency. Hierarchical decision making is a tree with various levels of the object of decision. The first level indicates the decision making goal and the final level indicates some choices that are going to be compared. The middle level indicates some criterions on which choices are compared [22]. The main goal is considered as the right promotional mix for sport products companies and in the second level of hierarchical tree, AIDA tools are used for attention, interest and desire and making them to purchase the products and at the third level promotional mix tools including public relations, advertisement, sales promotion and personal selling. At forth level advertisement tools were evaluated [Fig 1].
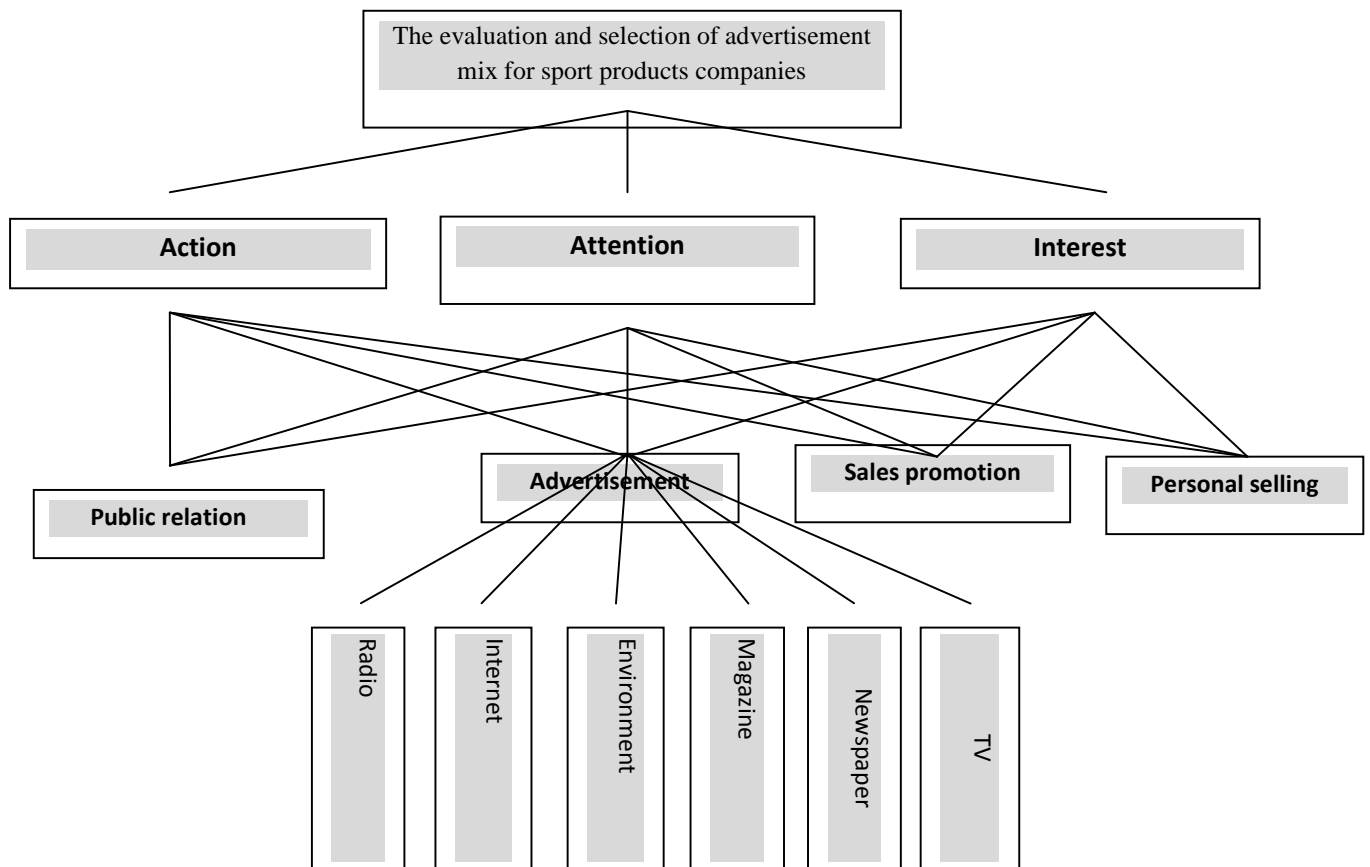

Figure 1: hierarchical decision tree with the final weight of indices and choices

RESULTS

As it is seen in table 1, integrated matrices, final weight and inconsistency ratio of advertisement tools, are shown. Among advertisement tools shown as numerical integrated matrices and final weight, TV advertisement with the final weight of [0.522] is more significant than other advertisement tools.

Table [2] shows integrated matrices, final weight and inconsistency ratio of advertisement tools based on AIDA model. As it is shown among advertisement tools attention, interest and action respectively with TV with the final weight of [0.510], [0.496] and [0.499] are significant among other tools.

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Table 3 shows integrated matrices, final weight, inconsistency ratio of promotional mix tools. The findings show that advertisement with the final weight of [0.396] is significant in comparison with other promotional mix tools.

Table 4 shows integrated matrices, final weight and inconsistency ratio of promotional mix tools based on AIDA model. As it is shown among promotional mix tools in attention, advertisement with the final weight of [0.391] is significant, while from interest aspect, sales promotion with the final weight of [0.359] are significant and from action aspect, personal selling with the final weight of [0.440] is significant.

Table 1: Integrated matrices final weight and inconsistency ratio of advertisement tools at forth level

	advertisement tools	[1]	[2]	[3]	[4]	[5]	[6]	final weight	inconsistency weight
Advertisement tools	TV [1]	1	4.65559	5.6235	6.117	6.84723	6.93833	0.522	0.03
	Newspaper [2]	0.21479	1	1.133	1.47724	3.89646	3.3923	0.144	
	radio [3]	0.1778	0.8821	1	0.1	0.8821	4.21116	0.131	
	environment [40	0.16347	0.6769	1	1	2.82577	3.7606	0.115	
	magazine [5]	0.4604	0.25664	0.26421	0.35388	1	1.25992	0.046	
	internet [6]	0.1441	0.2947	0.2374	0.2659	0.7937	1	0.041	

Table 2: Integrated matrices of advertisement tools based on AIDA model at fourth level

	advertisement tools	[1]	[2]	[3]	[4]	[5]	[6]	final weight	inconsistency weight
Attention	TV [1]	1	5.0115	5.9297	5.8938	5.8938	6.0313	0.510	0.04
	Newspaper [2]	0.1995	1	2.4406	2.4772	2.89646	3.3923	0.119	
	radio [3]	0.1834	0.4097	1	1.3083	1.8821	2.21116	0.112	
	environment [4]	0.1686	0.4036	0.7643	1	1.7542	2.1025	0.100	
	magazine [5]	0.1696	0.3452	0.5313	0.5331	1	1.4522	0.083	
	internet [6]	0.1658	0.2974	0.4526	0.7556	0.8886	1	0.077	
Interest	advertisement tools	[1]	[2]	[3]	[4]	[5]	[6]	final weight	
	TV [1]	1	5.1021	5.1195	6.03135	5.9297	5.8524	0.496	0.06
	Newspaper [2]	0.1959	1	1.1558	1.4051	1.0275	2.3239	0.108	
	radio [3]	0.1953	0.8652	1	1.4724	1.4301	2.4901	0.107	
	environment [4]	0.1658	0.7116	0.4724	1	2.2026	1.0358	0.106	
	magazine [5]	0.1686	0.9732	0.6992	0.5440	1	1.01992	0.102	
	internet [6]	0.1708	0.04303	0.1415	0.9654	0.9804	1	0.079	
Action	advertisement tools	[1]	[2]	[3]	[4]	[5]	[6]	final weight	
	TV [1]	1	5.0105	5.4524	6.03135	5.8938	5.9297	0.499	0.05
	Newspaper [2]	0.1995	1	2.4406	2.4851	2.5021	3.4239	0.126	
	radio [3]	0.1834	0.4097	1	1.0724	2.4301	2.4906	0.114	
	environment [4]	0.1658	0.4023	0.9324	1	2.2026	2.3358	0.101	
	magazine [5]	0.1696	0.3996	0.4115	0.4543	1	1.0192	0.084	
	internet [6]	0.1686	0.2920	0.4015	0.4241	0.9814	1	0.076	

Table 3: Integrated matrices final weight and inconsistency ratio of advertisement tools at third level

Promotional mix tools	[1]	[2]	[3]	[4]	final weight	inconsistency weight
Advertisements [1]	1	2.1056	2.0034	2.6753	0.396	0.08
public relations [2]	0.4749	1	0.8339	1.4461	0.163	
Sales promotion [3]	1.1991	0.3124	1	1.5499	0.292	
personal selling [4]	0.3737	0.6915	0.6452	1	0.149	

Table 5 shows integrated matrices, final weight and inconsistency ratio of AIDA tools. Results show that attention with final weight of [0.437] is more significant than other AIDA tools.

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Table 4: Integrated matrices final weight and inconsistency ratio of advertisement tools at third level

	Promotional mix tools	[1]	[2]	[3]	[4]	Final weight	inconsistency weight
Attention	Advertisements [1]	1	1.7056	3.0034	1.6753	0.391	
	public relations [2]	0.5863	1	3.2008	1.4461	0.293	0.08
	Sales promotion [3]	0.3029	0.3124	1	1.5499	0.150	
	personal selling [4]	0.5969	0.6915	0.6452	1	0.166	
interest	Promotional mix tools	[1]	[2]	[3]	[4]	final weight	
	sales promotion [1]	1	2.5036	3.0034	1.6753	0.359	
	advertisements [2]	0.5863	1	3.2008	1.4461	0.262	0.02
	public relations [3]	0.3029	0.3124	1	1.5499	0.165	
	personal selling [4]	0.6959	0.6915	0.6452	1	0.214	
action	Promotional mix tools	[1]	[2]	[3]	[4]	final weight	
	personal selling [1]	1	3.9617	1.5638	2.1401	0.440	
	sales promotion [2]	0.5097	1	1.3334	0.7383	0.204	0.04
	advertisements [3]	0.6394	0.7499	1	1.2311	0.190	
	public relations [4]	0.4672	1.5499	0.8122	1	0.166	

Table 5: Integrated matrices final weight and inconsistency ratio of advertisement tools at second level

AIDA tools	[1]	[2]	[3]	final weight	inconsistency ratio
attention [1]	1	1.4177	1.8543	0.437	
interest [2]	0.7053	1	2.098	0.361	0.02
action ion [3]	0.5392	0.4766	1	0.201	

DISCUSSION AND CONCLUSION

At the second level of hierarchal tree as the indices are compared as paired, the results showed that in AIDA factors, attention has the highest weight in comparison with interest and action that is compatible with the results of most of the researchers [8, 13, 7, 3, 2]. For a long time, the main interest of managers is concentrated production but in the recent decades, informing and giving right information and attraction ing the attention of customers is more difficult than producing the product itself. Also by increasing production, gradually the gap between production and consumption will increase. Thus, we should convey sale message to near and far markets and introduce their products and advantages. Different studies know increasing the information of customers about the services and products in the market to price, various products and their performance direct and modify perception indices of customers, creating a good image of the company and stating its presence and alarming rivals, modification and removing the negative effects, reduction of anxiety of consumers and creating a good mental image.

In the third level, advertisement was significant in comparison with public relations, personal sale and face-to –face selling, respectively and the other researchers also verify this result [18, 20, 17, 13, 8, 7, 7. 6, 5, 3, 2]. The importance of most of the advertisements in comparison with other promotional tools is due to the effective role of advertisement to inform the market about the good and new services, explanation of the commodity or service performance, correcting wrong perceptions, convincing the customer to make a purchase, changing the customers attitudes about the characteristics of commodity or service, reminding the consumer about his need to the commodity or service in near future and reminding the purchase place to the customer .

Considering the researches, we can say that advertisement in the current era is of great importance especially after the extensive growth of technology and advent of new media and applying them have special position and it has increased the people information about new goods and services. So it is recommended to the sport products company's authorities to apply new advertisement tools and new media and attributing more credit for advertisement help the promotion of marketing goals.

At fourth level, among advertisement choices, advertisement by TV was significant in comparisons with other advertisement tools [including newspaper, environment, magazine, internet and radio].

Also based on AIDA model TV advertisement is the most significant item from attention, interest and action aspects that is compatible with the results of researchers [2, 3, 5, 6, 77, 8, 13, 17, 20, 18].

Although TV advertisement is very costly, its great importance in comparisons with other promotional mix can be due to its extensive coverage, message observance frequency, and its influence method, voice, image and motion

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combination n and the possible use of color to make especial attraction ion for senses, high access to it, attracting new customers, increasing market share and also fixation of commercial sign at the audience mind. Considering the prioritization of advertisement media based on AIDA model, and as TV advertisements and Newspaper and Radio have the highest positive effect on customers so in arranging advertisement programs at first with high share we should concentrate on these media and then consider environment, magazine and Internet. It is worth to mention that during planning for promotion of company products, the planning managers shouldn't have the mistake of the lack of planning about media that are in the lower priority. Because it is possible that the lower priority of some of the media is due to the lack of investment and good planning in this regard.

As TV advertisements have the highest effect on this organization and considering that the price of this advertisement is higher than other choices, thus we should have comprehensive and exact analysis to increase the effect of this media. The practical actions in this regard are using AIDA model and other similar models in all advertisement tools.

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