

A Measurement Development of Customer Loyalty to Online Running Events

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Abstract

The growth of running events has created a number of participants and running organizers around the world. Due to the COVID-19, many running events have been canceled or postponed. To earn revenue, running events have changed from a physical venue to online. As new normal, running event organizers need to find the means to attract participants and gradually turn them into loyal customers. This study aims to explore factors of online running events influencing participants' loyalty based on the concept of event quality. A purposive sample of 400 runners is collected to assess the reliability and construct validity of the multi-dimensional factors of online running event. These factors include customer service, website design, and service outcome. The results propose a new framework for online running event factors affecting participants' loyalty. Event organizers can apply it to match participants' preferences and create successful online running events and other related sports.

Keywords: customer service, loyalty, running event, service outcome, website

INTRODUCTION

Running event, categorized under track events in sporting competition, was introduced since the Olympic Event 1896. With the number of outdoor running events grows significantly in the past few years, runners around the world travel to various cities to participate in the marathon events. Among world popular marathon events, the New York marathon, Chicago marathon, Berlin marathon, London marathon, and Tokyo marathon are at the top five popular

events (Stewart & Dwiarmein, 2015). In a country's perspective, these events create high economic impact to local communities (Papanikos, 2015). Kasikorn Research Center (2019) estimated that in 2020, outdoor sport events would generate revenue for the country around 1.7 billion baht. Unfortunately, the COVID-19 hit the world in early 2020 and all the running events had been cancelled or postponed due to the health concern.

With the COVID-19 disruption continued in 2021, the running industry took a proactive step to ensure that they can offer value to loyal participants. Race organizers applied creativity and innovation to increase number of participants by offering virtual races, creating new safety protocols and build new virtual challenge concepts (RunSignup, 2022). There was an expectation that the virtual events would bridge the gap until physical events return. Due to this, runners have shifted their intention toward the online world through these virtual races. This trend becomes more popular when technological developers produce virtual reality equipment, such as virtual reality helmets or headsets which allow participants to go deep into the artificial world and interact with virtual features. Virtual reality has been applied to sports to deliver a simulated experience of playing a sport in the virtual world.

As race organizations intended to gain back their loyal participants through virtual run, understanding factors associated with customers loyalty can enhance their chance of success. The study of Choi et al. (2018) suggested that participants experienced positive satisfaction with virtual golf produced a high intention to participate again in the future. This study confirmed that measuring customer satisfaction can lead to customer insight in terms of loyalty, especially intention to re-participate in the same event. In this paper, therefore, the author aims to develop a measurement scale of customer loyalty associated with virtual running event (or so-called online running event in this paper). Consequently, running organizers can utilize this measurement scale to enhance runners' loyalty as well as increase a chance of success in this industry.

LITERATURE REVIEW

Technology and Online Sport Event Environments

Not only must an individual sports consumer adapt to new sport technology, but the companies that organize sport activity need to change their service delivery into the online world. To provide online service to sports consumers, online communication platforms such as websites, social media, blogs, etc. are needed to interact with consumers. High value needs to be matched with the time, money, and effort of consumers. Due to high expectations from consumers, event organizers are experiencing more pressure to fulfill consumers' needs and wants. In this case, determining consumers' preferences can help event organizers satisfy their consumers, especially in sporting events where individuals perceive the value and meaning of sports products and services differently.

The number of participants in running, one of the most popular sport events organized around the world, has grown over the past ten years from around 5 million to 7.9 million participants per year (Andersen, 2020). This significant number means that running event organizers must provide a good experience so that these participants will participate again the next year. Although running events were among the emerging sport trends in 2019, the outbreak of COVID-19 in 2020 stopped all running event activity completely. All running events around the world were postponed or canceled. This unexpected event caused a huge loss in the event industry. To break through this wall, running event organizers see that conducting events via the internet will help them to maintain their customers and, perhaps, regain their revenue. Instead of conducting a physical running event as usual, running event organizers turn to an online running event where they provide a web-based platform for registration, recording data, giving a

reward, and managing the running community through the internet. This kind of event allows runners to participate anytime and anywhere by challenging and completing the race themselves. What they need is a tracker device like a sport or smartwatch and an application that can track and record their running performance.

Consumers' Lifestyle and Perceptions

In the past few years, many researchers have tried to identify consumer behavior in the context of sports activity. Theodorakis et al. (2001) explained consumer behavior in terms of service quality. They modified Parasuraman et al.'s (1988) SERVQUAL for the sport context and named this scale SPORTSERV. This scale was among the leading measurements evaluating service quality for sport spectators. Moreover, service quality has been applied in the sporting event field. For instance, Shonk and Chelladurai (2008) conducted research based on the sporting event's quality influencing the intention to return of those sport spectators who participated in All-Star sporting events in the United States. The event quality encompassed four dimensions, including access, accommodation, venue, and contest quality. The result confirmed that all four dimensions contributed to sports spectators' satisfaction, and, in turn, led to intention to return. The sports industry has since utilized numerous technologies through the internet. Websites have been used to connect service providers with consumers. The study by Suh and Pedersen (2010), which concentrated on consumer behavior based on service quality of fantasy sports websites, revealed that actual participants' behavior can be predicted by perceptions of service quality of the website, where satisfaction and attitude had a mediating effect. This study was supported by the work of Chiu and Won

(2016), who studied the effect of sports website quality on revisitation and media consumption. Their results revealed that both revisitation and media consumption were influenced by sports website quality. Within the different discipline of sport studies, Funk (2017) stated that sports consumer behavior deals with a multi-disciplinary approach in which sport has unique characteristics, such as the intangible and inconsistent nature of the sport service, uncertain outcomes, unstable demand and supply, being knowledge-based, and being consumed in the presence of others. Therefore, various dimensions were applied which may produce different results from another research context.

Even though sport studies have been conducted to explain factors associated with runners' behavior, such as running involvement (Alexandris et al., 2017; Sato et al., 2016), perceived value (Park et al., 2018), event quality scales (Armbrecht, 2019; Simasathiansophon, 2021), data resource management (Best & Braun, 2017), the effect of social factors on runners' participation (Cleland et al., 2019), and motivation to participate (Aicher et al., 2015), fewer scholars have studied the service quality of running events in the online context, since this trend only emerged after the spread of the COVID-19 pandemic in 2020. Therefore, this paper aims to identify factors associated with an online running event and construct the measurements to evaluate participants' loyalty. Unlike previous sport event quality scales where staff interaction, physical environment (venue), and outcome of service (Alexandris et al., 2017) were evaluated, this study adjusted two dimensions of sport event quality scales: staff interaction and service outcome, within the online environment (website) dimension (Karimov et al., 2011). The new measurements could help marketers and running

event organizers arrange an online running event to increase participants' loyalty.

Understanding participants' behavior in the sport event context is crucial because it affects the future participation rate and the likelihood that participants will recommend the event to others (Armbrrecht, 2019). As suggested by Brady and Cronin (2001), the service quality scale can be used to explain consumers' behavior. Funk (2016) noted that sport consumers' decision-making is often the result of a combination of inputs, processes, and outputs. To evaluate consumers' decision to join a sport, service quality should be measured as a tool to enhance the quality of service provided to consumers. Indeed, sport decision-making works as a sequence of input-process-output phases, which can explain how an individual selects and continues to participate in that sport in the future. Biased behavior influencing an individual repeatedly purchasing from one brand is called loyalty (Mellens et al., 1995). In this paper, therefore, factors associated with the service quality of a running event will be evaluated to explain participants' behavior which reflects their loyalty. Then, the website design as a new element in service quality for an online running event will be introduced.

Antecedents of Online Running Event

As mentioned earlier, key factors associated with running events from Alexandris et al. (2017) were applied. However, the paper studied a physical running event that cannot work in an online context. As a result, the author modified Alexandris et al.'s (2017) event quality scale with website design dimensions adapted from Karimov et al. (2011) and named three online running event dimensions as customer service, website design, and service outcome.

Customer Service

The customer service factor was adapted from the online retailing context (Hashemi, 2013; Rita et al., 2019). Customer service encompasses the process of delivering service to customers. It requires interaction between staff and customers. Attitude, ability to fulfill requirements, and staff knowledge are necessary to maintain customer relationships. In the online retailing industry, the core idea of customer service is to enhance the pre- and post-purchase experience of customers and maintain relationships with them (Khan Mukaram et al., 2019; Sriyakul et al., 2019). The study suggested that customers perceive service 'fairness' from the way they are treated by staff rather than the service outcome itself. This result was further supported by the work of Hashemi (2013) and Rahi et al. (2017), which indicated that as long as the company maintains a certain level of service quality, it is likely that customers will return and become loyal customers. In the case of sport events, event quality also influences word-of-mouth and satisfaction. The better the staff's ability to interact with customers, the more satisfying the experience is (Álvarez-García et al., 2019; Tzetzis et al., 2014).

Website Design

Since an online running event has no physical environment, the author concentrates on an online venue, which is a website where customers interact with the running organizers. A website, in an event context, is considered as a venue where customers can contact the service provider through the internet. In a physical sport event, the venue or place conducting the event has an important role in creating customer satisfaction (Calabuig-Moreno et al., 2016). To evaluate the website, the access system, design and appearance, usefulness, and reliability of information should be considered (Rahi et al., 2017; Suh & Pedersen, 2010). As sports

consumption is about knowledge-based acquisition, sports participants tend to look for a trusted website and seek specific information before making a decision (Funk et al., 2016). This fact is supported in the work of Karimov et al. (2011), who developed website design measurement based on trust and cue signaling theory. The results showed that website design cues improved consumers' initial trust in the new website. This is further explained by Carlson and O'Cass (2012), who asserted that when customers trust the website, they intend to repeat purchasing from the service firm. Alonso Dos Santos et al. (2017) also affirmed that a trustworthy website can encourage sports participants to attend the event.

Service Outcome

Service outcome, the last factor, is defined as the result that sport participants receive after the service delivery process. This outcome can be used to further determine customers' satisfaction and loyalty. Brady and Cronin Jr. (2001) and Howat et al. (2008) pointed out that the outcome dimension of service quality can predict behavioral and attitudinal loyalty. As the goal for runners is to evaluate their performance, it is necessary to measure the level of outcome (performance) and value derived from participating in the running event (Alexandris et al., 2017). According to Romiti and Sarti (2016), service outcome encompasses two sub-elements: challenge and value. In running events, race competition provokes the feeling of a challenge in participants. The challenge motivates participants to engage in the running activity to reach their potential performance. Value is considered by evaluating a trade-off between the cost of participating in a running event and its benefit (Zeithaml, 1988). Previous studies have

noted that value has a positive effect on satisfaction and intention (Biscaia et al., 2021).

Participants' Loyalty Behavior

To evaluate running event participants' behavior, the author examines Oliver (1999) cognitive-affective-conative-action pattern. The behavior can be assessed through the level of satisfaction felt by participants with the quality of service received from the event. According to this concept, participants will first develop a belief in the product and service of the brand (cognitive). After that, they will develop a feeling of 'love' connected to the brand (affective). Then, the intention to repeat purchase will grow (conative). Finally, loyalty will be established as participants repeatedly re-engage in the event (action). Costabile (2000) also suggested that after participants are involved in an action state they are unlikely to change or switch to competitor brands, even though the switching cost is low. To measure true loyalty, both behavior (frequent purchase) and attitude toward service need to be considered (Hashemi, 2013). As noted by Dick and Basu (1994), integrating repeated behavior and attitude dimensions can increase the ability to predict participants' behavior. This paper, therefore, applies two loyalty dimensions: attitudinal and behavioral loyalty. Attitudinal loyalty refers to the opinions and feelings of participants based on the service they perceive from the event. In some papers, this meaning has been expressed as a recommendation to others (Lam et al., 2004). According to Oliver's concept of loyalty (Oliver, 1999), attitudinal loyalty encompasses two phases, cognitive and affective, which link the customer's belief and emotion to the brand (Rai & Srivastava, 2012). Behavioral loyalty has been seen as repeat purchase of the service. During the conative state, the participant

will develop an intention to participate in the event again (Jones & Taylor, 2007). After the intention state is established, participants will make all purchases from the event organizers and rarely change to competitor services.

RESEARCH METHODOLOGY

Participants

This paper aims to develop measurement of how an online running event affects participants' loyalty. A quantitative method had been applied in this paper. The population consists of runners who participated in an online running event. Samples were obtained using purposive and simple random sampling methods due to a large population. Firstly, a purposive sampling method was employed to select runners' communities. In this stage, the author utilized social networks to find an online running community in Thailand that had at least 5,000 members. After asking for cooperation with online running communities, two communities were willing to help distribute a questionnaire and met the criterion of 5,000 members. Secondly, simple random sampling methods were used to distribute the questionnaire to participants in the running communities. The questionnaire was posted online via the running communities' webpage during September and October 2021. Among the 420 returned questionnaires, 400 were completed and thus included in the data analysis.

Measures

For this study, the author developed a scale for the online running event to evaluate participants' behavior. The scale development process is associated with a list of items for each dimension of the online running event framework. Multiple measures for each of the online running event factors—customer service, website design, and service outcome—were

developed and modified from existing scales (Alexandris et al., 2017; Cristobal et al., 2007; Hashemi, 2013; Karimov et al., 2011; Rita et al., 2019; Romiti & Sarti, 2016). Loyalty items were adjusted from Watson et al. (2015). According to the review and relevant literature, there are 45 items in this measurement: 32 items for three online running event factors and 13 items for loyalty factors. The measurement format was a five-point Likert scale ranging from 1 (very unlikely) to 5 (very likely).

Procedures

The researcher began to purify the scale by assessing content validity. The instrument was evaluated by three experts who have experience in event management, service marketing, and business. After the evaluation process, the instrument was revised based on the feedback given by those experts. The result for content validity indicated that all items' content validity was rated 3 or 4, which means that all 45 items were highly relevant to the research content and objectives. As suggested by Polit and Beck (2006), for excellent content validity, the item level of content validity should be awarded a score of 3 or 4 by three experts. After that, the measurement was subjected to ethics on the human research process and was approved before being delivered to respondents.

A sample of 400 members of the running communities responded to the measurement scale. To verify the scale's internal reliability, Cronbach's alpha was computed. Based on the results of the reliability test, scale items for each construct were considered reliable for the intended population (Nunnally & Bernstein, 1994). For construct validity, exploratory factor analysis (EFA) was tested, where the eigenvalue should be greater than 1 for each construct.

According to Hair et al. (2014), the criteria for factor analysis were that items with factor loadings below 0.4 or cross-loaded on more than one factor or with communalities lower than 0.4 will be deleted.

RESULTS

The reliability results for the first factor, customer service, showed that its alpha coefficient was 0.807, all items having inter-item correlations higher than 0.4, which meets the minimum criterion. According to Karimov et al. (2011), there are three sub-dimensions for the website design factor: visual website design, content design, and social interaction design. The alpha coefficients for these three sub-dimensions were 0.809, 0.865, and 0.907 respectively. For service outcome, the third factor, there are two sub-dimensions: challenge and value were evaluated here. The alpha coefficient results a

satisfaction Cronbach's alpha value of above 0.7 for these two sub-dimensions, being 0.894 and 0.913 respectively. Loyalty, the last factor, consisted of four sub-dimensions: attitudinal loyalty, behavioral loyalty, re-participation intention, and referring to others. The results of the alpha coefficient indicated that all sub-dimensions had alpha values higher than 0.7: 0.784 for attitudinal loyalty, 0.782 for behavioral loyalty, 0.794 for re-participation intention, and 0.853 for referring to others.

Exploratory factor analysis of these measurements was validated using a sample of 400. Items that failed to meet the minimum criteria for eigenvalue, factors loadings, and communalities were deleted. A Kaiser-Mayer-Olkin (KMO) higher than 0.5 and a significant Bartlett's test of sphericity ($P < 0.05$) showed the existence of correlations between variables. Table 1 details the EFA for customer service.

Table 1: Exploratory factor analysis of customer service (n = 400)

Items	Factor loadings		Eigenvalue	Variance explained	KMO	Bartlett's test: Chi-square	Sig.
	Component 1	Component 2					
Customer service			1.236	17.656	.697	1,297.943	.00
CS1	.483	.349					
CS2		.846					
CS3		.891					
CS4	.565	.414					
CS5	.836						
CS6	.753						
CS7	.894						

The results of the EFA for customer service revealed two components of factor loadings. The eigenvalue of this construct was 1.236, which is greater than 1. The KMO was 0.697, which indicates the appropriateness of the factor

analysis. Bartlett's test of sphericity revealed that the value of chi-square was 1,297.943 and statistically significant ($P < 0.05$). The factor loading of component one was ranked between 0.483 and 0.894, while component two was

ranked from 0.846 to 0.891. However, items CS1 and CS4 which are 'my experience with customer service when I have a problem is excellent' and 'the running event website provides me with a tailor-made service' had cross-loaded for two factors. Thus, these items were deleted at this stage. Therefore, customer service could be explained with two sub-dimensions. Component one included two items, CS2 and CS3, while component two had three items: CS5, CS6, and CS7. These two components were given the new names of contact function and customer inquiry function.

For website design, the results of the reliability coefficients of three sub-dimensions, including visual website design, content design, and social interaction design, were 0.809, 0.865, and 0.907 respectively, which indicated good consistency of all items. Visual website design consisted of one component with an eigenvalue of 3.088 and a KMO of 0.722, which indicates the appropriateness of the factor analysis. Bartlett's test of sphericity was 843.172 and statistically significant ($P < 0.05$). According to the criteria of communalities and factor loadings, an item with a score lower than 0.4 will be deleted. The result showed that the communalities of item one of visual website design (VWD) were only 0.244, close to the minimum. Thus, item one of the visual website design (VWD1) was deleted in this stage. For content design, factor loadings of all items were higher than 0.4 which met the minimum criterion. This sub-dimension had an eigenvalue of 3.252 and a KMO of 0.767, which signaled the appropriateness of the factor analysis. The value of 1312.414 for Bartlett's test of sphericity showed a correlation within a correlation matrix and was statistically significant ($P < 0.05$). Since all items were correlated to each other and all

values met the minimum criteria, no item was removed at this stage. The final sub-construct for website design is social interaction design. The result of factor loadings was higher than 0.4 and the eigenvalue of 3.654 indicated a good factor loading. KMO was 0.875, showing the appropriateness of factor analysis. Bartlett's test was 1312.414 with a significance of $P < 0.05$. All values identified here met the minimum criteria. In this stage, therefore, none of the items was deleted.

Service outcome, the next construct, was divided into two sub-dimensions, challenge and value, in line with the literature review. Challenge had a reliability coefficient of 0.894, indicating good internal consistency of all items. There were four items with factor loadings ranging from 0.731 to 0.930. This sub-construct had an eigenvalue of 3.058, which was greater than 1.00. KMO was 0.805, indicating good factor analysis. The value of chi-square was 1,143.875, revealing a correlation matrix with statistical significance ($P < 0.05$). Value, the second sub-dimension, had a high alpha coefficient score of 0.913, which showed consistency of all items. The eigenvalue was 3.7280 with a KMO of 0.856. Factor loadings of all items ranged from 0.827 to 0.894, indicating good factor loading. The value of chi-square was 1,410.123, showing a correlation matrix with statistical significance ($P < 0.05$). According to these results, none of the items was deleted at this stage.

The last construct of this study is loyalty. Attitudinal loyalty had an alpha coefficient of 0.784, higher than the minimum criterion. Factor analysis for all items of attitudinal loyalty had scores ranging from 0.718 to 0.900. The KMO was 0.710, indicating the appropriateness of the factor analysis. The eigenvalue of attitudinal loyalty was

2.434. Bartlett's test of sphericity was 521.501 and significant ($P < 0.05$). This means that correlations exist among variables. Based on this result, no item was deleted. For behavioral loyalty, the alpha coefficient was 0.782, which is considered acceptable and satisfactory. The eigenvalue was 2.111, which is greater than 1. The KMO was 0.631, showing the appropriateness of the factor

analysis. The value of Bartlett's test was 429.187, indicating the overall significance of all correlations ($P < 0.05$). The factor loading of components was ranked between 0.728 and 0.906, which is higher than the minimum score. Thus, none of the behavioral loyalty items was deleted at this stage. Table 2 indicates the results of factor loadings for website design, service outcome, and loyalty constructs.

Table 2. Exploratory factor analysis of website design, service outcome, and loyalty (n = 400)

Items	Factor loadings	Eigenvalue	Variance explained	KMO	Bartlett's test: Chi-square	Sig.
Website design						
<i>Visual Website Design</i>		3.088	51.474	.722	843.172	.00
VWD1	.494					
VWD2	.795					
VWD3	.761					
VWD4	.730					
VWD5	.760					
VWD6	.724					
<i>Content Design</i>		3.252	65.046	.767	982.345	.00
CD1	.746					
CD2	.830					
CD3	.808					
CD4	.865					
CD5	.779					
<i>Social Interaction Design</i>		3.654	73.085	.875	1,312.414	.00
SID1	.798					
SID2	.891					
SID3	.868					
SID4	.904					
SID5	.809					
Service outcome						
<i>Challenge</i>		3.058	76.459	.805	1,143.875	.00
CHA1	.731					
CHA2	.895					
CHA3	.930					
CHA4	.926					

Items	Factor loadings	Eigenvalue	Variance explained	KMO	Bartlett's test: Chi-square	Sig.
Website design						
<i>Value</i>		3.728	74.557	.856	1,410.123	.00
VAL1	.827					
VAL2	.871					
VAL3	.864					
VAL4	.859					
VAL5	.894					
Loyalty						
<i>Attitudinal Loyalty</i>		2.434	60.860	.710	521.501	.00
ATL1	.718					
ATL2	.900					
ATL3	.816					
ATL4	.667					
<i>Behavioral Loyalty</i>		2.111	70.375	.631	429.187	.00
BEL1	.728					
BEL2	.906					
BEL3	.872					

From the EFA, the proposed conceptual framework of this paper is identified in figure 1 below.

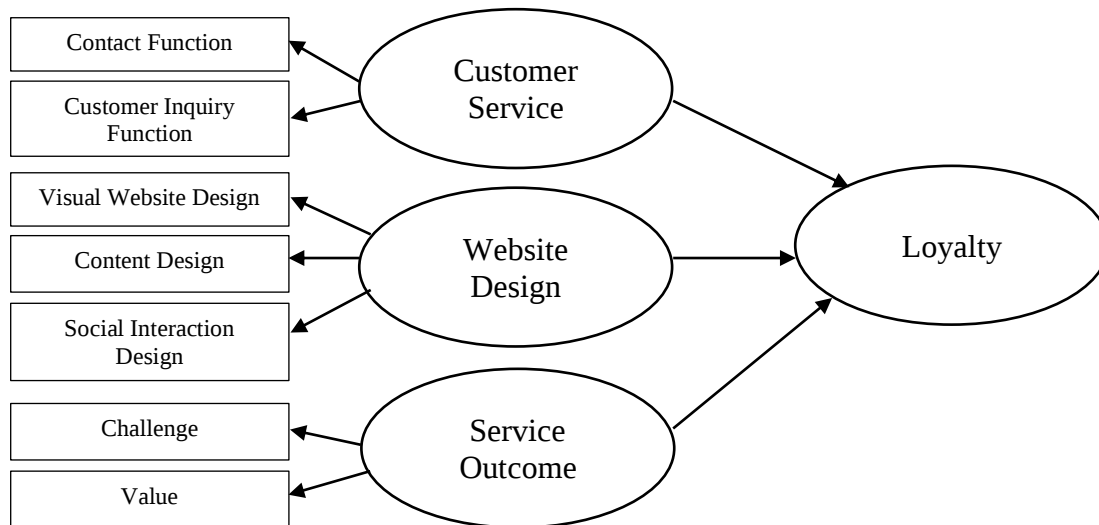


Figure 1: A conceptual framework of factors influencing loyalty to an online running event

DISCUSSION

The results of this study affirm that to evaluate participants' loyalty to online running events, multi-dimensional factors including input (customer service), process (website design), and output (service outcome) must be assessed. The measurement scales developed by Alexandris et al. (2017), who studied event quality and loyalty among runners, supported this paper's findings. According to the results for content validity, reliability, and EFA of the proposed framework, customer service suggests two constructs: contact function and customer inquiry function. This result is supported by Rahi et al. (2017), who studied customer service in online banking. In their framework, customer service was derived from reliability, personalized service, and fast response to customer inquiries. The authors also suggested that customer service had a relationship with customer loyalty. The researcher found that the website design for this paper had three sub-dimensions: visual website design, content design, and social interaction design, which was supported by previous scholars. According to Blanco et al. (2010), visual and content information are very important when designing a website for selling products online. Visual and textual information enhances customers' recognition and knowledge of the product. The appearance of pictures and text makes customers easily remember the brand, which leads to patronage intention (Zhang et al., 2021). The work of Varela et al. (2013) supports that color and font are key factors influencing the visual appeal of website design. Social interaction design is part of the website design dimension because it connects customers to customers and business to customers. The third dimension, service outcome, was put in this measurement as it evaluated after-service delivery. This dimension

was formed by two components, competition (challenge) and customer experience during the event (value) (Romiti & Sarti, 2016). Challenge, the first sub-dimension of service outcome, can be explained by competition characteristics of participants, the performance of participants, and effort of participants toward those sport. This competitive nature motivates participants to engage with a sporting event (Gillett & Kelly, 2006). In the sports tourism industry, this component is considered an important factor influencing the intention to return and the loyalty of sport tourists (David & Packianathan, 2008). The second outcome, value, is explained using utilitarian and hedonic fields (Babin et al., 1994). Value can be evaluated based on the trade-off between what is received and what is given (Zeithaml, 1988). The measure of value has a positive effect on behavioral intention, especially re-visitation in the sport context (Moreno et al., 2015).

CONCLUSION

The results propose a measurement construct assessing the impact of online running event factors on participants' loyalty. Loyalty in this measurement included both attitudinal and behavioral loyalty. This is because evaluating both types of loyalty can assess true loyalty. The result of EFA confirmed previous studies, showing that attitudinal loyalty and behavioral loyalty should be tested at the same time to evaluate true relationship loyalty (Dick & Basu, 1994; Hashemi, 2013; Yang, 2015). The framework of Schijns et al. (2016) also noted that to evaluate service quality, behavioral and attitudinal loyalty need to be tested to enhance customers' repurchase intention and attitude towards sport service. Therefore, attitudinal and behavioral loyalty have been included in this measurement.

This work provides a theoretical contribution to sport event literature by examining components of online event quality that influence participants' loyalty. The developed measurement has useful implications for organizers who conduct online running events. Loyalty to an online running event depends on the quality of service provided by the organizer, the effectiveness and usefulness of the website, and the outcome received by participants. This work has important implications for running event organizers to allocate necessary resources appropriately to create loyalty among online participants. Future research can apply this conceptual framework to other online sports activities. Variables selected in this study may not reflect the different characteristics of each sport. Thus, applying specific sport variables may be necessary to assess participants' loyalty to a particular sports activity.

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