The Relationship between Sport Event Quality, Satisfaction, Perceive Value, Loyalty and Behavior Intention: A Meta-Analysis

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Abstract
Purpose: The purpose of this study is to summarize the results of existing studies that addressed the relationship between some effective variables in sporting events (with emphasis on quality component features). Method: The methodological design followed three steps data collection, data coding, and statistical analysis. The study examined two databases (ISI WoS and Scopus) and analyzed 71 relationships. The metafor software from the R package used for analysis. Also, the coefficient of correlation r as a metric to measure the effect size of the studied scope variables. Findings: These findings provide empirical support for several previous studies. In other words, the relatively large effect size on the relationship between each of the variables considered in this study obtained. In such a way that event quality with satisfaction, perceived value with behavioral intention, perceived value with satisfaction, event quality with behavioral intention, satisfaction with loyalty, and finally satisfaction with behavioral intention obtained effect sizes (0.52), (0.56), (0.59), (0.64), (0.61), (0.62), respectively. Conclusion: Considering the meta-analytic approach in this study, it can be noted that managers and officials of sports events in their future decisions can have a more comprehensive and deeper understanding of the relationship between the variables studied in this study; and implement their strategies accordingly.

Keywords: Behavioral Intention; Event Quality; Loyalty; Perceived Value; Satisfaction

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INTRODUCTION
Sports events can be considered an essential topic in specific sports management research (Moreno et al., 2016). The need for addressing sports events will have significant implications for organizations and even host countries and destinations by providing utilitarian services and having tangible and intangible benefits (Kaplanidou & Vogt, 2007, Chalip & Leyns, 2002, Inoue & Havard, 2014). Sports events, including large-scale events (such as the Olympics) and small-scale events (sports league competitions), can attract a broad audience in various groups such as tourists (Kirkup & Sutherland, 2017), volunteers (Kerwin et al., 2015), fans (Dees et al., 2010), spectators (Turco, 2015), and athletes (Papadimitriou et al., 2016). In turn, it will pave the way for beneficiaries and practitioners to take advantage of this context in a variety of ways.

Considering sporting events as a service industry and thus the relationship established between different variables such as quality, satisfaction, perceived value, behavioral intentions, and loyalty is an issue that has been addressed by various service researchers (Moreno et al., 2016: 221, Cronin, Brady, & Hult, 2000).

Meanwhile, each of these variables has its definitions, and some of them are related, which will be discussed below. However, it is noteworthy that the researchers felt the need to conduct this study, and this led to the formation of this research. In fact, by reviewing valid databases, we are faced with a large and varied volume of studies on research variables, which indicates the importance of research in this area. Since the human mind is not able to combine and organize the data from many studies, it is necessary to use a method that, by applying a standard scientific model, makes possible hybrid research that provides the researchers with the extract of the studies systematically and scientifically. Besides, the ability to control the research environment, the sample of subjects, and the methods used may vary from research to research (Wolf, 1986). If the science of data accumulation and refining is considered (Hunter et al., 1982), it will be imperative to use a valid model for reviewing, integrating, and combining reliable research with some common questions. Undoubtedly, meta-analysis is one of the most reliable statistical methods for combining the results of a series of independent studies (Bown, & Sutton, 2010). In other words Meta-
analysis can be defined as a systematic statistical method for analyzing and synthesizing results from independent studies, taking into account all pertinent information (Hanji, 2017).

On the other hand, given the theoretical foundations, it seems that although research variables are significant and many theorists and researchers have addressed this issue, the most important indicator that these researches get is more than just a statistical test specific to a particular population. However, the meta-analysis approach (including various statistical populations with different sample sizes) has a more comprehensive approach to the subject by combining studies' results. In turn, it can help practitioners, directors, and other stakeholders who seek to benefit from the results of each of these individual studies. Unfortunately, recent research with a limited view of the subject, only in certain circumstances (population, time of research, different sample size, and other such characteristics) has evaluated the relationship between each of the factors separately. Also, by obtaining the correlation coefficient in different ranges, including low, medium, and high, each of these studies suggests that each of the variables involved in this study (variable names) have different effect sizes. The reason for choosing variables is the study's appropriate subject matter, their acceptance by the academics, their specificity to one of the sporting event service sectors, and their relevance to the psychological characteristics of the sporting event consumers. Understanding effect size can be considered as a roadmap for future researchers, managers, marketers, and event organizers.

**Literature Review**

**Loyalty**

Loyalty is how customers express their satisfaction with the performance of the product or service received (Zehir et al., 2011). Loyalty is the customer's desire to maintain long-term stable relationships, to buy and use certain goods and services of a particular company regularly, and to offer that company voluntarily to friends and colleagues to communicate with that company (Murali et al., 2016). Since loyal customers often refer to their favorite organization to buy products or use services, they play an essential role in enhancing the profitability and improving the
organizational image in the potential customers' minds by advising relatives, friends, or other people (Kandampully et al., 2015).

Like other variables, the concept of loyalty can be applied to various services, such as sports. Loyalty in sports is used in various forms, such as brand loyalty (Gladden & Funk, 2001), and fan's loyalty to the team, club, and event (Biscaia et al., 2013, Kirkup & Sutherland, 2017). Sumino and Harada (2004) defined sports loyalty as adherence to a team based on the spectator's attachment over time (Borges et al., 2014). Brand loyalty includes an individual's psychological relationship with a team, which leads to behavioral and attitudinal loyalty to the same team (Kaynak et al., 2008).

In terms of event loyalty, according to Bridgewater (2010) argument quoted by Richheld (2000), customer loyalty is determined by a club's value-added process, including initial returns (ticket sales), increased activity volume (more regular attendance and team shirt purchases), reduced marketing costs (annual ticket purchases), referrals (positive impact on others), and a high level of loyalty (participation, financial support, and investment). Team loyalty is generally defined as loyalty and commitment that develops over time through fans' conflict with their teams. As the impact of traditional customer loyalty on business continuity, fans' loyalty is vital for the continuation of sports clubs. Similarly, it can be said that sports club fans' loyalty is equivalent to the customer's importance for other sectors (Özgen & Argan, 2017).

According to Morgan et al (2000), loyalty has two attitudinal and behavioral components, which have been confirmed in new studies (Paparoidamis et al., 2019). Kwon et al. (2005) described participation in competitions as the crucial variable of behavioral loyalty. Funk and James (2001) also classified the behavioral component of sports fans into two categories: 1. a behaviour itself (e.g., purchase of ticket or merchandise, attendance at a sport event), and 2. a behaviour that is expressed with some duration in a situational context (e.g., watching the team every Sunday on television (Funk & James, 2001)

Although behavioral loyalty, which leads to a re-purchase behavior and a larger share of the wallet, is one of the most critical aspects of loyalty, the attitudinal aspect of loyalty intention also plays an essential role in creating true loyalty. Attitudinal loyalty indicates the customer's intention to show certain loyal behaviors, such as the probability of future
use, the possibility of introducing the brand to others, and the motivation to maintain a relationship with the brand (Gupta et al., 2018). In sports management research, attitudinal loyalty is mentioned more than behavioral loyalty (Özgen & Argan, 2017). Funk and James (2001) divided attitudinal loyalty in sports into three categories: stability, resistance, and cognitive processes (Funk & James, 2001). They argued that attitudinal loyalty is an emotional commitment that has a profound effect on fans' behavior-ethics. Thus, attitudinal loyalty primarily reflects the goals of future fan's participation (Özgen & Argan, 2017).

Previous research has shown that the concept of loyalty in sporting events is a broad set of valid predictors in a way that fan motives (Wang et al., 2011), brand personality (Karjaluoto et al., 2016), fan identification (Stevens, & Rosenberger, 2012), brand associations (Kaynak et al., 2007), and perceived CSR (Inoue et al., 2017) have been cited as factors influencing fan loyalty.

**Event Quality**

Undoubtedly, the event quality is an essential issue in sports tourism research, and service quality is one of its main components (Jeong et al., 2019). Over the past decade, extensive research has shown the importance of this sector in marketing and managing sports services (Shonk & Chelladurai, 2008).

To describe the difference between service quality and event quality, shonk et al. (2017) define event quality as 'a consumer's overall impression of a carefully crafted experience that is temporary and has a predetermined length.'

Investing in event quality and strategy development to ensure audience satisfaction has been reported to be one of the main steps that sports marketers need to take to motivate spectators to revisit (Larson & Steinman, 2009). Identifying the sports spectators' needs and their real understanding of the event quality is essential for the team's support, presence, and income. Sports organizations must continuously assess their spectators' satisfaction and adapt themselves to spectators' expectations. Meeting the spectators' expectations of the service quality provided at the event adds to the number of spectators and their loyalty (Kennett et al., 2001: 133).

From the sports spectators' point of view, the event quality has been evaluated in the form of various models such as TEAMQUAL model,
Kelley and Turley's (2001) nine-factor model, and Theodorakis & Alexandris (2001) model, which was performed in the field of professional basketball in Greece. To investigate the spectators' perceptions of the event service quality, they used the SPORTSERVE model, which has twenty-two items and five dimensions: tangibles, responsiveness, access, security, and reliability (Theodorakis & Alexandris., 2008, Theodorakis et al., 2009). While Kelley and Turley (2001) identified nine factors for measuring the service quality in spectator sports, the game experience was the most important feature used in evaluating service and spectators' overall satisfaction. In another model, Koo et al. (2009) introduced an event quality model for a sports spectator that included five key factors (game quality, complimentary service quality, interaction quality, outcome quality, and physical environment quality) with twelve sub-dimensions (skill performance, operating time, information, entertainment, concessions, employee's interaction, fan's interaction, sociability, valence, ambiance, design, and signage). Jin et al. (2013) also provided four dimensions of event service quality: game quality, interaction quality, outcome quality, and physical environment quality. Game quality assesses spectators' skills and player information, and interaction quality assesses the event staff and volunteers responsible for service delivery and satisfaction with interactions with other spectators. The quality outcome is "a consumer's perception of the profit received from interaction with service providers," and finally, physical quality is related to the consumer evaluation of the stadium environment, design, cleanliness, and safety features (Jin et al., 2013: 852). Previous research has shown that the event quality has a significant direct impact on sports consumers' satisfaction (Shonk et al., 2017). In sports literature, event quality also affects perceived value and behavioral intentions (Jin et al., 2013).

**Satisfaction**

Satisfaction is the answer that comes from comparing previous expectations and perceived performance after consumption. If the customer's expectations exceed perceived performance, the customer is dissatisfied. If the perceived performance meets expectations, the customer is satisfied. If the perceived performance exceeds expectations, the customer is happy (Akhoondnejad, 2018).
Consumer satisfaction is also defined as a consumer's real desire that results from evaluating the experience of consuming a particular product (Erciş et al., 2012: 1396). In sports events, the spectators and fans of the event are considered as one of the most critical consumers. Spectator satisfaction is defined as a satisfactory and enjoyable response to the fun of a sporting event (Yoshida & James, 2010: 340). Some research has shown that the main sports product, along with the game and its results, has the most significant impact on the event spectators' satisfaction (Brown et al., 2017: 5). Athletes are also another group of sporting event consumers. Theodorakis et al. (2015) defined event runners' satisfaction as a satisfactory response to participating in a sporting event or service provided during the event. According to Kim and Jogaratnam (2015), the participants' positive experience in a sporting event and direct competition aspects affect the overall satisfaction of that event.

Today, marketing researchers have examined two types of customer satisfaction: game satisfaction (Trail et al., 2005) and service satisfaction (Wakefield & Blodgett, 1996). In their study, Yoshida et al. (2010) examined these two factors in spectators of a sporting event. Biscaia et al. (2012) classified satisfaction into two categories: transaction-specific and overall satisfaction. The former refers to the consumer's judgment of a particular experience, while the latter refers to the consumer's holistic judgment after a particular experience. In sports tourism literature, overall satisfaction has replaced transaction-specific satisfaction. It is because the spectators' overall satisfaction is a better indicator of the past and present performance of sporting events. Also, overall satisfaction determines the spectators' future behavior better than the transaction-specific satisfaction (Biscaia et al., 2012).

Satisfaction correlation has been confirmed by variables such as facility quality, performance quality, and interaction quality (Lee & Hur, 2019), service marketing (Kim et al., 2017), and behavioral goals (Yoshida & James, 2010; Koo et al, 2008). Satisfaction with a sporting event can also lead to improved commitment (Funk et al., 2011), loyalty (Jeong et al, 2019; Lee et al., 2019), and engagement in future activity (Tian-Cole et al.,2002).

**Event**
Planned events are spatial-temporal phenomena, each of which is unique due to the interactions among settings, people, and management systems.
Much of the attractiveness of events is that they are never the same, and they need to be there to enjoy the unique experience fully (Getz, 2008). It has been found that events have the potential to increase a destination's competitiveness in attracting visitors (Getz, 2008). Sports events are one of the most significant events. Many governments have focused on attracting new and loyal tourists through sporting events (Jeong and Kim, 2019). Given the high importance of these events, it is not surprising that the academic world has begun to address this phenomenon. Professional sporting events have unique performance characteristics that set them apart from any other industry (Petrović et al., 2015).

Yu et al. (2010) argue that event hosting has many intangible benefits, such as social cohesion, patriotism, collecting expertise in event management, and in particular, contributing to peace and reconciliation. The context of sporting events, as previously predicted, has shifted to increasing competition because of a social trend around the world toward the presence of spectators at sporting events (Cant & Wiid, 2012) as far as different countries are spending vast sums of money to take advantage of its significant hosting benefits. It is not limited to a specific type of event but includes a variety of major events (e.g., the Olympics and the World Cup) and small events (e.g., National Championships). Spectators, volunteers, and athletes are the primary consumers of the event (Papadimitriou et al., 2016). Providing the best product and service to event consumers, along with reducing operating costs, is one of the most critical issues for sports event organizers (Ko et al., 2011).

**Perceived Value**

The perceived value is the consumer's overall assessment of the product/service desirability based on the perception of receipts and payments. This assessment is considered as a comparison of the inputs and outputs of a product or service (Zeithaml, 1988). The perceived value can be categorized into different structures. Some studies have focused on one dimension, such as value for money, in some hospitality and marketing literature (Lee et al., 2007), and others have focused on multidimensional structure. For example, Parasuraman and Grewal (2000) suggest four types of perceived value: acquisition value, transaction value, in-use value, and redemption value (Lee et al., 2007). Sweeney and Soutar (2001) also created four dimensions of customer
Perceived value: (1) functional value, (2) emotional value, (3) price or monetary value, and (4) social value.

Unlike other consumer goods, exercise can create a strong emotional response among consumers. Therefore, we may expect different patterns to emerge when a consumer understands the value of a sports event (Min et al., 2014). A deep understanding of the perceived value between spectators can be considered one of the necessities of one's perceptions in the face of his/her decisions. In this regard, the consumer evaluation of their favorite sports competitions is influenced by the team's value. This concept can be considered as the perceived value in sports, and it has been explored in various ways and multiple dimensions by researchers. For example, in their study, Kunkel et al. (2017) developed a scale to assess the value perceived by sports consumers. They introduced the five dimensions of functional, social, emotional, epistemological, and economic values as the core of the value perceived by sports consumers. Using the Holbrook's (2006) scale, Moon et al. (2013) also measured the perceived value of sports spectators on four (economic) scales.

The perceived value within the sport context and sporting events are closely related to other variables in this field so that this concept can be associated with satisfaction (e.g. Zouni, 2020), behavioral intentions (Moon, 2013; Xiao, 2020), loyalty (Jeong, 2019, Barajas et al., 2014), destination image (Moon, 2013; Jin et al., 2013), service quality (Yu et al., 2014; Byon et al., 2013), and brand value (Giroux et al., 2017). Jin and Lee (2013) showed that perceived value plays a central role in the continuation of significant sports events. Nuviala et al. (2012) also demonstrated that perceived value has a significant effect on customers' perception of sports services.

In this study, using meta-analysis and combining the knowledge used in the research literature, a comprehensive summary of the relationship between loyalty, satisfaction, event quality, perceived value, and behavioral intentions is provided in sporting events. This study not only helps clarify previous research but also offers suggestions for future studies.

**Behavioral Intention**

Behavioral intention is defined as the act by which a person develops a conscious plan to do or not to do certain behaviors in the future (Trian &
Petala, 2016: 7). This behavior reflects an individual's expectations and inclinations toward a particular action (Lee and Shiu, 2015). In other words, this concept can be considered a result of mental processing that will lead to a motivational action in influencing an individual's behavior in the future (Jang et al., 2009). It represents a possible behavior (Yazıcı et al., 2017), emphasizing the possible organization of a particular behavior (Jin et al., 2013). Behavioral intention literature in various fields, including sports, is mainly composed of common elements: willingness to repurchase and offer services (Del Bosque & San Martín, 2008) or willingness to recommend through word of mouth advertising and revisiting (Prayag, 2009). Given the importance of this concept, researchers have used it as a keyword in their studies, and they have applied it appropriately in various studies. (E.g. Duan, Liu, & He, 2019; Yoshida, & James, 2010; Phonthanukitithaworn, & Sellitto, 2018; Xiao, et al. 2019; Jin, Lee, & Lee, 2013; Jeong, Kim, & Yu, 2019).

METHOD

3 Methodological Design

The methodological design followed three steps: data collection, data coding, and statistical analysis.

3.1 Data Collection

Literature search studies collected from two major databases (ISI Web of Science and Scopus). The search included all peer-reviewed articles written in English and published through April 2020.

3.1.1 Search Strategy

We searched the ISI Web of Science and Scopus on April 4th, 2020, to collect publications related to the research subject. The time frame set to include all available publication years.

The databases were examined using the search strategy (TS="sport event") OR TS="sports event") OR TS="sporting event") OR TS="mega-event") OR TS="Mega Sport Event") OR TS="major-sport-event") OR TS="small-scale sport events") OR TS="small-scale sport event") AND ((TS="behavioral") OR TS="behavioral intention") OR TS="future W/3 intention") OR TS="word-of-mouth") OR TS="revisit") OR TS="Intent to return") OR TS="Intention to attend") OR TS="repeat visitation") OR TS="event quality") OR TS="fan loyalty") OR TS="team loyalty") OR TS="spectator loyalty") OR TS="satisfaction") OR TS="perceived value");
and the data retrieval strategies for the Scopus database were as follows: (TITLE-ABS-KEY("sport event") OR TITLE-ABS-KEY ("sports event") OR TITLE-ABS-KEY ("sporting event") OR TITLE-ABS-KEY ("mega-event") OR TITLE-ABS-KEY ("Mega Sport Event") OR TITLE-ABS-KEY ("major-sport-event") OR TITLE-ABS-KEY("small-scale sport events") OR TITLE-ABS-KEY("small-scale sport event")) AND ((TITLE-ABS-KEY ("fan loyalty") OR TITLE-ABS-KEY ("team loyalty") OR TITLE-ABS-KEY("spectator loyalty") OR TITLE-ABS-KEY ("satisfaction") OR TITLE-ABS-KEY ("behavioral") OR TITLE-ABS-KEY ("future W/3 intention") OR TITLE-ABS-KEY ("word-of-mouth") OR TITLE-ABS-KEY ("revisit") OR TITLE-ABS-KEY ("Intent to return") OR TITLE-ABS-KEY ("Intention to attend") OR TITLE-ABS-KEY ("repeat visitation") OR TITLE-ABS-KEY ("event quality") OR TITLE-ABS-KEY ("perceived value"))).

The initial search process identified 744 articles meeting one of the search criteria mentioned above. Of these, 129 studies did not fall into the scope of the analysis because they were studies of a duplicate nature. After deleting duplicate articles, 223 articles assigned to the Web of Science database and 392 articles to the Scopus database.

The next step involved the manual screening of title, abstract, and keywords of the extracted articles from the above search protocol to remove the irrelevant ones. At this stage, only Articles related to the content of the study (linked to at least one of the research hypotheses) and in the form of articles in the area of sports events were considered eligible. Thus, a total of 615 articles qualified this filtration stage. Of these, 562 studies were not within the scope of the analysis because they were not related to the constructs investigated here. After these exclusions and finally, 53 valid studies were identified and analyzed in this study.

### 3.2 Coding Procedure

The coding performed using a spreadsheet containing the following information: article identifier (number), author(s), title, publication year, country, sample size, sample type, and correlation coefficients recorded for each shortlisted article.

According to Kirca et al. (2005), meta-analysis can be carried out with at least three studies. Therefore, the individual reviews of the relationship between each of the research assumptions with less than three studies discarded for the current meta-analysis. Further, some of the behavioral reactions were grouped into a single construct (behavioral...
intentions) as existing articles had used different terminologies for the same construct. For example, revisit intention, repeat visitation, future intention, word of mouth, Repatronage, and repurchase intention combined with behavioral intentions.

At the beginning of the coding process, two judges (the first author and second author) met several times to outline coding rules and coded jointly several articles. Any inconsistencies in the coding of these articles were resolved via discussions to ensure consistent coding of all articles. After that, the remaining articles split between the two coders for independent coding.

### 3.3 Statistical Analysis

This procedure used to analyze the size of the random effects, as suggested by Hunter and Schmidt (2004). It relies on the random-effects model, which is the preferred approach since it assumes that population effect sizes vary across samples (Borenstein et al. 2009). The present study used the correlation coefficient (r) and sample size (n) as an input measure for calculating effect size. In other words, to compute the overall ES using the correlation metric presented in each study, correlation coefficient values were converted into Fisher’s z-scores to calculate the summary effect (Borenstein et al., 2009). The upper and lower confidence interval index analyzed at the 95% level, which involves an estimate of the mean range of corrected weighted correlations (Hunter & Schmidt, 2004).

We also calculated the fail-safe number index for significance because the calculation of the fail-safe number for meaningful relationships was too stressed. This index aims to estimate the number of non-significant or unpublished studies (Rosenthal and Rubin, 1991). For this calculation, the formulas suggested by Rosenthal (1979), and Orwin (1983) used. In the following, the Q-statistic test adopted to check the homogeneity of the effect size distribution (Lipsey and Wilson, 2001). Also, the p-value statistics used to assess the significance level of effect sizes.

### RESULTS

The meta-analysis conducted using metafor software from the R package. Table 1 presents a synthesis of the results obtained with the meta-analysis.
Regarding the first hypothesis, there are eight studies (k = 5) on which meta-analysis has conducted. In this hypothesis, a positive and significant relation between the event quality and satisfaction was expected (ES = 0.515; p < 0.001). The number of papers needed to refute this finding is 584 (Rosenthal, 1979) and 36 (Orwin, 1983).

**Table 1: Results of meta-analysis**

<table>
<thead>
<tr>
<th>H</th>
<th>RV</th>
<th>K</th>
<th>N</th>
<th>ES</th>
<th>P₁</th>
<th>ICI</th>
<th>ICS</th>
<th>Q</th>
<th>P₂</th>
<th>FSN_O</th>
<th>FSN_R</th>
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</thead>
<tbody>
<tr>
<td>H1</td>
<td>EQ_SA</td>
<td>5</td>
<td>1722</td>
<td>0.52</td>
<td>0.000</td>
<td>0.291</td>
<td>0.738</td>
<td>116.02</td>
<td>0.000</td>
<td>5</td>
<td>813</td>
</tr>
<tr>
<td>H2</td>
<td>PV_BI</td>
<td>8</td>
<td>6071</td>
<td>0.56</td>
<td>0.000</td>
<td>0.382</td>
<td>0.739</td>
<td>353.94</td>
<td>0.000</td>
<td>8</td>
<td>2888</td>
</tr>
<tr>
<td>H3</td>
<td>PV_SA</td>
<td>7</td>
<td>5582</td>
<td>0.59</td>
<td>0.000</td>
<td>0.406</td>
<td>0.768</td>
<td>311.89</td>
<td>0.000</td>
<td>8</td>
<td>2970</td>
</tr>
<tr>
<td>H4</td>
<td>EQ_BI</td>
<td>6</td>
<td>2133</td>
<td>0.64</td>
<td>0.000</td>
<td>0.405</td>
<td>0.874</td>
<td>191.55</td>
<td>0.000</td>
<td>6</td>
<td>1896</td>
</tr>
<tr>
<td>H5</td>
<td>SA_LOY</td>
<td>8</td>
<td>3107</td>
<td>0.61</td>
<td>0.000</td>
<td>0.454</td>
<td>0.757</td>
<td>155.41</td>
<td>0.000</td>
<td>8</td>
<td>3174</td>
</tr>
<tr>
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<td>21559</td>
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<td>0.000</td>
<td>0.511</td>
<td>0.729</td>
<td>1196.11</td>
<td>0.000</td>
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</table>

Note: H: Hypothesis; EQ: Event Quality; SA: Satisfaction; PV: Perceived Value; BI: Behavioral Intention; LOY: Loyalty; RV: The relationship between variables; K: Number of studies used from the analysis; (N) Number of accumulated samples of the assessed studies; ES: Effect size; P₁: Degree of the significance of the effect size; ICI: Lower confidence interval; ICS: Higher confidence interval; Q: Test of heterogeneity at the individual and aggregate levels; P₂: Significance level of Q; FSN_O: Failsafe number; the number of items needed for a false result – Orwin parameters (1983); FSN_R: Failsafe number; the number of items required for a false result – Rosenthal parameters (1979).
In H2, we proposed a positive and significant relationship between perceived value and behavioral intention. We analyzed eight studies and found effect size with ES = 0.56 between the two constructs. The results were significant (p < 0.001). The FSNs were 2888 and 8 from the Rosenthal (1979) and Orwin (1983) perspectives, respectively.

Another evaluated hypothesis (H3) was perceived value and satisfaction. The analysis performed through 7 studies from a cumulative sample of 5582 respondents. The results showed effect size of a relationship between perceived value with satisfaction was positive (ES = 0.587), significant (p < .001) and consistent (FSN_{Rosenthal} = 2970; FSN_{Orwin} = 8).

We tested using six studies, representing a sample of 2133 the relationship between event quality and behavioral intention. We identified a strong effect size (ES = 0.64) and a significant (p < .001). These results confirm the positive and significant association between the two constructors. It was noted that according to Rosenthal’s (1979) parameter, 1896 papers with null or opposite results would be needed to refute the finding. According to Orwin’s (1983) parameter, six studies would be required.

In H5, the results showed a statistically significant positive correlation between satisfaction and loyalty. In this case, eight effects from a cumulative sample of 5582 respondents were found. The final effect detected by this meta-analysis was ES = 0.60 (p < .001). And the evidence indicates that 3174 and 8 articles with contrary results would be necessary to refute the findings. (Rosenthal, 1979; Orwin, 1983).

The final tested relationship was between satisfaction and behavioral intention. We analyzed 37 studies and a cumulative sample of 21,559 respondents. The results showed a statistically significant positive correlation between constructors. The results sustain the hypothesis (ES = 0.62; p < 0.001). Also, according to Rosenthal’s (1979) parameter, 83639 papers with null or opposite results would be needed to refute the finding. Also, according to Orwin’s (1983) parameter, 37 studies would be required.

Also, in the following, each of the research hypotheses has been examined separately, and the results have presented in the form of figures.
The Relationship between EQ and SA
There are five studies (k = 5) on which meta-analysis has conducted. Figure 1 shows the result of meta-analysis, including a forest plot of Fisher’s Z transformation and a 95% confidence interval. By using random model effect results show a significant positive relationship between EQ and SA with CI = 0.29 to 0.74 (Fisher’s Z = 0.52, P = 0.001). Forest plot (Fig. 1a) showed that there is a positive relationship found between EQ and SA.

The Relationship between PV and BI
There are eight studies (k = 8) on which meta-analysis has conducted. Figure 1b shows the result of the meta-analysis conducted for the relationship between PV and BI. The result displayed with forest plot and relative weights used for meta-analysis for the random model. A positive and significant relationship was obtained between the variables (Fisher’s Z = 0.56, P = 0.001).

The Relationship between PV and SA
By using random model effect results show a significant positive relationship between PV and SA with CI = 0.41 to 0.77 (Fisher’s Z = 0.59, P = 0.001). Forest plot (Fig. 1c) showed that there is a positive relationship found between PV and SA.

The Relationship between EQ and BI
Regarding investigate this hypothesis, six studies included in the meta-analysis. The result displayed with forest plot and relative weights used for meta-analysis for the random model. The results indicated a positive and significant relationship between the variables (Fisher’s Z = 0.64, P = 0.001; CI = 0.41 to 0.87). (Fig. 1d)
The Relationship between SA and LOY

There are eight studies (k = 8) on which meta-analysis has conducted. Forest plot (Fig. 2) showed that there is a positive relationship found between SA and LOY. (Fisher’s Z = 0.61, P = 0.001; CI = 0.45 to 0.76).

The Relationship between SA and BI

There are 37 studies (k = 37) on which meta-analysis has conducted. The result displayed with forest plot and relative weights used for meta-analysis for the random model (Fig. 3). The results indicated a positive
and significant relationship between the variables (Fisher’s $Z = 0.62$, $P = 0.001$; CI = 0.51 to 0.73).

<table>
<thead>
<tr>
<th>Variables</th>
<th>SA</th>
<th>BI</th>
<th>$f$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marisio (2017)</td>
<td>0.3</td>
<td>0.4</td>
<td>0.1</td>
</tr>
<tr>
<td>Forrest (2015)</td>
<td>0.5</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Denizli (2016)</td>
<td>0.7</td>
<td>0.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Dogan (2017)</td>
<td>0.9</td>
<td>1.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Kemal (2018)</td>
<td>1.1</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Cevik (2019)</td>
<td>1.3</td>
<td>1.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Topkaya (2019)</td>
<td>1.5</td>
<td>1.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Topkaya (2019)</td>
<td>1.7</td>
<td>1.8</td>
<td>1.5</td>
</tr>
<tr>
<td>Topkaya (2019)</td>
<td>1.9</td>
<td>2.0</td>
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</tbody>
</table>

**DISCUSSION**

In this study, using meta-analysis and combining the knowledge used in the research literature, a comprehensive summary of the relationship between loyalty, satisfaction, event quality, perceived value, and behavioral intentions is provided in sporting events. This study not only helps clarify previous research but also offers suggestions for future studies.

**The Relationships between the Variables**

In this meta-analysis, 53 studies that were completely consistent with this study were used to test the relationships between the variables. It is believed that the current analysis provides a more thorough understanding of the relationships between event quality, perceive value, satisfaction, loyalty and behavioral intentions, which may be utilized by
event managers to better understand potential event consumers’ behavior.

The results showed that the effect size between satisfaction and event quality was 0.52. This result is consistent with Shonk et al. (2017) and Jeong et al. (2019) and Foroughi et al. (2014) studies, which consider the event quality as an important factor in predicting spectator satisfaction. Although some individual characteristics and variables such as spectator attachment to the event (Kim et al., 2018), athlete's performance (Du et al., 2015) can affect the level of satisfaction and the perceived quality of the event, the event quality can be improved by focusing on the basic factors. Accordingly, the event venue should have a striking appearance, a clean environment, and high security. Besides, the game quality between teams is one of the main elements of event quality (Jeong and Kim, 2019), so event organizers should use professional players to increase the game quality and event satisfaction as its consequence. Another result showed that the effect size between perceived value and behavioral intentions was 0.56. Various studies also show that higher levels of perceived value affect the event consumers' behavioral intentions (Du et al. 2015, Jin et al. 2013, and Hightower et al. 2002). Based on this finding, it is suggested that event managers, while regularly evaluating perceived value, use a strategy to improve perceived value to attract more participants to the event. This can be very profitable in the long-run. In this study, the effect size of satisfaction and the perceived value was 0.59. Therefore, it seems that the emphasis on perceived value, in other words, addressing the needs and meeting them can improve event consumers' satisfaction. Moreno et al. (2016) also identified perceived value as a key element of sporting event spectators' satisfaction and behavioral intentions. Therefore, more efforts should be made better to understand the perceived value structure and its fundamental mechanisms. Du et al. (2015), Barajas et al. (2014) and Wakefield (1995) and also confirmed this relationship. The fourth hypothesis’s results also showed that the effect size of the event quality on behavioral intentions was 0.64. Similar results are provided by shonk et al. (2017), Milovanović et al. (2019) and Jeong et al. (2019).

Meanwhile, the presence of rival's hobbies has raised the expectations of the sporting event quality. Therefore, event managers need to create fun events such as giving gifts to increase event quality
and the likelihood of revisiting and recommending the destination to family, friends, and acquaintances. Other results showed that the effect size of satisfaction and loyalty was 0.61 various studies demonstrate that a higher level of consumer satisfaction leads to greater loyalty (Akhoondnejad, 2018; Petrick et al. 2013 & Ahrholdt, 2017).

Loyal fans provide a steady source of income for the club, reduce costs, and increase club's benefits. Therefore, it is recommended to consider factors that increase sports participants' satisfaction to maintain and improve their loyalty. The final hypothesis also showed that the effect size of satisfaction and behavioral intentions was 0.62. For event managers, positive behavioral intentions (event promotion, re-attendance, and willingness to attend) should be considered the most key achievement of all activities and actions taken at the event, and for achieving this, participant satisfaction should always be considered. For event managers, positive behavioral intentions (event promotion, revisiting, and willingness to attend) should be considered the key achievement of all activities and actions taken at the event, and for achieving this, participant satisfaction should always be considered.

CONCLUSIONS

Cohen (1988) suggested 0.02, 0.15, and 0.35 as operational definitions of small, medium, and large effect sizes, respectively. The statistically significant result of the meta-analysis revealed a large effect size among research variables. According to the results and for improving sports event participants' satisfaction and loyalty, some suggestions can be provided to the managers of this field. It is recommended to communicate with participants during and after sporting events and to get information about their satisfaction. It can be done randomly through a survey. Also, entertaining activities enhance participants' satisfaction, and thus, participants' loyalty can be expected to increase. As a part of their competitive strategies, sports event organizers should consider sporting event quality as a key prelude to their perceived value of sporting events and an essential part of achieving their loyalty. Therefore, sporting event organizers should create an attractive and enjoyable environment for the participants as a key element for revisiting and promoting sporting events by loyal participants. Sports event service providers need to make accountability their top priority, and they should
be trusted consultants for their customers. Presenting gifts and souvenirs to participants can also be a way to commemorate sporting events.

**Research Suggestions and Limitations**

Like other meta-analytic research, this study also has some limitations. Language restrictions limited this analysis to English-language studies. Also our meta-analytic findings indicate a lack of basic data for some relationships between variables. For example, at least three studies were assigned to the relationship between research variables. Therefore, due to the limited number of studies on the relationship between some variables, they were removed from hypotheses. Although the lack of appropriate studies limits our conclusions, it provides the necessary context for future research. It is noted that research variables, including perceived satisfaction and value, are mental factors that can be unique to each individual, and they are influenced by a variety of factors (such as psychological factors, geographical location, gender, etc.). Therefore, sporting event researchers are encouraged to measure mediating and moderating variables in their future studies.

**REFERENCES**


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