Providing a Scale for Measuring Service Quality in Wrestling Events

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ABSTRACT

Purpose: Valid or reliable measurement scales can ensure correct and reliable inferences and conclusions are produced. The present research has been conducted to validate the service quality scale for wrestling events.

Methodology: Accordingly, factors and items assumed to be related to the service quality of wrestling events were first identified using a qualitative research methodology and compiled in a questionnaire form. Then, a questionnaire with seven components and 41 questions was finalized, applying the exploratory and confirmatory factor analysis. Having been distributed, the compiled questionnaires among 384 Iran Wrestling League spectators, were collected.

Findings: The measurement model fits well. Convergent and divergent validity and internal and composite reliability were additionally confirmed for this targeted scale. Therefore, researchers and executives can be recommended to benefit from this same scale to evaluate the service quality delivered in wrestling events.

Originality: Two quantitative and qualitative methods have been used in this research.

1. Introduction

Nowadays, service quality has attracted a great deal of attention in sports event research due to its effectiveness on psychological and behavioral consumer responses, including their participation, satisfaction, and loyalty (Bahrami et al., 2021; Brady et al., 2006; Yoshida & James, 2011). It is a mental and overall perception induced after consuming a product or service (Bitner & Hubbert, 1994). In general, service quality is determined by customer perceptions (Kim-Soon et al., 2014), and it could play a great significant role in analyzing customer satisfaction and retention (Yu et al., 2014). Further, the tremendous significance noticed for providing sports spectators with service quality has led researchers to put much more effort into assessing the quality of sports event services regarding spectators. Sports events are one of the most significant social phenomena experienced in the contemporary century. Indeed, sports events are considered an essential industry in providing the changing society with invaluable mental and physical health. Organizations also regard them as influential in growing the national economy and understanding and approaching cultures (Dobson et al., 2001). The most important reason for the growing attention of researchers to service quality and their subsequent endeavors to measure it is the significant consequences that service quality brings. One of these important consequences mostly emphasized is satisfaction (Pourzarnegar, 2022; Spreng & Mackoy, 1996). Satisfaction is sometimes considered a determining factor in attending a sporting event or recommending it to others in the future (Yoshida & James, 2011). This consequence can result from factors determining service quality (Parasuraman et al., 1988). Kim et al. (2014) found that participants' overall satisfaction is directly affected by their positive experience of a sporting event and its competitive aspects (Kim et al., 2014). The second practical and significant consequence related to service quality is behavioral tendencies.

In the sports spectator literature, behavioral intentions are defined as spectators' clear and positive intentions to attend future games, recommend such attendance to others, and purchase a team's products and services (Biscaia et al., 2013). This definition could also be used in sports consumer and participant literature. Behavioral intention seems to be a good analyzer (predictor) of participants' attitudes toward a sports event (Bang & Lee, 2014). Therefore, it can be concluded that identifying the relationship between satisfaction and behavioral intention is essential in determining participation in future sports events. Some researchers (Jen et al., 2011; Murray & Howat, 2002; Sarlab, 2022; Yoshida & James, 2011; Zhang et al., 2014) confirmed some relationship between service quality, behavioral intentions, and satisfaction (Biscaia et al., 2013; Jen et al., 2011; Lee et al., 2004; Yu et al., 2014). Specifically, satisfaction results from service quality and can significantly impact consumer behavioral tendencies (Choi et al., 2018). In this regard, Cole and Illum (2006) reasoned that a high level of service quality attracts satisfied customers who tend to repeat their purchasing behavior (Cole & Illum, 2006). Biscaia et al. (2013) substantiated that satisfaction with team games increases the likelihood of participating in future games and recommending them to others (Biscaia et al., 2013).

Nowadays, to attract the sports customers' attention and meet their needs sports, it is necessary to provide managers of sports events with the due condition to augment their level of awareness as to the results obtained in studies focusing on boosting the service quality. Understanding factors that improve the service quality and attract customers to sports events helps managers to find effective ways to meet customers' needs and hold league matches better. In addition, the notable growth of sports events has determined the need to conduct specialized studies focusing on exploring the service quality in sports events (Chelladurai, 2014).

Researchers have used different theoretical and measurement models to evaluate the perception of service quality in this field. Still, SERVQUAL has been introduced as the most common service quality evaluation scale (Parasuraman et al., 1988). For example, Kim and Lough (2007) confirmed that the SERVQUAL scale presented by Parasuraman et al. (1988) was the most accepted and valid scale to explain service quality differently. Most studies investigating the service quality of sports have used the SERVQUAL model.

Despite outstanding advances in this field, criticism of the SERVQUAL model has not given rise to using significantly other scales (Parasuraman et al., 1988) in sports research in the past decade, and they have been generally replaced by more relevant service quality dimensions (Theodorakis et al., 2015). However, some researchers have modified this model in their study contexts (Parasuraman et al., 1988) or developed context-specific measures based on every model (Kelley & Turley, 2001; Moon et al., 2011; Theodorakis et al., 2001). For example, Chang and Chelladurai (2003) developed a service quality scale in fitness centers.

Also, Ko et al. (2011) studied event quality in most popular sports and designed a conceptual framework with a particular measurement scale to evaluate spectators' perception of event quality. As a result, they provided the related research community with a comprehensive model compared to other existing studies. This research process examined factors such as match quality, interaction, service quality, match result, and environmental or climatic conditions for holding matches. As a further matter, three dimensions, including physical environment quality (PEQ), interaction quality (IQ), and outcome quality (OQ) Theodorakis et al. (2015) assessed the effects of a sports event's service quality received or perceived by some runners.

On the other hand, Kim et al. (2019), with a specialized approach, studied the quality of sports medicine services provided in the 2018 Winter Games. Further studies on service quality in sports events have examined the effects and consequences caused by this extensively considered motivator. As for the 2016 Rio de Janeiro Olympic Games, Ribeiro et al. (2018) explored the impact of service quality on social perception. Their study results indicated that the multidimensional structure of service quality was thought to have consisted of technical, functional, and aesthetic dimensions, accessibility, accommodation, and complementary events. They have a significant causal relationship with a positive social impact (including city image, increase in community pride, social experiences, and public infrastructure) and a negative social impact (social conflicts and costs).

These researchers expounded that service quality is a multidimensional structure that several context-specific dimensions have constructed. However, measurements of such systems cannot be stable for a long time as they are affected by contextual characteristics

each sports event may augment. Therefore, the quality of each event should be studied according to its specific background or context conditions.

Wrestling is Iran's most proud sport regarding the world and Olympic competition achievements and is deemed the Iranian national sport. Currently, this sport is contested worldwide in two disciplines, Greco-roman, and freestyle, and its world championships are held annually. Wrestling is in a relatively good position in the Olympics. Due to the distinct global level of Iranian wrestling, many domestic competitions (wrestling premier league, Takhti Cup, national championships, etc.) and international ones (Olympics, world championships, matches with different ages, etc.) are periodically held in this field. Considering the importance and effectiveness of assessing the quality of sports event services and pointing out that the spectators are provided with decent appropriate quality services in most other countries, a lack of scientific studies and fundamental attention to the service quality in wrestling events is felt.

Hence, focusing on the service quality provided to spectators in wrestling sports events can be one of the research priorities in sports management and marketing. In this regard, building a valid and reliable scale to evaluate the service quality of wrestling events provides two items, including the wrestling federation, wrestling league organization, and club managers, directly with accurate information. Also, its promising results can indirectly convince private sector managers to provide sports teams with more financial support and encourage them to support more teams. As the correctness and accuracy of measurement scales play a significant role in obtaining valid results and conclusions, the present study aims to validate measurement scales for the service quality of wrestling events from the spectators' point of view.

2. Methodology

The present research was considered an applied one in terms of purpose and was designed to be a mixed exploratory (qualitative-quantitative) study in data collection. The main goal of the qualitative part was to obtain the main questionnaire factors and items. The participants in the qualitative part included experts in sports events, especially in wrestling, such as the wrestling federation presidents and managers, the referees' committee, and the wrestling league organization, also experts with good knowledge of sports events. Having reviewed the research literature, and prepared the related interview guide, a sample of 17 experts were interviewed to extract preliminary components and items. For this purpose, semi-structured interview sessions were held to determine the primary and secondary factors of wrestling event service quality based on the experts` viewpoints. Viewpoints. It was implemented with the structural equation modeling approach to identify service quality characteristics.

As to the quantitative part, the structural equation modeling method was used. Hence, preliminary questions, a questionnaire with a 7-point Likert scale (one = completely disagree; seven = completely agree) were first prepared. Following the general evaluation of the questions and appropriate literary editing, the content and validity of the questionnaire form were assessed using sports management experts'

opinions (n=10). To explore the structural fact, exploratory and confirmatory factor analysis was applied.

Finally, a questionnaire with seven dimensions and 41 questions was prepared. Due to the inaccessibility of the exact number of the statistical population and the generalizability of the research results, we distributed 384 questionnaires to collect data. To analyze the data aimed to evaluate the divergent validity and to evaluate the convergent validity, the heterotrait-monotrait ratio and the average variance extracted were respectively used. Also, to meet the internal consistency and the reliability of the questionnaire items, Cronbach's alpha using SPSS software version 26 was applied. Smart PLS2 was used to fit the measurement model overall, using structural equation modeling with the variance-oriented approach.

3. Results

The demographic analysis of the spectators who completed the questionnaires showed that 58.3% were single, and the remaining 41.7% were married. As to education, people with a bachelor's degree (36.7%), diploma (30.5%), associate degree (18.2%), master's degree (10.7%), and doctorate (3.9%) are the most frequent among the respondents respectively. have among the studied sample. As regards employment status, most of the participants respectively were students (43%), freelance (21.9%), unemployed (12.8%), and pupils (8.1%). Their average age was 29.89, and they have averagely participated in competitions for 3.8 years.

In this research, exploratory factor analysis was applied to define and identify the factors affecting the service quality pattern of Iranian wrestling events. Before conducting the factor analysis, for this reason, to ensure the adequate sample size and to determine the correlation between the variables (items), the Kaiser-Meyer-Oklin measure of sampling adequacy (KMO) and Bartlett's test (Table 1) of sphericity were respectively used.

Table 1. Bartlett's and KMO's Results.

		Value
	KMO's Value (Sample Size Adequacy)	0/755
Bartlett's sphericity test	Chi-square value (X^2)	5628/453
	Degree of freedom	1431
	Significance level	0/001

According to the findings given in Table 1, the obtained KMO value is 0.755. Therefore, the research sample size is sufficient to conduct the mentioned factor analysis, and it is naturally possible to perform the factor analysis for the desired data. Thus, this number of data can be reduced to a series of hidden factors. Further, Bartlett's test results (Sig=0.001, $\chi2$=5628/453) demonstrated a high correlation between the items. So, it was permissible to proceed with other factor analysis stages. The components' factor analysis results are separately presented with the factor loading value reaped for each factor.

Table 2. Initial values for analyzing questionnaire components of wrestling event service quality (table of commonalities).

Item No.	Initial estimation of the share rate of each variable	Item No.	Common factor variance	Initial estimation of the share rate of each variable	Common factor variance
Q1	1	Q28	0/455	1	0/771
Q2	1	Q29	0/499	1	0/720
Q3	1	Q30	0/633	1	0/575
Q4	1	Q31	0/713	1	0/733
Q5	1	Q32	0/725	1	0/736
Q6	1	Q33	0/516	1	0/405
Q7	1	Q34	0/439	1	0/636
Q8	1	Q35	0/653	1	0/354
Q9	1	Q36	0/435	1	0/498
Q10	1	Q37	0/603	1	0/548
Q11	1	Q38	0/756	1	0/179
Q12	1	Q39	0/440	1	0/493
Q13	1	Q40	0/765	1	0/443
Q14	1	Q41	0/334	1	0/436
Q15	1	Q42	0/545	1	0/387
Q16	1	Q43	0/546	1	0/498
Q17	1	Q44	0/689	1	0/605
Q18	1	Q45	0/582	1	0/396
Q19	1	Q46	0/624	1	0/637
Q20	1	Q47	0/491	1	0/572
Q21	1	Q48	0/771	1	0/568
Q22	1	Q49	0/407	1	0/730
Q23	1	Q50	0/320	1	0/639
Q24	1	Q51	0/732	1	0/473
Q25	1	Q52	0/706	1	0/366
Q26	1	Q53	0/652	1	0/361
Q27	1	Q54	0/736	1	0/603

According to the commonality Table 2, the initial estimation of the commonality rate of each variable revealed that all their value is equal to one. The common factor variance column shows an amount of each variable variance that the factors could explain. The closer to 1 the values are, the greater involvement the related variables have. The smaller values indicated that the variable (item or question) is not suitable enough for factor analysis and should thus be removed from the study. Therefore, the experts modified or removed the variables so that the factors could not determine their changes above 0.3 (or 30%). As noticed in Table 2, the expected variance of all the items has been reported to be more than 0.3. Therefore, all the things would remain in the analysis.

Table 3. Eigenvalues and variance of the wrestling event service quality questionnaire factors.

Components	Initial eigenvalues			Extraction sums of squared factor loadings		
	Total	Variance percentage	Collective variance percentage	Total	Variance percentage	Collective variance percentage
1	11/417	21/142	21/142	11/417	21/142	21/142
2	5/899	10/924	32/066	5/899	10/924	32/066
3	3/503	6/488	38/554	3/503	6/488	38/554
4	2/580	4/777	43/331	2/580	4/777	43/331
5	2/418	4/478	47/809	2/418	4/478	47/809
6	2/139	3/961	51/770	2/139	3/961	51/770
7	2/069	3/832	55/602	2/069	3/832	55/602

The eigenvalues and cumulative variance percentage values extracted and explained from the data set by each factor have been reported Table 3. According to Keizer's criterion, only elements were selected from Table 3 whose eigenvalue is higher than 1. Other factors with values less than one were removed from the set of characteristics and would not be considered. The results given in Table 3 show that all the 54 items considered in the present research can be reduced to 7 factors, and it is possible to design a new structure by combining these 54 items based on the factors and analyzing the data based on this new structure resulted from such combinations.
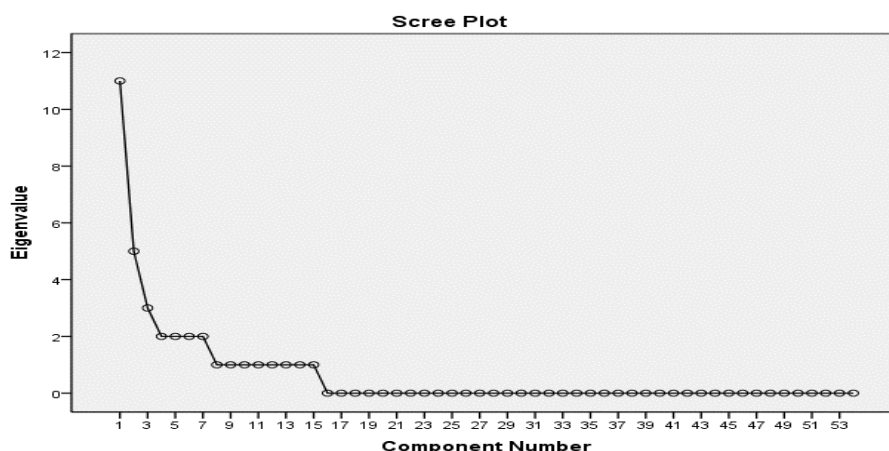
Figure 1. eigenvalues of factors related to the variables of the wrestling event service quality questionnaire.

Finally, considering the scree plot, the explained variance table, the columns of the initial eigenvalue (three columns on the left,) and extraction sums of squared loadings (three columns on the right), it can be said that a maximum of 41 items has been extracted. Also, the first factor of explanatory variance can be more precisely observed as to the seven factors.

Rotated factor matrix results should be used based on their factor loadings to classify the items into the mentioned factors. Table 4 presents the correlation matrix between the items and factors shown following the rotation. Based on the researchers' opinion, factor loadings with values more than 0.50 are acceptable (Hulland, 1999). The researchers have considered the item classification in terms of their correlation with each other based on the most significant factor loading of individual items.

Table 4. Rotated factor matrix of the wrestling event service quality questionnaire.

Items	Service provision quality	Technical skills	Interaction	Environment quality	Appraisal	Referee quality	Social value
Q13	0/830	---	---	---	---	---	---
Q21	0/823	---	---	---	---	---	---
Q28	0/812	---	---	---	---	---	---
Q17	0/804	---	---	---	---	---	---
Q11	0/801	---	---	---	---	---	---
Q29	0/792	---	---	---	---	---	---
Q5	0/686	---	---	---	---	---	---
Q15	---	0/704	---	---	0/704	---	---
Q34	---	0/680	---	---	0/680	---	---
Q8	---	0/676	---	---	0/676	---	---
Q16	---	0/605	---	---	0/605	---	---
Q2	---	0/578	---	---	0/578	---	---
Q9	---	0/561	---	---	0/561	---	---
Q7	---	0/546	---	---	0/546	---	---
Q51	---	0/523	---	---	0/523	---	---
Q25	---	---	0/763	---	---	---	---
Q26	---	---	0/731	---	---	---	---
Q4	---	---	0/718	---	---	---	---
Q3	---	---	0/714	---	---	---	---
Q18	---	---	0/709	---	---	---	---
Q24	---	---	0/700	---	---	---	---
Q54	---	---	0/525	---	---	---	---
Q47	---	---	---	0/744	---	---	---
Q30	---	---	---	0/692	---	---	---
Q6	---	---	---	0/657	---	---	---
Q10	---	---	---	0/625	---	---	---
Q20	---	---	---	0/612	---	---	---
Q22	---	---	---	0/600	---	---	---
Q12	---	---	---	0/563	---	---	---
Q42	---	---	---	0/508	---	---	---
Q50	---	---	---	---	0/734	---	---
Q49	---	---	---	---	0/732	---	---
Q48	---	---	---	---	0/678	---	---
Q19	---	---	---	---	0/653	---	---
Q27	---	---	---	---	0/526	---	---
Q46	---	---	---	---	---	0/764	---
Q44	---	---	---	---	---	0/729	---
Q36	---	---	---	---	---	0/551	---
Q37	---	---	---	---	---	0/541	---
Q32	---	---	---	---	---	---	0/823
Q31	---	---	---	---	---	---	0/810

Based on the findings resulting from the exploratory factor analysis and extraction of seven factors in the being discussed questionnaire, the questions corresponding with the extracted factors are as follows:

Table 5. Service quality factor items of Iran wrestling events.

Factors	Items	Factor loading
Service provision quality	The conditions of wrestling racing mats should be at a satisfactory (standard) level.	0/830
	The conditions of watching the competition area should be at an acceptable level (it should be easily visible from all the points of the wrestling gym).	0/823
	The price of the delivered services in the competition gym should be affordable.	0/812
	The quality of facilities should be at a suitable level.	0/804
	The personnel quality (appearance, personal behavior, efficiency) should be seriously considered to be at a good level.	0/801
	.The teams' location should be prepared to be appropriate in the competition gym.	0/792
	The ticket price to be paid for the gym competition should be affordable.	0/686
Technical skills	Time interference with different competitions should be checked.	0/704
	Organizing competitions should be performed by the executive staff.	0/680
	The executive staff should be of rich experience to organize the competitions.	0/676
	Wrestlers with high technical skills should be employed.	0/605
	Well-known experienced staff should be employed.	0/578
	The competition day events should be informed and updated.	0/561
	Athletes should be of required skills to perform artistic techniques.	0/546
	Related people and public should be well-informed before and after the competition.	0/523
Interaction	Good interaction should be established between coach and referee staffs.	0/763
	Professional courses to teach behavioral principles should be held for team coaches and staffs.	0/731
	To increase interaction, fans should also be organized.	0/718
	Fan clubs should be established to expand interaction.	0/714
	Sports culture should be internalized among spectators.	0/709
	A Well-educated executive staff should be employed.	0/700
	Acceptable interaction among competition pillars should be provided.	0/525
Environment quality	Endeavors should be made to realize easy access to the gym and the targeted places and locations.	0/744
	Scoreboards should be located in appropriate places.	0/692
	The gym exit can be easily done.	0/657
	Locating should be appropriately made in the competition gym.	0/625
	The gym convenience should be built with enough numbers and in appropriate places.	0/612
	The gym capacity should be exactly considered.	0/600
	Enough and suitable drinking fountains should be situated in the gym.	0/563
	Beauty and attraction of the gym should be observed.	0/508
appraisal	The spectators' expectations should be met by the organizers.	0/734
	There should be an appraisal process in different events.	0/732
	Regulation specific to each competition should be compiled.	0/678
	Legal cases related to each competition should be redacted.	0/653
	There should be a conventional and continuous inspection system observing competitions.	0/526
Referee quality	The referee quality should be at a standard level.	0/764
	Arranging referees should be impartially done.	0/729
	Well-known referees with international degrees should be employed.	0/551
	The match referees should be of required abilities to make required decisions.	0/541
Social value	Cultural issues and matters should be obsessively observed.	0/823
	Correct social evaluation should be conducted to perform the competitions.	0/810

To ensure the construct validity and confirmation of the factors identified in the previous step (exploratory factor analysis), the elements were examined using the confirmatory factor analysis test focused on the partial square technique. If the factor load is less than 0.3, the relationship is considered weak and is definitively ignored. Conversely, factor loads between 0.3 and 0.6 are acceptable, and related associations are considered adequate. If the load is more significant than 0.6, it is deemed favorable. The results reported in Table 6, the factor loadings of the research questions have been acceptable, the statistical values have been obtained to be more than 1.96, and all the questions, as a result, would be retained.

Table 6. The results of confirmatory factor loading of the wrestling event service quality questionnaire's items.

Factors	Question	Factor load	Value t	Significance level
Service provision quality	1	0/89	33/67	0/001
	2	0/80	17/13	0/001
	3	0/79	15/86	0/001
	4	0/87	28/36	0/001
	5	0/88	28/79	0/001
	6	0/86	27/65	0/001
	7	0/86	26/03	0/001
Technical skills	8	0/63	5/30	0/001
	9	0/53	2/320	0/001
	10	0/64	2/94	0/001
	11	0/64	3/19	0/001
	12	0/70	3/86	0/001
	13	0/59	3/19	0/001
	14	0/49	1/99	0/001
	15	0/51	2/62	0/001
Interaction	16	0/72	9/29	0/001
	17	0/73	10/68	0/001
	18	0/70	8/86	0/001
	19	0/80	18/87	0/001
	20	0/80	19/23	0/001
	21	0/81	17/07	0/001
	22	0/54	6/13	0/001
Environment quality	23	0/82	23/77	0/001
	24	0/76	14/53	0/001
	25	0/45	4/53	0/001
	26	0/60	6/96	0/001
	27	0/59	7/27	0/001
	28	0/52	5/51	0/001
	29	0/79	19/61	0/001
	30	0/79	19/61	0/001
Appraisal	31	0/68	13/22	0/001
	32	0/56	5/26	0/001
	33	0/55	4/94	0/001
	34	0/82	16/28	0/001
	35	0/88	20/55	0/001
Referee quality	36	0/61	5/36	0/001
	37	0/80	15/66	0/001
	38	0/67	7/02	0/001
	39	0/56	4/98	0/001
Social value	40	0/86	5/75	0/001
	41	0/61	3/44	0/001

Herein, Cronbach's alpha and composite reliability indexes were used to examine the reliability and evaluate the internal consistency reliability of the measurement model variables. The index of average variance extracted was also used to explore the convergent validity of the mentioned measurement model. Concurrent validity is used to determine if each question has the highest correlation with its construct compared to other constructs. The average variance extracted explores how much the hidden variable explains the conflict of the questions. In other words, it examines the degree of individual hidden variables' correlation with the related inquiries. The minimum accepted value for the average variance extracted was 0.5 (Fornell & Larcker, 1981). As for Cronbach's alpha index and composite reliability, values higher than 0.7 were acceptable (Mallery & George, 2000). As noticed in Table 7, the values given for Cronbach's alpha and composite reliability were good for all the research variables. Therefore, the reliability and internal consistency of the research variables were confirmed. Having considered values of the average variance extracted, convergent validity was additionally confirmed.

Table 7. Values of Cronbach's alpha, composite reliability, and average variance extracted.

Factors	Cronbach's alpha	Composite reliability	AVE	Significance level
Service provision quality	0/93	0/94	0/73	0/001
Technical skills	0/80	0/81	0/55	0/001
Interaction	0/86	0/89	0/54	0/001
Environment quality	0/93	0/87	0/56	0/001
Appraisal	0/74	0/82	0/59	0/001
Referee quality	0/70	0/76	0/55	0/001
Social value	0/73	0/71	0/56	0/001

Fornell and Larcker (1981) were used to examine the divergent validity of the research measurement model. Divergent validity is used to check whether each question has the highest correlation with its construct compared to other constructs. According to this same criterion, a latent variable, compared to other latent variables, should be more dispersion among its questions. Specifically, the root means square of each hidden variable variance extracted must be greater than the maximum correlation of that variable with other latent model variables. As can be observed in Table 8, this occurred. So, divergent validity is confirmed (Fornell & Larcker, 1981).

Table 8. Values of the measurement model's divergent validity, based on Fornell-Locker's criterion.

Factors	1	2	3	4	5	6	7
Service provision quality	0/85	---	---	---	---	---	---
Technical skills	0/71	0/74	---	---	---	---	---
Interaction	0/69	0/52	0/73	---	---	---	---
Environment quality	0/69	0/72	0/61	0/74	---	---	---
Appraisal	0/72	0/67	0/64	0/51	0/76	---	---
Referee quality	0/68	0/42	0/43	0/35	0/69	0/74	---
Social value	0/46	0/23	0/39	0/20	0/43	0/63	0/75

Finally, the commonality index and coefficient of determination (R^2) can help test the research model's structural prediction power and quality. The positive values of the

commonality index Q2 indicate the quality deemed appropriate for the measurement model. The coefficient of determination (R2) shows an exogenous component's effect on an endogenous one. The value of this coefficient ranges from zero to one; it is noteworthy that the larger the matter is, the more favorable effectiveness is caused. In sum, values close to 0.67, 0.33, and 0.19 are respectively deemed profitable, average, and weak (Bolker et al., 2009).

4. Discussion and Conclusion

The present research was conducted to build and validate a scale for the service quality of wrestling events. This research identified the most critical components affecting service quality in wrestling events using a qualitative approach. The initial questionnaire was tested using the wrestling competition spectators' opinions based on the factors obtained in the qualitative section. Meanwhile, the findings revealed that the overall research model fits well as seven factors and 41 items are included. The service delivery quality, correct evaluation, the quality of the environments in which matches are held, the referees` qualities, athletes' technical skills, and interaction between tournament organizers and the social event value are seven factors that explain the quality of wrestling sports events.

The high quality of executing competitions and timely holding events satisfies the spectators of sports events. A valid measure for organizations holding competitions is the quality of service in that event, and this category gives rise to great help in making decisions for sports organizations (Calabuig-Moreno et al., 2016). The service quality in sports venues, including the appropriate rate of facilities, the stadium environment, the staff support and use, and services, has a significant impact on the behavioral intentions, satisfaction, and return of the spectators to the sports stadiums (Calabuig-Moreno et al., 2016). In a study on a sports and recreation park in Jiangsu Province, China, Dai et al. (2019) emphasized the importance of service quality in sports venues. It mentioned access to facilities, suitable space, staff services, and environmental safety as components of service quality in sports environments and places.

Further, the service provision quality was recognized in the present study as an effective index in wrestling sports events. So, managers and officials of wrestling sports events are encouraged by the above facts to consider such things as standard conditions of the competition mats, conditions for spectating competitions (being visible from all gym points), the price of the services traded in the competition gym, the quality of facilities, the quality of personnel (appearance, individual behavior, efficiency), the location of the teams in the competition hall and the ticket price. By identifying and considering these indicators and components of service quality in sports events, officials and those involved in organizing events can increase the spectators' satisfaction and provide them with appropriate services to augment the quality of the competitions and satisfy the spectators accordingly.

Undoubtedly, the high quality of holding competitions requires high technical skills. The results obtained in the present research showed that the technical skills of the athletes are one of the main factors which explain the service quality of wrestling events. Brady and Cronin Jr (2001) conceptualized technical quality as an output of service production

and delivery. In other words, technical quality is the quality consumers receive from interacting with a service company. This quality is of great importance for them and service quality evaluation. If the athletes play their role well, represent higher skills, and use all their strength in the competitions, the spectators will be satisfied with the technical quality and feel happy to be in the stadium. In addition, as the opponent team is of high quality and has sound records and history, the spectators perceive that success is not only for the team athletes, but a kind of success can be created for them. Indeed, the praise and admiration of their team can naturally cause happiness and complete satisfaction and superiority for them.

Interaction is another main factor that explains the service quality of Iranian wrestling events. Interaction is reckoned one of the intangible services, including encounters between the stadium staff and the spectators. Regarding service quality, interaction is mainly emphasized as an essential element in making spectators feel good about sports events. For example, Yoshida and James (2011) maintain that interaction is a factor affecting service quality and can provide customers with significant satisfaction. Those engaged in wrestling should consider matters, including interacting between coaches and referees and holding professional courses. The behavioral principles are taught to coaches and team staff, organizing fans, establishing fan clubs to increase interaction, internalizing a suitable culture among spectators, using trained executive staff, and establishing appropriate interactions between the elements of competition.

The present research results indicated that environmental quality is the main factor that explains the quality of services in Iranian wrestling events. Rozita et al. (2014) believed that the environment size, performance quality, and employee competence have a significant relationship with customer satisfaction and behavior. The present research results are consistent with Rozita et al. (2014). Also, easy access to the facilities affects the spectators' perception of the quality of the services provided in the stadium, and it can significantly impact the performance quality. Given such easy access, the spectators feel that the stadium is desirable in terms of its performance. Thus, accessibility is one of the factors mentioned hereafter in environmental quality.

Further, the quality level of access to the competition venue and the quality and hygiene of the platforms are significant for the spectators. The presence of guide signs for spectators' more accessible access to the stadiums can significantly increase their satisfaction. Specific and appropriate markings to guide the spectators outside the stadiums and suitable quality scoreboards inside the stadiums can be two influential factors in improving the environmental quality.

Correct evaluation is another main factor that explains the service quality in Iranian wrestling events. The overall evaluation factor was first introduced in Shonk (2006) research. After that, Ko et al. (2011) proposed the final evaluation factor in the sports service quality. This factor should be conducted after the match. It can be said that the satisfaction that arises from attending a sports event and becoming a fan can be classified into two sub-factors. These two sub-factors of evaluation, namely the pre-and post-game evaluations, have a significant relationship with the service quality, by which emotions and feelings of the spectators are more assessed during and after matches. The overall evaluation includes the probability of attending an event disregarding evaluations of

specific service quality aspects. Spectators' evaluation following the game end is the end point of the game process, which is reckoned as an essential factor in evaluating service quality due to its effective contribution to the overall evaluation. Meeting the spectators' expectations, applying an effective evaluation process in various events, compiling regulations related to each competition, and developing an appropriate and dynamic competition inspection system are included in the essential items that should be considered in the related evaluations.

In addition, the present research results showed that the quality of referees is one of the main factors that can explain service quality in Iranian wrestling events. Bernthal and Sawyer (2004) investigated the referee quality factor for the American Tennis Association tournaments for the first time. In the present study, the referee quality factor is also considered an effective one through which playing time is automatically introduced in the proposed model. Refereeing is the fundamental pillar of every sports event. According to Kelley and Turley (2001), correct game management and the referees' correct decisions are essential for the spectators. Therefore, paying attention to the refereeing quality level, arranging referees unbiasedly, and employing well-known referees with international degrees, also necessary decision-making ability, can significantly affect the event quality. Also, the current research results showed that social value is the seventh main factor employing which the service quality can be explained in Iranian wrestling sports events. These findings are consistent with (Ribeiro et al., 2018). Specifically, Ribeiro et al. (2018) investigated the service quality and social perception of the Rio de Janeiro Olympic Games (2016), and they proposed an excellent psychometric analysis of the multidimensional service quality structure, including technical, functional, and aesthetic dimensions, and aspects of accessibility, accommodation and supplementary events. In their results, the service quality structure was significantly correlated with positive social impacts (favorable city image, increased community pride, improved social experiences, and public infrastructure, etc.) and negative social consequences (social conflicts and costs, etc.).

Social values include all desirable or undesirable, appropriate or inappropriate things that are fascinated, noticed, and respected by humans. Any matter or anything, whether material or spiritual that is valuable and respectful in society, seems to meet the materialist and human spiritual needs, or anything precious and beneficial for a human could be included in the social values. In other words, anything useful, desirable, and ultimately appreciated by a human group is a social value. Based on the present research findings, paying attention to the spectators' cultural issues and evaluating correctly and socially for holding competitions are two essential components of the social values in wrestling sports events, which require the attention of the competition organizers.

Considering the results, it can be concluded that providing services leading to the spectators' satisfaction and reattendance is one of the essential factors in completing the sports event cycle, which will only be achieved with the correct evaluation of the sports event. In this research, in a combined way and with qualitative and quantitative assessment, a valid and reliable scale has been built to examine primary and secondary factors of the service quality in wrestling sports events. The managers and officials

responsible for organizing sports events will be thereby informed of the strengths and weaknesses of sports events to make better decisions for better holding events.

Finally, as a study in managing sports events, this study confronted limitations that should be considered for future studies. One of the limitations was the small sample size taken from wrestling experts. This indicates that care should be taken in generalizing the findings. Also, the results are specific to the participants of Iran wrestling sports events and cannot be generalized to other events worldwide. Although the known factors affecting the service quality of wrestling sports events were explored in this study, further studies are needed to investigate other possible factors which lead to spectators' satisfaction and loyalty.

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ارائه یک مقیاس معتبر برای سنجش کیفیت خدمات در رویدادهای کشتی

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چکیده

هدف: مقیاس‌های اندازه‌گیری معتبر یا قابل اعتماد می‌توانند اطمینان حاصل کنند که استنتاج‌ها و نتیجه‌گیری‌های صحیح و قابل اعتماد در پژوهش‌ها تولید می‌شوند. پژوهش حاضر به منظور اعتبارسنجی مقیاس کیفیت خدمات برای رویدادهای کشتی انجام شده است.

روش: عوامل و موارد مرتبط با کیفیت خدمات مسابقات کشتی با استفاده از روش تحقیق کیفی شناسایی و در قالب پرسشنامه تدوین شد. سپس با استفاده از تحلیل عاملی اکتشافی و تأییدی، پرسشنامه‌ای با هفت مؤلفه و ۴۱ سؤال نهایی شد. این پرسشنامه بین ۳۸۴ نفر از تماشاگران لیگ کشتی ایران، توزیع و جمع‌آوری شد.

یافته‌ها: مدل اندازه‌گیری توسعه‌یافته پژوهش از برازش کافی برخوردار است. روایی همگرا و واگرا و پایایی درونی و ترکیبی نیز برای این مقیاس هدف تایید شد. بنابراین می توان به محققان و مدیران اجرایی توصیه کرد که از همین مقیاس برای ارزیابی کیفیت خدمات ارائه شده در مسابقات کشتی استفاده کنند.

اصالت و ابتکار مقاله: در این تحقیق از دو روش کمی و کیفی استفاده شده است.

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