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Development and Validation of Sport Law Knowledge Test

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ABSTRACT

This study aims to develop a valid and reliable Sport Law Knowledge Test for preservice sport management students. The test was prepared by a panel including two professors having expertise on curriculum development, two university instructors lecturing sport law course and a Turkish language expert. Panel discussed and prepared 25 multiple-choice questions. Participants were 205 (122 male and 83 female) preservice sport management students who had successfully completed sport law course. Rasch modeling was used to evaluate the validity and reliability of the Sport Law Knowledge Test. Results showed that all test items demonstrated high internal consistency and reliability for both test items and person attended this study. The wright map showed that items demonstrated the cumulative norm. Overall analysis showed good evidence to support the validity and reliability of Sport Law Knowledge Test. Developed test can be used for measuring sport law knowledge level of preservice sport management students.

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INTRODUCTION

Sport, especially global sport events such as Olympic Games, have been influential trademark in societies (Milano & Chelladurai, 2011). This popularity has also turned out some challenges such as increasing professionalism (e.g. media effect), worldwide audience and commercialization (Vieweg, 2018). Sport related stakeholders and their relationships, on the other hand, triggered to conflict which affects the people' thoughts and involvement on sport events. Conflicts in sport have revealed the need for sport law. Concept of sports law has been defined as controlling, normalizing and regulating sport behaviors (Orhan & Özkurt, 2024). Sports law can also be understood as a unique branch of law that deals with rules regulating the relations among athletes, clubs, team owner companies, International Olympic Committee (IOC), international regional federations and national and international federations (Erten, 2008; International Olympic Committee, 2023).

Sport law has five distinguished features (Vieweg, 2018). First one is the system of self-regulation. National and international federations or associations have their rights to regulate their sport which they have responsibilities. Second is two-track structure which indicates coexistence and harmoniousness of rules of national and international law, and regulations of federations and associations (Vieweg, 2018). Third feature is international character of sport law. Even sport law cases were found the solutions in different process and juridical decision, those are alike in all legal law systems. Fourth feature is the multiplicity of effects. Sport law affects many people and organizations in terms of integrating their relationships into economically relevant regulations. Last feature is cross-sectional matter which means interdisciplinary awareness. Many cases related to sport law whether they are criminal, private or public has deterministic and specific role. These decisions affect each other (Vieweg, 2018).

Sport management has been accepted as an academic discipline at the beginning of 1980s even though it has existed since ancient Greek games (Batista & Pittman, 2006; Parkhouse & Pitts, 2005; Susanto, 2021). Sport management is defined by DeSensi et al. (1990) as "any combination of skills related to planning, organizing, directing, controlling, budgeting, leading, and evaluating within the context of an organization or department whose primary product or service is related to sport and/or physical activity" (p.33). It deals with many different aspects of sport related operations and organizations, as well as business of sport

(Batista & Pittman, 2006). Sport management is the process of moving the theoretical aspects of sport management to professional dimension (Laird, 2005).

Sport management professional programs were established in 1966 in Ohio, USA (Stier, 1993). Since then, these programs have been gained more popularity in USA and other countries such as Australia, Canada and New Zealand in terms of bachelor, master and doctoral programs (North American Society for Sport Management, [NASSM], 2007). The increase in the number of sports management departments has revealed the necessity of standards that will determine the quality of these departments (Jones et al., 2008; Zakrajsek, 1993). First standards for department of sport management were introduced by the National Association for Sports and Physical Education (NASPE)-NASSM in 1987 (NASPE-NASSM, 1993) and accepted in early 1994 (Stier, 1993). According to standards, programs should include finance in sport, economics in sport, marketing in sport, governance in sport, field experience in sport management, behavioral dimensions in sport, management and organizational skills in sports, ethics in sport management, communication in sport, and legal aspects of sport (Jones et al., 2008). Preservice sport management students are supposed to complete successfully these courses before they graduate from the sport management departments (NASSM, 2016; Parks et al., 2013). Sport law, also known as legal aspects of sport, is one of the important courses that is taught in sport management departments at undergraduate and graduate levels (Epstein, 2002).

Sport law courses are expected to teach in department of sport management programs. However, there is no consistency what lectures should teach and what student should learn (Batista & Pittman, 2006). Even these courses have different curriculum and standards, students who completed these courses successfully should have sufficient sport law knowledge (NASSM, 2016; Parks et al., 2013). To measure students' knowledge level, valid and reliable knowledge tests which were developed for different field (e.g. physical education) have been used in several studies (Dervent et al., 2018; 2020; Devrilmez et al., 2019; Ince & Hunuk, 2013; Miller & Housner, 1998; Santiago & Morrow, 2020; Tsuda et al., 2021; Tsuda et al., 2022). Literature indicates that there is no valid and reliable sport law knowledge test for measuring undergraduate and graduate sport management students. Given the rationale mentioned above, the purpose of this study was to develop valid and reliable sport law knowledge test.

METHODS

Participants

The participants of this study were 205 (122 male and 83 female) senior students enrolled in five state university sport management programmes. They were purposefully selected because first and second authors contacted with 25 universities and five of them accepted to attend this study. Participants had previously followed and successfully completed a compulsory sport law course in their junior year. Participants ranged in age from 20 to 27 years (M = 23.21, 2.84). All participants stated that they had no experience or did not follow seminar, educational approach, etc. about sport law.

Procedure

Participants responded the test items and data for analyzing were collected during regular sports law courses and 40 minutes were given participants to fill the test. Participants answered the test and additional time wasn't given. Rasch measurement model (Rasch, 1980) was used for analyzing the collected data which were entered into an Excel spreadsheet, then exported to Winsteps Software Version 3.72.4 (Linacre, 2008). Rasch modelling is the probability of a participant's answer to a question hinge on difficulty of the item (i.e. the question) and the participant's ability (Linacre, 2008). Generally, in literature, traditional item measurement methods such as item response theory use the data as "fit the data". However, Rasch modelling determines the data as 'fit the model' (Linacre, 2008). This study was accepted by Institutional review board of Karamanoğlu Mehmetbey University (Ethical No: 09-2023/134). Individual consent forms were also collected from the participants.

Data Collection Tools

Development of the Test

We have checked the literature to find valid and reliable sport law knowledge test before development process of the test. Review indicated that there were no valid and reliable sport law knowledge test. We followed four steps to develop the test. In this process, content validity and face validity were also checked. At the first step, an expert group consisting of two professors having expertise on curriculum development, two university instructors lecturing sport law course and a Turkish language expert was created. The group members met and argued possible main purposes and outcomes of sport law course (i.e. content validity). Following this argument, expert group determined that there should be eight main

objectives: 1) General concepts related to sport law, 2) National and international federations, 3) Turkish general statute, 4) Sport law on the prevention of violence and disorder in sport (Law 6222), 5) Turkish football federation, 6) Sport related contracts, 7) Doping in sport law, 8) Court of Arbitration for Sport (CAS). Panel created six questions for each objective and there were totally 42 questions in sport law knowledge test. Second step, a Turkish language expert checked all questions in terms of their appropriateness for sport management students (i.e. face validity). Third step, the draft test was provided to two professors in sport management department who had experience on teaching sport law. They checked the questions to decide whether they were those that completed the compulsory sport law course would be supposed to be able to answer. After checking, 17 questions were distracted from the test because these questions were determined as too easy or too difficult for sport department students. In the last step, the test was checked by another 30 sport management students who had completed compulsory sport law course successfully during 2019-2020 fall semester. These students stated that all questions were comprehensible and straightforward. At the final version of the sport law knowledge test, there were 25 questions (three questions for each objective, only four questions for general concepts related to sport law). Test consisted of multiple-choice questions with four alternative options, but only one correct answer. Example of questions are presented in Table 1.

Table 1

Sample Questions of Sport Law Knowledge Test

Question 1- General concepts related to sport law
Which of the following branches of law is related to sports law? a) International public law b) Mixed law c) Private interstate law d) Commercial law
Question 2- National and international federations
Which of the following is the headquarters of the The Fédération internationale de football association (FIFA)? a) London b) Zürich c) Paris d) Brussels
Question 3- Turkish general statute
Which of the following boards is not permanent board of the ministry of youth and sport? a) Arbitration Board b) Board of Sports Evaluation and Development c) Board of Provincial Sports Disciplinary d) General Directorate of Law Services
Question 4- Sport law on the prevention of violence and disorder in sport (Law, 6222)
Which of the following is the law regarding the prevention of violence and disorder in sports? a) Law no. 6222 b) Law no. 5894 c) Law no. 3289 d) Law no. 5253

Table 2 (Continued)

Question 5- Turkish football federation
Which of the following is not civil chambers of Turkish Soccer Federation? a) Dispute Resolution Board b) Arbitration Board c) The board of visitors d) Supreme board of referees
Question 6- Sport related contracts
Which of the following laws regulate the contracts of the athletes? a) Turkish Code of Obligations b) Law of Labor c) Law on Associations d) Law on Preventing Violence and Disorder in Sports
Question 7- Doping in sport law
Sample Question If no prohibited substance is found after the laboratory analysis of the "A" sample in the doping control, the negative result is reported to the relevant administrative committee or the International Sports Federation. Then, how long "B" sample is removed after a while? a) 1 month b) 2 months c) 3 months d) 7 days
Question 8- Court of Arbitration for Sport (CAS)
How long is the decision period in first degree arbitration in Court of Arbitration for Sport (CAS)? a) 1-3 months b) 7 days c) 6-12 months d) 3-6 months

Data Analysis

The model has four basic levels for data analysis;

Item fit: Item fit statistics is utilized how each item fits the test modelling (Bond & Fox, 2007). Infit and outfit statistics which are used to designate the fit the model (Linacre, 2008). Infit statistics are sensitive to expectations regarding potential responses from participants. If an expert in the field of sports law answered most of the questions in the test, this would indicate that the data fit the model. Outfit statistics are sensitive to unexpected responses of the participants and affect the patterns of the model. If a participant with no experience in sports law correctly answered the rather difficult questions, this would demonstrate poor fit with the model. To decide if the model has a good fit, the mean square residual (MNSQ) and the standardized mean square residual (ZSTD) are used. These concepts hinge on differences between what is expected and what is observed by Rasch modelling (Liu, 2010). The MNSQ is the square of the residual which focus on the difference between the observed and predicted responses on the pattern. ZSTD is the measurement utilizing the normalized t-score of the residual (Liu, 2010).

Person fit: Person-fit statistics is utilized to decide appropriateness of item-score pattern in the model (Bond & Fox, 2007; Linacre, 2008). Relevance of attenders' response scores are controlled by Person-fit statistics. Scores of MNSQ values should be between 0.5 to 1.5. Person-fit statistics is considered as poor if a participant got the score lower than 0.5 (e.g. little variation in responses) or higher than 1.5 (e.g. large variation in responses) in mean square statistic (Linacre, 2008).

Person item/Wright maps: Wright maps, also called person-item maps, indicate distribution of responses and item difficulties. The wright map has two sides which are left and right. The rank of the item difficulties was shown on the right side. While the most difficult items are demonstrated in uppermost, the easiest items take the position lower section. The left side, on the other hand, represents answers of the participants. The highest scores of the participants are shown on the top and lowest scores take position bottom of side.

Separation index and separation-reliability index: There are two separation indexes which are item and person. Item separation index is used to validate the hierarchy of difficulty ranking from low to high and it is related to construct validity of the model. In person separation index, Respondents are divided into those with a high level of knowledge and those who do not have the necessary level of knowledge. Both separation index scores are determined as; a) 3.00 or over is excellent level, b) 2.00 indicates good level, and c) 1.50 represents acceptable level (Bond & Fox, 2007).

The separation-reliability index is a reliability indicator used to report the likelihood of repeating placements of an item or person (Bond & Fox, 2007). Scores of both item and person range from 0 to 1. If the score is close to 1, there is a high degree of confidence. Visa versa, if the score is close to 0, there is a low level of confidence (Bond & Fox, 2007).

RESULTS

Infit and outfit results of the study were reported in table 2. MNSQ results showed that range of infit statistics were from .90 to 1.10 and those in outfit statistics were from .87 to 1.21. MNSQ values of all items were within the acceptable range of 0.5-1.5. In ZSTD results, infit values were from -1.8 to .8 and outfit values were from -1.9 to 1.7. ZSTD values of all items were within acceptable scores of -2.0- +2.0 (Boone et al., 2014). Infit and outfit statistics results supported to good fit as well as unidimensional structure of the sport low knowledge test.

Table 3
Item Difficulty, Standard Error, Fit and Point-Measure Correlation Results

Entry Number	Item Difficulty	Model Standart Error	Infit		Outfit		PT-measure
			MNSQ	ZSTD	MNSQ	ZSTD	
19	1.83	.21	1.10	.8	1.21	1.2	.20
21	1.76	.20	1.02	.2	1.20	.6	.12
18	1.71	.20	1.02	.4	1.14	1.7	.26
6	1.70	.19	1.07	.6	1.12	.7	.20
2	1.71	.18	1.01	.1	1.12	1.4	.26
8	1.83	.17	1.00	.1	1.11	.5	.15
20	1.39	.16	1.04	.6	1.07	.7	.24
25	1.31	.16	1.02	.4	1.06	.7	.26
12	1.35	.15	1.04	.6	1.05	.5	.25
1	1.28	.15	1.04	.8	1.03	.4	.26
4	1.22	.15	1.03	.4	1.03	.3	.24
17	1.19	.15	.99	-.1	1.01	.2	.26
10	1.05	.13	.99	-.1	1.00	.0	.22
14	.96	.13	.96	-.5	.94	-.5	.24
3	.86	.12	.94	-1.5	.93	-1.2	.27
7	.71	.11	.93	-.7	.85	-1.1	.22
13	.65	.11	.93	-1.7	.89	-1.7	.27
24	.52	.12	.90	-1.4	.87	-1.5	.29
X	1.24	.15	.99	.0	1.03	.2	.39
SD	.45	.03	.10	1.5	.29	1.8	.08

Table 2 reported the item difficulty of the items which were ranged from .41 (harder items) to 1.83 (easier items). The Wright map represented in figure 1 obviously indicated that difficulty of the items and person abilities were well distributed (*M* = 1.24, *SD* = .45; *M* = 1.95, *SD* = .42, respectively).

Table 4
Summary of 25 Measured Items

	Total Score	Model		Infit		Outfit	
		count	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	12.4	25.0	3.80	1.00	-.1	1.02	.0
SD	4.5	.0	.78	.23	1.1	.42	1.1
MAX.	21.0	25.0	7.40	1.67	2.9	2.60	3.5
MIN.	5.0	25.0	3.36	.66	-1.8	.46	-2.0
Real RMSE = 5.10	True SD = 3.04	Separation = 3.21	Item reliability = .90				
Model RMSE = 4.87	True SD = 3.23	Separation = 3.31	Item reliability = .91				
SE of item mean .71							

According to Boone et al. (2014), it was recommended that "real" estimate should be utilized rather than "model" estimate in education studies while checking the reliability of educational measurement models. Real estimate value is more convenient and conservative to

determine item and person reliability levels. We have followed the guidance of Boone et al. (2014). Table 3 showed that item separation index score was 3.21 represents a very good level of separation. The separation-reliability estimate score was .90. This score showed that there was a high confidence to use test items on another sample (Boone et al., 2014). The person separation index score, representing in table 4, was 4.56. This score demonstrated that sample selected and conducted for this study was excellent (Boone et al., 2014).

Figure 1

Wright Map of Sport Law Knowledge Test

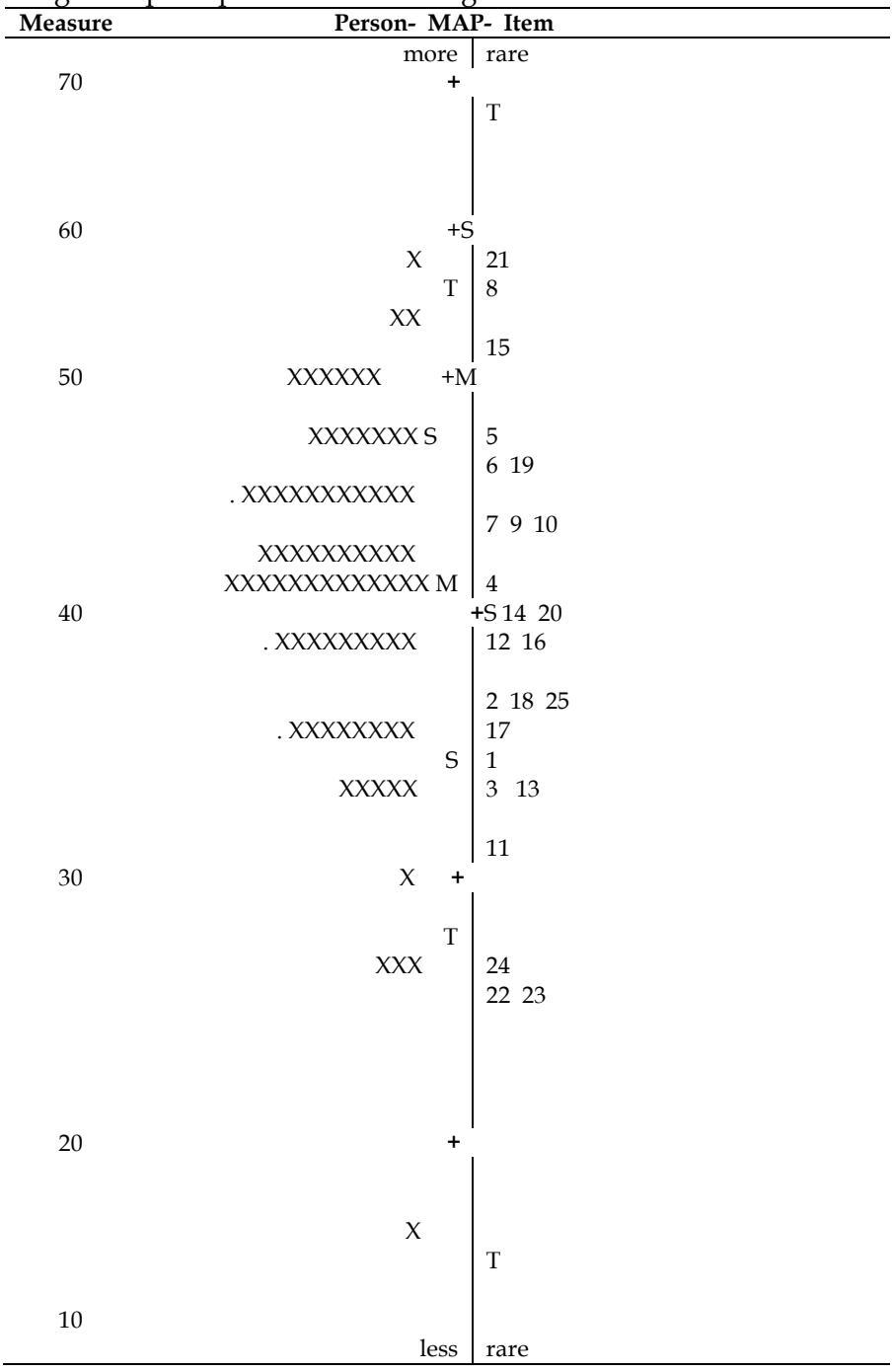

Table 5
Summary of 205 Measured Persons

	Total Score	Model		Infit		Outfit	
		Count	S.E.	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	53.1	205.0	1.95	1.00	-.1	1.02	.0
SD	27.3	.0	.42	.06	.9	.10	1.0
MAX.	188.0	205.0	6.46	1.10	.8	1.21	1.7
MIN.	22.0	205.0	2.66	.90	-2.4	.85	-2.3
Real RMSE = 2.02		True SD = 9.22		Separation = 4.56		Person reliability = .95	
Model RMSE = 2.00		True SD = 9.22		Separation = 4.62		Person reliability = .96	
SE of item mean = 1.93							

DISCUSSION

The motivation of development and validating the sport law knowledge test was a need to standardized measures that could be utilized in preservice sport management students. To date, no valid and reliable sport law knowledge test has been found in literature. Absence of such measurement tool is an important barrier for improving quality of department of sport managements. To fill this gap in literature, we aimed to develop valid and reliable sport law knowledge test. Results showed that developed sport law knowledge test had high internal consistency for both item difficulty and person-ability. Overall analysis indicated good evidence to support the reliability and validity of the sport law knowledge test.

The study contributed literature in three ways. First, this test has a unidimensional trait which directly measures sport law knowledge level. There is no valid and reliable sport law knowledge test developed for preservice sport management students. This is maybe the reason of the nature of the sport law. According to Vieweg (2018), sport law is fascinating subject area because it is cross-sectional and creates a bridge between real sport life and law. The test specifically focusing on sport law will overcome this problem.

Second contribution is that validated sport law knowledge test can be used for preservice students in department of sport management and continuing professional development of sport management stakeholders such as sport managers, coaches and athletes. The test can be used for studies designed as cross-sectional, as well as pre-post experimental studies in order to demonstrate effectiveness of intervention or training related to sport law. Researchers might utilize this test to check whether sport law course in department of sport management meet the required standards in terms of course syllabi, student learning outcomes or national standards.

The last contribution of this study was to test development method. We used the Rasch modelling (Rasch, 1980) to validate sport law knowledge test and it allowed us to check item difficulty, person and item reliability. Results showed that validated test met the criteria of

reliability and construct validity. The Rasch modelling has some advantages for researchers which are; a) converting raw score to interval data (Boone et al., 2014). This trait of the model provides data from Rasch modelling which can be used in correlational and experimental studies. b) The model performs data analysis based on "fit the model", not "fit the data" which most traditional test development methods use (Bond & Fox, 2007; Linacre, 2011). The Rasch modelling also indicates that although some questions of the test do not provide the fit index, the test can be used if its general reliability is high. And c) The model proved that the test could be validated with smaller sample size. According to Chen et al. (2014), The Rasch analysis can be performed with small sample size (N>50), unlike other traditional methods (Chen et al., 2014; Linacre, 2011). The test can be validated with Rasch modelling if necessary steps are followed such as random distribution of the items (Chen et al., 2014).

Limitations

There are some limitations in this study. Firstly, the participants were preservice sport management students. Future studies can focus on in-service sport managers, coaches or athletes. Second, this study was limited to Turkish sport management setting. We developed the test according to Turkish sport management curriculum. The test can be translated to other languages and maybe it can be validated. Lastly, our sample size was moderate (N= 205) and future studies can focus on a larger sample. This will improve the representativeness of the data.

CONCLUSION

Reliable and valid sport law knowledge test is a necessary to step forward to sport management field. We have aimed to develop sport law knowledge test with using Rasch modelling. Overall, our findings indicated that developed sport law knowledge test is valid and reliable for measuring sport management students' sport law knowledge level.

PRACTICAL IMPLICATIONS

Developed sport law knowledge test can be utilized for measuring sport management students' sport law knowledge level. On the other hand, this test can be applied to sport managers who are related with sport law or legacy of sport.

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Authors' Contributions

The study was conceived and designed by the first, second, third and the fourth authors. Data collection was carried out by the first and second authors. Data analysis and interpretation were conducted by the first, fifth and the sixth authors. The manuscript was drafted and/or critically revised by the first four authors. Final approval of the version to be published was given by all six authors.

Declaration of Conflict Interest

Authors state that there is no conflict of the interest.

Ethics Statement

This study was accepted by Institutional review board of Karamanoğlu Mehmetbey University (Ethical No: 09-2023/134). Individual consent forms were also collected from the participants.

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