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Validity and Reliability of Persian Version of Scale to Measure Attitude toward Advertising through Sport

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ABSTRACT

The current study aimed to investigate factor structure, internal consistency, and construct validity of the scale to measure attitude toward advertising through sport. To collect data, a 45-item, seven-point Likert scale to measure attitude toward advertising through sport proposed by Pyun (2006) was applied [37]. A total of 390 students were selected in the sport management courses at Bachelor's (BBA), Master's (MBA) and Doctoral (PhD) levels from universities of Tehran (Iran) during the academic year 2012-2013 by using a random sampling method. The confirmatory factor analysis was employed to assess the construct validity. The findings showed that Cronbach's coefficient alpha provided a good estimate of the reliability for the total scale (0.86) and seven factors. Through the confirmatory factor analysis, the obtained coefficients were significant (> 1.96), indicating the necessary validity for the scale. The study provided support for the application of the scale to measure overall attitude toward advertising through sport as a valid and reliable instrument in academic settings.

Keywords: Reliability, Validity, Belief, Attitude, Advertising, Sport.

INTRODUCTION

The growth of the sport industry has resulted in an increase in advertising through sport over the last several decades, an indication that corporations have acknowledged the potential of advertising through sport to accomplish a range of goals and objectives [1].

Advertising includes product information is important because it results in better decision-making by consumers [2]. Mittal (1994) concluded that of 10 perceptions considered, perceptions of the informational value of advertising was the most important contributor to consumers' overall attitude toward television advertising [38]. Pollay and Mittal (1993) found product information was a significant predictor of attitude toward advertising [37]. Information has also been found to be positively related with attitude toward Internet advertising [3, 4] and attitude toward direct marketing advertising [5]. The meaning of advertising as social role and image represents the idea that advertising often attempts to sell the consumers an image or lifestyle as well as a product or service [6]. Hedonism/pleasure to be one of the most important reasons why consumers like TV advertising [7]. An important indicator of positive and negative attitudes is likeability, which represents how people react to a product or a message, and one likeability technique has been considered as the use of hedonism/pleasure in advertising [8]. Celebrities who are endorsing products used in their competition communicate a more powerful "match-up" effect [9]. Such an effect may cause consumers to have a more positive brand attitude toward products [10], and influence them to choose those products [11]. As the spending on advertising through sport as part of corporate marketing strategies has continued to increase, a growing need for research has emerged [12]. The effectiveness of some formats of advertising through sport such as in-stadium or outdoor signage, and sponsorship recall and recognition have been examined [13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27]. The increase in the popularity of advertising through sport has led to concerns about consumer "identification" and "differentiation" [1]. The perceived lack of a consumer "differentiation" and "identification" may be due to a failure by researchers to understand consumer perceptions of, and information about attitudes toward advertising through sport [1, 28]. The dearth of understanding regarding

consumers' cognitive structures with respect to advertising through sport suggests the need for researchers to understand consumers' belief and attitude concepts surrounding advertising through sport [1]. Pollay and Mittal (1993), They proposed that attitudes could be explained by beliefs, based on Fishbein's (1963) theory of reasoned action [36, 39]. The kernel of Fishbein's theory is that beliefs and attitudes are distinct, and beliefs usually function as indicants of attitudes [29, 30, 31, 32]. There has been a significant increase in the different types of advertising media in recent decades. One medium that has grown dramatically, but which has not been a topic of study relative to attitude toward advertising, is sport. Sport has been considered a natural platform for advertising "as it carries very strong images, has a mass international audience, and appeals to all classes" [33]. the use of sport as an advertising medium enhances the effectiveness of advertising through sport. The current study sought to explore attitude toward advertising through sport and to distinguish between beliefs about and an attitude toward advertising through sport.

Advertising refers to a systematic process that provides appropriate information on goods and services to customers, and encourages consumers to purchase goods or services. Through Pollay and Mittal's (1993) model of attitude toward advertising in general, Pyun (2006) examined and explored attitude toward advertising through sport [36, 37]. The current research seeks to test validity and psychometric properties of the Pyun's scale for Iranian community. The objective is to standardize the questionnaire of attitude toward advertising through sport.

MATERIALS AND METHODS

Given that this paper is to validate the scale to measure overall attitude toward advertising through sport, a descriptive method is applied with special emphasis on validation studies, as a type of research tool construct and development.

Participant

The population included all sport management students at Bachelor's (BBA), Master's (MBA) and Doctoral (PhD) levels from universities of Tehran (Iran) during the academic year 2012-2013. The sample was 400 randomly selected male and female students. A total of 390 filled questionnaires were received, and 10 cases were rejected due to incomplete information.

Measures

The Pyun's scale to measure overall attitude toward advertising through sport was used. The scale was translated from English into Persian by five educational professionals, familiar with marketing and sports science; the literary edition was conducted by three people. It was submitted to seven university professors in sports management and also five marketing experts for a test of face validity. The instrument consisted of 45 items on a seven-point Likert-style response scale (1: Totally Disagree- 7: Totally Agree) and (1: absolutely hate - 7: absolutely like). It was designed as close-ended questions so respondents could easily define their opinions about advertising in general, and about advertising through sport. Demographic information was also asked by ten statements. The research instrument included four individual subscales (product data, social role and image, hedonism/pleasure, and annoyance/irritation) and three social and economic subscales (good economy, lie/lack of understanding, materialism). The scale components are cover letter, instructions, personal data, and items.

Data Analysis

In the present study, descriptive statistics including mean, standard deviation, frequency, and percentage were used for the data analysis, provided through tables and figures. The 2-fold significance level of 0.05 was employed. The SPSS16 and Liser1 software were also included in the analysis. The cronbach's coefficient alpha and confirmatory factor analysis (CFA) tests were conducted in order to examine the research hypotheses.

RESULTS

The results showed that the mean age of the sample was 26.7 years (SD = 4.61): 37.9% males and 62.1% females. 81.3% of respondents were single, 18.7% married. In terms of educational levels, 33.5% was at BBA, 54.8% at MBA, and 11.7% at PHD. The highest and lowest time values spent watching sporting events were obtained from the classes of "more than 120 min" by 26.7% and "none" by 2.9%, respectively. 41.0% of respondents were more likely to pay attention to sporting goods advertisements. For effective methods of advertising, television and websites were listed on the top by 50.3% and 16.3%, respectively. However, radio was less effective by 0.3% (Table 1).

Table 1- Descriptive statistics for Demographic Variables

		Frequency	Frequency percentage			Frequency	Frequency percentage	
Gender	Male	148	37.9	Attention to advert	Appliances	17	4.4	
	Female	242	62.1		Clothing	108	27.7	
Marital Status	Single	304	77.9		Electronics	48	12.3	
	Married	70	17.9		Beverage	1	.3	
Degree	Bachelor	126	33.5		Sporting goods	162	41.5	
	Masters	207	54.8		Other	4	1	
	PhD	43	11.7		Total	390	100	
The spent time for watching sport games in a typical	Never	11	2.8		Effectiveness of advertising method	Radio	1	.3
	1-30 minutes	19	4.9			Television	157	40.3
	31-60 minutes	89	22.8			Sports fields	41	10.5
	61-90 minutes	79	20.3	Sports Magazines		28	7.2	
	91-120 minutes	77	19.7	Billboards		34	8.7	
	More 120 minutes	100	25.6	Site		51	13.1	
	Total	390	100	Total		390	100	

Reliability & Validity

According to the results obtained from Cronbach's alpha test, the scale to measure attitude toward advertising through sport has a coefficient of internal consistency of 0.86. Furthermore, the internal consistency values in each subscale are: product data by 0.838, social image and role 0.817, hedonism/pleasure 0.784, annoyance/irritation 0.782, materialism 0.763, good economy 0.746, lie/lack of understanding 0.746, attitude toward advertising in general 0.873, overall attitude toward advertising through sport 0.887 (Table 2).

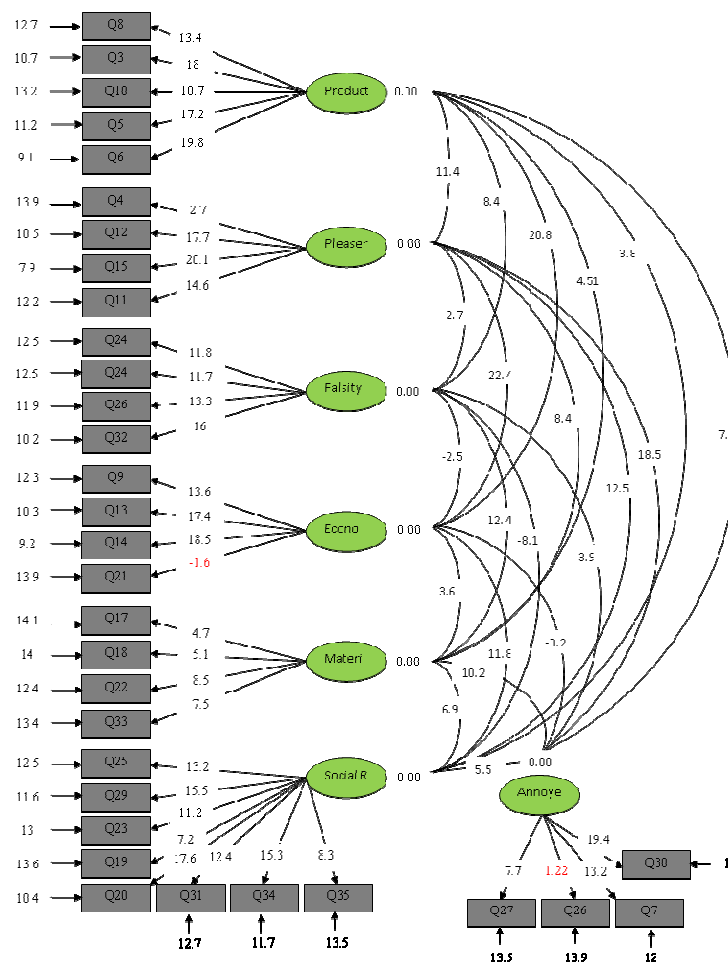


Fig. 1- Significance Values of Confirmatory Factor Analysis Test

Table 2- Reliability Estimates

Factor	Items	Cronbach's α coe
Annoyance/ irritation	7, 26, 27, 30	.782
Social role and image	19, 20, 23, 25, 29, 31,	.817
Product information	3, 5, 6, 8, 10	.838
Good for the economy	9, 13, 14, 21	.746
Hedonism/ pleasure	4, 12, 15, 16	.784
Falsity/ no sense	11, 24, 28, 32	.746
Materialism	17, 18, 22, 33	.763
Global attitude toward advertising	43, 44, 45	.873
Global attitude toward advertising through	1, 2, 36, 37, 38, 39, 40	.887
Total scale	45 items	.860

To assess the validity of the scale to measure attitude toward advertising through sport, the confirmatory factor analysis is employed. The basis of the decision to determine whether a hypothesis could be accepted or rejection [i.e. significance of relationship] is to investigate the model by significance numbers. With an error rate of $p < 0.05$ in a bilateral test [normal default], the critical values are 1.96 and -1.96. If the significance level of coefficients is higher than 1.96 or lower than -1.96; the null hypothesis would be rejected, and the alternative hypothesis describing the existence of a significance relationship will be accepted.

In the questionnaire used, only two questions about the relevant subscales are insignificant; including Question# 21 for good economy (usually wastes of economic resources; T-Value = 1.82) and Question# 26 for annoyance/ irritation (it is irritating; T-Value = 1.22). The factor loading related to these questions is less than 0.2. Some experts believe it is necessary to obtain a loading higher than 0.2 in order to accept factor analysis and place a variable in the questionnaire. Among 33 questions, 31 ones have factor loading higher than 0.2. Figure 1 shows the factor loadings of the questions.

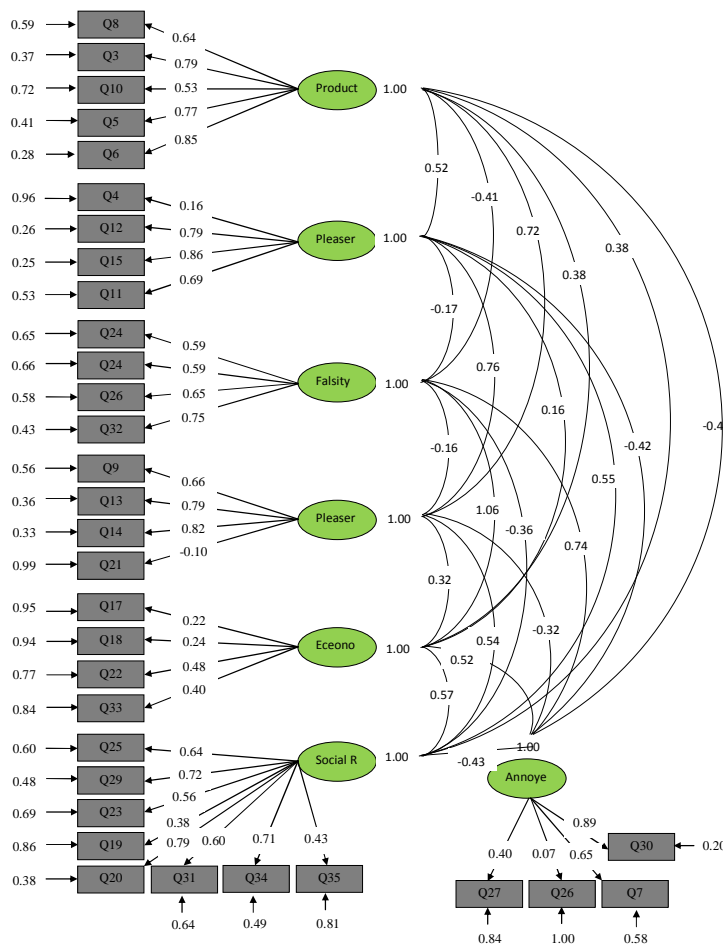


Fig. 2 - Causal Coefficients (Factor Loadings) With Estimated Standard

The model fitness indices show a good estimate of the fitness for the confirmatory factor analysis. The RMSEA value is less than 0.050; however, the values of GFI and AGFI indices, both for the model goodness, are higher than 0.90, meaning the appropriateness of extracted model in terms of data. The chi-square to degrees of freedom ratio is less than 3; this provides the accuracy of the fitness for the confirmatory factor analysis model.

Table 2 – Fitness Indices for Confirmatory Factor Analysis

Fitness Indices	Df	Chi-Square	RMSEA	P-Value	GFI	AGFI
	475	711	.032	0.000	.93	.91

DISCUSSION

The results indicated that the Persian version of the scale to measure attitude toward advertising through sport had the required reliability. Most studies have applied alpha coefficients to assess interested ranges [2, 3, 5, 34, 35, 36]. Among which the research of Korgaonkar et al. (1997), Pollay and Mittal (1993) and Pyun (2006) are highly relevant to the current study [36, 37, 38, 39]. Pollay and Mittal (1993) investigated reliability of seven dimensions for beliefs and the general framework of attitude using different coefficients [37,38]. Their findings revealed that the coefficients of belief dimensions ranged from 0.47 to 0.78 in the university student sample and from 0.54 to 0.71 in housewives group. The coefficients for the framework of attitude were 0.88 and 0.79 for university student and housewife samples, respectively. Korgaonkar et al. (1997) investigated the reliability of seven belief dimensions about marketing direct advertising. As the results showed, the alpha coefficients ranged from 0.50 to 0.69. Pyun (2006) assessed reliability of seven dimensions for overall attitude toward advertising through sport in an academic sample [37]. The results indicated that the Cronbach's alphas varied from 0.68 to 0.84. For overall attitude toward advertising through sport, the Cronbach's alpha was 0.828. It can be noted that both studies Korgaonkar et al. (1997) and Pollay & Mittal (1993), provided no satisfactory internal scores in reliability, exceptionally for some dimensions [39, 36].

Furthermore, the study confirmed the validity of the Persian version of the scale to measure attitude toward advertising through sport. According to evidences of the face validity, content validity and construct validity, the test seems to be relevant to the subject for which it had been designed. Also, the scale content is suitable to achieve the objectives of the scale to measure attitude toward advertising through sport.

To assess the validity of the scale to measure attitude toward advertising through sport, the confirmatory factor analysis test was employed. The basis of the decision to determine whether a hypothesis could be accepted or rejection [i.e. significance of relationship] is to investigate the model by significance numbers. From the statements used, only two cases about the relevant subscales were insignificant; including Question# 21 for good economy and Question# 26 for annoyance/ irritation. The reason for the first might be that the statement itself is conceptually positive, but the item is conceptually negative, non-adjusted with other items of the subscale. For the second statement, the insignificance could be justified by the fact that two statements # 5 and 26 represent the same concept, and due to such iteration, the word "equal" applied in the survey may remind a positive meaning; however, the subscale brings out negative concept.

Due to confirmed evidences of reliability and validity for the scale to measure attitude toward advertising through sport, the scale can be utilized for further research on advertising through sport.

Derived from Pollay and Mittal's theory, it is recommended to investigate attitude toward advertising for sports. In addition, it is needed to determine validity of the scale for other communities.

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