

The Effect of Logistics Activities on Participant Satisfaction in Sports Organizations*

Adnan DUYGUN, İstanbul Gelişim University, Faculty of Economics, Administrative and Social Sciences, Business Administration, aduygun@gelisim.edu.tr, Istanbul, Turkey, ORCID: 0000-0003-4026-4054

Mustafa SUBAŞI, İstanbul Gelişim University, Institute of Graduate Studies, Business Administration, Ph.D. Student, mustysubasi@gmail.com, Istanbul, Turkey, ORCID: 0000-0002-8075-6689

Abstract

Logistics activities in sports organizations and the effect of these activities on participant satisfaction have not been measured in the literature. The study to be carried out is important in terms of contributing to the literature on this subject. So that, the main purpose of this study is to measure the effect of logistics activities in sports organizations on participant satisfaction. The National Rowing Championships on the Sapanca Rowing Course were chosen as the application area. The number of respondents to the survey was 111. The study analyses the effect of logistics activities in sports organizations on participant satisfaction with partial least squares structural equation modeling (PLS-SEM). The study was analyzed by SmartPLS 3. The main finding of the study is that logistics activities have an impact on participant satisfaction. According to the result, it is possible to say that 44.5% (R^2) indicate logistics activities have the strongest effect on participant satisfaction. This result will guide the managers for organizing rowing sports organizations.

Keywords: Sports Organizations, Rowing, Logistics Activities, Participant Satisfaction, Championships.

* This study is not included in the study group that requires TR Index Ethics Committee Approval.

1. Introduction

Sports organizations that have brought people and societies together since ancient times have now become a large sector and countries have become competing with each other to organize sports organizations in their own countries. Even just to organize the Olympic Games, countries strive to make their facilities and infrastructure investments suitable for the games and become candidates for the organization of the games. They even make changes in the laws of the country to organize these games. Australia changed the law banning animals from entering the country in 2000 due to Equestrian competitions in the Olympic Games.

While this has become the situation in the area of sports organizations in the world, it has become very important to be successful in organizations to be a candidate for future organizations. It is also of great importance that the necessary equipment and resources are available in the right place at the right time for successful sports organizations. In this case, logistics activities come to the fore. Considering the activities in sports organizations, it is possible to say that most of them are logistics activities. Therefore, good planning and execution of logistics activities for organizing a sports organization are important for the success of the organization.

Many logistics activities such as supply and purchasing, transportation, storage, facility location are included in the sport. In professional sports clubs, these activities are carried out by professional and competent people to use sportive success and financial resources efficiently.

Another issue that needs to be considered for sports organizations to be successful is that the participants are satisfied with the organization. In this study, in the example of rowing, the logistics activities in sports organizations were examined and the effect of these activities on participant satisfaction was revealed.

2. Literature Review – Conceptual Framework

In the literature, it is seen that there is a limited number of academic studies on logistics activities in sports organizations. Table 1 represents some examples of remarkable studies which are from the world and Turkey.

Table 1. Some Remarkable Studies for Logistics Activities in Sports Organizations

Author(s)	About	Type of The Study
Liu and Gao (2013)	Sports logistics	Conference Proceeding
Yuan et al. (2013)	Logistics of sport facilities	Conference Proceeding
Batmaz et al. (2015)	Supply chains and logistic activities on the Turkish sport industry	Article
Saleh (2015)	Sport logistics	Article
Ke (2016)	Logistics in large sport event	Article
Paker et al. (2017)	Logistics processes of sailing races	Article
Włodarczyk (2018)	Sport, logistics, and media	Article
Genchev et al. (2018)	Sports logistics outsourcing	Conference Proceeding
Subaşı (2019)	The effect of logistics activities on participant satisfaction in sports organizations	Master's Thesis
Herold et al. (2019)	Sport organisations	Conference Proceeding
Karaköprü and Kabadurmuş (2019)	Logistics decisions in sports clubs	Article
Genchev et al. (2019)	The case of equine sports transportation outsourcing	Article
Li et al. (2019)	Logistics network of large sports event	Conference Proceeding
Herold et al. (2020)	Sport logistics	Article
Herold et al. (2020)	Event spectator modal choice and climate impact	Conference Workshop
Sayın and Tunç (2020)	Supply chain activities in sports organizations	Book Chapter
Herold et al. (2021)	Sports logistics framework	Article
Martins et al. (2021)	Sustainable transportation intentions	Article
Gafari et al. (2021)	Reverse logistics development at sport events	Article

Table 2. Classification of Logistics Activities in Sport Organizations

Source	Logistics Activities
Herold et al. (2020)	Sport Logistics Activities <ul style="list-style-type: none"> - Plan - Source - Make - Deliver - Return - Enable
Minis et al. (2006)	Major Tasks and Activities of Olympic Logistics <ul style="list-style-type: none"> - Freight forwarding and customs clearance - Warehousing and distribution - Venue logistics - Delivery coordination - Asset tracking - Reverse logistics
(Şen&Pak, 2018; Olgun, 2018; Çelik, 2018; Turkey Rowing Federation – Race Instruction, 2012; General Sport Directorate, 2017; Bayraktar & Kurtoğlu, 2009; Örer et al., 2018; Özdemir, 2004; Özcan et al., 2018; Avat et al., 2018; IV. Five Year Development Plan, 1979; Ceyhun, 2008; FISA (International Rowing Federation) – Manuel Book, 2010)	Logistics Activities in Rowing <ul style="list-style-type: none"> - Transport - Supply Chain and Purchase - Storage - Material Management and Maintenance-Repair - Handling - Selection of Location

In Table 2, approaches regarding the classification of logistics activities in sports organizations are given. Herold et al. (2020) listed sport logistics activities as plan, source, make, deliver, return and enable. According to Minis et al. (2006), major tasks and activities of Olympic logistics are freight forwarding and customs clearance, warehousing and distribution, venue logistics, delivery coordination, asset tracking, and reverse logistics. Finally; logistics activities for rowing are transportation, supply chain and purchasing, storage, material management, and maintenance and repair, handling and location selection (Şen and Pak, 2018; Olgun, 2018; Çelik, 2018; Turkey Rowing Federation – Race Instruction, 2012; General Sport Directorate, 2017; Bayraktar and Kurtoğlu, 2009; Örer et al. 2018; Özdemir, 2004; Özcan et al. 2018; Avat et al. 2018; IV. Five Year Development Plan, 1979; Ceyhun, 2008; FISA (International Rowing Federation) – Manuel Book, 2010).

3. Methodology

In this section, topics are included that the purpose of the research, the importance of the research, limitations of the research, the research universe and the sample size, the research model and the main hypothesis, and finally data collection and variables.

3.1. The Purpose of the Research

Logistics activities that can be seen as an important part of an effective sports organizations and the measurement of participant satisfaction with these activities are an issue that should be emphasized. In this context; the main objective of this study is to measure the effects of logistics activities in sports organizations on participant satisfaction. The National Rowing Championships on the Sapanca Rowing Course were chosen as the application area.

3.2. The Importance of the Research

It is possible to say that one of the issues to be considered in planning and organizing a successful sports organization is the logistics activities related to the organization. Even without logistics activities, there is no possibility of an organization being realized.

From this point of view, considering that logistics activities in sports organizations and the effect of these activities on participant satisfaction have not been measured in the literature, the thesis to be carried out is important in terms of contributing to the literature on this subject.

3.3. Limitations of the Research

The universe of the research consists of athletes interested in rowing. Since it was not possible to reach all relevant participants in terms of time and cost, the research was conducted with the appropriate number of participants using the appropriate sampling method to be selected. Also, the fact that rowing championships are held at certain times of the year can be expressed as a time constraint. The prescribed time for research has been limited to 2 months including the obtaining necessary permissions to conduct research. The competition season is between March and September and since the races ended in September, the survey was conducted between 01.11.2018 and 31.12.2018 to prevent the results of the competition from affecting the answers to the questionnaire.

3.4. The Research Universe and the Sample Size

The universe of research consists of the athletes participating in the National Rowing Championships held on the Sapanca Rowing Course. Athletes participating in rowing championships have a minimum age limit of 13. However, a survey was conducted voluntarily with all athletes aged 16 and over, considering that they are athletes with at least two years of experience. The number of respondents to the survey was 111.

3.5. The Research Model and the Main Hypothesis

In the study, the effects of the athletes participating in the National Rowing Championships on the Sapanca Rowing Course and the logistics activities in the organization on participant satisfaction were examined. The research model was created as seen in Figure 1.



Figure 1. Research Model

Based on the research model, the main hypothesis to be tested in the research can be explained as follows:

H₁: Logistics activities have a statistically significant effect on participant satisfaction

3.6. Data Collection and Variables

Research data were collected with the help of a questionnaire. The surveys were started one month after the end of the competition season to prevent the results of the participants from having a positive or negative effect on the survey responses.

The variables used in the study consist of 10 variables including logistics activities in the organization, and 14 variables related to participant satisfaction. The variables were prepared in the questionnaire form with the help of a 5-point Likert scale. Options for logistics activities and participant satisfaction are (1) Strongly disagree, (2) Partially disagree, (3) Undecided, (4) Partially agree, (5) Strongly agree.

A focus group study was conducted with the participants (athletes, coaches, managers, audiences, and logistics company employees) to determine the variables that make up the participant satisfaction with logistics activities.

According to the results obtained, it is possible to list the variables for logistics activities and participant satisfaction for rowing organizations as follows:

Logistics activities in rowing championships:

- LA1: Adequate measures have been taken in terms of athlete safety on the rowing course.
- LA2: The boat parking area at the organization area is sufficient.
- LA3: Technical equipment (boat racks, stands, etc.) in the boat parking area is sufficient.
- LA4: The position of launching pontoons are appropriate.
- LA5: Sufficient precautions have been taken in terms of athlete safety at the launching pontoons.

- LA6: The technical specifications of the launching pontoons are suitable.
- LA7: Technological equipment is used in the rowing course. (photo finish, automatic start, camera, etc.)
- LA8: Health services are provided at the required level in the organization.
- LA9: Food and beverage services are provided at an adequate level in the organization area.
- LA10: Boat and other materials are transported safely.

Participant satisfaction in rowing championships:

- PS1: The location where the races are held is suitable for rowing championships.
- PS2: The location of the rowing course is suitable in terms of weather conditions (wind, wave, etc.).
- PS3: The rowing course is suitable for national races.
- PS4: The rowing course is suitable for international rowing regattas.
- PS5: The location of the rowing course is suitable for the traceability of the races.
- PS6: The dates on which the championships are organized are suitable for the feasibility of the races.
- PS7: There are no problems in the organization and the race schedule.
- PS8: The organization area is clean.
- PS9: The organization area is tidy.
- PS10: In the organization area, facilities such as toilets, changing rooms, showers are provided at an adequate level.
- PS11: Adequate measures have been taken in terms of the safety of the participants in the organization area.
- PS12: Adequate measures have been taken in terms of the safety of materials in the organization area.
- PS13: Transportation services are comfortable for the transfer of participants to the organization area.
- PS14: Transportation services are safe for transferring participants to the organization area.

4. Findings

The findings of the study is explained in the following headings.

4.1. Frequency Analysis of Socio-Demographic Characteristics

In this section, frequency distributions regarding the socio-demographic characteristics of the participants are included. Socio-demographic characteristics; are listed as gender, age, marital status, income levels, and education levels.

Table 3. Frequency Distributions for Socio-Demographic Characteristics of Participants

		Frequency	%	Valid %	Cumulative %
Gender	Male	77	69.4	69.4	69.4
	Female	34	30.6	30.6	100.0
	Total	111	100.0	100.0	
Age	18 and under	47	42.3	42.3	42.3
	19 and above	64	57.7	57.7	100.0
	Total	111	100.0	100.0	
Marital Status	Single	87	78.4	78.4	78.4
	Married	24	21.6	21.6	100.0
	Total	111	100.0	100.0	
Income Level	500 Turkish Liras and under	55	49.5	49.5	49.5
	Between 501 Turkish Liras and 1500 Turkish Liras	19	17.1	17.1	66.7
	1501 Turkish Liras and above	37	33.3	33.3	100.0
	Total	111	100.0	100.0	
Education Level	High School	53	47.7	47.7	47.7
	Higher Education (Associate degree, undergraduate and graduate)	58	52.3	52.3	100.0
	Total	111	100.0	100.0	

The participants are 111 participants in total, of which 77 are male and 34 are female. Their percentage distribution is 69.4% male and 30.6% female. While the number of participants aged 18 and under is 47 (42.3%), those aged 19 and above are 64 (57.7%). According to their marital status, 87 people are single (78.4%), 24 people are married (21.6%). 55 participants (49.5%) with an income of 500 Turkish Liras and under, 19 people (17.1%) with an income between 501 Turkish Liras and 1500 Turkish Liras, and 37 people (33%) with an income of 1501 Turkish Liras and above. Finally, person numbers and rates in terms of education levels; high school 53 people (47.7%), higher education (associate degree, undergraduate and graduate) 58 people (52.3%).

4.2. Results and Discussion

For testing the research models, PLS-SEM is one of the important tool. In this study, SmartPLS was used (Ringle et al., 2015). SmartPLS is a “stand alone software specialized for PLS path models” (Monecke & Leisch, 2012).

Table 4. Factor Loading and VIF Values

Logistics Activities	Factor Loadings	VIF
LA1	0.711	1.397
LA4	0.715	1.354
LA8	0.749	1.424
LA9	0.714	1.171
Participant Satisfaction	Factor Loadings	VIF
PS8	0.731	2.511
PS9	0.760	2.678
PS11	0.764	1.791
PS12	0.763	1.967
PS13	0.725	3.120
PS14	0.802	3.316

Table 4 shows the factor loading and VIF (Variance inflation factor) values. Generally; factor loadings must be equal to or higher than 0.70 (Hair et al., 2011; Hair et al., 2014a; Hair et al., 2014b). It is suggested that if the factor loadings are between 0.40 and 0.70, the composite reliability (CR) and average variance extracted (AVE) values should be reviewed, and if these values do not meet the threshold values, they should be removed from the model (Hair et al., 2014b). Accordingly, the variables that did not meet this condition were excluded from the model. Factor loadings of logistics activities (LA1=0.711, LA4=0.715, LA8=0.749, and LA9=0.714) and participant satisfaction (PS8=0.731, PS9=0.760, PS11=0.764, PS12=0.763, PS13=0.725, and PS14=0.802) are satisfied this requirement. According to Wong (2013), if 10 of arrows point at a latent variable in the model, the minimum sample size required is 91. In this case, it appears that the sample size (111) of this study is adequate.

Variance inflation factor (VIF) is a coefficient that provides information about the existence of multicollinearity problem. If the VIF value is greater than 10, the model has a multicollinearity problem (Sönmez Çakır, 2019). Hair et al. (2014b) recommends that the VIF value is below 5. Accordingly, the VIF values in Table 4 are at the recommended values.

Table 5. Construct Reliability and Validity

	Cronbach's Alpha	rho_A	CR	AVE
Logistics Activities	0.698	0.701	0.813	0.522
Participant Satisfaction	0.852	0.856	0.890	0.575

According to Hair et al. (2014a), above 0.70 values are necessary for Cronbach's Alpha and CR values, also above 0.50 is required for AVE values. The Cronbach's Alpha value for logistics activities is almost 0.70 (0.698) and it is acceptable. The Cronbach's Alpha value of participant satisfaction is 0.852 and above 0.70. CR and AVE values are also acceptable according to Table 5. Rho_A is a calculated coefficient to see data consistency. Over 0.70 indicates that factor elements are reliable (Van Nguyen & Habók, 2021; Sönmez Çakır, 2019; Ulupui et al., 2020). In this case, the rho_A values are appropriate.

Table 6. Discriminant Validity (Heterotrait-Monotrait Ratio – HTMT)

	Participant Satisfaction
Logistics Activities	0.838

Depending on Table 5, all AVE values are higher than the threshold value (0.5). Henseler et al. (2015) indicated that heterotrait-monotrait ratio (HTMT) value should theoretically be less than 0.90 As shown in Table 6, the HTMT values of the model presented are below the threshold values.

Table 7. Discriminant Validity (Fornell – Larcker Criterion)

	Logistics Activities	Participant Satisfaction
Logistics Activities	0.722	
Participant Satisfaction	0.667	0.758

In addition, as shown in Table 7, the criteria proposed by Fornell and Larcker (1981) were used in the analysis of the discriminant validity. When Table 7 is examined, the discriminant validity is ensured.

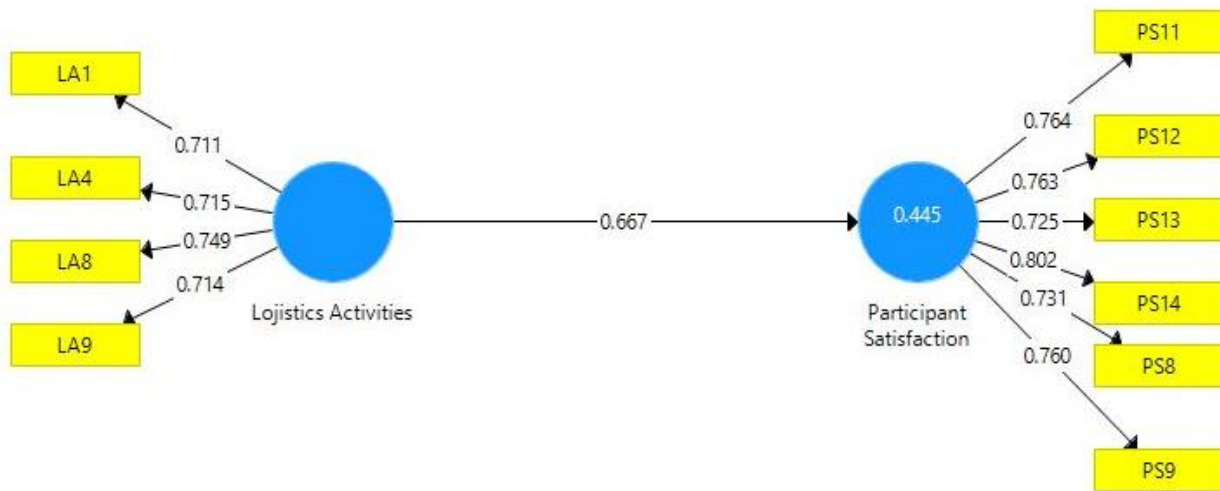


Figure 2. The Structural Equation Model (PLS-SEM)

Depending on the analysis of the measurement model carried out so far, the resulting dimensions are suitable for structural equation modeling in terms of both reliability and validity. The Structural Equation Model (PLS-SEM) is seen in Figure 2.

Firstly, bootstrapping analysis is conducted and 5000 bootstraps samples are taken to gauge the significance of PLS path coefficients. Table 8 shows the results of hypothesis testing. The structural equation model in Figure 2 exhibits the relation between logistics activities and participant satisfaction. This relation is about the main hypothesis of the research which is H₁ (Logistics activities have a statistically significant effect on participant satisfaction).

Table 8. Results of Hypothesis Testing

	Path (Beta-β) coefficient	T-value	R²	f²	Q²	VIF	P Value	Supported
H₁	0.667	13.451	0.445	0.803	0.244	1.000	0.000	YES

Path coefficient expresses the effect ratio (Yılseli & Özdemir, 2021). T values indicate whether the expressions constituting each factor are statistically significant. It is significant if the T values are greater than 1.96 (Sönmez Çakur, 2019). R² is called a coefficient of determination. It can take values between 0 and 1. Higher values indicate higher accuracy in estimates. It is difficult to set a standard rule about R² values which are acceptable as they depend on model complexity and research discipline (Yıldız, 2021). Above 26% is an acceptable value (Sönmez Çakur, 2019). f² values expressed as impact volume. Respectively, f² ≥ 0.02, f² ≥ 0.15, and f² ≥ 0.35 represent small, medium, and large effect sizes (Cohen, 1988). Finally, it is necessary to mention the Q² values. As a general rule, Q² values greater than zero for a given internal structure indicate that the accuracy of the path model estimations for that structure is acceptable (Yıldız, 2021).

Table 8 represents the main hypothesis testing results. Since the significance value of the H_1 hypothesis regarding logistics activities have a statistically significant effect on participant satisfaction is $p=0.000$ ($p<0.05$), the hypothesis was found significant. In this case, hypothesis H_1 is supported. When the path coefficient is examined, it is seen that the logistics activities have an effect of $\beta=0.667$. In the study, R^2 value is 44.5%. This means that logistics activities have the strongest effect on participant satisfaction. As a similar study; the role of sports logistics (49.92%) was found in the study titled "The Role of Sport Logistics in Enhancing the Sport Clubs Level in Gaza from the Administrative Committees Perspectives" conducted by Saleh in 2015. VIF value is below 5, T-value is greater than 1.96, and f^2 value indicates the large effect. Finally, Q^2 value is higher than zero which means the model's estimates are accurate.

5. Conclusion and Suggestions

Sports and sports organizations, which have become a very large sector today, have gained great importance for the countries as well as for institutions and organizations in terms of economy and promotion. Countries are now competing with each other to organize large organizations such as the World Championships and the Olympic Games, due to their contribution to the promotion and economy of the country. When choosing the country to organize these events, the International Federations and the International Olympic Committee evaluate the facility competence and organization experience of that country and authorize the candidate country to organize the organization accordingly.

When the activities in sports organizations are examined, it is possible to say that most of these activities are logistics activities. This reveals the importance of planning and management of logistics activities while organizing sports events.

If this situation is evaluated especially in terms of rowing sport since the logistics activities such as transportation, location selection, and storage are more specific in the organizations that have an important place in the Olympic Games and are the most crowded athlete participation after athletics, the planning and management of these activities It is important for its execution. Even a disruption that may occur in one or more of these activities may cause the organization to be disrupted or even canceled due to the inability to hold the races.

Failure to transport the materials required for the race under suitable and safe conditions may cause the materials to be damaged. If the weather and wind conditions are not taken into account in the selection of the location where the rowing championships will be held, the risk of not organizing the organization may come to the fore. The examples given are important in terms of revealing the importance of logistics activities in rowing sports organizations.

Another issue that should be emphasized in rowing sports organizations is to ensure the satisfaction of the participants, which can be considered an important element for the continuity of the organizations. Especially the satisfaction of the athletes is important in terms of increasing participation in the races that are planned to be repeated in the following years.

In this study, which was carried out taking into account the aforementioned issues, the effect of logistics activities in rowing sports organizations on participant satisfaction was investigated. For this, the National Rowing Championships organized on the Sapanca Rowing Course were selected and a survey was conducted with the athletes participating in the competitions. Besides, this research is important in terms of the fact that there is no previous study on this subject and it contributes to the literature.

The result was obtained by testing the hypothesis put forward in the research. It has been determined that logistics activities have an impact on participant satisfaction. According to the result, it is possible to say that 44.5% (R^2) indicate logistics activities have the strongest effect on participant satisfaction.

Based on the results of the research, it is also possible to make some suggestions to researchers, academicians, and interested parties who want to work on logistics activities and participant satisfaction in sports organizations.

This research was carried out with the athletes competing on the Sapanca Rowing Course. The research is repeated with the athletes competing in other courses and the results can be compared. It may even be suggested to repeat the research for other sports branches. Thus, socio-demographic differences can be examined in terms of logistics activities and participant satisfaction.

The research was conducted with athletes. The research can be repeated with coaches, managers, audiences, and logistics business staff to compare the different outcomes that may arise. A similar situation can be recommended for different sports branches.

Acknowledgement and info

Support Info: Data in this study was derived from the business administration master thesis of Mustafa SUBAŞI in 2019. The study was revised by Assoc. Prof. Dr. Adnan DUYGUN in terms of literature and methodology. In addition, we would like to thank Assist. Prof. Dr. Oğuz YILDIZ.

Ethical Approval: The article complies with national and international research and publication ethics. Otherwise, **GSI Journals Serie A: Advancements in Tourism Recreation and Sports Sciences Journal** has no responsibility and all responsibility belongs to the article authors.

Ethics Committee Approval: Ethics Committee Approval was not required for the study. Since the survey in this study was conducted in 2018, it is not included in the study group that requires the permission of TR Index ethics committee.

Conflict of Interest: There is no conflict of interest or gain in the article.

Contribution Rate of Researchers: The study was prepared with the contribution of two authors. Contribution rates; 1. Author = 65%, 2. Author = 35%.

References

- IV. Five Year Development Plan (1979). *Special expertize commission report, Physical education and sports*, Ankara.
- Avat, L., Subaşı, Ü. & Barutçu, B. S. (2018). Rowing club coaches, *Personal Interview*, 17.09.2018.
- Batmaz, H. Ç., Zirek, O. & Karadağ, M. (2015). The application of supply chains and logistic activities on the Turkish sport industry (The paradigm Fenerium, GS store, Kartal Yuvasi and TS clup). *International Referred Journal of Researches on Economy Management*, April / May / June- Spring Summer, Issue: 4, 248-265.
- Bayraktar, B. & Kurtoğlu, M. (2009). Performance in sports, effective factors, evaluation and increase. *Clinical Development*, 22(1), 16-24.
- Ceyhun, S. (2008). In usage of sports facilities as a view of recreative. *Kastamonu Education Journal*, 16(1), 325-332.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed., Lawrence Erlbaum Associates, Mahwah.
- Çelik, M. (2018). Transporter of Turkish Rowing Federation. *Personal Interview*, 12.12.2018.
- FISA (International Rowing Federation) (2010), *Manuel book*.
- Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.

- Duygun, A. & Subaşı, M. (2023). The Effect of Logistics Activities on Participant Satisfaction in Sports Organizations. *GSI Journals Serie A: Advancements in Tourism, Recreation and Sports Sciences (ATRSS)*, 6 (1): 236-247
- Gafari, P., Fahimeinejad, A., Morsal, B. & Sanei, S. M. T. (2021). Identify and prioritize needs of reverse logistics development at sport events. *Sport Management and Development*, 10(2), 81-90.
- Genchev, S. E., Gray, G. & Wert-Gray, S. (2019). A conceptual and qualitative study of outsourcing criteria and the role of emotions in decision making: The case of equine sports transportation outsourcing. *Journal of Transportation Management*, 30(1), 49-61.
- Genchev, S. E., Gray, G. & Wert-Gray, S. (2018). Sports logistics outsourcing: A Conceptual and qualitative study in the equine industry. *Association of Marketing Theory and Practice Proceedings*, March 2018, 1-12, Accessed Address (15.07.2021): https://digitalcommons.georgiasouthern.edu/cgi/viewcontent.cgi?article=1091&context=amp-tp-proceedings_2018.
- General Sport Directorate (2017). Travel rules of sportsmen groups.
- Hair, J., Ringle, C. & Sarstedt, M. (2011). PLS-SEM: indeed a silver bullet. *The Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Hair, J. F., Sarstedt, M., Hopkins, L. & Kuppelwieser, V. G. (2014a). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, 26(2), 106-121.
- Hair, J. F., Tomas, G., Hult, M., Ringle, C. M. & Sarstedt, M. (2014b). *A Primer on Partial Least Square Structural Equations Modeling (PLS-SEM)*, Los Angeles: Sage.
- Henseler, J., Ringle, C. M. & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135.
- Herold, D. M., Breitbarth, T., Schönfelder, S. & Hergesell, A. (2020). Event spectator modal choice and climate impact, in Bodet, G. and Mueller, J. (Eds.), 28th European Sport Management Virtual Conference, 17. September - 25. September 2020, Book of Abstracts, 398-400.
- Herold, D. M., Breitbarth, T., Schulenkorf, N. & Kummer, S. (2020). Sport logistics research: reviewing and line marking of a new field. *The International Journal of Logistics Management*, 31(2), 357-379.
- Herold, D. M., Breitbarth, T., Schulenkorf, N., Kummer, S. & Schönfelder, S. (2019). In scope: Environmental impact and accountability of sport organisations, in Breitbarth, T., Bodet, G., Luna, A. F., Naranjo, P. B. and Bielons, G. (Eds.), *The 27th European Sport Management Conference, Connecting Sport Practice & Science*, 3rd – 6th September 2019, Seville, Spain, Book of Abstracts, 431-433.
- Herold, D. M., Schulenkorf, N., Breitbarth, T. & Bongiovanni, I. (2021). An application of the sports logistics framework: The case of the Dallas Cowboys. *Journal of Convention & Event Tourism*, 22(2), 155-176.
- Karaköprü, U. O. & Kabadurmuş, Ö. (2019). Using multi-criteria decision making methods to make logistics decisions in sports clubs. *Alphanumeric Journal, The Journal of Operations Research, Statistics, Econometrics and Management Information Systems*, 7(1), 129-142.
- Ke, W. (2016). Logistics process planning and emergency dynamic regulatory mechanism for large sport event, Accessed Address (21.08.2021): https://en.cnki.com.cn/Article_en/CJFDTotal-YSZH201603018.htm.
- Li, P., Lan, H. & Chen, Y. (2019). Building a food cold chain logistics network of large sports event: A Multi-dimensional conceptual framework. *IMMS 2019: 2019 2nd International Conference on Information Management and Management Sciences*, Chengdu China August 23 - 25, 2019, Accessed Address (01.08.2021): <https://dl.acm.org/action/showFmPdf?doi=10.1145%2F3357292>.

- Duygun, A. & Subaşı, M. (2023). The Effect of Logistics Activities on Participant Satisfaction in Sports Organizations. *GSI Journals Serie A: Advancements in Tourism, Recreation and Sports Sciences (ATRSS)*, 6 (1): 236-247
- Liu, P. & Gao, L. (2013). Demand analysis and framework of theory about Chinese events sports logistics. The 19th International Conference on Industrial Engineering and Engineering Management, Accessed Address (11.06.2021): https://link.springer.com/chapter/10.1007/978-3-642-37270-4_15.
- Martins, R., Pereira, E., Rosado, A., Marôco, J., McCullough, B. & Mascarenhas, M. (2021). Understanding spectator sustainable transportation intentions in international sport tourism events. *Journal of Sustainable Tourism*, 1-20.
- Minis, I., Paraschi, M. & Tzimourtas, A. (2006) The design of logistics operations for the Olympic Games. *International Journal of Physical Distribution & Logistics Management*, 36(8), 621-642.
- Monecke, A. & Leisch, F. (2012). semPLS: Structural equation modeling using partial least squares. *Journal of Statistical Software*, 48(3), 1-32.
- Olgun, Ö. (2018). Galatasaray Rowing Club, Maintenance and repair stuff, Personal Interview, 06.09.2018.
- Örer, F., Subaşı, Ü. & Taşçı, Y. (2018). National sportsmen and rowing coaches, Personal Interview, 27.07.2018.
- Özcan, Y., Fidancı, Y., Türker, M. & Algür, F. (2018). Rowing clubs coaches and managers, *Personal Interview*, 25-30.10.2018.
- Özdemir, A. İ. (2004). Development, processes and benefits of Supply Chain Management. *Journal of Erciyes University Faculty of Economics and Administrative Sciences*, Number 23, 87-96.
- Paker, S., Çullu, B., Paker, N. & Çiçek, S. (2017). An exploratory research on logistics processes of sailing races. *Dokuz Eylül Üniversitesi Denizcilik Fakültesi Dergisi*, UDTS 2016 Özel Sayı, 27-49.
- Ringle, C. M., Wende, S. & Becker, J.-M. (2015). "SmartPLS 3", Boenningstedt: SmartPLS GmbH, Accessed Address (19.05.2021): <http://www.smartpls.com>.
- Saleh, A. F. (2015). The role of sport logistics in enhancing the sport clubs level in gaza from the administrative committees perspectives. *Journal of Educational & Psychological Sciences*, 16(3), 457-486.
- Sayın, A. A. & Tunç, M. G. (2020). Research on the importance of supply chain activities in sports organizations. Akçi, Y. (Ed.), *Karma İşletmecilik Yazıları*, Iksad Publications, Ankara, Turkey, 35-84.
- Sönmez Çakır, F. (2019). Partial Least Squares Structural Equation Modeling (PLS-SEM) and an Application. *Journal of Social Research and Behavioral Sciences*, 5(9), 111-128.
- Subaşı, M. (2019). The effect of logistics activities on participant satisfaction in sports organizations: The case of Sapanca Rowing Course of National Rowing Championships, Master's Thesis.
- Şen, G. & Pak, M. (2018). Turkish Rowing Federation, Members of Organization and Foreign Relations Board, Personal Interview, 16.11.2018.
- Turkish Rowing Federation (2012). Rules of racing.
- Ulupui, I. G. K. A., Murdayanti, Y., Marini, A. C., Purwohedi, U., Mardi & Yanto, H. (2020). Green accounting, material flow cost accounting and environmental performance. *Accounting*, 6 (2020), 743-752.
- Van Nguyen, S. & Habók, A. (2021). Designing and validating the learner autonomy perception questionnaire. *Heliyon*, 7(4), 1-11.
- Włodarczyk, A. (2018). Olympic Games in Garmisch- Partenkirchen 1936 – sport, logistics, media. *Studies in Sport Humanities*, nr 23, 19-23.

- Duygun, A. & Subaşı, M. (2023). The Effect of Logistics Activities on Participant Satisfaction in Sports Organizations. *GSI Journals Serie A: Advancements in Tourism, Recreation and Sports Sciences (ATRSS)*, 6 (1): 236-247
- Wong, K. K-K. (2013). Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS. *Marketing Bulletin*, 24, Technical Note 1, 1-32.
- Yıldız, O. (2021). A PLS-SEM approach to the consumer adoption of shopping via mobile apps. *International Journal of Mobile Communications*, 19(5), 589-614.
- Yılseli, H. & Özdemir, E. (2021). The effects of negotiation skills of salespeople on perceived sales performance. *Journal of Business Research-Turk*, 13(1), 504-519.
- Yuan, J., Song, J., Zhang, Y., Jiang, C. & Xu, F. (2013). Planning of dynamic routing of logistics in urban public sports facilities based on MAS. Fourth International Conference on Transportation Engineering, Accessed Address (29.06.2021): <https://ascelibrary.org/doi/10.1061/9780784413159.168>.