International
Journal of Human Sciences
ISSN:2458-9489

Volume 15 Issue 4 Year: 2018

A study on development of Perceived Quality-Image Scale in Sports Organizations[1]

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Abstract
The purpose of this study is to research how marketing activities of international sports organizations are performed and to develop a scale determining the effects of image management on public. The audiences of interuniversity World Winter Olympic sheld in Erzurum in 2011 participated in the research. Explanatory and Confirmatory Factor Analysis, reliability analysis were performed over the data obtained. All model fit indices of 25-item and four-factor structure of quality-image scale perceived in sports organizations applied were found to be at good level. In line with the findings obtained from the explanatory and confirmatory factor analyses and reliability analysis, it can be uttered that the scale is a valid and reliable measurement tool that can be used in field researches.

Keywords: Sports; Organization; Quality; Image; Scale.

1. Introduction

Sports activities indicated as today's most important advertisement and promotion elements are highly important in terms of the success of the organizations. Systematic planning and organization of events from the beginning to the end leads to the best result. Otherwise, even if the world's most important sporting organizations are held, the disruptions that will occur will affect the overall activity (Demirci, 1986: 43). Motivation is necessary for efficiency of employees in organizations (Kurudirek, Belli, Katkat and Tüzemen, 2012: 298). Since the disruptions that may occur in sports organizations that have a dynamic structure can also affect human performance (Sunay, 2010: 47).

The sports organization is a concept that has a rational structure and a system of operation, with relatively clear boundaries, which take place in the sports industry as a social personality or organization within the framework of certain purposes. These are the planned and scheduled activities carried out for the purpose of organizing and managing all kinds of sports activities aimed at sporting purposes and all kinds of events that will take place within this frame (Slack, 1997: 128).

Sports organizations organized at international and national level address a wide range of people from different countries with audiences, technical directors, journalists, administrators and other participants.In the present situation, the importance of the planned activities arises when the organizations arranged by different sports branches are considered.

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Submitted: 2018-03-19 Published: 2018-12-22

Bayrakdaroglu, Y., & Katkat, D. (2018). A study on development of Perceived Quality-Image Scale in Sports Organizations. *Journal of Human Sciences*, *15*(4), 2407-2416. doi:10.14687/jhs.v15i4.5290

However, some basic elements must be organized for the organization of a national and international sports event. Essential and indispensable elements for a sports organization can be listed as follows (İnal, 2003: 152-185; Sunay, 2010: 47).

- Sports Facilities
- Information and Communication services
- Transportation Services
- Security services
- Nutrition Services
- Health Service
- Audience Services
- Accommodation Services
- Competition Management
- Management of Ceremonies
- Social and Cultural Services
- Technology Services
- Logistics Services
- Finance Management
- Human Resources
- VIP Services

The main elements mentioned above are needed at every stage of the organization (Balcı, 1999:8-35, Gençlik ve Spor Bakanlığı EWU Arşiv, 2011).

When evaluated from a more up-to-date perspective, the target audience of all sports organizations is the spectators. Whether active or passive, audiences have a variety of needs. The more organizations are watched, the more people they reach and the more successful they are. In this way, the global and economic cycle takes place. There are some services offered to the audiences. These needs are planned for audiences in all of the small or large sports organizations. These can be listed as follows;

- Transportation,
- Security,
- Health,
- Eating and drinking,
- Tickets,
- Toilet,
- Rent a car,
- Accommodation,
- Currency-banks,
- Disabled audience services,
- Car park,
- VIP Services
- Waste and recycling,
- Media(Gençlik ve Spor Bakanlığı EWU Arşiv, 2011)

At the same time, sports organizations are emerging as an important element in promoting the country. However, this promotion opportunity should be evaluated well. The effective use of marketing and advertising techniques is important for the promotion of these organizations and the host country (Kılıçaslan, 2008: 100-110).

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Sports Organizations have two goals namely general and specific goals. The general aim is to raise healthy individuals and to spread sports consciousness. Their special purpose is to make money, gain political superiority, prestige and to promote. It is seen that important issues such as marketing, market values and brand image have come to the forefront with reference to the special purposes of international sports organizations.

For this reason, marketing of sports organizations to people, proliferation of recognition and formation of sport consciousness in society is of great importance. In addition, such a study is a necessity in that it can be a model for the marketing activities of the International Sport Organizations that will be organized in the future.

The purpose of the study is to develop a scale in order to determine the effects of image management on public and to establish at what level these organizations reach their promotion and marketing targets by revealing the brand management approaches of international sports organizations. In this way, infrastructure can be created for subsequent organizations by creating a better management policy.

2. Method

This research is a descriptive study of because it involves a scale development study process. During the scale development process, first the related literature was examined and an items pool was created. The item pool prepared was presented to the evaluation of 3 field experts, a Turkish language specialist and a measurement specialist and feedback was obtained through expert evaluation forms. In line with the feedbacks coming from experts, the final form of the first draft of the pre-pilot application was given after performing the required corrections specified in the related items in the item pool. The first draft of the scale before the pilot application was composed of 31 items. For the pilot applications, samples of 50 persons were created and the compliance levels and scale sums of items were evaluated. In this regard, it was determined in the pilot application process that the item total correlation values of each item were examined and the related values varied between 31 and .58 and the internal consistency value (Cronbach Alpha) of the 31-item scale was determined to be .95. The fact that item total correlation values were above .30 and Cronbach Alpha value was above .70 was interpreted in that the item compliances and internal consistency of the scale were ensured (Seçer, 2013: 171; Seçer, 2015: 45-64). As a result of the pilot application, Exploratory Factor Analysis was used to determine the factor structure of the 31-item survey of the scale and confirmatory factor analysis was used to determine the model compliance. In factor analysis it is recommended to achieve a sample size of at least five to ten times of the number of items in the scale. In this context, validity analyses were carried out with a sample of 760 persons composed of 413 females and 347 males by taking into consideration the lost data and normality analyses. SPSS 22.00 package program and LISREL 9.2 package program were used for analysis of validity and reliability of the scale and all analyses were performed in computer environment. In addition, during the data collection process, the collected data were read through the optical forms and transferred to the computer environment by using the REMARK OMR questionnaire reading program and they were converted into SPSS format and prepared for analysis.

3. Findings

3.1. Structural Validity

Factor analysis is performed with the aim of decreasing the number of variables by defining the basic variables or factors grouped in a large number of observed variables. In other words, it is the process of obtaining the resultant factor as a result of grouping the variables that correlate with each other and measure the same dimension by calculating the correlation between the variables according to the answers given by the subjects in a matter (Ural and Kılıç, 2005).

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In explanatory factor analysis, it is recommended that the variance value explained by each sub-dimension should be at least 5% in determining the items, eigenvalues should be at least 1.00 and the factor load value be at least .30 and there should be a factor load difference at .10 level at least among the items with sufficient factor load value in more than one factor (Seçer, 2015: 21; Shevlin and Lewis, 1999: 250-252,). In addition, Maximum Likelihood Method and Promax Rotation Method were used in Exploratory Factor Analysis.

3.2. Exploratory Factor Analysis

In exploratory factor analysis, KMO and Barlett tests were conducted in order to test the conformity of data collected from the study group with the factor analysis and KMO was found as .855 and Barlett test χ^2 value was found as 6532.233 ($p < .001$). The fact that KMO is higher than .60 and Barlett test is significant indicates that data are suitable for factor analysis (Pallant, 2005; Seçer, 2015). The findings obtained from the exploratory factor analysis related to the Inventory of Perceived Quality-Image In Sports Organizations scale are given in Table 1.

Table 1 Item Factor Loads,Variances Explained by Sub-scales and Item Analyses of the Inventory of Perceived Quality-Image in Sports Organizations (IPQISO)

Item	1st Factor	2nd Factor	3rd Factor	4th Factor	Total Correlation of Items
I15Organizasyon esnasında yarışma alanlarındaki (stat, salon, kort vs.) tesislerdeki gıda ve büfe hizmetleri sizce…	.81				.43
I16Yarışma ya da etkinlikler öncesi biletlerin halka duyurulması sizce…	.76				.48
I 17Yarışma esnasında biletlerin satışına yönelik bilgilendirme sizce…	.71				.47
I18Yarışmalar için bilet satış noktalarında uygulanan hizmet sizce…	.70				.49
I19Açılış ve kapanış törenleri biletlerinin satışına yönelik bilgilendirme ve bilet temini sizce…	.66				.50
I21Spor organizasyonu esnasında karşılaştığınız personelin nezaketi sizce…	.55				.50
I31Lisanslı ürün (logolu tişört, şapka, maskot vs.) satış noktaları ve kalitesi sizce…	.50				.52
I5 Organizasyon esnasında sunulan çevre hizmetleri (çöp toplama, temizlik, yenilenebilir enerji vs.) sizce…		.65			.53
I8 Organizasyonda dağıtılan promosyon, hediye vs. gibi ürünler sizce…		.60			.53
I9 Organizasyonun resmi Web sitesi hizmetleri sizce…		.58			.50
I11Spor Organizasyonu esnasında toplu ulaşım hizmetleri (belediye otobüsü, dolmuş,tramvay vs.) sizce…		.55			.48
I12Organizasyon esnasında spor tesislerindeki otopark hizmetleri sizce…		.51			.44
I13Yarışma yapılan spor tesislerindeki güvenlik hizmetleri sizce…		.50			.52
I14Spor tesislerindeki sağlık hizmetleri sizce…		.49			.42

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I22Yarışma yapılan spor tesislerinde seyircilere yönelik "danışma masası" hizmetleri sizce…		.45			.44
I23Engelli seyircilere yönelik hizmetler dikkatinizi çektiyse sizce…		.44			.43
I1Spor organizasyonu esnasında şehir içi yönlendirmeleri sizce…			.55		.51
I2Spor organizasyonu hakkında bilgi vermek amaçlı hazırlanan basılı evraklar (seyirciel kitabı, yarışma takvimi, rehber, vs) sizce…			.52		.34
I4 Spor organizasyonu tanıtımı için kültür ve sanat etkinlikleri sizce…			.50		.42
I6Spor organizasyonun tanıtımı amaçlı internet, TV ve radyo reklamları sizce…			.49		.45
I7Spor organizasyonu işlevselliği açısından gönüllü personel hizmetleri sizce…			.45		.58
I26 Katıldığınız yarışmalardaki tribünlerin doluluk oranı sizce…			.44		.50
I28İlinizde yapılan spor organizasyonunun tanıtımı sizce…				.51	.31
I29 Madalya ve ödül törenlerinin görsel zevk açısından sunumu sizce…				.48	.36
I30 Açılış ve kapanış törenleri görsel zevk açısından sizce…				.43	.36
	43.18% eigen value 3.47	7.07% eigen value 2.61	5.84% eigen value 1.7847	5.08% eigen value 1.19	
	TOTAL VARIANCE 61.01%				

As a result of the exploratory factor analysis related to IPQISO scale, a four-factor structure explaining 61.01% of total variance was obtained. The first one of these factors is the consumer services sub-dimension composed of the items of 13, 14, 15, 16, 17, 18 and 25. The second one is public services sub-dimension composed of the items of 4, 7, 8, 19, 10, 11, 12, 19 and 20. The third one is marketing communication sub-dimension composed of the items of 1, 2, 3, 5, 6 and 21. The fourth one is cultural marketing sub-dimension composed of the items of 22, 23 and 24.

It has been observed that factor load values of items related to the whole scale are between .81 and .43. Tabachnick and Fidell (2001) have stated that factor load values of items during scale development and adaptation process should be .32 as the baseline. In line with the data obtained, it can be stated that item factor load values of the four-factor structure of the scale are at sufficient level (Seçer, 2015). Total explained variance value of the scale has been found to be 61.01%.

It has been decided that 6 items in the 31-item scale form don't provide factor compliance with the whole scale in exploratory factor analysis and these items should be excluded from the scale after receiving the expert opinions due to the fact that they don't have sufficient factor load value (.32). However, it was paid attention to ensure that there was a difference at a level of .10 at least between the factor load values existing in two different dimensions of the items that may have sufficient factor load values in more than one sub-dimension. It has been determined that each item of the 25-item scale form, created after the excluded items which were thought not to have sufficient factor load, has sufficient factor load value and factor compliance.

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With the purpose of determining the relation between the factors of IPQISO scale, correlation between factors was analyzed. It is recommended that the coefficient of correlation between factors defined as multicollinearity problem shouldn't be .90 or higher (Pallant, 2005; Akbulut, 2011; Seçer, 2015). In this regard, the findings obtained related to the multiple correlation are presented in Table 2.

Table 2 Correlations between the Sub-dimensions of Inventory of Perceived Quality-Image in Sports Organizations (IPQISO)

	1	2	3	4
Factor 1	1			
Factor 2	.224*	1		
Factor 3	.211*	.325*	1	
Factor 4	.138*	.185*	.215**	1

* p< 0.05 (2-tailed).

Looking at Table 2, it can be stated that the correlation values between the sub-dimensions of IPQISO scale are considerably lower than .90 value set as a criteria for multicollinearity problem and there is no multicollinearity problem between the dimensions of the scale (Seçer, 2015: 77).

3.3. Confirmatory Factor Analysis

Confirmatory factor analysis was used to analyze the model compliance of the four-factor structure of IPQISO scale obtained after the exploratory factor analysis. In confirmatory factor analysis, GFI, CFI, NFI, RFI, IFI and AGFI indices being among the multiple compliance indices were used and the acceptable compliance value for each index was considered as 0.90. The compliance value of 0.08 was taken as the criteria for RMSEA, RMR and SRMR value being among the main compliance indices (Seçer, 2013: 134; Seçer, 2015: 78).

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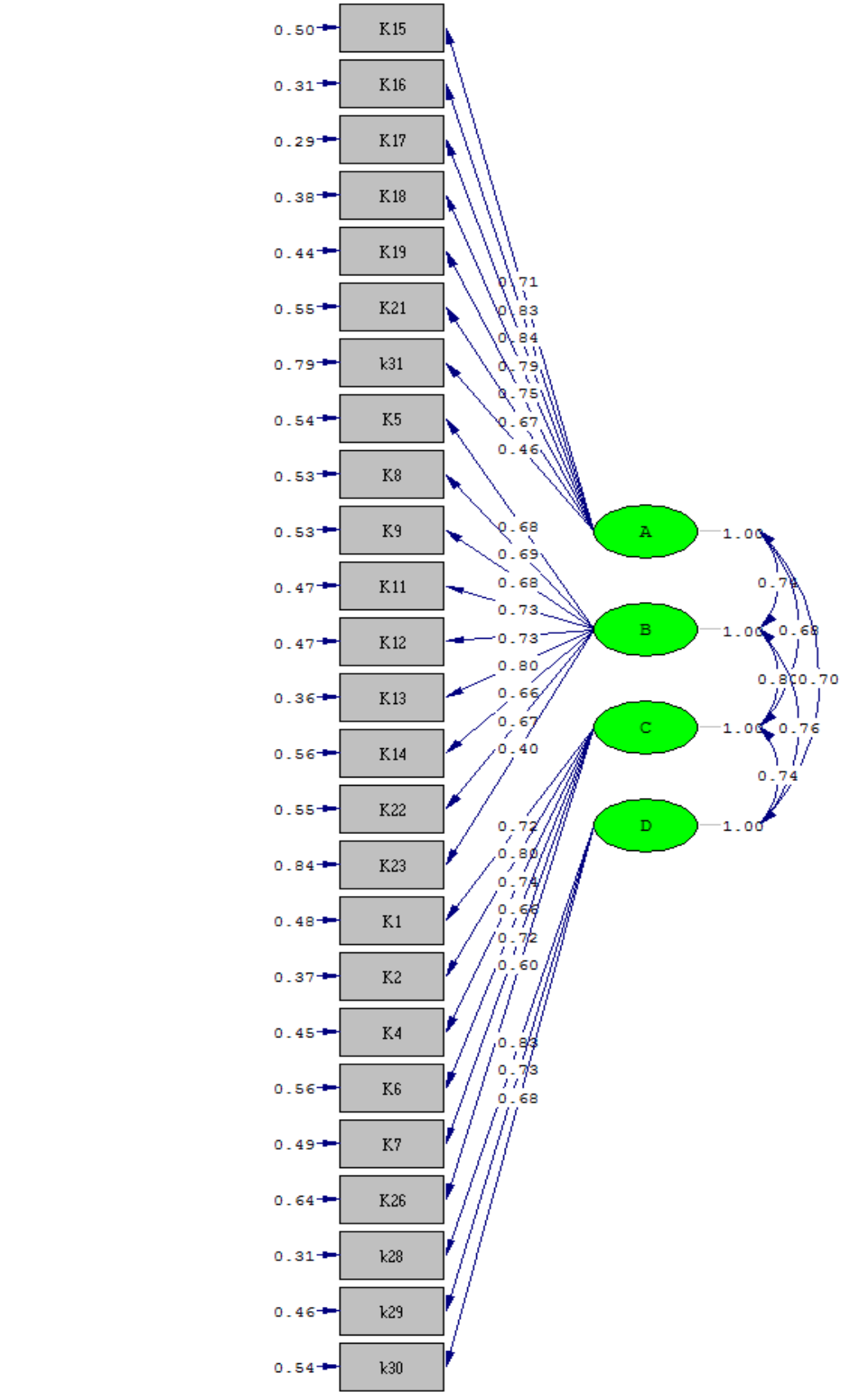

Chi-Square=479.42, df=269, P-value=0.00000, RMSEA=0.067

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Figure 1 ***DFA Result Regarding Inventory of Perceived Quality-Image in Sports Organizations (IPQISO)***

Looking at Figure 1, path analysis result related to model compliance of the Inventory of Perceived Quality-Image in Sports Organizations composed of 25 items and four sub-factors is observed. The compliance values of the model obtained as a result of the DFA analysis and the reference values regarding these values are presented in Table 3.

Table3 Compliance Values of the Model and Relevant Reference Values

Index	Acceptable Value	Perfect Compliance Level	Value Obtained in Research
X^2/Sd	<5	<3	1.78 Perfect compliance
RMSEA	<.050-.080	<.00-.05	.067 Acceptable compliance
RMR	<.050-.080	<.00-.05	.055 Acceptable compliance
CFI	<.90-.95	<.95-1.00	.97 Perfect compliance
GFI	<.90-.95	<.95-1.00	.93 Acceptable compliance
AGFI	<.85-.90	<.90-1.00	.91 Perfect compliance
IFI	<.90-.95	<.95-1.00	.97 Perfect compliance
NFI	<.90-.95	<.95-1.00	.96 Perfect compliance
NNFI	<.90-.95	<.95-1.00	.96 Perfect compliance
RFI	<.90-.95	<.95-1.00	.97 Perfect compliance

Analyzing the Table 3, it is observed that the values obtained in the DFA analysis performed to determine the model compliance of SOAKI scale have perfect compliance levels in X2 / Sd, CFI, AGFI, IFI, NFI, NNFI and RFI indices whereas they have acceptable compliance values for RMR, RMSEA and GFI indices. Considering these values obtained, it can be stated that the model compliance of SOAKI scale has been ensured and the scale has sufficient level of validity.

Following the standard solutions, t values between factors and items were checked and it was analyzed whether there was an item not showing compliance with the whole scale. It was determined that the items were significant at .05 level and showed compliance with the scale in general.

After ensuring the validity of the scale, internal consistency and split half-reliability analyses were conducted to analyze the reliability of the scale and the findings obtained are given in Table 2.3.

Table4 Reliability Coefficients Calculated with Internal Consistency and Split Half-Reliability Method Regarding Inventory of Perceived Quality-Image in Sports Organizations (IPQISO)

Dimensions	**Int.Consistency**	**Split Half-Reliability**
Factor 1	.85	.79
Factor 2	.84	.77
Factor 3	.81	.75
Factor 4	.81	.73
Total Scale	.87	.78

It can be evaluated that all of the values obtained as a result of the reliability analysis conducted regarding IPQISO are at a level that allows the scale to be considered as reliable and the scale has internal consistency and split half-reliability (Seçer, 2015).

The scale is composed of 25 items and each item takes a value between 1 and 6. For this reason, the minimum score that can be obtained from the scale is 25 and the maximum score is 150. Approximation of the scores obtained from the scale to 25 means that the perceived quality is low and if the scores taken from the scale draw close to 150, this indicates that the perceived quality is high. Due to the fact that the perceived quality scale isn't a diagnostic scale, there isn't any breakpoint.

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4. Discussion and Conclusion

The purpose of the study is to develop a scale with the purpose of determining to what extent the promotion and marketing targets of organizations are reached. Necessary literature review was performed during the research and a pool of items was established after receiving the expert opinions. And then, exploratory factor analysis was used to determine how many sub-dimensions the items included in the survey tool could be collected under and what kind of relation they had with each other.

In line with the data obtained, it can be stated that item factor load values of the four-factor structure of the scale are at sufficient level. The variance value of 61.01% obtained as a result of the exploratory factor analysis has been found to be sufficient to decide the factor structure of the scale. It has been determined that each one of the 25-item scale form has sufficient factor load value and factor compliance. Total explained variance value of the scale has been found to be 61.01%. Kline (2011) states that the variance rate explained in scale development and adaptation studies should be 40% at least. In this regard, it can be stated that the variance value of 61.01% obtained after the exploratory factor analysis during the research is adequate to decide on the factor structure of the scale.

Confirmatory factor analysis was used to analyze the model compliance of the four-factor structure of IPQISO scale obtained after the exploratory factor analysis. It is observed that compliance indices of IPQISO scale composed of 25 items and four sub-factors are significant (X2=479.42sd=269, p=.00, X2/sd=1.78). Compliance index values were found as RMSEA=.067, RMR= .055, NFI=.96, NNFI= .96, CFI=.97, IFI=.97, RFI=.97, AGFI=.91, GFI=.93. Concerning IPQISO scale, it can be stated that all model compliance indices of the four-factor structure tested with first level confirmatory factor analysis are very well and the four-factor structure of the scale is confirmed (Seçer, 2015: 78).

Following the standard solutions, t values between factors and items were checked and it was analyzed whether there was an item not showing compliance with the whole scale. Jöreskog and Sörbom (1996) have stated that all items are significant at a level of .05 due to the fact that there are no red arrows about t values. Absence of a red arrow in t values has been interpreted in the way that all items are significant at a level of .05 and comply with the whole scale.

The findings obtained from the exploratory and confirmatory factor analyses can be interpreted such that IPQISO scale has a structural validity. It can be evaluated that all of the values obtained as a result of the reliability analysis conducted regarding IPQISO are at a level that allows the scale to be considered as reliable and the scale has internal consistency and split half-reliability(Seçer, 2015). Landis and Koch, (1977: 159-174) and Robinson, Shaver and Wrightsman (1991) suggest that a reliability coefficient of .70 and above in scale development and adaptation process is adequate in order for the scale to be considered reliable. In this regard, it can be uttered that reliability criteria are met considering both the values of sub-factors of the scale and the total values belonging to the scale.

In conclusion, it can be stated that the scale is a reliable and valid measurement tool that can be used in field researches in line with the findings obtained from exploratory and confirmatory factor analyses related to IPQISO scale and the findings obtained from reliability analyses.

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