CRITICAL FACTORS OF ONLINE INTERNATIONAL RUNNING EVENT INFLUENCING PARTICIPANTS BEHAVIORS

By
MISS Nalin SIMASATHIANSOPHON

A Thesis Submitted in Partial Fulfillment of the Requirements
for Doctor of Philosophy INTERNATIONAL BUSINESS (INTERNATIONAL PROGRAM)
Department of INTERNATIONAL BUSINESS
Graduate School, Silpakorn University
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โดย
นางสาวนลิน สีมะเสถียรโสภณ

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By	MISS Nalin SIMASATHIANSOPHON
Field of Study	INTERNATIONAL BUSINESS (INTERNATIONAL PROGRAM)
Advisor	Assistant Professor Dr. Chalermporn Siriwichai
Co advisor	Dr. Nethchanok Riddhagni

Graduate School Silpakorn University in Partial Fulfillment of the Requirements for the Doctor of Philosophy

.....Dean of graduate school
(Associate Professor Jurairat Nunthanid, Ph.D.)

Approved by

.....Chair person
(Assistant Professor Dr. Nantarat Tangvitoontham)

.....Advisor
(Assistant Professor Dr. Chalermporn Siriwichai)

.....Co advisor
(Dr. Nethchanok Riddhagni)

.....Committee
(Assistant Professor Dr. Jantima Banjongprasert)

.....External Examiner
(Assistant Professor Dr. Krongthong Khairiree)

59502901 : Major INTERNATIONAL BUSINESS (INTERNATIONAL PROGRAM)
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MISS NALIN SIMASATHIANSOPHON : CRITICAL FACTORS OF ONLINE INTERNATIONAL RUNNING EVENT INFLUENCING PARTICIPANTS BEHAVIORS THESIS ADVISOR : ASSISTANT PROFESSOR DR. CHALERMPORN SIRIWICHAI

Online running event becomes the new trend emerging around the world after the COVID-19 pandemic. This virtual sport event has changed behaviors of both participants and organizers. Instead of providing the physical running event, the running organizers utilize digital technologies to conduct online running events. In this case, application and website are used as medium platforms for managing the running event, such as registration and record the results. Participants can join the online running event anywhere. They only need a smart watch or mobile phone to record real-time results on the application or website. Since this is the new trend, it is worth for studying which factors affecting runners' behavioral changes. This study, therefore, aims to explore critical factors of online international running event that can influence participants behaviors based on the concept of service quality.

Mixed methods research is used to obtain data from both organizers and participants. For qualitative research method, two key informants are selected using purposive sampling methods. The semi-structure interview questions are used to identify factors associated with organizing online running event. Content analysis was employed for qualitative data. For quantitative method, 400 samples are selected using multi-stage random sampling method. The questionnaire is designed using five-point Likert scale to assess the effect of the online international running event factors on satisfaction and loyalty. A structure equation model was used after the questionnaire was distributed.

The qualitative result reveal that to organize online international running event, four critical factors including customer service, website design, service outcome, and success of the event need to be considered. These critical factors are, later, used to create conceptual framework and set the hypotheses of this study. After the hypotheses are tested in the quantitative research method, the results indicate that customer service,

website design, and service outcome influence participants satisfaction only when it mediates by personality traits. In other words, different types of personality traits satisfy customer service, website design, and service outcome differently. This satisfaction, in turn, directly affects the level of loyalty. Therefore, running event organizers need to pay attention on the critical factors as well as personality traits of participants when conducting an online international running event.

This research contributes to many aspects. This new measurement model can help marketer to identify new sport consumer behaviors, create loyalty campaign and achieve high service quality. Regarding the psychological context, personality traits are confirmed, in a context of online running event, as a significant effect on satisfaction. Running event organizers can apply the results to match participants' expectation and create successful events. As a result, participants will receive a high service quality from event organizers.

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Chapter 1
Introduction

1.1 Research Background

Running event is one of sporting event classified under the track event competition. Running as well as walking events are part of this type of competition with a variety of distances and courses (Britannica, 2019). It has been among the popular events organized around the world. Hufton, Pickering, and Wadsworth (2011) suggested that these track events can be divided into three categories: a shortest distance race (sprint race, 100-400 meters), a long-distance race (3,000 – 10,000 meters), and a marathon race (42.195 kilometers). Since marathon has been presented in the 1896 Olympic Event, it has been growing significantly in a past few years.

Andersen (2020) stated that the running event has grown by 57% over the past 10 years, with number of participants continue increasing since 2006, approximately 5 to 7.9 million participants per year. In year 2019, there was a growing trend of traveling to participate in a running event in different locations or countries. For marathons, the number of foreigners traveling to join a race in different places was increased from 0.2% to 3.5% (Andersen, 2020). It is a good chance for the government of a particular country to stimulate economic from this sport tourism trend. Participants, who are either locals or foreigners, tend to travel to destination of interest while consume local products or services. This activity is defined as part of sport tourism, in which a person travels to experience or engage in or viewing sport related activities. The trend of sport tourism has emerged since 1996 when the Olympic games that held in Atlanta had been promoted as a tourist attraction. In 2010, revenues generating from sport tourism had reached $6 billion. Among this trend, hosting a sport mega-event such as the FIFA World Cup would generate country's revenues as well as stimulate economic growth (Tourism Authority of Thailand, 2012). In Thailand, the number of revenues generated by running events can amount to approximate THB1.7 Billion, with around 1,800 running events will be organized during 2020 (KasikornResearchCenter, 2020). These sport tourisms can be generally divided into two types: sport event tourism and active sport tourism. Sport event tourists, so called spectators, refers to tourists who participate

in hallmark events such as the Olympic games and the World Cup soccer (football) championships. This includes professional sport teams and college football tournaments. On the other hands, active sport tourists, so called participants, tend to be male with college educated level. This group of sport tourists likes to travel in long distances to participate in their favorite sports and, more often, engage until retirement (Ross, 2001). These participants can be professional or amateur athletes who compete in sport events, as well as leisure participants who take part in sport events. Romiti and Sarti (2016) stated that running event is classified under active sport tourism, in which participants tend to travel in long distances in order to join their favorite event organized by their favorite organizer and location. Furthermore, the purpose of participants has continuously changed from seeking for achievement to more leisure experience.

Although in 2019 the running event industry seemed to boom, the outbreak of COVID-19 pandemic in early 2020 has changed runners' behavior to more digital aspects. Traditionally, what you need in a marathon is just a good running shoe. During the COVID-19 period, however, the physical running events has been cancelled or at least postponed and, consequently, lead to a decline in revenue for those who organized and sponsored the events. Due to this concern, running event organizers has been forced to conduct an online running event, so called virtual running event, rather than waiting for the unclear future of organizing physical one. The good thing of online running event is that it allows runners taking a challenge and complete the race whenever and wherever they like. This can be a local route near their house or on a treadmill. The runners can start the race at night or early morning and even at the same time with their friends (Popupraces, 2020). What the runners simply needed is that a tracker device, and application or website which can track and record their running performance. Meanwhile, the organizers only provide a stable web-based platform for registration, storing data, giving a reward, and managing community. The popular virtual running event during the pandemic is, for instance, the London Marathon 2020, where the elite runners will compete in a limited and enclosed course in person on October 4th while non elite runners can complete 26.2 miles anywhere in the world within 24 hours on the same date. Another example is The Virtual New York City Marathon, where there are two entry tiers, one is a free option with no medal and another tier has a medal but

costs $50 for NYRR members and $60 for non-members (SportsTravelInternational, 2020).

The change in physical event towards online event has created runners' behavioral changes. Traditionally, a physical service concept has been measured by SERVQUAL model established by Zeithaml, Berry, and Parasuraman (1996). In this model, service quality has been described as the degree in which a service meets or exceeds customer expectations. Consumer considers tangible elements, reliability, responsiveness, assurance and empathy while evaluates these elements using gap of perception between real experience and expectations about service (Parasuraman, Zeithaml, & Berry, 1988; Gronroos, 1984). This exceeded expectation has been considered important for customer loyalty. The psychologists in marketing field have proposed that there are three dimensions of behavior: cognitive, affective, and conative (Oliver, 1999). A cognitive response concerns the evaluation of services' perspective, an effective response refers to satisfaction, and a conative response concerns the behavioral intention. A behavioral intention (a conative loyalty) has been defined as a branding of the service which shown in terms of commitment to purchase or buy (actual loyalty). In business environment, the ability of offer high-quality services has become a critical issue for an organization. It can promote customer satisfaction and loyalty, which enhances the profitability of the service provider (Aicher, Karadakis, & Eddosary, 2015). However, the SERVQUAL concept has not been considered universal as the dimension of service depends on the type of service examined. For instance, Getz, O'Neill and Carlsen (2001) suggested that it was not appropriate for measuring service quality in an entertainment industry, where it may be useful to include the aesthetic dimension of a service instead. Although a SERVQUAL model can be used to assess service quality, relatively few studies have attempted to measure service quality in online sports events context (Ko, Zhang, Cattani, & Pastore, 2011). Therefore, the current study examines how does service quality in running event affect consumer behaviors, and, in turn, lead to loyalty.

Lately, service quality has be applied in sporting event. Research on sport event context has focused on perceived service quality of spectators at major sporting events. However, there has been less scholar exploring online sporting event as it is new practice after the pandemic emerged. In the literature on sports events, factors important

to evaluate perceived service quality are accessibility, tangibles and staff. For instance, Theodorakis et al. (2001) pointed out that service quality affected spectators' satisfaction. Accessibility and tangibles played an important role to enhance spectators' satisfaction. Calabuig et al. (2016), who attempted to measure spectators perceived quality at a mega-sporting event using the EVENTQUAL model, also acknowledged four dimensions of perceived quality of sporting event including accessibility, staff, tangibles, and complementary services. Thus, tangible and accessibility of the sports events are two main factors evaluating service quality in sporting event context. As this research focus on 'online running event', tangible and accessibility need to be adjusted with 'online' context. Therefore, it is worth to identify factors associated with the online international running event.

This study, therefore, aims to explore factors of online international running event. To do this, a fuller understanding of how sports event organizers conduct the running event and provide service to participants via online platform needs to be identify. Thus, qualitative research method is implemented to find out these factors. According to sport decision-making sequence of Funk (2008), these external factors, which in this study are factors of online international running event, are influenced by internal forces, personality. So, the personality traits need to be included as it influences the way participants decide to join the running event. Moreover, these personality traits, later on, influence psychological and behavioral outcomes. To evaluate this sport decision-making process, the quantitative research method has been implemented in this study. The results revealed how participants decide to participate in an online running event and what are the outcomes of their decision-making. Focusing on online sports events can help develop more robust theories of service quality in contemporary sporting event, as well as potentially informing future growth of online events in sport industry.

1.2 Research Questions

1.2.1 What are critical factors of online international running event?

1.2.2 How do critical factors influence on participants satisfaction?

1.2.3 How do personality traits mediate relationship between critical factors and participants satisfaction?

1.2.4 How do participants satisfaction influence loyalty?

1.3 Research Objectives

This research aims to explore critical factors of online international running event influencing participants behaviors. The objectives of this research are as follow.

1.3.1 To examine critical factors associated with online international running event

1.3.2 To analyze critical factors of online international running event that influence on participants satisfaction

1.3.3 To investigate personality traits as mediator linking relationship between critical factors and participants satisfaction

1.3.4 To identify effect of participants satisfaction on loyalty

1.4 Scope and Limitation

The scope and limitation of this research consist of the following elements.

1.4.1 Population were event organizers who conducting running event via online platform and runners who participate in an online international running events.

1.4.2 Data were collected using online survey via online running communities on Facebook page as it was possible to collect data from various nationalities at the same time. In the online survey, the respondents who answer 'No' for the question "Did you attend the online international running event before?" will not include in this study.

1.4.3 Variables included in this research consist of: 1) independent variables: customer service; website design; and service outcome, 2) dependent variables: participants satisfaction and loyalty, and 3) mediator variable: personality traits.

1.4.4 Timeframe of conducting this research starts from January 2021 – April 2022 due to the COVID-19 affected on sampling method and data collection.

1.5 Conceptual Framework

The conceptual framework of this research was the result of the qualitative research method. There are four factors associated with organizing online running event including customer service, website design, service outcome, and success of the event. Sport decision-making concept of Funk (2008) was integrated in this study to identify why participants join the online running event (see chapter 2). According to the four factors found, three of them which included customer service, website design, and

service outcome were considered as an inputs phase. While runners evaluate the external environments when participating in online running event during the inputs phase, they also use their internal environments, personality traits, to judge the quality of the running event. The process of using internal environments to assess the event is called an internal processing phase. After participants finish the second phase, they can then identify whether the online running event can provide the outputs they are looking for. This last phase, the outputs phase, is considered the success of the event for the running event organizers viewpoint and it is the fourth factor that has been found in the qualitative research method. Therefore, three factors of online running event included customer service, website design, and service outcome were considered as independent variables. The personality traits were studied as a mediator that drive the participants behavior. Satisfaction was considered as the dependent variable influencing on participants' loyalty. Figure 1 proposed the conceptual framework of this research.

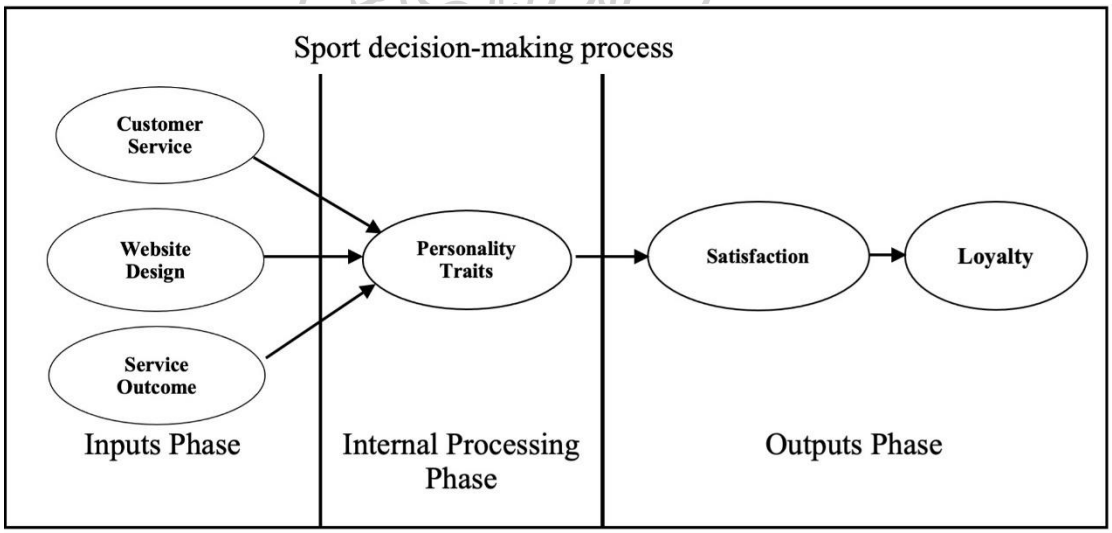

Figure 1 Proposed conceptual framework

1.6 Hypotheses

This research aims to explore critical factors of online international running event influencing participants behaviors. Since online running event is new concept in sport event. It is crucial to identify critical factors dealing with organizing an online international running event and to measure how those factors influence on participants satisfaction and loyalty.

1.6.1 Finding critical factors of online international running event

To explore the critical factors of online international running event, the literature about service quality and sport event have been reviewed. Brady and Cronin (2001) suggested that the service quality consisted of three-constructs relating with staff interaction, physical environment, and outcome. For sport events, Calabuig-Moreno et al. (2016) also confirmed that tangibles, staff, complementary service and accessibility were main factors influencing spectators' perception of service quality. Moreover, Armbrecht (2019) commented that the value dimensions (i.e. fun) and challenge and excitement dimension (i.e. hedonic and eudaimonic aspects) should be included when evaluating perceived quality of participants at running event. From the literature review, it is obvious that tangibles or physical environment, staff, accessibility, value, and challenge dimensions are factors used to assess event quality. Therefore, it has been questioned that what are critical factors of online international running events?

1.6.2 Measuring critical factors of online international running event

The critical factors of online international running event, revealed from qualitative research method, consisted of customer service, website design, and service outcome. Literature review showed the previous research based on each factor.

1.6.2.1 Customer service, the first factor, focuses on participants' experiences received when using an online international running event website. Hashemi (2013) suggested that the good customer service can increase satisfaction level of participants. This statement also supported by the study of Park, Hsieh, and Miller (2018) that the positive result of customer service will increase satisfaction level of runners who participating in a marathon event. It was hypothesized that customer service of online international running event positively influences participants satisfaction.

1.6.2.2 Website design refers to the design of an online international running event platform. There are three elements for evaluating this factor: visual design, content design, and social design. Visual design identifies the balance of graphics, appearance, layout of webpage, and attractive color. It can also increase the customers satisfaction to a website (Cyr, Head, Larios, & Pan, 2009; Karimov, Brengman, & Van Hove, 2011). Content design relates to the information provided on the website in both text and graphic form. Social design refers to website interface via

interactive tools, such as social media application, search engine optimization (SEO), telephone, and Email that help participants contact with other runners or an event organizer. Kharouf et al. (2020b) suggested that a good content design can impose positive satisfaction to customers. Thus, the hypothesis was website design of online international running event positively influences participants satisfaction.

1.6.2.3 Service outcome indicates the result of service delivering to participants. Base on this description, Romiti and Sarti (2016) explained that the dimensions of this service outcome is linked to the level of game competition or challenge due to the fact that it can influence positive satisfaction and, as a result, influence the re-participation intention. In an active sport, another outcome of the service is evaluated by value which is a trade-off between what is received and what is given (V. Zeithaml, 1988). In other words, value is a gap between the perceived quality and perceived sacrifice. The higher the gap, the higher the perceived value. In this research, challenge of a race and value that participants perceive will be tested. Therefore, it has be hypothesized as service outcome of online international running event positively influences participants satisfaction

1.6.3 Mediating effect of personality traits

In sport field, personality traits have been used to explain participants behavior toward each type of sport. According to Funk, Alexandris & McDonald (2016), five characteristics of personality traits include openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability. In this research, personality traits will be studied as mediator linking the relationship between three online international running event factors: customer service, website design, and service outcome, and participants satisfaction. For previous studies, customer service – first factor – and personality traits tend to be studied together in explaining how personality traits of a staff who provide customer service affect customer satisfaction or a service performance (Herzig, Shmueli-Scheuer, Sandbank, & Konopnicki, 2017; Kotzé & Lamb, 2012). However, in this research, the other edge of customer service will be studied. Personality of customer will be examined to explain whether the satisfaction toward customer service of online international running event will change according to personality traits of participants. Second factor, website design, plays a vital role in online running event due to its ‘online’ nature. Although there is an

evidence that personalize website appearance can increase audience satisfaction (Kosinski, Bachrach, Kohli, Stillwell, & Graepel, 2014), there is less evidence to confirm the mediating effect of relationship between website design and participants satisfaction. Service outcome, third factor, include challenge and value participants received from service. Hallmann and Wicker (2012) stated that different groups of runners have different satisfaction level over the service outcome. To the best of author's knowledge, less research explicitly answer the question that whether personality traits can influence the relationship between service outcome and satisfaction. Therefore, it can be hypothesized that personality traits mediate the relationship between customer service, website design, service outcome and participants satisfaction.

1.6.4 Satisfaction effect on loyalty

Cristobal (2007) stated that information quality and user-friendliness can increase level of consumer satisfaction towards website. The author suggested that the higher levels of perceived quality in website service, the more user will satisfy with the website. When an individual continuously uses the service from the website, it would strengthen the chance that those customers will become loyalty to the firm. At the same time, if the firm can offer the higher service than other competitors, it can prevent customers' withdrawal from the business. In this case, satisfaction becomes a significant key success factor for a firm (Luarn & Lin, 2003). Thus, we can say that fulfilling user's satisfaction can increase the future repeat purchasing intentions and increase customer visit frequency as well. Moreover, theory of loyalty will be tested here in this research but in a more concrete level regarding the customer retention concept in marketing field. In this concept, attitudinal and behavioral loyalty of participants who join an online international running event will be analyzed as well as re-participation intention and refer to others will also be focused. Therefore, the hypothesis was satisfaction on online international running event positively influences participants loyalty.

1.7 Significant of The Study

1.7.1 Although sports events have been studied for many years, the running event measurement scale invented by Armbrecht (2019) was tested with physical

running events since 2019 before the pandemic hit the world. Thus, it is not update enough to measure participants who join online running event (no physical contact between running event organizers and participants). This means the current measurements cannot apply as it evaluated service staff and physical venue of the event. Calabuig-Moreno et al. (2016) pointed out that it is necessary for a sport organization to have a valid and reliable scales to make a good decision. By the author knowledge so far, there are a few scales measuring running events available for organizers. Even if there were, it had been tested on other type of sports, such as football, basketball, tennis, volleyball, etc. which based on spectators' perception, rather than participants who play that sport. Furthermore, Tsitskari et al. (2006) also mentioned that service quality in sport and recreation is a multi-dimensional structure. Thus, it seems to vary from country to country and in different sport sectors. Therefore, it is worth to explore new aspect of online running event and its factors that may alter consumers behavior in online running event field.

1.7.2 Previous research has not yet examined how personality traits influence the relationship between online running event factors and participants satisfaction. Even so, they did not examine personality traits in online event context (Haslam, Whelan, & Bastian, 2009). Thus, it is a good opportunity to generate the new aspects of online consumer behavior for psychological perspective.

1.7.3 Although it has been some theoretically supported in marketing literature that loyalty was measured in sport industry, it often assesses customers intention or word-of-mouth or repeat buying of sport products and services as separate identity (Schijns, Caniëls, & Conté, 2016; Tsoukatos & Koulentaki, 2013). This study focused on both behavioral and attitudinal loyalty of participants. This means that to be a loyalty customer, they need to have positive attitude as well as behave loyalty. These aspects of loyalty can help organizers to arrange high quality of online running event to retain participants and increase profit (Aicher, Karadakis, & Eddosary, 2015).

1.8 Research Contributions

This research contributes to both academics and practitioners. The results increase understanding about running event concept towards the digital world. The

contributions are divided into two types: academic contributions and practiced contributions.

1.8.1 Academic contributions

1.8.1.1 This research created the originality of factors influencing online running event quality in service marketing concept. These factors, which consisted of customer service, website design, and service outcome can enhance understanding of participants behavior who join online international running event.

1.8.1.2 The research formed the new measurement model for assessing online running event quality. This new model confirmed that both behavioral and attitudinal loyalty should be assessed at the same time when evaluating participants loyalty on an online running event.

1.8.1.3 The nature of 'online' running events indicates that the new measurement model can be used to assess participants behavior in any online international running events. As its name, online running events are considered to operate internationally since the organizers promote the event via the Internet where anyone can access it. With multi-stage random sampling method, therefore, this research generalized the results for marketers who want to apply this measurement model with a particular online running event.

1.8.1.4 The study generated the originality of mediating effect of personality traits on the online sport event context. With different traits, participants satisfied with online running event factors (customer service, website design, and service outcome) differently. Thus, it enhanced in-depth knowledge in psychological concept that personality traits of participants play a vital role when evaluating the effect of online running event factors on satisfaction.

1.8.2 Practiced contributions

1.8.2.1 Running organizers can use the valid and reliable scales for measuring quality of the online running event. As a result, it would be set as a new online running event standard for achieving the participants' expectation and satisfaction.

1.8.2.2 Running organizers can use the result of this research to create strategic planning, build marketing campaigns, and develop loyalty program for generating revenue and enhance participants value.

1.8.2.3 Participants or runners feel pleasure with high quality of the event. They will also receive high service standard for what they have paid for as well as have a good experience with the online running event they have joined.

1.9 Definitions

1.9.1 Critical factors refer to factors that contribute to participants satisfaction and, as a result, lead to the success of online international running event. These factors included customer service, website design, and service outcome.

1.9.2 Customer service refers to service that participants received from participating in online running event.

1.9.3 Website design is a website environment including a visual design, content design and social design of the online running event website.

1.9.4 Service outcome is defined as consequence of service delivering to participants. It encompasses challenge and value participants received from the event.

1.9.5 Loyalty refers to attitudinal loyalty, behavioral loyalty, re-participation intention, and refer to others.

1.9.6 Personality traits refers to the differences of behavior, thinking, and feeling of each runner toward the online international running event that they participated.

1.9.7 Online international running event refers to running event that organized virtually through international standardized online running platform, which in this study consisted of Event Pop website and Map My Fitness application

1.9.8 Participants refer to runners who participate in an online international running event.

1.9.9 Running event organizers means organizers who conduct running event via international standardized online running platform.

Chapter 2
Literature Review

This chapter encompasses sport behavior literatures and event concepts. The first section identifies sport and event consumption. The second section deals with customer loyalty concept and its influences on customer behaviors. The third section relates with service quality theory and how it applies with sport and running context. The fourth section indicates antecedences of online running event. This includes customer service, website design, and service outcome. Section five expresses personality traits theories and how it mediates online running event factors and satisfaction. The last section describes satisfaction concept and its influence on customer loyalty.

2.1 Sport and Event Consumption

Sport consumer behavior is defined as experiences sport that consumers received from participating in a sport event. It mirrors a satisfaction and benefits consumer received from experiencing that sport event. Time, money, and effort spent on participating in sport and events have been categorized as behavioral outcomes of this holistic process. According to Funk (2008), time, money and effort spent by an individual have strong connected with consumption activities, such as money and time spent on training for a marathon will lead to a high effort during the running period. Because of these efforts, it is a duty of sport and event marketers to support consumers' decision-making. In this sense, determining types of individuals purchasing a specific running shoe, for instance, might help marketers satisfy benefits and needs for each segmentation. By obtaining information, thus, marketers can serve their consumers well. Previous research reveals that each type of individuals perceived consumptive experiences differently (Babin, Darden, & Griffin, 1994). This result is true in the case of sport consumption due to the unique nature of sport and events provides different experiences to consumers in terms of its value and meaning.

2.1.1 Characteristics of sport products, events, and services

The unique characteristics of sport products, events, and services have been identified under sport marketing context developed by Mullin, Hardy, and Sutton (2014) and Shilbury et al. (2020). The authors explained 10 aspects of different characteristics of sport products, events, and services comparing to the traditional marketing.

2.1.1.1 Sport is intangible and subjective nature. It is hard for marketer to fulfill a high consumer satisfaction.

2.1.1.2 Sport consumers normally place themselves as experts of a sport activity they are participating.

2.1.1.3 Sport is consumed simultaneously at the time they are produced. In running event, participants create a competition when they are participating that event. If the race is cancelled, the service will not be produced or consumed.

2.1.1.4 Demands and supply of sports are fluctuated. It can be determined by various factors, such as outdoor sports may be organized during summer while winter sports have to be conducted during winter.

2.1.1.5 Sport organizations must cooperate with all stakeholders for the league success while compete for being a leader of the industry.

2.1.1.6 Sport provides social facilitation. Runners and bikers, for instance, often participate in groups. It creates a chance for socialization.

2.1.1.7 Sport often yields an uncertain result which give a challenge to those who are participating. It provides a sense of competition in which the results maybe different any time they join.

2.1.1.8 Sport cannot be controlled by marketers. As a sense of service, it depends on many factors, such as market strategies designed by manager, standard rules and regulation of that sport, etc.

2.1.1.9 Sport experience relies on many elements that may not related to the core product, such as promotions, advertising, and other activities. Marketers, sometime, try to sell these extended core products rather than the competition itself.

2.1.1.10 Sport is both a consumer and industrial products. A football game, for example, is considered as industrial since it is consumed by spectators,

meanwhile a marathon is said to be an individual sport due to it is consumed by participants.

These ten unique aspects highlight the need for understanding marketing in sport event industry. It provides opportunities for many stakeholders to get benefit from marketing actions. For instance, host destinations can promote city image and stimulate the economy. Tour agents can reach new segmentation of travelers. Governments can build community identification and create jobs. Sponsors build brand recognition, launch new products or services. Lastly, sport organizations can use sport events to promote sport products and services.

2.1.2 Sport decision-making

Sport decision making reveals how external forces influences internal forces, which in turn, lead to output, consumer behavior. According to D. C. Funk (2008, p. 31), there are three phases of sport and event decision-making sequence. The first is inputs phase representing external forces, such as sociological influences and marketing activities that used to evaluate a certain sport object. The second phase, internal processing, deals with internal forces, such as motivation, perception, learning, memory, and personality that influence sport consumption experience in the output phase. The last phase represents outputs of the decision-making, such as psychological and behavioral outcomes. Figure 2 indicates the sequence of sport decision-making.

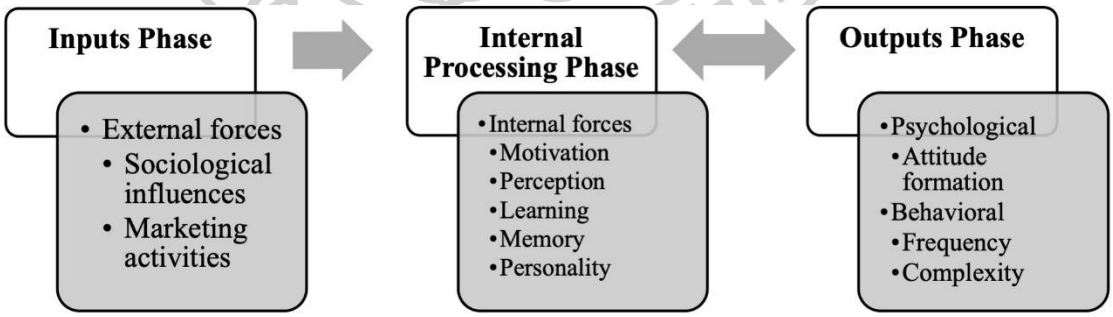

Figure 2 Sport decision-making sequence
Source: Funk (2008, p. 31)

From the figure above, the inputs phase explains how an individual perceives a product or service in a desirable outcome. External forces or so-called environmental input consists of two categories: information received from sport

organization's marketing activities and sociological influences which includes information and recommendations a consumer receives from family, neighbors, friends, and colleagues. The internal processing phase focuses on internal forces, such as motivation, perception, learning, memory, and personality. In fact, it encompasses activities ranking from need recognition, information search before purchasing, and evaluation of choices. As the term of 'process' comes in this phase, it represents how people assess external inputs and apply internal forces to conduct the evaluation. The figure 3 describes how this process works based on the concept that sport consumer behavior emerged as a result of processing internal inputs (psychological and personal forces) and external inputs (environmental force).

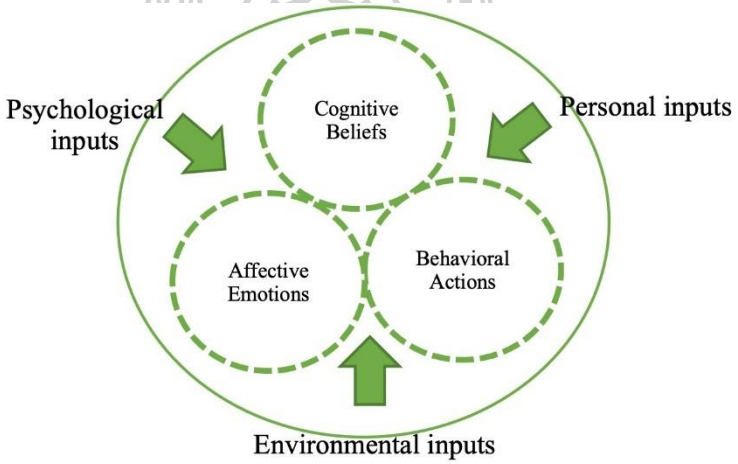

Figure 3 Internal processing box
Source: Funk (2008, p. 33)

The figure is called a 'mental box' which are evaluating responses (cognitive, affective, and behavioral) to external and internal inputs. In fact, those attitudinal gears have been activated and rotated by internal processing, which in turn, determined by environmental, psychological, and personal inputs evaluation. Hence, the evaluation process lures by existing knowledge to evaluate degree of engagement in a sport activity whether it can provide the desirable outcomes.

The last phase is output phase, behavioral and psychological outcomes. The psychological outcomes encompass three main categories: cognitive, effective, and behavioral intent as mentioned in 'mental box' above. Cognitive outcomes refer to evaluative responses comprising thoughts an individual has over a sport object, and it

is a knowledge-based beliefs about whether sport experience can provide benefits and needs to consumers (D. Funk, Haugtvedt, & Howard, 2000; Gladden & Funk, 2002). Affective outcomes involve feelings, emotions, or moods that a person experience from sport object. Unlike the cognitive outcomes, this type of evaluative response deals with emotion and can leave a positive affect to consumers when a desirable needs and benefits is met (Ajzen, 2001). The last element, behavioral intent, deals with the way people decide to engage with a sport activity (Ajzen, 2001). The current research suggested that knowledge beliefs have a strong relationship with feelings. The psychological outcomes, thus, represent how attitudes of an individual change when it affects feelings, and in turn influence behavioral intent and actual behavior (Ajzen & Fishbein, 2005). The behavioral outcomes, another element in the output phase, refers to the response of an individual have toward a sport object. It includes buying behavior, decision, and experience behavior after buying a sport product or service. Buying behavior can be determined by time and money spent on sport consumption activities. It can be consumed by both direct and indirect way, such as watching a football match from television and buying a team merchandise at the same time. Experience behavior after buying a sport product or service can be evaluated by service quality and satisfaction in which the needs are fulfilled by those benefits given by the sport activities (D. C. Funk, 2008).

In conclusion, the sport decision-making illustrates how an individual engages in sport consumption through a sequence of inputs, processes, and outputs phases. It shows how external interacts with internal forces to create psychological and behavioral outcomes. Furthermore, as seen in the figure 2, the double-headed arrow between outputs and internal processing shows how experience evaluation can serve as a guidance to future decisions on sport consumption activities. The sport decision-making sequence, therefore, is important since it explains why an individual select and continue to engage in a particular sport activity.

2.1.3 Running event

2.1.3.1 Running event definition

Running is categorized under the track events. These track events can also be separated into four groups: sprint or short distance races, middle distance races, long distance races, and hurdles and relay races. According to Carifta.com

(2022), the sprint races or short distance races, the first group, include 100-meter race, the final races in the track and field competition in the Olympic Games, 200-meter race, and the 400-meter race. The winners of these short distance races are the most respected athletes in the world. Middle distance races, the second group, combines many disciplines, such as 800-meter races, the 1,500-meter races and the 1-mile races. Unlike the short distance races that require a big muscle mass from the runners, the middle distance races less strength of the muscle. Instead, this kind of races require the endurance and tactics of runners. The third group is long distance races which combining 3,000-meter races, 5,000-meter races and 10,000-meter race. Similar to the middle distance races, strength is less important than endurance and tactics. The long distance races also include marathon races which has a distance of 42.195 kilometers or 26.219 miles. The marathon races are considered the most difficult long distance races organized by international sport federations, World Athletics. The last group, hurdles and relay races, are special type of the running race. The hurdles races are organized in which the athletes must jump over the obstacle to finish the line. This kind of race demands strength and speed of the runners while moving toward the next hurdles. The distances of the hurdles races are 100-meter and 400-meter hurdle races for women and 110-meter and 400-meter hurdle races for men. The relay races must play as a team. The first runner must run one distance with baton and hands over the baton to the second runner once they run to the finishing distance. The baton, however, must be handed in the identified area, or else the team cannot continue the race. Table 1 summarizes four types of track events.

Table 1 Types of track events

Types	**Descriptions**	**Distances**
Sprints or short distance	- Most popular races in the track events - It requires strength and speed of runners. - The winners are among the most respected athletes in the world.	1) 100-meter race 2) 200-meter race 3) 400-meter race
Middle distance	- It requires less strength, but more endurance and tactics.	1) 800-meter race 2) 1,500-meter race 3) 1 mile race

Table 1 Types of track events (Continue)

Types	Descriptions	Distances
Long distance	- It requires less strength, but more endurance and tactics.	1) 3,000-meter race 2) 5,000-meter race 3) 10,000-meter race 4) Marathon race (42.195 km. or 26.219 miles)
Hurdles and relay	- Hurdles: athletes need to jump over the obstacle - Relay: first athlete of the team needs to run in a particular distance while hands over the baton to the second athlete.	1) 4 x 100-meter race 2) 4 x 400-meter race

Source: Carifta.com (2022)

2.1.3.2 Reasons to participate in a running event

There are many reasons why people participate in running events. According to Hufton et al. (2011), one of the great reasons to participate in the first race is to increase motivation. Instead of going to the simple jogging, participating in running events put more courage for those first-time runners to achieve high. Seeing the race date marked on the calendar is a trigger that push first-time runners off the ground. Once they train harder, the expectation would increase and, hence, the adrenaline rush can booth their performance. This is where the first-time runners feel that they have achieved something that other peoples never have the courage to achieve. Another reason to participate in running events is to discovery oneself. The ability to push on and reach beyond the limit shows that a runner is determined and disciplined person. This is something that a runner can call on in difficult situations. Participating in the running events also provides the chance to meet other runners of all ages, shapes, and sizes. It is also a good opportunity to bring friends and family to cheer or, perhaps, join the race next time. The last reason is rewards achievement. Research shows that people who keen to compete tend to do much better, such as run faster, than those who has less intention to compete. However, they may want to achieve other rewards, such as visiting the place they wanted to go or to raise money for charity. These are the main reasons encouraging people to participate in the running events.

2.1.3.3 Race distances

As a first-time runner, starting with a short distance race is a good way to begin with. There are many popular race distances organized around the world. According to Hufton et al. (2011), these race distances include 5 kilometers, 10 kilometers, 21 kilometers (half-marathon), and 42.195 kilometers (marathon). Each race distance has its own popular season to organize. For instance, the 10 km races are often organized in summer, while marathon often take place all year round, particularly during spring and autumn seasons. Table 2 indicates the popular race distances and its frequency and season.

Table 2 Most popular running distances

Event	**Distance**	**Build-up**	**Average time to finish**	**Frequency and season**
Fun run	5 km.	6-12 weeks	25-40 minutes	Take place all year round
Mini marathon	10 km.	2-4 months	40 minutes – 1.15 hours	Take place most weeks of the year; more common in summer
Half-marathon	21 km.	4-6 months	1.35 – 3 hours	Often combined with big marathons; or one month before big marathons
Marathon	42.195 km.	1 year	3.30 – more than 6 hours	Take place all year round, but with spring and autumn peaks

Source: Hufton et al. (2011)

Another popular race distance among elite runners, not recommend for beginner, is the ultra-marathon. The distance for this kind of race is more than 42.195 km. Runners who join this distance tend to be those who already achieve the marathon races and want to reach beyond their physical and psychological limitation. Thus, it is a race distance that elite runners like to participate. One of the most popular ultra-marathon events in the world is Ultra Trail du Mont Blanc (UTMB)

in France where runners will experience the extraordinary scenery of Europe's highest mountain along the course of 170 km (Finn, 2021).

2.1.4 Online running event

The online races, or so called 'virtual races,' provide more flexibility and independence than the physical races. Brately (2020) mentioned that participants or runners can join an event anywhere and anytime they like. Currently, some of the top running events in the world have provided the virtual races as an alternative for those who do not want to travel so far away to participate in the physical event, such as New York City Virtual Marathon 2021. A virtual race has distance equivalent to the conventional running event, such as 5 km, 10 km, half-marathon, and full marathon. The differences between a physical race and a virtual race are that runners need to complete the race in their own time and way and no physical contact with staffs. After the race finish, runners post the race results online to a group of runners in which it will motivate and encourage others to complete with them.

2.2 Customer Loyalty

In early 1990s, loyalty concept was not yet distributed to marketing strategy, only satisfaction had been focused and aligned. During these years, the failure of using only satisfaction to maintain customers with the brand began to appear (T. O. Jones & Sasser, 1995). Marketing researchers realized that making customers satisfy with product and service could not keep them loyal with the brand. This is, perhaps, the beginning era of loyalty as 'a key value' to increase profit for a company. The customer loyalty concept will be described as follow.

2.2.1 Customer loyalty concept

Traditionally, loyalty had been explored under psychological aspect to differentiate its meaning from behavioral definitions, such as re-purchase behavior. Loyalty is defined as a deep commitment to repurchase product or service in the future even though there may be situations causing them to change their behaviors. It is a biased behavior of an individual expressed towards product or service received from a brand (Mellens, Dekimpe, & Steenkamp, 1996). Previous researcher has pointed out that there was a strong tie of loyalty relationship between customer and brand which put a significant effect to the brand (Mittal, William, & Baldasare, 1998). Regarding to

this traditional concept, however, loyal customers had been evaluated only from their behavior of re-purchase product/service of the brand, not brand-related information seeking. It recorded only what customers does, not a psychological meaning, such as attitudes toward the brand (Ishak & Abd. Ghani, 2013). The concept of customer loyalty had been advanced in 1975 when Fishbein and Ajzen (2005) developed theory of reasoned action indicating that attitudes was influencing customer behavior, and, thus, predicting people's behavioral intentions to perform that behavior.

In 1999, Oliver (1999) argued that concept of loyalty was moved as a pattern, from beliefs, to attitudes, to behavioral intention, and to real behavior. He mentioned that the concept of loyalty should be further analyzed to assess customer beliefs, affect, and intention. As explained in the sport decision-making sequence, outputs of decision-making had been described by both psychological and behavioral outcomes. In fact, customer loyalty occurs when an individual pass through the process of transforming information into beliefs and use beliefs as foundation for attitudes then commit to repeat a behavioral decision based on those attitudes. We can distinguish loyalty from repeat buying using an important element, commitment to buy (Ishak & Abd. Ghani, 2013). A customer with high loyalty tends to be less price sensitive and is willing to pay higher prices than usual. Degrees of loyalty for a particular brands, stores, and companies of each customer is vary. For instance, consumers tend to have a positive perception of a product or service with the brand they already feel good with, meanwhile the company may experience a negative effect if they fail to meet customers' expectations.

2.2.2 Loyalty phases

According to Oliver (1999), loyalty consisted of four phases: cognitive loyalty, affective loyalty, conative loyalty, and action loyalty. The first phase, cognitive loyalty, deals with brand belief. It encompasses how brand provide information, such as price and quality of product and service to customers. Cognition focuses on transferring previous knowledge and experience-based information into brand beliefs. This stage is a fundamental state since it could be a mere performance if the customer just routinely buys a product or service. It is also the weakest type of loyalty as it reflects the cost-benefit of an offering (Blut, Evanschitzky, Vogel, & Ahlert, 2007). If a

customer satisfies with the product or service, the belief begins to transfer to affective phase.

Affective loyalty, the second phase, begins with development of cumulative satisfaction, in which a firm can fulfill customers' preferences. It relates to a favorable attitude towards brand. Affective loyalty can range from a pleasant feeling, such as satisfaction to a more emotionally reason. It can also decrease due to the more attractive product or service offering by competitive brands (Oliver, 1999).

The third phase is conative loyalty. This phase transfers thinking and feeling toward brand into a motivation to purchase. It implies that customer's decision must be accompanied by an intention to take an action. In this stage, action of customers still be considered as vulnerability. Failure to repeated buying can reduce conative loyalty (Blut et al., 2007). A brand needs to be careful in this stage because customers may switch to alternatives if they fail to provide a good service.

The last phase is action loyalty. It transforms intention to the real action. This state reflects customer's willingness to search for the brand despite many competitors offer the same product and service. This action determines a customer's commitment to engage in an action, which, in this case, repeat purchase even in an obstacle situation (Oliver, 1999). Table 3 summarizes four-phase of loyalty according to Oliver (1999) cognition-affect-conation model. It also explains meaning and drivers of each phase.

Table 3 Loyalty phases

Loyalty Phases	**Meaning**	**Drivers**	**Statement**
Cognitive	Loyalty to information: a customer belief the brand is better than competitive brands.	Product design, quality, performance, value, etc.	I belief that the brand offers the best product.
Affective	Loyalty to a liking: a customer develops a deep connection to the brand.	Brand identification, non-monetary rewards, experience, social influence, etc.	I love the brand.

Table 3 Loyalty phases (Continue)

Loyalty Phases	Meaning	Drivers	Statement
Conative	Loyalty to an intention: a customer intends to repurchase from the brand.	Social norms, overall value, trust, convenience, brand relationship, rewards, etc.	I intend to repeatedly purchase from the brand.
Action	Loyalty to action: a customer repurchases from the brand, even they face an obstacle.	Habits, switching costs, rewards, brand relationship, etc.	I purchase the brand all the time.

Source: Oliver (1999, p. 36)

According to Ayyildiz and Cengiz (2007), customer loyalty developed from those cognitive-affective-conative-action pattern, which can be obtained through satisfaction of customers over service quality perceived from brand's performance. This leads to an action state which involves a strong decided of a customer in repurchasing product/service even the switching cost to similar products provided by competitors is low (Costabile, 2000). Nevertheless, instead of dividing customer loyalty into four-phase like Oliver (1999), some researchers had divided customer characteristics into two categories: attitudinal loyalty and behavioral loyalty. They suggested that attitude, which is normally considered as a predictor of behavior, should be considered separately with behavioral loyalty (Ishak & Abd. Ghani, 2013; Tsoukatos & Koulentaki, 2013).

2.2.3 Dimensions of customer loyalty

Customer loyalty significantly focuses on its outcomes since it presses a high impact on the revenues and growth of the company. To get a high revenue, a company are encouraged to establish loyal customers. Some researchers stated that repeatedly purchasing could not indicate the true customer loyalty due to its lack of attitudes to prove that those loyal customers would repurchase from the same service provider. This is, probably, because customer may purchase service repeatedly until the competitor come up with a better service (Hashemi, 2013). This means that a company needs to establish loyal customers who have a good attitude together with high repeat patronage behavior. The loyalty model of Dick and Basu (1994) suggested that

integrating attitude dimension with patronage behavior could enhance the ability to predict customer's behavior. Many scholars also supported this statement as loyalty is multi-dimensional and should not be measured only attitudinal measurements or behavioral measurements alone since it would not explain the true relationships of customer loyalty (Kumar, Shah, & Venkatesan, 2006). Fedotova, Kryvoruchko, and Shynkarenko (2019) suggested that one approach to measure loyalty is by combining attitudinal and behavioral characteristics of loyalty. According to Lam (2004), customer loyalty had been expressed with two-construct dimensions: recommendation service to other buyers and intention to repeat patronage. Many previous studies also treated recommendation and repurchase as loyalty indicators (Fornell, 1990; Fullerton, 2009; Soderlund, 2006). In this research, based on these previous studies, outcomes of customer loyalty would be divided into two dimensions: attitudinal and behavioral loyalty. The following information explained each type of customer loyalty. In this sense, attitudinal means recommend to others, while behavioral means repurchase product or service (Rai & Srivastava, 2012).

2.2.3.1 Attitudinal loyalty contains opinions and feelings of customers toward service provider or businesses related with repurchase. It is determined by a strong preference of customer towards service provided by the business (Watson, Beck, Henderson, & Palmatier, 2015). This means that attitudinal loyalty encompassed cognitive phase to affective phase in which customer transfers their belief towards a brand into an emotional connected with the brand. Rai and Srivastava (2012) suggested that relative attitude can be assessed by emotions of people towards a service provider. If they have a relatively good attitude (satisfaction), these people will further recommend the service provider to others (Fullerton, 2009; Lam et al., 2004).

2.2.3.2 Behavioral loyalty focuses on repeat purchase of products or services of a current brand. In this case, the intention, and commitment to repurchase is created (Cheng, 2011; DeFranzo, 2020; Ishak & Abd. Ghani, 2013). Some scholars suggested that customer retention serves as a proxy of customer loyalty. Thus, behavioral loyalty contains two loyalty phases: conative and action. In fact, it can be concluded that behavioral outcome is related with intention to repurchase product or service of the brand (T. Jones & Taylor, 2007; Zeithaml et al., 1996). After the commitment to repurchase is established, customer will make all purchases from the

service provider (Abu-Alhaija, Nerina, Hashim, & Jaharuddin, 2018; Khan, 2013; Reynolds & Beatty, 1999).

In conclusion, this study measured both attitudinal and behavioral loyalty characteristics. By combining two dimensions of behavior and attitude together, loyalty can be defined as positive attitude towards service. When customers beliefs that this service is superior to competitors' service, they tend to further refers this service to others. Once intention to repurchase the service is created, customer would rarely change their mind to other services, hence, true behavioral loyalty is created. For this research, therefore, behavioral, and attitudinal loyalty towards an online running event was measured to reflex participants behaviors. The attitudinal loyalty involves attitudes of runners participating in the online running event and the way they refer that online running event to others. Meanwhile behavioral loyalty entails runners' intention to re-participate in the online running event in the future.

2.3 Service Quality

2.3.1 History of service quality

In service industry, one of the main elements lead to customer loyalty is service quality. Service quality model has started with two schools, one from the Nordic European and another from North American. Grönroos (1984), one of the first movers from the Nordic European school who conceptualized service quality, argues that understanding service quality factors could provide insight information for the business. Thus, Grönroos model encompassed the interaction between buyer and seller as well as the service outcome (Grönroos, 1988). The model also compared two variables: the expected service and the actual service perceived by customers, and measured service quality through performance scores. Expected service included marketing communication, image, word-of-mouth, and customer needs, meanwhile perceived service combined two service quality dimensions: technical quality which indicated what the customer receives as a result of customers interaction with a service provider, and functional quality which related with how customer perceived a service (see figure 4). This model, however, had no strong empirical evidence to support the model at that time since it had not been utilized in a practical manner.

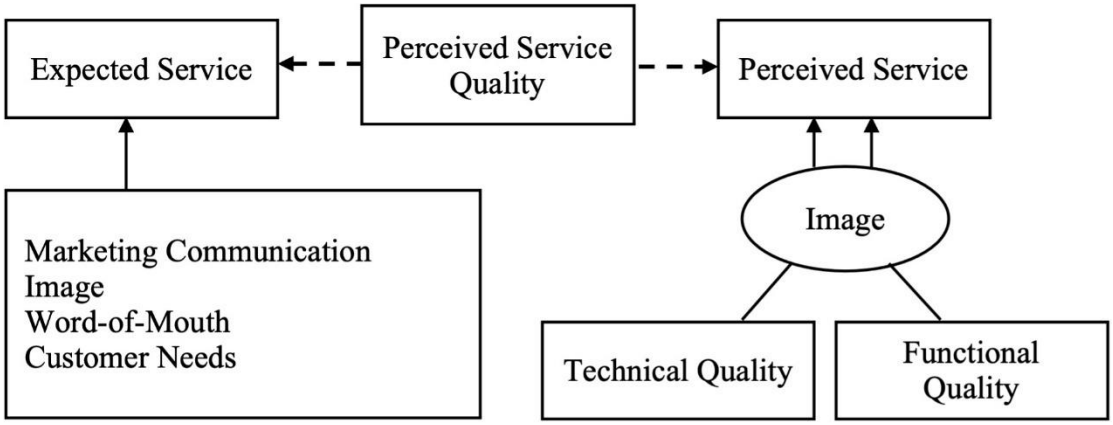

Figure 4 Service quality model of Grönroos

Source: Grönroos (1988)

Another service quality model is from North American school of thought. The most popular service quality model is SERVQUAL model. This model was created by Parasuraman, Zeithaml, and Berry (1985) and has been modified by researchers in different fields. Originally, this model consisted of ten determinants of service quality and had been tested by asking the consumers to rate the service expectation and performance. The similar items belonging to the same component were grouped together. As a result, ten determinants had been reduced to five basic dimensions: reliability, responsiveness, empathy, assurance and tangibles (A. Parasuraman, Zeithaml, & Berry, 1988). Figure 5 indicates five basic dimensions of SERVQUAL model.

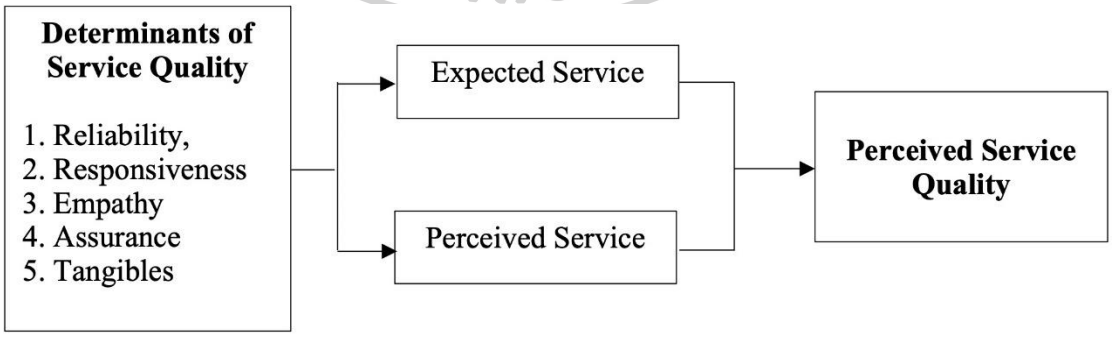

Figure 5 Five dimensions of SERVQUAL

Source: A. Parasuraman et al. (1988)

However, later scholars had criticized SERVQUAL that perceived service quality may not be assessed by the gap between perception and expectations since expectations can be formed simultaneously with service consumption (Buttle, 1996). Others also argued that SERVQUAL has been focusing on the process of service delivery rather than the outcomes of the service. Since SERVQUAL model is not universal, thus it should be tailored to a particular context being studied (Asubonteng, McCleary, & Swan, 1996; Jahanshahi, Gashti, Mirdamadi, Nawaser, & Khaksar, 2011; Kursunluoglu, 2014; Leung, Li, & Au, 1998; Liao, 2012, p. 634; Murray & Howat, 2002; Polyakova, 2018). Therefore, the new measurement emerged.

In year 1994, Rust and Oliver (1994) had developed the three-component model of service quality. Their study suggested that in order to measure service quality, three essential elements should be considered: service product, service delivery, and service environment. Figure 6 illustrates three-component model of service quality.

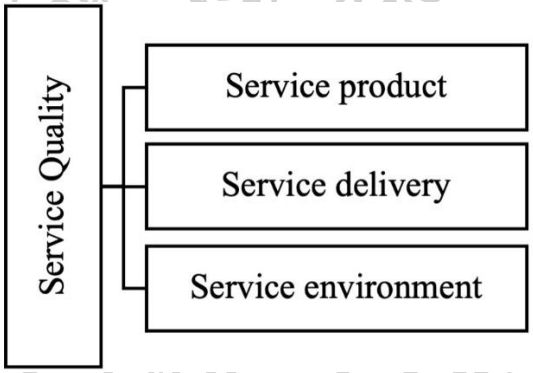

Figure 6 Three-component model of service quality
Source: Rust and Oliver (1994)

The service product refers to the result customers received from the service (i.e. service outcome). It also involves customers' perception toward that service. The second element, service delivery, consists of the service process dealing with relevant events occurring during the time of service. Service environment, the last element, encompasses the internal and external environment during the servicing process. This model, however, had not been tested at that time by the author themselves, but later confirmed by Brady and Cronin in 2001 with retail banking industry.

Two years later after Rust and Oliver (1994) developed the three-component model of service quality, Dabholkar et al. (1996) had developed a new model of service quality, applied in retail service industry, called Retail Service Quality

Scale (RSQS). This model is a multilevel model since it has a higher-order factor measured by two level of attributes: dimension level and sub-dimension level. Dabholkar et al. (1996) applied a triangulation research technique to developed and validated a 28-item scale. There were five dimensions in this model: 1) physical aspects, which deals with appearance and layout of the retail store; 2) reliability, which refers to promise fulfillment and doing the right thing; 3) personal interaction, relating with store workers should be helpful, courteous, and inspire confidence to customers; 4) problem solving, involving how store workers handling customers' problems and complaints; and 5) policy, which deals with product quality policy, operation hours, parking and credit cards policy. Scholars, however, found that this model was a performance-based measurement which means that it may not be suitable to apply in all contexts. Keillor et al. (2004) suggested that RSQS is suitable for a retail industry but not in all service industries since there are some elements deal with a specific country's and industry's context which may be significantly influence behavioral intention of customers.

The model of Brady and Cronin (2001) combined the three-component model of Rust and Oliver and the multilevel model of Dabholkar together. In this study, basic service quality dimensions had been formed by three elements: interaction quality, physical environment quality, and outcome quality, with three sub-dimensions for each quality dimension. The figure 7 illustrates the hierarchical approach model of Brady and Cronin.

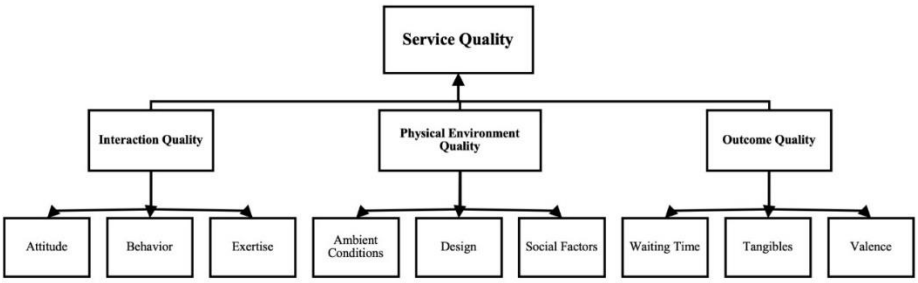

Figure 7 A hierarchical approach model
Source: Brady and Cronin (2001)

Interaction quality focuses on the processes of service in which it takes place during service delivering from service providers to customers. Brady and Cronin

(2001) indicated in their qualitative study that interaction quality relates with staffs' attitude, behavior, and knowledge (expertise). Physical environment or service environment quality encompassed nearby environment influence on customers' perceptions toward the service. There are three factors influencing physical environment: ambient conditions, facility design, and social factors (Brady & Cronin, 2001). Bitner (1992) called this surround environment as the 'servicescape' which had been accounted as the important factor evaluating service quality. Outcome quality, the last element, indicated actual service that the customer received after service process is finished. Rust and Oliver (1994) refers the outcome quality as the "service product" meanwhile Romiti (2016) refers it as the 'technical quality.' This element focused on three sub-dimensions: waiting time, tangibles and valence (experience) (Brady & Cronin, 2001).

2.3.2 Service quality in sport context

Lately, service quality has be applied in sport industry. Many researchers tried to examine the relationship between service quality and sport activities. Despite some researchers used SERVQUAL model to evaluate perceived service quality in sport context, other scholars had developed model assessing service quality for a particular sport. For instance, Theodorakis et al. (2001) developed SPORTSERV model to evaluate how service quality affected spectators' satisfaction at a professional sports. The results mentioned that reliability of the team, responsiveness of personnel and security had less influence on satisfaction, while tangibles and access elements showed positive effect to satisfaction. They also suggested that sports managers should enhance these elements to increase spectators' perceptions of service quality. Calabuig-Moreno et al. (2016) measured service quality in sporting event using EVENTQUAL scale. Structural model revealed four dimensions of EVENTQUAL scale including accessibility, personnel, tangibles, and complementary services could be used to evaluate spectators' perception on service quality in sporting events. Table 4 indicates scholars who studied service quality in different sports context.

Table 4 Service quality in sport context

Author	Sports context	Methods / Techniques	Findings
Theodorakis et al. (2001)	Professional sports	Pearson correlation, and Regression analysis	- Five service quality dimensions (SPORTSERV) including access, responsiveness, reliability, security, and tangibles were positively correlated with satisfaction. - Reliability and tangibles had strong influence on satisfaction. - Responsiveness, access, and securing had low influence on satisfaction.
Murray and Howat (2002)	Sports and leisure centre	Structural equation modelling (SEM)	- Service quality dimensions divided into two dimensions: core service quality (i.e. structure and management function of the centre) and relational service quality (i.e. staff interaction). - Perceived service quality influenced satisfaction and, in turn, affect intentions. - Value mediated perceived service quality and satisfaction.
Tsitskari et al. (2006)	Sport services	Literature review	- Service quality in sport is a multi-dimensional structure. - Service quality dimensions vary among countries and service sectors.
Theodorakis and Alexandris (2008)	Professional soccer	Regression analysis	- Among five SPORTSERV dimensions, tangibles, responsiveness, and reliability had significant effect on word-of-mouth communications. - Responsiveness, and reliability had significant effect on repurchase intentions.

Table 4 Service quality in sport context (Continue)

Author	Sports context	Methods / Techniques	Findings
Pérez, Minguet, and Freire (2010)	Sports management service	Literature review	- Many scholars suggested that ISO and EFQM model can be used to measure quality of service. - The sport organizations should assess quality of sports services and implement service quality principles internally and externally.
Suh and Pedersen (2010)	Fantasy sports websites	Structural equation modelling (SEM)	- Four service quality dimensions included ease of use, trust, content, and appearance. - Satisfaction and attitude mediated the relationship between service quality and actual usage of fantasy sports websites.
Tzetzis, Alexandris, and Kapsampeli (2014)	Outdoor sport event	Regression analysis	- Three service quality dimensions included access quality, venue quality and contest quality. - The relationship between access, and venue quality and intention were fully mediated by satisfaction. - The relationship between content quality and intention was partially mediated by satisfaction. - The relationship between all service quality dimensions and word-of-mouth were mediated by satisfaction.

Table 4 Service quality in sport context (Continue)

Author	Sports context	Methods / Techniques	Findings
Calabuig-Moreno et al. (2016)	Sporting events	Structural equation modelling (SEM)	There are four dimensions of perceived quality of spectators in sporting events (EVENTQUAL) including tangibles, staff, complementary services, and accessibility.
Romiti and Sarti (2016)	Active sport tourism	Regression analysis	- Aesthetic quality (valence and venue) influenced loyalty of active sports tourists. -Venue and technical quality influenced intention to return.
Choi, Greenwell, and Lee (2018)	Virtual golf	Structural equation modelling (SEM)	- Core service had significant effect on perceived value.
Polyakova (2018)	Public sports centres	Statistical analysis using t-test, and Pearson correlation	- Personal achievement was important for fitness suites and fitness classes. - Sociability was important for the users of fitness classes, but not for fitness suites, - Interaction with staff was important for both fitness suites and fitness classes. - Users of two fitness settings satisfied with perceived service quality differently.
Álvarez-García, González-Vázquez, Río-Rama, and Durán-Sánchez (2019)	Sport and health centers	Regression analysis	- Three dimensions of perceived service quality including facilities and material, communication, and activities had significant effect on satisfaction. - Monitor/coach, and facility staff had less effect on satisfaction

Table 4 Service quality in sport context (Continue)

Author	Sports context	Methods / Techniques	Findings
Biscaia, Yoshida, and Kim (2021)	Spectator sport	Meta-analysis review	- Three dimensions of service quality included core product, functional, and aesthetic quality. - Functional and aesthetic quality moderately influenced on perceived value and less influenced on satisfaction and intentions. - Core product quality had moderate effect on satisfaction, but no effect on both perceived value and intentions. - Perceived value and satisfaction related to intentions. - The relationship of service quality and perceived value, satisfaction, and intentions were partially moderated by culture and sport setting.
Xu et al. (2021)	Health-fitness clubs	Content analysis, Structural equation modelling (SEM)	- Six themes of service quality in fitness clubs included facility function, program operation, staff performance, service assurance, service recovery, and instructor quality. - All six dimensions had positive influence on satisfaction.

Tzetzis et al. (2014) tested the effect of service quality dimensions (access quality, venue quality, and contest quality) on intentions and word-of-mouth communications using regression analysis. They found that access quality and venue quality of a small-scale outdoor sport event influenced intention when mediated by satisfaction. All three dimensions influenced word-of-mouth communications when mediated by satisfaction. The structural analysis result of Suh and Pedersen (2010) also

supported that satisfaction and attitude are mediator linking the relationship between service quality of fantasy sports websites and actual behavior.

2.3.3 Service quality and running event

According to Armbrecht (2019), the physical running events should be measured by four factors. These factors included immersion, fun, hedonic aspects, and service quality. The immersion was defined as involvement of the participants. When one immersed into an activity, they tended to forget time and space, which resulted to reality losing. Fun was considered as participants' value created by the enjoyment of run. The hedonic aspects included challenge, excitement, and memorability of the running event. This factor, indeed, related with multisensory and emotive aspects of runners when participating and achieving the goals. Service quality of the running event was measured by five aspects included tangibles, reliability, responsiveness, assurance, and empathy. As Armbrecht (2019) assessed the quality of running event, Romiti and Sarti (2016) suggested three factors associated with loyalty. These factors included valence, venue of the running event, and value perceived by participants. These are the scales developed for evaluating service quality in physical running event. However, Tsitskari et al. (2006) stated that service quality in sport context is a multi-dimensional structure and tends to vary among different sport activities. Since this research focuses on the running events organized via online platform, a hierarchical approach model of Brady and Cronin is used to find service quality themes on online running events using qualitative method (see research methodology in chapter 3). Three dimensions were accounted as antecedences of online international running event: interaction with staff (customer service), online environment (website design), and service outcome. The following section explains all antecedences in detail.

2.4 Antecedences of Online Running Event

There are three antecedences associated in this research: customer service, website design, and service outcome. Each antecedence is explained as follow.

2.4.1 Customer service

2.4.1.1 Customer service concept

According to Brady and Cronin (2001), service is intangible and has to be consumed at the place and time that it has been delivery. It entails the

‘interactions’ between consumers and service provider, which has been further identified as customer interaction. In a service industry, customer interaction has been considered as an important element that customers used to evaluate before, during, or after received service from a company/firm/organization. For online retailers, customer interaction is explained as customer service since it is based on how service representatives would contact with customers or who a customer get a response from those service representatives (Hur, Ko, & Valacich, 2007). The definition encompasses output of distribution system to logistics and marketing. The key to a good customer service is based on how firms prevent the breakdown of service between pre and post purchasing experience as well as how to maintain relationship with customers. Innis and La Londe (1994) contributed that customer service, one of the most important outputs of physical distribution function, can influence customer demand and lead to the firm’ competitive advantage. The researchers developed customer service attributes based on customer service performance in the auto glass industry. The measurement consisted of six factors of customer service attributes: 1) product availability, 2) ordering-shipping, 3) quality, 4) billing-returns, 5) sales force, and 6) other information. The result of this study showed that customer service had a significant and positive effect of customer satisfaction, cognitive attitudes, and repurchase intentions. The study of Leung et al. (1998) who applied the procedural justice concept with customer behavior revealed that people tended to perceive ‘fairness’ of service through the quality of interpersonal treatment received and the resources allocation procedure rather than the service outcome itself. The result of this study also supported the work of Innis and La Londe (1994) and Rahi, Yasin, and Alnaser (2017) that customer service played a significant role in predicting customer loyalty. In-deed, it was important than perceived product value and can predict amount of money spent by customer and the range of products purchased. With this regard, interpersonal aspect was considered as a key element of customer service.

Hashemi (2013) suggested that in an online retailing, customers are those who purchase product via the internet and good customer service provided by a business will lead to customer retention and repurchase intention. Online customer service in retailing has been defined based on how service provider interacts with customers. This includes information available to customers, order-tracking function,

and minimizing service failure. Rita, Oliveira, and Farisa (2019) suggested that customer service deals with service level during and after the sale. Unlike offline businesses in which service staffs take care customer during the buying process, customer service in an online business will be performed through live chat facilities or online help desk or social network websites. Hur et al. (2007) proposed that customer service is one of the consumers' concerns since service will be provided through the Internet, such as product return warranties, contacting with after-sale service, getting response from the online retailers. Moreover, Cristobal (2007) also stated that customer service plays an important role in achieving a positive result in an online shop. For instance, customers expect a fast response, correct delivery, and full attention from the company. This perceived high quality of service leads to satisfaction and loyalty to the brand. Since this research focuses on customer service provided through online platform, the characteristics of online customer service can be summarized as follow.

1) Online communication is a key to provide customers with support, value, and process in order to facilitate customers' preferences.

2) Online customer community needs to be set-up to maintain a content, provide information and response to questions and requirements from customers.

3) All value experiences provided by a service provider need to be sustained and consistent over time to maintain expectation level of customers.

4) Various accessible channels need to be implemented, especially online platforms, since it can increase customer's engagement level.

2.4.1.2 Customer service in sport context and satisfaction

In recent years, scholars are trying to adjust service quality model of Parasuraman with sport context. Tzetzis et al. (2014) who studied outdoor sport event in Greece suggested that customer service can be measured through the sport event quality scales with three variables including access quality, venue quality, and contest quality. The result showed that all three dimensions of sport event quality had a positive effect on word-of-mouth and satisfaction. Contest quality, however, was the only element that had a positive effect on intention to re-attend the event meanwhile access and venue quality had no significant impact with intention to re-attend the event. This means that the event organizer should cooperate with local venue officers to ensure the

accessibility of the place otherwise the visitor may not re-attend the event in the future (Tzetzis et al., 2014). Other scholars also supported this results that the higher quality of staff interaction facility, the more satisfaction experienced by the customers would be (Álvarez-García et al., 2019).

In an online sport context, customer service is viewed as the main function when providing a good experience to customers. Online sport or so-called virtual sport is the latest type of sports that adapt technology with sport. For instance, Choi et al. (2018) has studied the effects of core service, peripheral service, perceived value, and consumer satisfaction on behavioral intentions in the context of virtual golf. The virtual golf refers to using a virtual reality to simulate playing golf in which it delivers the new experience of playing golf to customers. The result illustrated that core service, which include attention, knowledgeable, reliable, and well-maintained had a significant positive effect with satisfaction and perceived value. Moreover, the result revealed that customer satisfaction had a positive effect on behavioral intentions of customers. This means the more customer satisfies digital experience, the more likely they will re-attend the virtual golf (Choi et al., 2018). For online running event, runners participate in the event through online running website. It means they will not contact directly with the staffs. Instead, live chat or social media chat is the popular way to contact with staffs when runners have problem about the event. Mahan et al. (2015) also suggested that social media platform is served as engagement function influencing runners' behavior as well as promoting their life satisfaction. These results support the statement of the higher service level satisfied by runners, the more likely they will satisfy with that service and recommend their experiences to others. Consequently, these satisfied customers turn to be repeat customers (Hashemi, 2013). The work of Park, Hsieh, and Miller (2018) also supported that quality of service positively influenced runners' perceived value which, in turn, increased runners satisfaction to the marathon. As customer service is one of a significant factor explaining customer behavior in virtual sports, the new scale development is needed to standardize the future research in virtual sport (Choi et al., 2018). Hence, we can hypothesize that:

H_1: Customer service of online international running event positively influences participants satisfaction

2.4.2 Website design

According to the hierarchical approach model, the second factor has been evaluated was the physical environment quality, which refers to the environment that comprises the tangible element of the sport product. The study of Calabuig-Moreno et al. (2016) had mentioned that venue is a tangible dimension that had been shared in most of the service quality studies. It is clear in sport event context that the physical element is one of the most important variables needed to be measured due to the less contact with service employees. However, in this research, the author focuses on the online event, which means that customers interact with the service provider using the Internet. Alonso et al. (2017, p. 56) proposed that the Internet serves as an important factor motivating customers to attend a sport event. In recent year, sport event organizers have tried to ensure that their website would provide all relevant information to customers properly. If the website is poor or could not satisfy customers' preference, they would easily switch to another websites. In normal situation, tools like site traffics and number of queries would be assessed to evaluate website quality. Due to the changing digital era, the issues have been raised whether these traditional tools can express the effectiveness of website quality. Perhaps, factors like content of information, appearance of the website and interaction between customers and service providers should be considered (Alonso Dos Santos et al., 2017, p. 56; Chiu & Won, 2016; Hur, Ko, & Valacich, 2011; Karimov et al., 2011). Suh and Pedersen (2010) and Rahi et al. (2017) further recommended that the website must offer a user friendly and easy to access system, a good design and appearance, and useful and reliable information to maintain number of customers.

As remarks above, it can be concluded that online sport event conducting via the Internet should create an effective website providing accurate information, ease of use, good appearance and design, as well as connecting with customers. Thus, the researcher tried to explain these characteristics based on website trust-building concept. Unlike other scholars who studied trust as one of the website quality antecedence, Karimov et al. (2011) developed the scale to measure website design dimensions by combining trust theory with cue signaling theory. Under uncertainty situations in an online environment like cybercrime and online fraud, trust plays an important role in ensuring whether the transaction will happen (Ba & Pavlou, 2002). As trust can be

determined in different situation and context, its measurements need to be clearly defined in a specific term. For instance, cues used in online retailing context to promote online trust could be reputation of information, positive WOM, brand equity, and security perspective experienced by customers. As stated before, to increase customer trust on website, particularly when it comes to the payment information, the website needs to provide cue information enough to initiate trust from customers. Karimov et al. (2011), therefore, had adjust trust and cue signaling theory to evaluate customer experience toward website usage. Three dimensions, visual design, content design, and social design, associating with website presence had been included in their model.

2.4.2.1 Visual design consists of layout, graphics, context, and color of the website that impressed customer; content design relates with information provided by website; and social design encompasses web interface that allows customers communicate with service provider and other customers across different media (Karimov et al., 2011; Wu, Lee, Fu, & Wang, 2014). Regarding to Alexandris (2016), website presence plays an important role for evaluating customers' satisfaction. The visual design can catch attention from customers. It deals with affect-based trust which explains by emotion and feelings of customers towards the trustee whether they are trustworthy (Komiak & Benbasat, 2004). The elements of visual design need to be balance between homogeneous graphics, good appearance, simple and structural layout, and attractive color. These elements provide information about the brand and influence customers responses rate (Karimov et al., 2011). According to Cyr et al. (2009), the visual design of a website is important since it can lead to a high satisfaction and more positive attitudes toward the brand.

2.4.2.2 The content design encompasses information given by a website in both text and graphic design. The content has been designed to inform customers about brand information, product and service information, and policies (delivery and return policies). Suh and Pedersen (2010) suggested that many sports website has increased their budget to improve the quality of websites, especially the visual effectiveness and information accuracy. Zhang, Fiore, Zhang, and Liu (2021) also mentioned that information provided in the site can enhance customer patronage intention.

2.4.2.3 Social design relates to web interface that encourage customers engagement on the website. The interactive tools, such as social media applications can provide face-to-face interactions between service providers and customers. Customers tend to visit social networks site to socialize. To be more specified, it demonstrates the way people connect to each other (Keller, 2009). In this research, social design also includes marketing communication between customers and running event organizer. Kharouf, Biscaia, Garcia-Perez, and Hickman (2020a) states that effective marketing communication can help companies increase overall customer positive experience. In online running event, marketing communication is usually delivered through digital platform, such as social media – Facebook, Twitter, Instagram, and YouTube – Search Engine Optimization (SEO) via Google, and Email marketing (RaceDirectorsHQ, 2020). These are powerful platform that raise awareness, encourage, and persuade runners to re-participate in the future.

Cristobal (2007) stated that information quality and user-friendliness can increase level of consumer satisfaction towards website. The higher levels of perceived quality in website service, the more user will satisfy with the website. In sport context, many scholars have studied the impacts of sport websites on consumers' services perceptions. While using a sport website, consumers participate in various online activities, such as buying a product, getting an information, getting a score, or sharing an opinion with other sport fans (Chiu & Won, 2016; Hur et al., 2011). These behaviors have been described as outputs of sport decision-making. The more satisfaction level perceived by participants; the more engagement pursues by participants in the future. The more participants engage in the activity, the stronger retention participants would become, and later lead to loyalty. Therefore, it can be hypothesized that:

H_2: Website design of online international running event positively influences participants satisfaction

2.4.3 Service outcome

Service outcome, so called outcome quality or technical quality, is defined as the result of service delivering. It relates to customer satisfaction after the production process is finished. In the case of spectator sport, for instance, team performance influences spectator satisfaction (Biscaia et al., 2021). In case of running event, player performance and level of competition may play an important role in satisfying runners.

For sport event, the outcome of service relies on components like player performance, competition, and level of effort. Previous researchers had point out that outcome dimension of service quality can be used to predict behavioral and attitudinal loyalty. The outcome of service refers to the challenge and value of those races perceived by runners after finishing the race (Kostantinos Alexandris, Theodorakis, Kaplanidou, & Papadimitriou, 2017; Romiti & Sarti, 2016). Romiti & Sarti (2016) suggested that sport outcome dimension is linked to the competition or challenge of the sport game. It encompasses two sub-elements: challenge and value.

2.4.3.1 Challenge refers to the level of race competition. Within running context, the competence-mastery is considered as the first motivation of runners to participate in running events. It relates with the level of individuals engagement in sport activities in order to achieve, master, challenge, and compete (Romiti & Sarti, 2016). Since it is a competition motive, the comparison between one's ability with another's defined as a challenge factor. Thus, challenge can be considered as one of the factors influencing satisfaction and loyalty (Romiti & Sarti, 2016).

2.4.3.2 Value is evaluated by experience of participants toward a particular service received and a trade-off between perceived quality and money spent for that service (V. A. Zeithaml, 1988). Cronin, Brady, and Hult (2000) confirmed that service value had a direct effect on satisfaction and behavioral intentions. Biscaia, Yoshida, and Kim (2021) who study meta-analysis in spectator sport noted that perceived value indicated a positive impact on spectator satisfaction, which supported the trade-off between costs and benefits of Zeithaml study. The measure of value is important because it can be used to determine the intention to re-participate an event and, at the end, influence behavioral loyalty. In this study, both components were included to evaluating participants' performance as well as value received from the event. Therefore, it would be hypothesized that:

H_3: Service outcome of online international running event positively influences participants satisfaction

2.4.4 Personality traits

Personality traits refer to how an individual differs from each other in terms of thinking, feeling, and behaving (Jani & Han, 2014). In sports context, the study of personality traits in sport is called 'sport personality traits.' There are two main types

of research based on sport personality traits: personality *and* sports, and personality *in* sports (De Vries, 2020). Personality *and* sports focus on the relationship between personality of sport participants and sport preference, physical activity and the performance. The personality *in* sports, on the other hands, is more contextualized approach as it account how an individual exhibits trait while playing sports. This this study, personality *and* sports has been focused to examine the assumption that personality traits mediate the relationship of online international running event factors and participants behavior. The 'Big-Five' model has been applied. According to the personality traits theory, the characteristics of the Big-Five traits consist of extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience (D. Funk et al., 2016).

Extraversion, the first trait, refers to how comfortable an individual will develop a social relationship with others. Agreeableness explains individual's ability to cooperate with others. Research in sport context suggests that high agreeableness can contribute a high level of satisfaction from engaging in that sport. Conscientiousness deals with how does individual reliable and capable for behavioral and cognitive control. The higher conscientiousness an individual is pursuing, the less risky behavior an individual will engage. Emotional stability represents level of calm an individual face during stressful situation. Lastly, openness to experience deals with ability of an individual to seek new experience (Barnett, 2013; Hanson & Buckworth, 2017; Sato, Jordan, Funk, & Sachs, 2018). This study focused on personality traits since it was considered as internal factors enhancing consumer decision-making. The following section explains personalities traits and its relationship with satisfaction and online running event factors.

2.4.4.1 Personality traits and satisfaction

Personality can predict satisfaction. The study of Jani and Han (2014) indicated that in hotel industry, only three factors including extroversion, agreeableness and neuroticism influenced satisfaction. In this regard, Mete (2020) also supported Jani and Han (2014) that big five personality traits were significantly influence job satisfaction in defense industry. In the running event, however, there is no research testing the relationship between personality and satisfaction yet. Therefore, it can be hypothesized that:

H_4: Personality traits positively influences participants satisfaction

2.4.4.2 Personality traits and customer service

Customer service, in the context of personality, has been defined as service that customer received from both automated agent (robot response) or supportive staffs. This plays a vital role in service industry since customer service aims to evaluate how well staff can attract customers and retain them as well as how to improve customers' satisfaction. This is the reason why we need to monitor customer service to maximize customers' experience. Firms know that a good customer service can lead to a high satisfaction and, in process, enhance brand royalty (Kiger, 2002). This result supported by Verhagen et al. (2014) as good customer service, such as fast response to customer request would positively impact on service personalization for customers. Thus, it can be proposed that:

H_5: Customer service of online international running event positively influences on personality traits.

Nevertheless, the previous papers tended to focus on staff or service provider's personality traits that can affect customer satisfaction or service performance (Herzig et al., 2017; Hurley, 1998; Kotzé & Lamb, 2012). By far, there is less study on how customers personality traits mediate the relationship between customer service and satisfaction. Therefore, the author proposes:

H_6: Personality traits mediate the relationship between customer service and participants satisfaction.

2.4.4.3 Personality traits and website design

It is vital for website providers to know the profiles of their users. In customers centric era, knowing how to personalize the website content according to its audience profiles are necessary. This business practice can contribute to improvement of services and enhancing customers experience, which, in turn, can lead to repeat users (behavioral loyalty). Kosinski et al. (2014) whose studied on how many times user visit 23 websites, proposed that these selected websites were potentially informative about a visitor's personality. The results illustrated that a person who like to go-out and do socialized activities can be attract by the exciting website, such as songlyrics.com. These people, indeed, can be characterized by level of extroversion. Website design, such as web feature, content, and interactive tools can be used to

predicted characteristics of the users (Golbeck, Robles, & Turner, 2011). Hence, it can be hypothesized that:

H_7: Website design of online international running event positively influences on personality traits

Since personality of runners is different and website for online running event has not yet been studied, it is worth to explore whether personality traits would be attracted by the website design, as well as how the personality traits mediate the relationship between the website design and satisfaction. Therefore, the hypotheses would be:

H_8: Personality traits mediate the relationship between website design and participants satisfaction

2.4.4.4 Personality traits and service outcome

Witkowski and Piepiora (2018) stated that personality traits of a sport participant could be impacted by service outcome (how challenging of that sport). Other scholars also mentioned that different people who experienced different service outcomes will have a different level of satisfaction (Howat, Crilley, & McGrath, 2008; Koh, Wang, Erikson, & Côté, 2012). This can be hypothesized that:

H_9: Service outcome of online international running event positively influences on personality traits

Hallmann and Wicker (2012) revealed that different groups of runners, which in this paper, has distinguished runners by their purpose of stay, has different satisfaction level over the service outcome such as value of time and money, in different way. This paper consistent with the work of Matzler, Faullant, Renzl, and Leiter (2005) in the way that personality trait could impact self-satisfaction on their own performance. The model linked personality traits, consumption-based emotions, and self-satisfaction. The results illustrated a direct relationship between personality and self-satisfaction exists, over the mediating system of emotions. Therefore, we can hypothesize that:

H_{10}: Personality traits mediate the relationship between service outcome and participants satisfaction

2.4.5 Satisfaction and customer loyalty

In a customer-centric era, customer satisfaction can be both a goal of a company and a marketing tool. It is necessary for firms to communicate its reputation of customer satisfaction to their target market to maintain customer base and market share. To assess satisfaction, product and service quality is worth to be accounted. Quality is a set of features and characteristics of an object that satisfy needs of customers (Golder, Mitra, & Moorman, 2012). Quality program has been developed for many years for business practice. Academic researcher has adopted concept of quality in, for example, marketing field to enhance understanding of perceived service quality, satisfaction, and customer expectations (Brady & Cronin, 2001; Golder et al., 2012; A Parsu Parasuraman, Zeithaml, & Malhotra, 2005).

According to Cronin and Taylor (1992), it is important to measure customer loyalty through customer satisfaction concerning perceived performance of the service. In fact, perceived service quality led to customer satisfaction, hence both are prerequisites of loyalty (Ayyildiz & Cengiz, 2007; Lam et al., 2004). Satisfaction, defined as a pleasure fulfillment, is the consumer's sense accounted by outcome of product or service consumption against either standard of pleasure or displeasure. In other words, satisfaction is feelings that an individual has over the consumption of product or service after comparing the perceived performance with expectation. When an individual continuously uses the service from the firm, it would strengthen the chance that those customers will become loyalty to the firm. At the same time, if the firm can offer the higher service than other competitors, it can prevent customers' withdrawal from the business. It has been said that the customer will have a high satisfaction if he or she received superior product or service than he or she has expected. Satisfaction can affect loyalty in the way that it must be accumulated overtime. In this case, satisfaction becomes a significant key success factor for a firm (Luarn & Lin, 2003). To evaluate the successful of organizing running event, satisfaction and loyalty was assessed by event organizers. Previous research showed that satisfaction had positive direct effect on customer loyalty (Almohaimmeed, 2019; Bhaskar & Kumar, 2016; Chen et al., 2021; Ghazi & Ammar, 2018). Although many scholars like Chen et al. (2021) found the significant relationship between runners satisfaction on destination

loyalty, none had been studied in the context of online running events. Therefore, it can be hypothesized that:

H_{11}: Satisfaction on online international running event positively influences participants loyalty

2.5 Framework and Hypotheses

The figure 8 shows framework of this research together with its hypotheses. It indicates how antecedences of online running event: customer service, website design, and service outcome influenced on satisfaction and personality traits. Satisfaction was also examined as it can influence on participants' loyalty. Figure 8 identifies direct effect of the hypothesis.

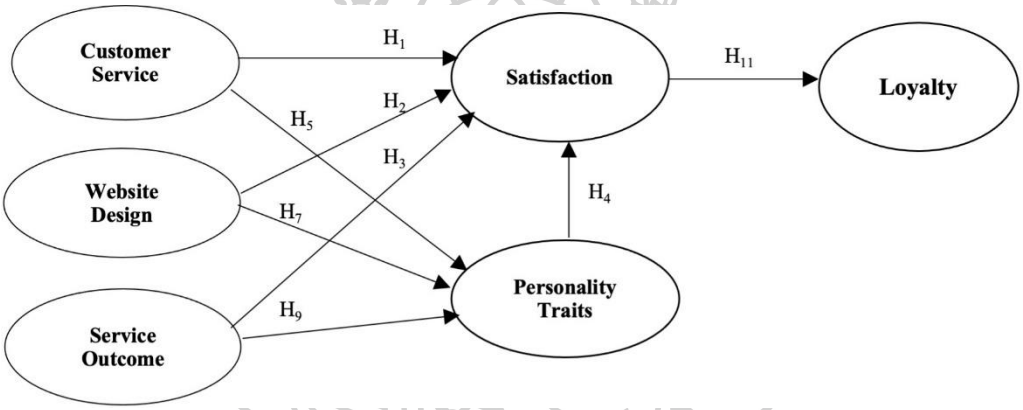

Figure 8 Framework with direct effect of the hypotheses

The figure 9 shows mediating effect of the hypotheses. It has been proposed that personality traits mediate the relationship of customer service, website design, and service outcome on satisfaction.

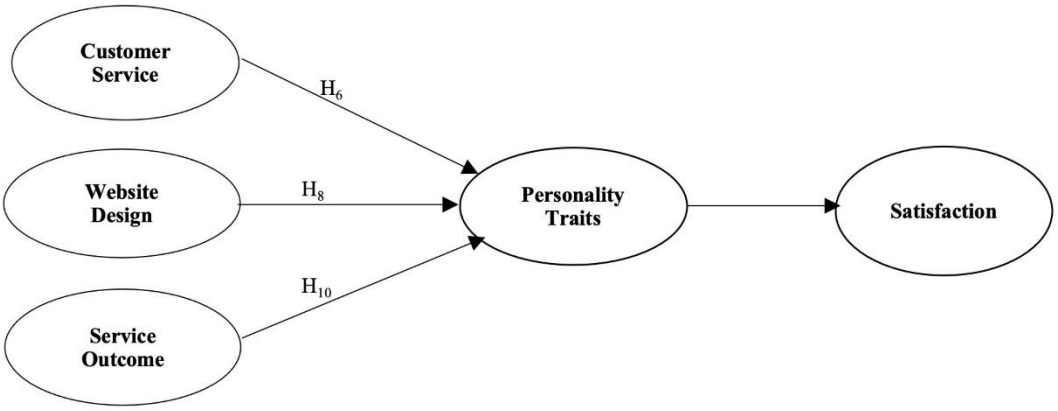

Figure 9 Framework with mediating effect of the hypotheses

Chapter 3
Research Methodology

This research aims to explore critical factors influencing participants behaviors toward online international running event. Mixed methods research approach was used for this research. The purpose of using the mixed methods research is to develop instrument associating with factors of online international running event. The qualitative research is employed to obtain insight information from event organizers for developing online international running event questionnaire and scale items. Quantitative research is employed to evaluate relationships among critical factors of online international running event and participants behaviors (Bryman, 2006). The mixed methods design of this research is exploratory sequential design, begin with qualitative data collection at the first phase and quantitative data analysis is followed at the second phase to test the influence of online international running event factors on participants behaviors. Two types of research instruments have been applied: semi-structure interview questions for qualitative research, and questionnaire for quantitative research.

3.1 Qualitative Research Approach

The main purposes of this qualitative research method are to explore critical factors of online international running event and develop the questionnaire and scale items. To explore these factors, the researcher went through service quality in sporting and running event context as it directly leads to the success of the event. There is theoretical support for service quality in physical running events (Calabuig-Moreno et al., 2016; David J. Shonk, 2006; Tzetzis et al., 2014), but there has been less effort to identify factors that define ‘online’ running events. To address the dimensions of service quality in online running event, the study needs to answer the research question:

What are critical factors of online international running event?

The next section explains research method and design, participations, instruments, and data collection process and analysis in qualitative research method.

3.1.1 Research method and design

Research design used in this study is a narrative analysis approach. The aim of this approach is to understand story or 'narrative' that an individual use to explain their experiences and events (Flick, Kardoff, & Steinke, 2004). In this study, organizers who are conducting online international running events are questioned about their perceptions and experiences when conducting online international running event. This research used the result of this method to answer the research question and develop conceptual framework and the measurement scales for online international running event.

For this study, semi-structured interview method was applied to collect data from running event organizers. The interview questions related to feelings and experiences of the organizers. To serve the goal of this research, interviews were conducted to organizers who arrange running event on the online location via website or application platform. Voice recordings were taken to collect the informants' responses. All responses were described as text using content analysis and were transformed into themes and sub-themes for developing conceptual framework and the questionnaire.

3.1.2 Participations

The population were running event organizers who conduct online running events. Two running event organizers were selected for interviewing using purposive sampling method. Only two samples were chosen because, as suggested by Grbich (1999), the number of sample size was not important as long as they could provide rich information regarding the chosen topic.

The criteria of online international running event was set when selecting the organizers. Participants must conduct the running event via the Internet where everyone can access it. The platforms of the running events should reach internationalized standard. According to this criteria, two organizers were chosen because they shared experience of conducting online running event via international standardized event platforms. The organizers located on the Internet were gathered through social networks (Facebook) and referral from Silpakorn University International College contacts. The key informants in this study were voluntary and may end their participation any time without risk. Demographics will not be neither

identified nor recorded to protect privacy of the informants. The details of these two running event organizers are as follow.

3.1.2.1 The first organizer is ‘Fit Don’t Quit.’ It is the virtual event that aims to encourage people to exercise. Participants who join this event could collect the ‘step’ from their exercise, such as running or joking through mobile application or smart watch. Participants could continuously collect their steps for 2 weeks during June 2-23, 2021. Every 1,000 steps collected from all participants would donate for COVID-19 patient located at Khlong Toei Community (Eventpop.me, 2022). The informant who is a representative from this event is female, 22 years old. She works as a manager of the event organizer.

3.1.2.2 The second organizer conducting the event is named ‘SM Virtual Run 2021.’ The event was conducted to encourage runners to collect longer running range as much as possible. The organizer used application called ‘Map My Fitness’ to collected steps from runners. The event took place on September 18-24, 2021. The informant is male, age 28, who is an administrative of the event organizer. Table 5 shows the list of key informants and its online running platform.

Table 5 List of key informants and its online running platform.

Key informants	**Name of event**	**Age**	**Online running platform**
Manager	Fit Don’t Quit	22	Web-based platform: Event Pop
Administrative officer	SM Virtual Run 2021	28	Application platform: Map My Fitness

3.1.3 Research instrument design procedures

3.1.3.1 Step 1: Researcher studied on concepts and theories of sport consumer behavior, service quality, and event quality from online databases to define factors associated with organizing sport event.

3.1.3.2 Step 2: Researcher reviewed further concepts of online running event from resources, such as journal articles, textbook, and websites to guide on interview questions creation.

3.1.3.3 Step 3: Concepts and theories as well as questions obtained from literature review were applied on the interview questions.

3.1.3.4 Step 4: The first draft of interview questions was sent to the advisors for reviewing. After the advisors gave comments, the researcher edited the interview questions. Then, the researcher, again, submitted the interview questions (draft) to the advisors.

3.1.3.5 Step 5: Once the advisors approved the interview questions, the researcher used it to interview the key informants.

3.1.4 Research instruments

The research instrument for qualitative research approach is semi-structure interview questions. There are 12 interview questions identifying factors of online international running event through the experiences of organizers. As stated in chapter 2, service quality plays a vital role when evaluating sport service. The interview questions were pre-determined and then applied from the hierarchical approach of service quality theory (Brady and Cronin, 2001). However, Brady and Cronin's study was based on physical industries, there is a need to adjust online aspects with their factors. Three dimensions of service quality factors of Brady and Cronin that adjusted with online aspects were identified as follow.

3.1.4.1 Interaction quality. This factor included attitude, behavior, and/or expertise of staff who provide service to customers. It magnified the quality of service delivered to customers and, at the end, affect customers' satisfaction. Questions related with expertise of staffs who provide online problem solving service were adjusted from Hashemi (2013). Meanwhile behaviors of staffs were obtained from Brady and Cronin (2001).

3.1.4.2 Environment quality. This factor related with how customer evaluate the physical environment. Since services are intangible and inseparable from the service provider, surrounding environment may have the significant impact on perceived service quality by customers. Thus, this factor combined ambient conditions, design, and social factors as subdimensions measuring service environment quality. Questions related with design of the online running platforms and social networking were adjusted from Brady and Cronin (2001). Also, the researcher crated the primary interview questions based on the content posted on the online running platform.

3.1.4.3 Outcome quality. This factor determined perceptions of service that customer received after the production process is finished. Questions deal with

online sport outcome was applied. Thus, questions adopted from Romiti and Sarti (2016) were adjusted to interview about value and challenges of the online running event perceived by participants.

Moreover, the primary interview questions further included satisfaction and loyalty aspects as it can be used to generate satisfaction and loyalty scales for the quantitative research method. Table 6 indicates all semi-structure interview questions and sources of each factor.

Table 6 Semi-structure interview questions

No.	Interview Questions	Sources
Interaction Quality		
1	What are channels that you provide your service for runners? How do you provide service?	Hashemi (2013)
2	If there is a problem with your website, how would you resolve the problem?	
3	What are your online channels? How would you provide service through those channels?	Brady and Cronin (2001)
Environmental Quality		
4	When designing your website, what could be your concerns?	Brady and Cronin (2001)
5	How did you design your website?	
6	What are the areas that website content covering? How many platforms you posting those contents? How did you post it?	
7	How does a runner use website to connect with other runners or event organizers?	
8	How does your website create runners' networking?	
Outcome Quality		
9	How can your online running event create challenges to runners?	Romiti and Sarti (2016)
10	How can your online running event create value to runners?	
Satisfaction and Loyalty		
11	How does a runner evaluate satisfaction over the online event?	Primary Questions
12	How can your online running event create runners' loyalty process?	

After the researcher obtained interview data from two informants, it had been used to develop the questionnaire and scales items of online international running event

in quantitative research method. The full semi-structure interview questions are presented in Appendix A.

3.1.5 Data collection process and analysis

3.1.5.1 Informed consent

The informants received the documents regarding the purpose, procedures, risks and benefits of the study and the privacy of their information. The informants had the right to participate or decline to participate any time during the study period. The informants had been informed the interview date and time via telephone and email. Data collection was conducted during the interview via video conference program. Data was reviewed after the interview finish and was analyzed into the description of organizing online running event experiences.

The informants do not have to sign an informed consent since this research was granted the waiver of informed consent (see Appendix E). The collect information received from the informants were store in the m4a file on external hard disk with a password protected. The transcripts files were also kept on the same external hard disk and stored in a locked cabinet where only the researcher can have the access to it.

3.1.5.2 Confidentiality

The interview sessions were conducted one-by-one informant. The informants were firstly contact via telephone call to inform date and time of the interview. Then, the researcher confirmed the date and time again and sent the interview questions via e-mail. Before the sessions start, the informants were informed that their voice records would be kept at least 3 years in a secure location after the research completed. Each informant was also informed that participation in this research is confidential and voluntary. The identity of all informants would be kept confidential and would not be directly linked with any data.

3.1.5.3 Data collection method

The semi-structure interview questions offer flexibility and opportunities for informants to light their experiences of conducting online running event. There are two informants participated in this research. Data collection for each informant were stated as follow.

1) Informant no.1 is a manager of the event ‘Fit Don’t Quit.’ Their online running event was conducted via popular online event website, Event Pop. The interview was conducted via video conference program on September 4th, 2021. Time spent on this interview was 33 minutes. Before the interview starts, informant no.1 was informed about her right to end the session anytime and that her voice would be recorded during the interview session. The informant no.1 agreed to give a voice record. During the interview session, all 12 questions has been asked with some extra questions related with communication channels.

2) Informant no.2 is an administrative of the event ‘SM Virtual Run 2021.’ The online running event was conducted via the application ‘Map My Fitness’ which owned by Under Armour Inc. The interview was conducted via video conference program on September 27th, 2021. Time spent on this interview was 18 minutes. The informant no.2 was informed about his right to end the session anytime and that his voice would be recorded during the interview session. The informant no.2 agreed to give a voice recording. While interviewing the informant no.2, extra questions regarding to running application ‘Map My Fitness’ had been asked.

3.1.5.4 Data analysis

Data analysis was used to discover new ideas and patterns and generate a better understanding of the subject of study. In this study, content analysis has been used to categorize and describe what factors associated with organizing online international running event. Content analysis is a qualitative research tool used to identify words, concepts, or themes from a given data. Types of content analysis includes conceptual analysis and relational analysis (Elo et al., 2014). This study used conceptual analysis to determine the concepts existence in a text, then the concepts were analyzed by quantifying and counting its presence. These pre-determine concepts were divided into three themes as stated in research instrument section. However, the researcher allowed flexibility of concepts be added from the interview data. Therefore, collected data has been categorized into four themes. Table 7 shows themes and sub-themes of online international running event.

Table 7 Themes and sub-themes of online international running event

Themes	Sub-themes	Description
Customer service	- contact detail	The organizer provides contact detail on the website or application.
	- problem solving service	The organizer provides problem solving service on online channels (website, application and social media).
	- questions answering	The organizer provides questions answering service on social media (Facebook and Instagram)
Website design	- template	The template of website or application
	- user interface	The user interface of the website or application
	- tool bars	The tool bars on the webpage or application
	- content	The content (information) of the running event given by the organizer on various online channels (website, application, and social media)
	- communicating tools	The communication tools (social media) connect participants to organizers and participants to participants.
Service outcome	- challenged by the runners themselves	Participants has been challenged by themselves in the running event.
	- challenged by other runners	Participants has been challenged by others in the running event.
	- value for the price paid	Value received from participating in the running event is worth for money.
	- value for their pride (helping community)	Value received from participating in the running event is worth for effort.
Success of the event	- satisfaction	The participants satisfied with the running event.
	- connection building	The organizer builds connection (familiarity) with participants by providing webinars session.
	- passion to participate	The running event create the passion to participate.

These four themes have been used to develop the propose conceptual framework and measurement scales of online international running event in quantitative research method.

3.2 Quantitative Research Approach

The objectives of quantitative research are to examine the effect of online international running event factors on participants satisfaction, investigate personality traits as mediator and identify effect of participants satisfaction on loyalty. The research questions are as following.

1. How do critical factors influence on participants satisfaction?

2. How do personality traits mediate relationship between critical factors and participants satisfaction?

3. How do participants satisfaction influence loyalty?

The next sections identify population and sample, instruments, data collection procedure, and statistical data analysis.

3.2.1 Population and sample

The population in the quantitative research consisted of participants who joined international running events in which it operates via online platform. Since the population of participants who joined international running events are infinite, thus the sample size had been determined using the sample size norms of Blair and Blair (2015) with the confidence interval of 95%. 400 samples had been obtained for analyzing the data collected from the survey.

The researcher employed multi-stage random sampling to select the sample group. Firstly, a purposive sampling method to identify online running communities publicly operates on Facebook, with number of members exceed 5,000 people for each community. Secondly, the samples were selected using simple random sampling by posting the survey on the communities' Facebook page. Thirdly, stratified random sampling was employed. The sample online respondents were randomly selected based on their nationalities and the sample size was 400 respondents. The sample size was determined based on the criterion of 20 times of the observed variables.

3.2.2 Research instrument design procedures

3.2.2.1 Step 1: Researcher reviewed the literature of sport consumer behavior, service quality, event quality, running event, website design, customer satisfaction, customer loyalty, and personality traits from online databases in order to identify conceptual framework for this research.

3.2.2.2 Step 2: Researcher studied in more detail on factors associated with online international running event that obtained from qualitative research. Theories and concepts regarding to customer service, website design, and service outcome were search from various resources including online textbook, journal articles, newspaper, website, and online articles to guide on questions creating.

3.2.2.3 Step 3: Concepts and theories as well as questions obtained from literature review were applied to create the questionnaire. Since the usable questions were in English, the research invited language experts to translate into Thai language. After that, the researcher used the language center to translate the questionnaire from Thai version to English version.

3.2.2.4 Step 4: The first draft of questionnaire was sent to the advisors for reviewing the questionnaire. After the advisors provided the feedback, the researcher edited the first draft regarding to the comments and recommendations. Then, the researcher resubmitted the second draft to the advisors.

3.2.2.5 Step 5: Once the advisors approved the questionnaire, the researcher sent the questionnaire to the experts who are knowledgeable as service marketing, event management, and business management to receive recommendations. Three experts were selected based on the recommendation of Polit and Beck (2006). Content validity index (CVI) was employed to verify the adequate and relevant of questions on the objectives of the research. Both item-level CVI (I-CVI) and scale-level index (S-CVI) were evaluated. Each item had been given the relevance rating from 1 to 4 scores. According to Polit and Beck (2006), the I-CVI scores 3 or 4 will be considered as relevance to research objective. The result of content validity index was reported in instrument verification section.

3.2.2.6 Step 6: All comments and recommendations from three experts were used to modify the questionnaire. After the questions were revised, it had been converted into online survey. Then, the researcher posted the online survey on various online channels, such as social media, Facebook page, and Instagram in order to test reliability of the questionnaire. There were 108 returned questionnaires. The researcher, later, employed Cronbach alpha coefficient for testing reliability of the questionnaire. A Cronbach's alpha greater than .60 is considered as a good indication of the construct

reliability (Hair, Black, Babin, & Anderson, 2014a). The scores were reported in reliability assessment section.

3.2.2.7 Step 7: The researcher distributed the questionnaire that has been tested reliability to online running communities.

3.2.2 Research instruments

The questionnaire and scale items were obtained from the result of qualitative research method. The questionnaire was designed using Five-point Likert scale. All variables are divided into three types: 1) Independent variables including customer service, website design, and research outcome; 2) Dependent variables including satisfaction and loyalty; 3) Mediator variable including personality traits.

3.2.2.1 Customer service

There were 7 items in this factors, 3 items adopt from qualitative research and 4 items adjusted from Cristobal et al. (2007), and Rita et al. (2019) scales. These 7 items comprised experience of participants with customer service. The questions items retrieved from qualitative results are as follow.

- The running event website provides a contact detail to reach the event organizer.

- Customer service (live chat) helps me to solve the problem effectively and rapidly.

- Customer service (live chat) answers my inquiries promptly.

The other four items have been adjusted from Cristobal et al. (2007), and Rita et al. (2019) scales as it can evaluate other aspects of the customer service, such as how well the problem is solved, a tailor-made service on website, and a live person available to solve the problem. These four questions are as follow.

- My experience with customer service when I have a problem is excellent.

- The running event website has customer service representatives available online.

- The running event website provides me with a tailor-made service.

- The running event website offers the ability to speak to a live person if there is a problem.

The Likert scale had been used to rate the score for service that participants received from online international running events. The scale ranked from 5 (very likely) to 1 (very unlikely).

3.2.2.2 Website design

According to qualitative results of website design, template, user interface, tool bars, content, and communicating tools have been mentioned. Thus, the researcher reviews literatures on website design. Template refers to the layout and display of the website. User interface encompasses the appearance and interactivity of an application or website (Nanjappan, Liang, Wang, & Man, 2017). Tool bars is considered as interactive tools for participants to download the content on the web page. According to Karimov et al. (2011), user interface, tool bars and communicating tools are interactive tools on the webpage that encourage participants engage on the website. Content deals with information given on the website by the running organizers (Zhang et al., 2021). Alonso et al. (2017) also suggested that interactive tools, accessibility system, design and appearance of the website should be considered. Regarding to the above explanation, 9 questions retrieved from the qualitative results are as follow.

- The home page of website is visually appealing.
- The layout of webpage is attractive and well organized.
- The display of the website is good.
- The interactive features of website help me navigate and search on the website.
- The content provides clear contact information and channel.
- The content provides running event information in detail.
- The content on various online platforms is consistent.
- The website provides tools to interact with running event organizer.
- The website provides a chance to interact with other runners.

However, these primary scales need to be adjusted with the previous studies as it does not cover all aspects of website design. For instance, Karimov et al. (2011) suggested that the elements of visual design of the website should also include graphics and attractive color. The content design should also evaluate the

information accuracy. Social design should include the socialization aspects. Therefore, the other 7 items from Karimov et al. scales have been included as follow.

- The graphic is attractive and has high quality.
- The color used on the website is attractive.
- The content is clear, easy to understand, and interesting.
- The content shared to others easily.
- Other runners consistently make me to have a good impression of the online running event.
- Other runners' attitudes impact on effectiveness of the website.
- The website makes me feel that I belong to a runners' network.

These items can be grouped into 3 types according to its measurement context. These types include visual website design, content design, and social interaction design. All items have been rearranged as follow.

1) Website design
   - The home page of website is visually appealing.
   - The layout of webpage is attractive and well organized.
   - The graphic is attractive and has high quality.
   - The display of the website is good.
   - The color used on the website is attractive.
   - The interactive features of website help me navigate and search on the website.

2) Content design
   - The content provides clear contact information and channel.
   - The content provides running event information in detail.
   - The content is clear, easy to understand, and interesting.
   - The content on various online platforms is consistent.
   - The content shared to others easily.

3) Social interaction design
   - The website provides tools to interact with running event organizer.
   - The website provides a chance to interact with other runners.

- Other runners consistently make me to have a good impression of the online running event.

- Other runners' attitudes impact on effectiveness of the website.

- The website makes me feel that I belong to a runners' network.

The total number of items in this factor is 16 items. The Likert scale had also been used in this section, ranking from 5 (very likely) to 1 (very unlikely).

3.2.2.3 Service outcome.

This factor consisted of 9 items regardless of challenge, and value perceived by those participants who join online international running events. The Likert scales, from 5 (very likely) to 1 (very unlikely) had been rated for this factor. 4 items included in this factor adapt from the qualitative result. These items are as follow.

- An online running event is an event that I can challenge myself.

- An online running event is an event where I can challenge others.

- An online running event was worth for my money.

- An online running event was worth for my effort.

The researcher also included items adjusted from Romiti and Sarti (2016) who suggested that running event is a competition in nature, in which it create the level of achievement for participants. Thus, the challenge of the event itself should be included in this study. Moreover, V. A. Zeithaml (1988) stated that value is evaluated using a trade-off between what is received compare to what have been spent for it. 5 more items, therefore, has been included in this scale as follow.

- An online running event is an event that is a challenge.

- An online running event presents to me the challenge that I am looking for.

- An online running event was worth for my time.

- An online running event offered me more value than that I expected.

- An online running event offered me more value than other normal running events.

These items can be grouped into 2 categories: challenge and value. The new arrangement of all items is as follow.

1) Challenge

- An online running event is an event that I can challenge myself.

- An online running event is an event that is a challenge.

- An online running event is an event where I can challenge others.

- An online running event presents to me the challenge that I am looking for.

2) Value

- An online running event was worth for my money.

- An online running event was worth for my time.

- An online running event was worth for my effort.

- An online running event offered me more value than that I expected.

- An online running event offered me more value than other normal running events.

3.2.2.4 Satisfaction

According to the last theme of the qualitative result, satisfaction has been mentioned by key informants. To define the items measuring satisfaction, the work of Alonso-Dos-Santos et al. (2017) has been adjusted in this study. The items measure how customer service, website design, and service outcome influence participants satisfaction. Five-point Likert scale had been applied, ranking from 5 (very satisfied) to 1 (very dissatisfied). There were 6 items measuring satisfaction as follow.

- I think I do the right things when decide to participate in an online running event.

- I decide to participate in the next online running event.

- I am very satisfied with the website design of an online running event.

- I am very satisfied with the customer service of an online running event.

- I am very satisfied with the service outcome of an online running event.

- I am very satisfied with the value received from an online running event.

3.2.2.5 Loyalty

Loyalty items had been obtained from qualitative research and previous scholars (Kumar et al., 2006; Lam et al., 2004; Watson et al., 2015). The result of interview mentioned that the way to successfully organize the running event should also concern with building a connection with participants as well as creating the passion to participate. Passionate to participant relates with positive attitude of participants toward the running event (Watson et al., 2015). While connection building deals with the way participants keep in touch (repeat patronage) with the event organizer after the event end (Dick & Basu, 1994). Based on this information, items developed from the qualitative results are as follow.

- I have a positive attitude toward an online running event.
- I will always participate in online running event.
- I will definitely keep participating in an online running event.

However, Kumar et al. (2006) suggested that loyalty is multi-dimensional construct, hence need to be measured by both attitudinal and behavioral measurements. Lam et al. (2004) also mentioned that customer loyalty was expressed by two constructs: recommendation to others and intention to repeat patronage. Therefore, it is crucial to include attitudinal, behavioral, recommendation to others and intention to repeat patronage in the study. There are 10 questions obtained from Kumar et al. (2006) and Lam et al. (2004) as stated below.

- I enjoy using the online running event platform at my free time.
- I consider online running event as my first preference.
- I participate in almost all online running events.
- The latest time I participated in a running event, I participated in an online running event.
- I plan to participate in an online running event in the future.
- I will try to participate in an online running event again in the future.
- There is no doubt that I will attend an online running event in the future.
- I encourage my friends and relatives to participate in an online running event.

- I say positive words about online running event to others.
- I recommend an online running event to others.

There are, in total, 13 items of loyalty scales. Five-point Likert scale had also been used in this factor. The items have been rearranged regarding to the loyalty dimensions.

1) Attitudinal loyalty
   - I enjoy using the online running event platform at my free time.
   - I consider online running event as my first preference.
   - I have a positive attitude toward an online running event.
   - I will always participate in online running event.

2) Behavioral loyalty
   - I will definitely keep participating in an online running event.
   - I participate in almost all online running events.
   - The latest time I participated in a running event, I participated in an online running event.

3) Re-participation intention
   - I plan to participate in an online running event in the future.
   - I will try to participate in an online running event again in the future.
   - There is no doubt that I will attend an online running event in the future.

4) Refer to others
   - I encourage my friends and relatives to participate in an online running event.
   - I say positive words about online running event to others.
   - I recommend an online running event to others.

3.2.2.6 Personality traits

Personality traits explain how people are different from each other. The differences include the way they think, feel, and behave. In psychological aspects, the traits differ in each person, it can be consistent and enduring, as well as can change over time. In sport context, personality traits influence the way people decide to participate sporting event (D. C. Funk, 2008). These traits also link the relationship

between external forces and the outcomes of sport decision-making. In this study, hence, personality traits are indicated as mediator linking relationship between factors of online international running event (external forces) and satisfaction and loyalty (outcomes). The items of personality traits, adapted from Jani and Han (2014), consisted of 5 elements: extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience. Each element of the personality traits had five items.

1) Openness to experience
   - I get excited by new ideas and activities.
   - I enjoy thinking about several matters.
   - I enjoy hearing new things or ideas.
   - I enjoy looking for a deeper meaning.
   - I have a clear imagination.

2) Conscientiousness
   - I comply with my plans.
   - I pay attention to detail.
   - I always prepare.
   - I make plans and am strict to them.
   - I am exact in my work.

3) Extraversion
   - I talk to lots of different people at online running events.
   - I feel comfortable around other people.
   - I am the one who start conversations.
   - I make friends easily.
   - I like being center of attention.

4) Agreeableness
   - I sympathize with others' feelings.
   - I am concerned about others.
   - I respect others.
   - I believe that others have good intention.
   - I trust what people say to me.

5) Neuroticism

- I get stressed easily.
- I worry about several matters.
- I fear the worst.
- I am filled with doubts.
- I feel panic easily.

There are, in total, 25 items of personality traits scales. Five-point Likert scale had also been used in this factor. The table 8 shows all measurement items and sources of each factor.

Table 8 Measurement items and sources

No.	Measurement items	Sources
Customer Service		Cristobal et al. (2007); Hashemi (2013); and Rita et al. (2019)
1	My experience with customer service when I have a problem is excellent.	
2	The running event website provides a contact detail to reach the event organizer.	
3	The running event website has customer service representatives available online.	
4	The running event website provides me with a tailor-made service.	
5	The running event website offers the ability to speak to a live person if there is a problem.	
6	Customer service (live chat) helps me to solve the problem effectively and rapidly.	
7	Customer service (live chat) answers my inquiries promptly.	
Website Design		Karimov et al. (2011)
	Visual website design	
8	The home page of website is visually appealing.	
9	The layout of webpage is attractive and well organized.	
10	The graphic is attractive and has high quality.	
11	The display of the website is good.	
12	The color used in the website is attractive.	
13	The interactive features of website help me navigate and search on the website.	
	Content design	
14	The content provides clear contact information and channel.	
15	The content provides running event information in detail.	
16	The content is clear, easy to understand, and interesting.	
17	The content on various online platforms is consistent.	

Table 8 Measurement items and sources (Continue)

No.	Measurement items	Sources
18	The content shared to others easily.	
	Social interaction design	
19	The website provides tools to interact with running event organizer.	
20	The website provides a chance to interact with other runners.	
21	Other runners consistently make me to have a good impression of the online running event.	
22	Other runners' attitudes impact on effectiveness of the website.	
23	The website makes me feel that I belong to a runners' network.	
Service Outcome		Romiti and Sarti (2016)
	Challenge	
24	An online running event is an event that I can challenge myself.	
25	An online running event is an event that is a challenge.	
26	An online running event is an event where I can challenge others.	
27	An online running event presents to me the challenge that I am looking for.	
	Value	
28	An online running event was worth for my money.	
29	An online running event was worth for my time.	
30	An online running event was worth for my effort.	
31	An online running event offered me more value than that I expected.	
32	An online running event offered me more value than other normal running events.	
Personality Traits		Jani and Han (2014)
	Openness to experience	
33	I get excited by new ideas and activities.	
34	I enjoy thinking about several matters.	
35	I enjoy hearing new things or ideas.	
36	I enjoy looking for a deeper meaning.	
37	I have a clear imagination.	
	Conscientiousness	
38	I comply with my plans.	
39	I pay attention to detail.	
40	I always prepare.	
41	I make plans and am strict to them.	
42	I am exact in my work.	

Table 8 Measurement items and sources (Continue)

No.	Measurement items	Sources
	Extraversion	
43	I talk to lots of different people at online running events.	
44	I feel comfortable around other people.	
45	I am the one who start conversations.	
46	I make friends easily.	
47	I like being center of attention.	
	Agreeableness	
48	I sympathize with others' feelings.	
49	I am concerned about others.	
50	I respect others.	
51	I believe that others have good intention.	
52	I trust what people say to me.	
	Neuroticism	
53	I get stressed easily.	
54	I worry about several matters.	
55	I fear the worst.	
56	I am filled with doubts.	
57	I feel panic easily.	
Satisfactions		Alonso-Dos-Santos et al. (2017); Chen et al. (2021); Koo, Byon, and Baker III (2014)
58	I think I do the right things when decide to participate in an online running event.	
59	I decide to participate in the next online running event.	
60	I am very satisfied with the website design of an online running event.	
61	I am very satisfied with the customer service of an online running event.	
62	I am very satisfied with the service outcome of an online running event.	
63	I am very satisfied with the value received from an online running event.	
Loyalty		Watson et al. (2015)
	Attitudinal loyalty	
64	I enjoy using the online running event platform at my free time.	
65	I consider online running event as my first preference.	
66	I have a positive attitude toward an online running event.	
67	I will always participate in online running event.	
	Behavioral loyalty	Kumar et al. (2006)
68	I will definitely keep participating in an online running event.	
69	I participate in almost all online running events.	
70	The latest time I participated in a running event, I participated in an online running event.	

Table 8 Measurement items and sources (Continue)

No.	Measurement items	Sources
	Re-participation intention	Dick and Basu (1994)
71	I plan to participate in an online running event in the future.	
72	I will try to participate in an online running event again in the future.	
73	There is no doubt that I will attend an online running event in the future.	
	Refer to others	Lam et al. (2004)
74	I encourage my friends and relatives to participate in an online running event.	
75	I say positive words about online running event to others.	
76	I recommend an online running event to others.	

There are 6 variables in this research. Three independent variables drawn from interview results: customer service, website design, and service outcome, meanwhile satisfaction and loyalty were dependent variables, and personality traits were mediator. Some of the items included in the measurement scales had been attained from the previous research. Number of items associated with 6 variables were listed in Table 9.

Table 9 Number of measurement items for 6 variables

Variables	Number of items
Customer service	7 items
Website design	16 items
Service outcome	9 items
Satisfaction	6 items
Loyalty	13 items
Personality traits	25 items

3.2.3 Research instrument verification and validation

3.2.3.1 Content validity

In this research, content validity of all items received score of 3 to 4, which passed the minimum criteria of item-level CVI (I-CVI). Furthermore, the result of scale-level index (S-CVI) showed that all 76 items were rated 3 to 4 from all three experts. Thus, the S-CVI was equal to 1.00 which indicating the items of the research instrument were relevant to the objectives. The result of content validity index was presented in Appendix C.

3.2.3.2 Reliability Assessment

Reliability assessment was tested with 108 cases of responses in pilot test. The reliability result of customer service was .839, website design was .942, service outcome was .926, personality traits were .838, satisfaction was .871, and loyalty was .832. There was no item deleted in this phase. The result can be found in Chapter 4.

3.2.3.3 Dimensionality assessment

Once the questionnaires were returned, exploratory factor analysis (EFA) was tested. The criteria for testing EFA are adopt from Hair et al. (2014b). They suggested that the sample size should be, at least, 50 samples. The factors with eigenvalue greater than 1 is considered significant and should be selected. The item that has factor loading below .40 or cross-loaded more than one factor with a factor loading higher than .40 should be deleted. Items with communalities below .40 will be deleted since it is considered insufficient to explain that construct. The Kaiser-Meyer-Olkin (KMO) measuring sampling adequacy should be greater than .50 to meet the acceptable criteria. A significant Bartlett's test of sphericity (p-value) should be less than .05 ($P < .05$).

3.2.3.4 Convergent and discriminant validity

To analyze data using structural equation modeling (SEM), convergent and discriminant validity is required to validate the constructs. Confirmatory factor analysis (CFA) was employed to test construct validity of a model measurement. The measured items were validated to check whether it reflects the theoretical variable of the same construct. The observed variables of a specified construct should have a high proportion of variance (convergent validity). Hair et al.

(2014b) suggested the criteria of convergent that factor loading should be greater than .50. The average variance extracted (AVE) should be higher than .50 and the composite reliability (CR) should be .60 or higher.

3.2.4 Data collection procedure

3.2.4.1 Step 1: Before getting the data, the researcher asked for the permission to collect the data from selected online running communities.

3.2.4.2 Step 2: When the permit was granted, the researcher immediately distributed the online survey to the communities' administrative to post the survey on Facebook page during late September to December 2021. At the first page of online survey, all respondents were informed the objectives of the study as well as the right to end the survey any time they feel uncomfortable with the questions.

3.2.4.3 Step 3: During the time of survey, the researcher needed to re-post the survey on the online running communities every month. It took almost four months to collect the data from running communities. At the end of December 2021, data from 400 respondents were collected. all data received from the respondents had been kept privately in an Excel file on a password secured driver, where only the researcher can access.

3.2.5 Statistical data analysis

After collected data from the respondents, content analysis, descriptive statistics, and hypothesis testing were applied in this research.

3.2.5.1 Descriptive statistics including frequency, percentage, mean, standard deviation (SD) was used to analyze data related to all six variables: customer service, website design, service outcome, satisfaction, loyalty, and personality traits.

3.2.5.2 Data normality was tested using skewness and kurtosis. All univariate distributions of the variables in this research had normal skew and kurtosis. According to Kline (2005), the skewness values that out of the boundary -3.0 and +3.0 are extremely skew, in which considering as non-normality. Meanwhile, the kurtosis index that above 10.0 is considered non-normal distribution.

3.2.5.3 Multivariate statistics were used to test hypothesis. Structural equation modeling (SEM) was used to identify structural relationship between measured variables and latent constructs. Factor analysis and multiple regression analysis were used to analyze this relationship. The criteria of factor loading should be

greater than .50 (Hair et al., 2014b). To evaluate model, the absolute fit indices suggested that χ^2/df lower than 5.00 is considered acceptable and considered good fit if it is lower than 3.00. The Goodness-of-fit index (GFI) and Adjusted Goodness-of-fit (AGFI) should be greater than .90. Comparative Fit Index (CFI) should be higher than .90. The Root Mean Square Error of Approximation (RMSEA) and Root Mean Square Residual (RMR) below .08 indicated acceptable fit. Table 10 summarizes the absolute fit indices.

Table 10 The summary of absolute fit indices

Fit Indices	**Good Fit Values**	**Acceptable Fit Values**
χ^2/df	00 < χ^2/df < 3.00	3.00 < χ^2/df < 5.00
GFI	.95 < GFI < 1.00	.90 < GFI < .95
AGFI	.95 < GFI < 1.00	.90 < GFI < .95
CFI	.95 < CFI < 1.00	.90 < CFI < .95
RMSEA	.00 < RMSEA < .05	.05 < RMSEA < .08
RMR	.00 < RMR < .05	.05 < RMR < .08

Source: Byrne (2009)

Chapter 4
Results and Findings

This chapter reveals the results and findings of content and data analysis, consisting of two main sections. The first section reveals the results of qualitative research method. The data obtained from interviewing two key informants who work with the running organizers. The second section presents results of quantitative research method. The samples' characteristics and descriptive statistical analysis of participants are mentioned first. Then, data screening, data normality, and reliability of all variables are identified. The results of construct validity including exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), convergent validity, and discriminant validity of all measurement models are, later, stated. The last part shows structural model with path analysis results and hypothesis testing.

4.1 Qualitative Results

The purpose of qualitative research is to explore critical factors associated with online international running event. The current service quality measured online running event has not yet identified since it is new concept in sport event. The semi-interview structural questions were based on the work of Brady and Cronin (2001) who studied a hierarchical approach model (see chapter 2). The interview data is collected from two key informants who are staffs of online running event organizers. The results obtained from interviews can be draw into four themes: customer service, website design, service outcome, and successfulness of the event (see chapter 3).

Before organizing an online running event, the organizer should identify their event characteristics. Then the platform will be chosen according to these characteristics. As the manager of Fit Don't Quit stated about background of the event below.

It is an exercise event that people who participates will count their steps and report to us. Then we will convert those steps into money and donate to community that support COVID-19. We make people want to exercise even at home. We make them feel like exercise is meaningful, not only for themselves, but also for others because finally

it will become a donation. They also get the small gifts from us as rewards for exercising.

4.1.1 Customer service

Once the characteristic of the event established, organizers need to have an online platform for managing the event. The online platform plays an important role in online running event since it is the contact point between organizer and participants starting from registration to result posting (Brately, 2022). The manager of Fit Don't Quit explained that participants can register, commit payment, and collect steps via Event Pop which is the main platform for Fit Don't Quit. The manager is explained that they use online channels to providing service to customer as below here.

Actually, we only have the online because we don't have a platform to communicate with participants. So, we use 'Event Pop' as our main platform for information display, registration, payment, and steps collection record. But for different kind of post and marketing activities, we are mainly using the Facebook and Instagram. So, we use various channels like social media and the website.

According to the administrative staff of SM Virtual Run 2021 stated in the interview, he mentioned that social media (Facebook) is the main platform to contact and promote the event to participants. Moreover, they also selected 'Map My Fitness' to manage the event. As he stated in the interview as below.

"We use Facebook to contact and promote our virtual run. It is easy for us to use chat box in social media to response to our runners. The runners can use Map My Fitness to participate in the online running event."

According to both organizers, they use website and social media (particularly Facebook) to contact with participants, promote, and manage the events. As stated by the manager of Fit Don't Quit below.

We use website, and social media like Instagram and Facebook. We posted our related contents about our sports and how does it work. We just promoted our small event and activities that we have during the event phase.

It is confirmed by the administrative staff of SM that social media and the application 'Map My Fitness' are the main contact channels between participants and the organizer as he stated below.

We use only Facebook and Map My Fitness to provide service for our runners. If runners have problem with Map My Fitness, they can ask questions on Facebook page anytime.

Thus, it is obvious that social media, such as Facebook and Instagram, is used as the main channels for answering participants' questions or enquiries. Meanwhile the online running platforms (Event Pop and Map My Fitness) are used for managing the event and collect the steps recording from all participants.

In conclusion, to satisfy participants' expectation, staff attitude, behavior, and professional skill are necessary. The interview results reveal that running event organizers tend to contact and response to participants' inquiries via social media. Even though the organizers provided various platforms, such as website, application, and social media, to contact participants, the most popular communication platform was social media (particularly Facebook and Instagram). Therefore, interaction between staff and participants tend to be conducted via social media. This is, perhaps, because the time delay between the question posted by participants and the answer responded by staff was short. As the digital sense, the patient time of participants reduced compared to the physical event.

4.1.2 Website design

As the online running event required online platform as a channel for participant to join the event, organizers need to be careful when select the right platform for their events. Running event organizers suggested that they evaluated alternatives event platforms by considering the popularity and number of participants joining events conducted by event agents. Both organizers gave the reasons why they have selected

these two online running event platforms, Event Pop and Map My Fitness that it is the popular platform used by their main target group. In the case of Event pop, it is the website that provide different kind of sport events, such as virtual run, fitness activities, education events, concerts, etc (Eventpop.me, 2022). The manager of Fit Don't Quit explained how they selected the event as below here.

Yes, we have many choices during our pitching. We search for different kind of platforms. But it seems like Event Pop is the one that most people using for virtual run and different kind of sport events. So, we picked it because we see that many people are trying to sell the tickets, both online and offline, on Event Pop. So, we think it is a good platform for our event.

The administrative staff of SM Virtual Run 2021 also explained the reason to select Map My Fitness that it is popular among their target group since it created by world popular sport brand, Under Armour (Statista.com, 2022). The app is easy to use, and the system is stable as mentioned by the administrative staff below.

Map My Fitness is a popular app among our runners (students). They use this app as it created by Under Armour. Lots of students are Under Armour Fans. We use Map My Fitness to record the step of each runner. They can sync the app with Apple Watch, Garmin and others smart watch and can track their progress. The app system is easy to use and quite stable, and other runners who are not Under Armour customer can use it too.

Although Event pop and Map My Fitness are standardized event platform, there are some problems occur with using a 'standardized' platform. For instance, the visual design cannot change by the event organizers. It is a format template that only allow organizers to post events news on it. As mentioned by the manager of Fit Don't Quit as below.

We cannot design our website because it had a format already. And we concern about the format since it is not what we think. We can only put the photos and

give a description. It is not what we imagine at the first time. We though it should have, at least, the details and display. It only scrolls down and scrolls down. We have asked them, but we cannot change the format. So, we just leave it like that and try to work more on Instagram and Facebook because we can post many kinds of artworks for our event, and we can manage how it looks.

As the website cannot be change, the problem occurs with website interface as mentioned by the manager of Fit Don't Quit below.

The complaint was not from the runners themselves but come from our team because sometimes the Event Pop user interface is not so well. It hard to find the correct tool bars. Sometime if we want to set something like check the data of the runners and registers, it hard to find the page that we can use. So, we have to communicate with web team very often and we also have a private group with them to ask some questions, detail setting, and different kind of communications.

The manager of Fit Don't Quit also suggested that when the team tried to practice a registration process on Event Pop, they found that the interactive feature is hard to use and not clear. As she stated below.

Yes. And we are trying to register, but we found out that it is hard for people to upload the steps recorded because they cannot find the page and the page is not very clear.

The problem about interactive feature also found in the case of SM Virtual Run 2021 as the administrative staff mentioned that they cannot design a template as it already has a standardized application template.

No, we cannot design as there is a template. We can only send the information, pictures, and some text to them and let them post on the application for us.

From this, it can be implied that the best solution for designing the feature on website or application is that simply sending information, pictures, and artworks of the running events to the websites or application administrative team and let them post it on the website or application. The manager of Fit Don't Quit mentioned this solution as below.

We can only give them the file of our posters and artworks.

Not only a design, but the content posted on the website or application were also concerned. The content on the website tends to be information about the event, contact details, artworks, pictures, and other media related to exercise or running topics. As the manager of Fit Don't Quit stated below.

We provide contact information via all channels, and they can contact us if they have any problem.

For the Event Pop, we provide the description and information about our t-shirt design. We also provide the online lectures about the exercise topics. The information is less details than on the social media.

The administrative staff of SM Virtual Run 2021 also mentioned that they divide contents posted on the application and social media. They use social media (Facebook) to post the content about the event, and use Map My Fitness to menage the event only. As he stated in the interview below.

We have only 2 platforms. We normally used Facebook for posting information about our virtual run activity and contact with runners. We used Map My Fitness to only record the results.

To create relationship with participants, the event organizers applied social interactive tools to contact with participants. These tools help participants contact with other participants and the running organizers. The most popular interactive tools

are social media, such as Facebook. As the administrative staff of SM Virtual Run 2021 stated below.

Runners do not use application to contact each other. They use Facebook page to chat with other runners.

As we use Facebook to contact with runners, they can talk to each other in the Facebook page. And if they have some questions about the event, they can contact the staff anytime they want.

This is also mentioned by the manager of Fit Don't Quit that Facebook Messenger is an appropriated tool to answer questions from participants as stated below.

We normally use Facebook messenger to answer questions from runners.

It is interesting that, however, website and application only allow participants to contact with event organizers. It has no interactive tools or feature on the website or application for participants to contact with each other. What participants only see on the website or application is the score board. The manager of Fit Don't Quit gave the interview in this regard as below.

We have a leader board for runners to look. So, they know who the leaders of the board are. But they did not communicate with each other since it has no tool for them to communicate inside the event.

Thus, it can be concluded that website and application can only establish relationship between participants and the running event organizers. Meanwhile social media, as its named, can be used as a tool to create social networking for both participants to organizers, and participants to participants. As the template of the online platform cannot change, selecting the right event platform is important to get first impression from new participants. Therefore, using social media together with website

or application on the event can lead to a stronger relationship with participants as well as to retain the current participants with the event.

4.1.3 Service outcome

Once the participants experience the event, the outcome of joining that online running event has been created. Like other sports competition, running event is a sport type that make people feel the tense of challenge when joining the competition, either challenge their own level of achievement or challenged by others' achievement. In the case of online running event, the scores on the live leader board can challenge participants in the way that they may want to be on the top of the board. As stated by the manager of Fit Don't Quit below.

I think the challenge is created by runners themselves since they have a leader board. And some of the runners in the leading position is hard working. So, when others upload their records, they will be motivated and workout more. Since in the tool bar there are name of competitors, so they may feel like I want to compete with them.

This fact also supported by the administrative staff of SM Virtual Run 2021 that participants feel challenge when they want to be on the top of the leader board. He stated that in the interview below.

It is a competition between runners, so they may feel challenge as they want to be on top of the score board.

The outcome perceived by participants also included value. Certificate, medal, and gifts from the organizers are considered as reward for participants. It makes participants satisfied with their hard effort. As stated by the administrative staff of SM Virtual Run 2021 below.

Participants who join the event receives the certificate, and gifts from us. This will make them proud as they can finish the race.

The manager of Fit Don't Quit also mentioned that participants feel special since they are the community helpers who support COVID-19 donation campaign. This running event can motivate them to collect more steps for the donation. The manager stated in the interview session as follow.

We are trying to make them feel value for the exercise because normally this kind of running event will give them a medal or certificate. We have the cloth, e-certificate and gifts for make them feel value by choosing to donate money to people who need money during a COVID time. We got feedback about the event that it is fresh and new for them because not all of this kind of event donate the profit to the community, and it make them feel like special when they workout and motivate them.

To conclude in the outcome point, the organizers motivated participants to join the running event by providing a special experience or feeling (challenge) and value, such as certificate, gifts, medal, and race gears (T-shirt) to participants.

4.1.4 Success of the event

After the event finish, organizers need to get feedback from participants. The administrative staff of SM Virtual Run 2021 mentioned about the method and channels collecting the survey that it was created using Google Form and, later, distributed through Facebook page. This indicates that social media is an easy tool to communicate with participants. The administrative staff stated as follow.

When runners registered in our virtual run, they need to provide their email to use. Thus, we can collect the email of runners and send information and survey via email after the event finish. We created the satisfaction survey using Google Form and distribute the survey to runners via Facebook page. Runners satisfied with our event.

The result of the SM Virtual Run 2021 shows that runners satisfied with the event. This is supported by the feedback of Fit Don't Quit event. It shows that participants satisfied with their event too. They also provide online webinars for

participants after the event. However, the price is too high for participants' perspective as stated by the manager of Fit Don't Quit below.

They satisfied because it not difficult for them since people workout already. We are just another platform for them to upload their workout record. So, it is no limitation for them to join. We also provide online session like online webinars and provide information to them. The only thing that we see unsatisfaction is that the price is too high.

The manager of Fit Don't Quit also mentioned the way to continue relationship with participants by providing information regarding on the exercise topic. Moreover, they also suggested that participants have less passion to join online running event comparing with the physical one. As she stated in the interview below.

After we finish the event, we try to build up our connection with participants by providing information about workout and COVID-19. We try to make them get familiar with us. However, using only the online channels is difficult to get in touch with people. We prefer for an offline event instead. They have more passion to participate.

The organizers, furthermore, also got some feedbacks from participants. The feedback indicates a satisfaction result. This is a chance that the organizers can continuously send information about running or exercising to participants in order to develop more connection with them for the next event. Since the organizers had participants' email, they can send the promotion or advertising of the next running event to them via the email.

From the data above, figure 10 illustrates how online running event factors contribute to the successful of the running event. Customer service, website design, and service outcome are primary factors affecting the event successfulness. It would lead to participants satisfaction, connection building, and the passionate for participating the event again in the future.

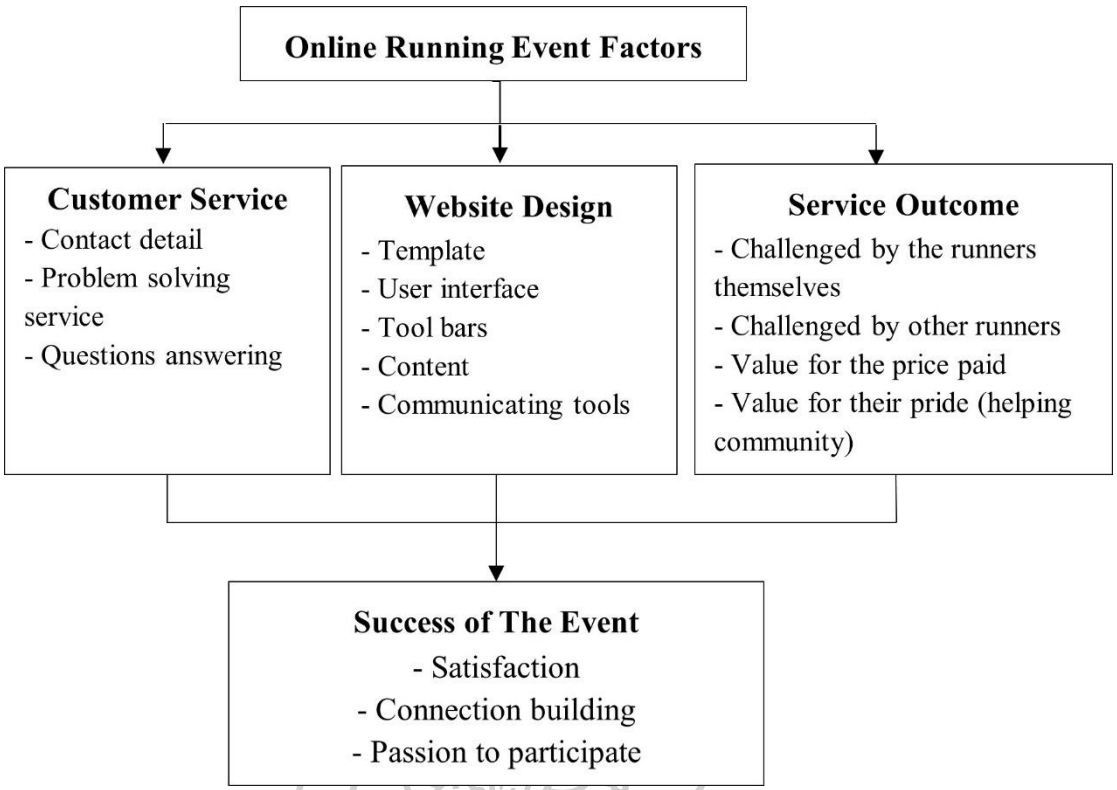

Figure 10 Online running event factors contribution to the event successfulness

4.1.5 Proposed conceptual framework

Four dimensions found from the interview has been proposed as the conceptual framework. It related with sport decision-making process in the way that participants evaluate external forces while using internal forces as a driving gear, as well as assess the outputs of their decision to participate in online running event. The sport decision-making concept applied in this study was adjusted from Funk (2008) (see chapter 2). From figure 10, the three dimensions: customer service, website design, and service outcome were considered as external forces that influence participants' decision-making when they join the online running event. While participants experience the online running event, they evaluate the quality of the event using their internal forces, personality traits. Later, in the outputs phase, participants form a positive attitude as well as the new behaviors toward the online running event. According to this adjustment, therefore, the researcher has developed the proposed conceptual framework as figure 11 shown below.

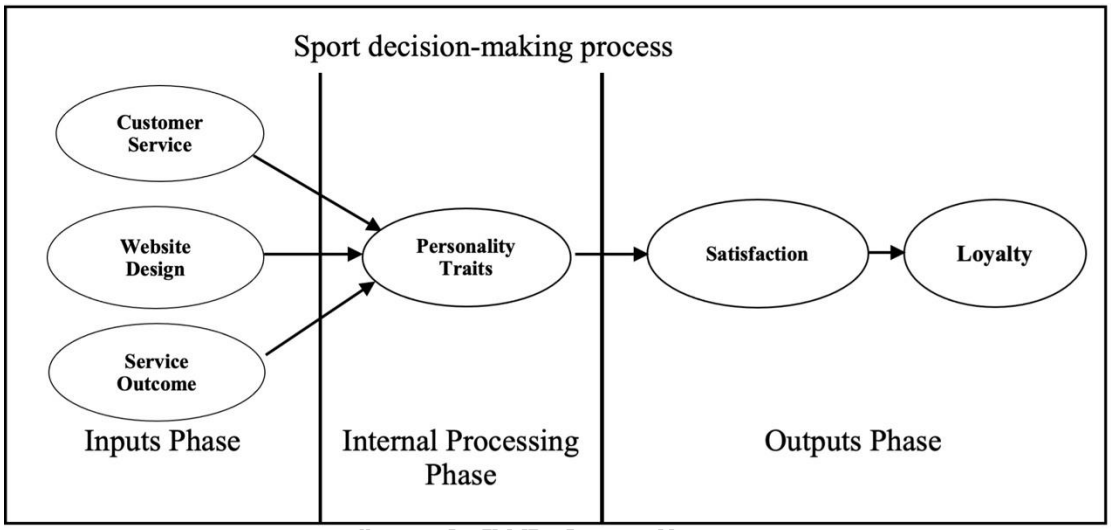

Figure 11 The proposed conceptual framework

After the conceptual framework has been identified, the next step is to put all four factors found in the questionnaire for quantitative research method (see chapter 3). As stated earlier, the purpose of doing qualitative research is to develop the new measurement scales evaluating online running events. According to the interview result, customer service tends to deal with staff interaction with participants. For online event, however, the staffs only interact with customer online, without physical contact. Thus, customer service is the main factor of the event need to be evaluated when organizing the online running event.

Since online running event conducted via online platform, website environment was focused on this research instead of physical environment. The results show that the template of website or application, user interface, tool bars, content of the event, and communication tools are key features that the website or application needs to have. Thus, it needs to be assessed in this study.

Service outcome deals with challenge and value perceived by participants. The results suggest that participants who join the competitions might feel that they are challenged by themselves and others. Value is also considered here as participants would evaluate the worthiness of their money and the effort when participating in the running event. Thus, value and challenge have been included in the questionnaire under ‘service outcome.’

To evaluate the succession of the event, satisfaction survey should be on the top of must-do list. Moreover, to encourage the current participants to re-participate again in the future, the organizer should also build a relationship with participants and create passion to participate for them.

Once the proposed conceptual framework and the measurement scales have been created, the researcher validated those six measurement scales including customer service, website design, service outcome, personality traits, satisfaction, and loyalty as well as tested the hypotheses. The next section explains these results in detail.

4.2 Quantitative Results

4.2.1 Pilot result

Before the questionnaire has been distributed to the target group, it needs to be tested the reliability of the content. Reliability coefficient assessment was tested with 108 respondents who participated in online running events. The table 11 shows that all constructs have reliability scores more than .80 and no item has been deleted during the pilot test.

Table 11 Reliability coefficient of pilot test

Items	**Item-to-total correlations**	**Alpha if item deleted**	**Reliability Coefficient**
Customer Service (CS)			.839
CS1	.579	.820	
CS2	.537	.827	
CS3	.621	.815	
CS4	.445	.837	
CS5	.570	.820	
CS6	.771	.786	
CS7	.703	.801	
Website Design (WD)			.942
WV1	.406	.944	
WV2	.721	.938	

Table 11 Reliability coefficient of pilot test (Continue)

Items	Item-to-total correlations	Alpha if item deleted	Reliability Coefficient
WV3	.647	.940	
WV4	.629	.940	
WV5	.600	.941	
WV6	.637	.940	
CT1	.683	.939	
CT2	.730	.938	
CT3	.661	.939	
CT4	.782	.936	
CT5	.666	.939	
SI1	.791	.936	
SI2	.820	.935	
SI3	.819	.935	
SI4	.775	.937	
SI5	.682	.940	
Service Outcome (SO)			.926
CHA1	.669	.921	
CHA2	.833	.910	
CHA3	.606	.924	
CHA4	.833	.911	
VAL1	.743	.916	
VAL2	.738	.916	
VAL3	.748	.916	
VAL4	.770	.914	
VAL5	.680	.922	
Personality Traits (PT)			.838
OPE1	.484	.828	
OPE2	.533	.826	
OPE3	.519	.827	

Table 11 Reliability coefficient of pilot test (Continue)

Items	Item-to-total correlations	Alpha if item deleted	Reliability Coefficient
OPE4	.442	.830	
OPE5	.502	.828	
CON1	.523	.828	
CON2	.564	.826	
CON3	.451	.829	
CON4	.492	.829	
CON5	.497	.828	
EXT1	.556	.824	
EXT2	.448	.830	
EXT3	.539	.826	
EXT4	.528	.826	
EXT5	.385	.832	
AGR1	.371	.833	
AGR2	.281	.836	
AGR3	.218	.838	
AGR4	.294	.835	
AGR5	.454	.830	
NEU1	.026	.846	
NEU2	.061	.842	
NEU3	.146	.840	
NEU4	.216	.838	
NEU5	.020	.848	
Satisfaction (SAT)			.871
SAT1	.572	.865	
SAT2	.668	.850	
SAT3	.598	.862	
SAT4	.662	.852	
SAT5	.774	.830	

Table 11 Reliability coefficient of pilot test (Continue)

Items	Item-to-total correlations	Alpha if item deleted	Reliability Coefficient
SAT6	.770	.832	
Loyalty (LOY)			.832
ATT1	.351	.828	
ATT2	.474	.821	
ATT3	.564	.814	
ATT4	.610	.809	
BEH1	.603	.810	
BEH2	.614	.809	
BEH3	.577	.812	
INT1	.410	.825	
INT2	.406	.825	
INT3	.351	.828	
REF1	.362	.829	
REF2	.446	.822	
REF3	.385	.826	

The Alpha of customer service was .839, website design was .942, service outcome was .926, personality traits was .838, satisfaction was .871, and loyalty was .832. All variables have reliability coefficient value higher than .80 indicating that the content of all items was consistent with each variable.

4.2.2 Sample characteristics and descriptive analysis

Data collected from samples were distributed to online running communities on Facebook page during the period of September to December 2021. 400 questionnaires were selected as samples according to Blair and Blair (2015, p. 107) sample size norm (with the confidence interval of 95%). The following section resents demographic and general information of these samples.

4.2.2.1 Demographic profile

Demographic characteristics of 400 respondents include gender, age, nationality, spending per event, running event programs, and distance of race. Table 12 indicates demographic profiles in frequency and percentage.

Table 12 Demographic profile (n=400)

Demographics	**Frequency**	**%**
Gender		
Male	190	47.5
Female	210	52.5
Age		
20-29 years	62	15.5
30-39 years	111	27.8
40-49 years	159	39.8
50-59 years	59	14.8
60 years or over	9	2.3
Nationality		
Thai	339	84.8
Chinese	9	2.3
British	47	11.8
Malaysian	5	1.3
Spending (per event)		
1) Total spending for registration		
- Less than $100	290	72.5
- $101-200	92	23.0
- $201-300	9	2.3
- $301-400	9	2.3
2) Total spending for buying race gears		
- Less than $100	197	49.3
- $101-200	103	25.8
- $201-300	39	9.8
- $301-400	23	5.8

Table 12 Demographic profile (n=400) (Continue)

Demographics	Frequency	%
- $501 or more	38	9.5
3) Total spending for buying other products		
- Less than $100	251	62.8
- $101-200	68	17.0
- $201-300	43	10.8
- $301-400	17	4.3
- $501 or more	21	5.3
Online running event programs		
Strava	80	20.0
Zwift	36	9.0
Peloton	40	10.0
42Race	41	10.3
40th RX KKU	43	10.8
NTT Virtual run	29	7.3
Romruarun 3	18	4.5
Drunker Runner	26	6.5
ThaiRun	17	4.3
The mask runner	35	8.8
Fit don't quit	35	8.8
Distance of the race		
Mini Marathon: 10 km.	265	66.3
Half Marathon: 21.1 km.	25	6.3
Marathon: 42.2 km.	40	10.0
Ultra-Marathon: longer than 42.2 km.	70	17.5

Among these samples, most respondents were female, accounted as 210 respondents or 52.5% and male, accounted as 190 respondents or 47.5%. Figure 12 indicates gender of respondents in percentage.

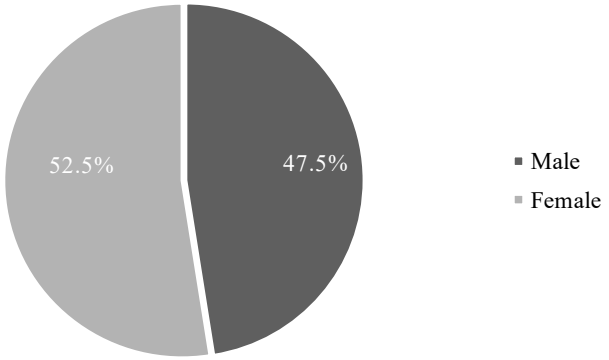

Figure 12 Gender in percentage

Most respondents were 40-49 years old, accounted as 159 respondents or 39.8%. 111 respondents or 27.8% were between 30-39 years old. 62 respondents or 15.5% were 20-29 years old were, 59 respondents or 14.8% were 50-59 years old, 9 respondents or 2.3% were 60 years or over. Figure 13 identifies age group of respondents in percentage.

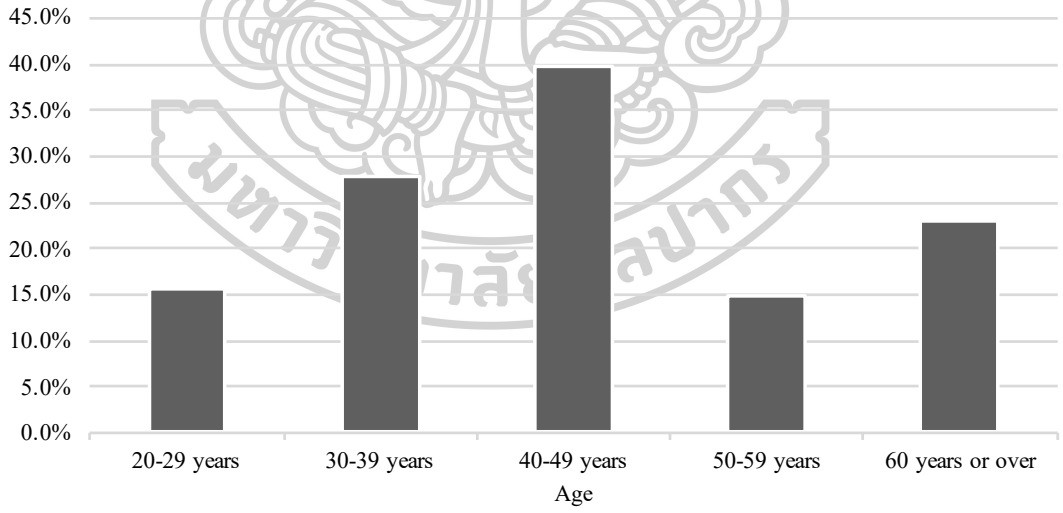

Figure 13 Age group in percentage

The nationality of respondents was mostly Thai, accounted as 339 respondents or 84.8%, meanwhile British respondents were rank second, accounted as

47 or 11.8%, Chinese was 9 or 2.3% and Malaysian was 5 or 1.3% respectively. Figure14 indicates nationality in percentage.

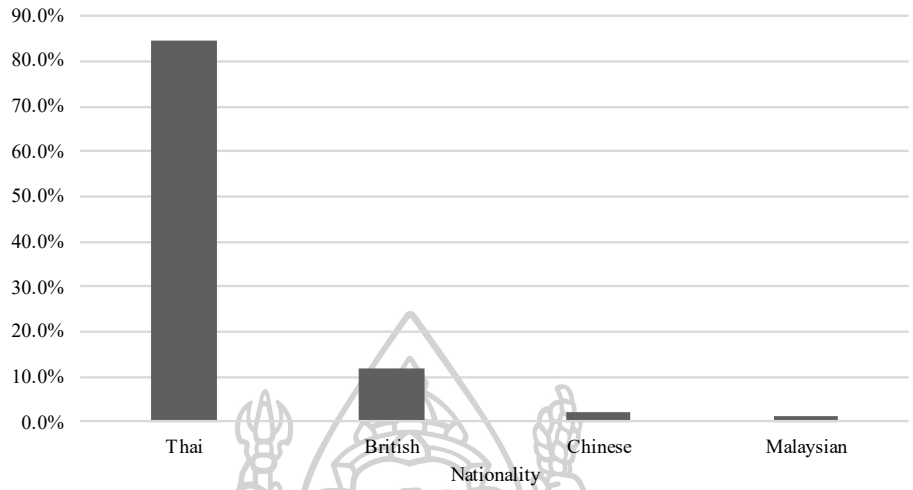

Figure 14 Nationality in percentage

Spending for each event consists of three subsets: spending for registration, buying race gears, and buying other products. Registration spending levels was mostly less than $100, accounted as 290 respondents or 72.5%. There were 92 respondents or 23% spent $101 - $200 on registration and 9 respondents (2.3%) spent money between $201 and $300 and $301and $400 equally. Figure 15 identifies registration spending per event.

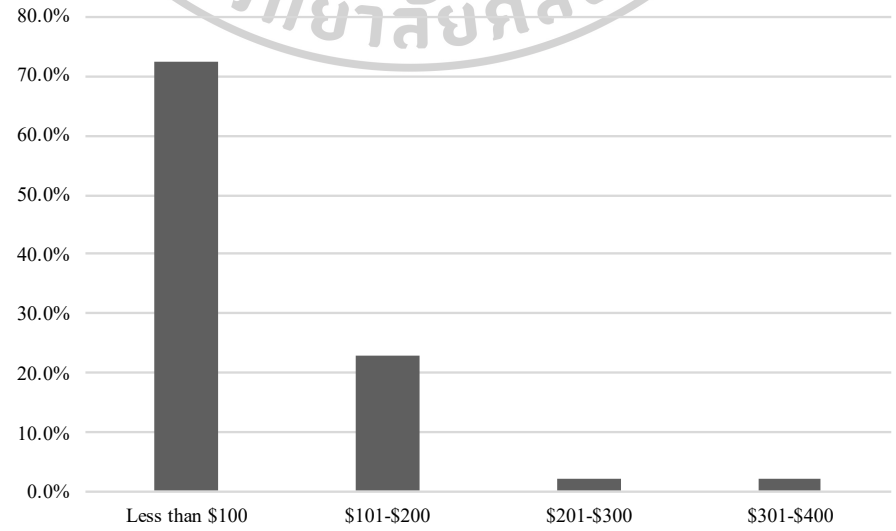

Figure 15 Registration spending in percentage

For buying race gears, 197 respondents (49.3%) spent less than $100, 103 respondents (25.8%) spent between $101 and $200, 39 respondents (9.8%) spent $201-$300, 38 respondents (9.5%) spent $501 or more, and only 23 respondents (5.8%) spent between $301 and $400. Figure 16 shows race gears spending per event.

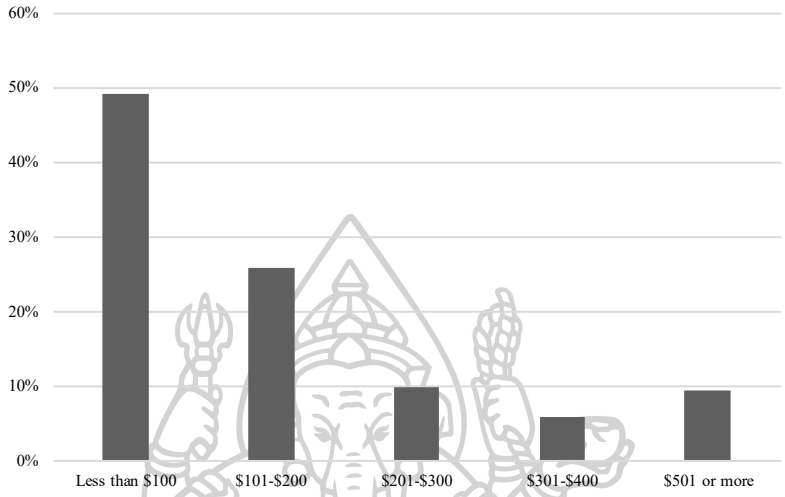

Figure 16 Race gears spending in percentage

251 respondents (62.8%) who bought other products, spent less than $100. 68 respondents (17%) spent their money between $101 and $200 for buying other products. 43 respondents (10.8%) spent between $201 and $300, 21 respondents (5.3%) spent $501 or more, and 17 respondents (4.3%) spent between $301 and $400 to by other products. Figure 17 illustrates other products spending per event.

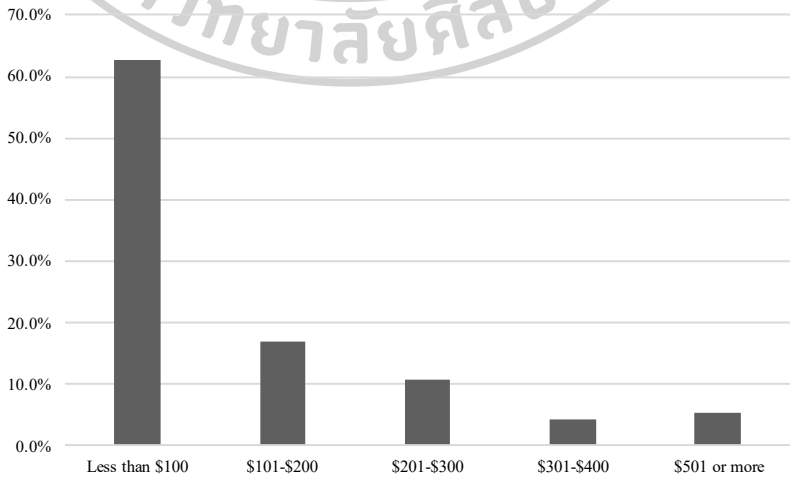

Figure 17 Other products spending in percentage

The online running event programs that respondents participated recently includes Strava Challenge, accounted as 80 respondents or 20% from total respondents. The next rank consists of 40th RX KKU Virtual Run, accounted as 43 respondents or 10.8%, 42Race had 41 respondents (10.3%), Peloton Challenge had 40 respondents (10%), Swift had 36 respondents (9%), the Mask Runner and Fit Don't Quit had equal amount of 35 respondents (8.8%), NTT Virtual Run had 29 respondents (7.3%), Drunker Runner had 26 respondents (6.5%), Romruarun 3 had 18 respondents (4.5%), and ThaiRun had 17 respondents (4.3%). Figure 18 shows online running event programs participated by respondents.

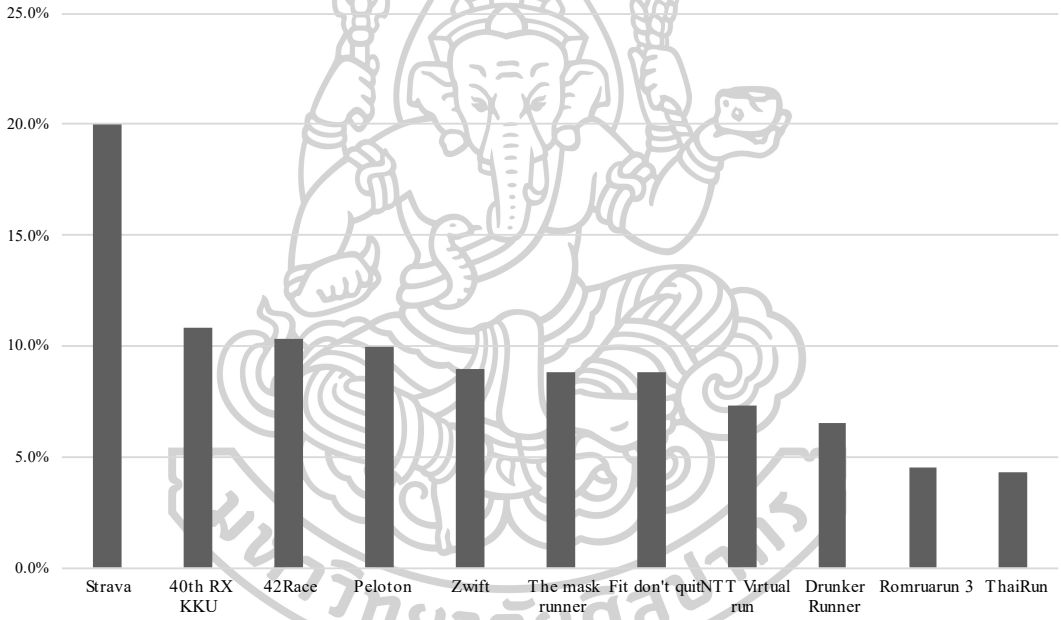

Figure 18 Online running event programs in percentage

The distances that most respondents had been participating were Mini Marathon (10 km.), which had 265 respondents or accounted as 66.3% from total respondents. There were 70 respondents participating Ultra-Marathon (longer than 42.2 km.), accounted as 17.5%, 40 respondents were participating on Marathon (42.2 km.), and 25 respondents were participating on Half Marathon (21.1 km.). Figure 19 shows the distance of running event that respondents participated.

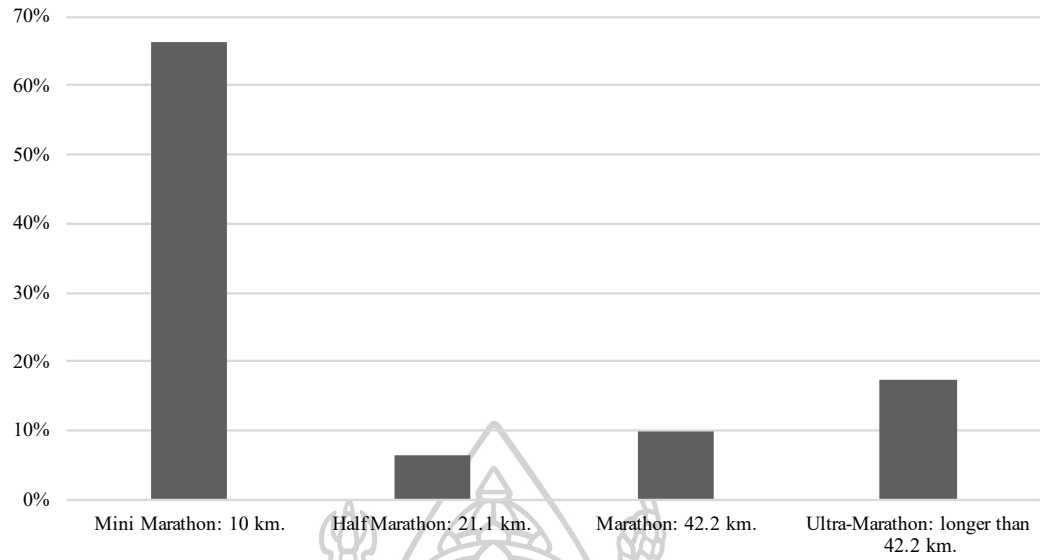

Figure 19 Distance of the race in percentage

4.2.3 Social interactive tools

Social interactive tools are used by running organizers to contact with participants. Table 13 identifies the social interactive tools used by participants. These tools are ranked according to its popularity and ease of use.

Table 13 Social interactive tools (n=400)

Social Interactive Tools	%	Rank
Facebook	38.5	1
Line App.	18.0	2
Website	15.3	3
Other tools	8.3	4
Instagram	7.8	5
Twitter	5.5	6
YouTube	4.8	7
WhatsApp	1.3	8
Snapchat	0.8	9

Facebook was the first rank, with 38.5%. Line Application was the second rank with 18%, website was the third rank accounted as 15.3%, other tools, such as blogs came after accounted as 8.3%. The fifth rank was Instagram, accounted as 7.8%, meanwhile Twitter was the sixth rank or 5.5%. YouTube was ranked number seven accounted as 4.8%, WhatsApp was ranked number eight, accounted as 1.3%, and lastly, Snapchat was ranked number nine with 0.8%. Figure 20 illustrates the rank of social interactive tools in bar chart.

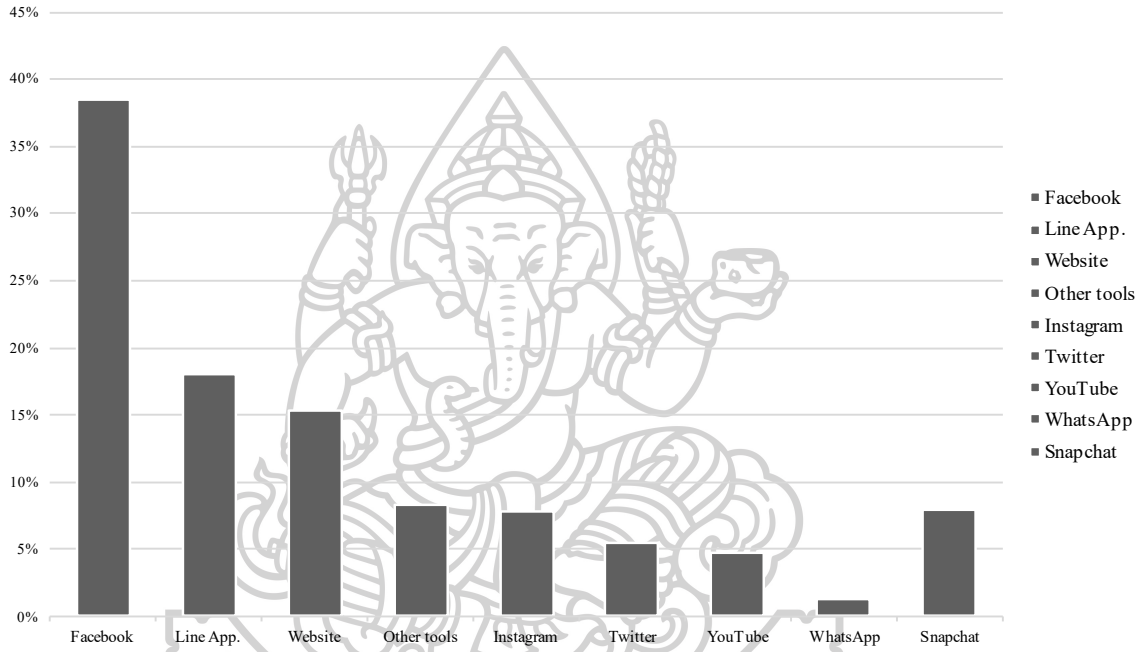

Figure 20 Social interactive tools

4.2.4 Descriptive statistic analysis

4.2.4.1 Mean score and standard deviation

Mean score and standard deviation (SD) of the measurement models: customer service, website design, service outcome, personality traits, satisfaction, and loyalty are shown in Table 14. All items reported in descending order of the mean score.

Table 14 Mean and standard deviation of measurement items (n=400)

Items	Description	Mean	S.D.
Customer Service (CS)			
CS3	The running event website has customer service representatives available online.	4.39	.488
CS2	The running event website provides a contact detail to reach the event organizer.	4.31	.464
CS6	Customer service (live chat) helps me to solve the problem effectively and rapidly.	4.26	.439
CS7	Customer service (live chat) answers my inquiries promptly.	4.21	.410
CS5	The running event website offers the ability to speak to a live person if there is a problem.	4.16	.362
CS4	The running event website provides me with a tailor-made service.	4.13	.339
CS1	My experience with customer service when I have a problem is excellent.	4.12	.319
Website Design (WD)			
Visual website design			
WV4	The display of the website is good.	4.41	.623
WV6	The interactive features of website help me navigate and search on the website.	4.39	.643
WV3	The graphic is attractive and has high quality.	4.33	.561
WV2	The layout of webpage is attractive and well organized.	4.31	.563
WV1	The home page of website is visually appealing.	4.23	.418
WV5	The color used in the website is attractive.	4.19	.609
Content design			
CT4	The content on various online platforms is consistent.	4.28	.718
CT3	The content is clear, easy to understand, and interesting.	4.26	.638
CT2	The content provides running event information in detail.	4.24	.742
CT5	The content shared to others easily.	4.20	.653
CT1	The content provides clear contact information and channel.	4.08	.583

Table 14 Mean and standard deviation of measurement items (n=400) (Continue)

Items	Description	Mean	S.D.
Social interaction design			
SI1	The website provides tools to interact with running event organizer.	4.25	.736
SI2	The website provides a chance to interact with other runners.	4.11	.757
SI4	Other runners' attitudes impact on effectiveness of the website.	4.03	.805
SI3	Other runners consistently make me to have a good impression of the online running event.	3.99	.746
SI5	The website makes me feel that I belong to a runners' network.	3.85	.825
Service Outcome (SO)			
Challenge			
CHA2	An online running event is an event that is a challenge.	4.20	.759
CHA1	An online running event is an event that I can challenge myself.	4.03	.768
CHA3	An online running event is an event where I can challenge others.	3.98	.909
CHA4	An online running event presents to me the challenge that I am looking for.	3.92	.760
Value			
VAL3	An online running event was worth for my effort.	3.87	.756
VAL4	An online running event offered me more value than that I expected.	3.79	.895
VAL1	An online running event was worth for my money.	3.76	.784
VAL2	An online running event was worth for my time.	3.70	.775
VAL5	An online running event offered me more value than other normal running events.	3.69	.745
Personality Traits (PT)			
Opening to experience			
OPE2	I enjoy thinking about several matters.	4.11	.774
OPE4	I enjoy looking for a deeper meaning.	4.00	.803
OPE5	I have a clear imagination.	3.81	.713
OPE3	I enjoy hearing new things or ideas.	3.79	.722
OPE1	I get excited by new ideas and activities.	3.66	.890

Table 14 Mean and standard deviation of measurement items (n=400) (Continue)

Items	Description	Mean	S.D.
Conscientiousness			
CON4	I make plans and am strict to them.	4.02	.801
CON2	I pay attention to detail.	3.92	.820
CON3	I always prepare.	3.82	.726
CON1	I comply with my plans.	3.80	.714
CON5	I am exact in my work.	3.80	.797
Extraversion			
EXT1	I talk to lots of different people at online running events.	3.55	.754
EXT3	I am the one who start conversations.	3.51	.850
EXT2	I feel comfortable around other people.	3.42	.891
EXT5	I like being center of attention.	3.42	.860
EXT4	I make friends easily.	3.35	.792
Agreeableness			
AGR5	I trust what people say to me.	3.83	.789
AGR4	I believe that others have good intention.	3.82	.836
AGR2	I am concerned about others.	3.78	.722
AGR3	I respect others.	3.63	.837
AGR1	I sympathize with others' feelings.	3.13	.894
Neuroticism			
NEU4	I am filled with doubts.	2.99	.799
NEU5	I feel panic easily.	2.94	.855
NEU2	I worry about several matters.	2.84	.808
NEU3	I fear the worst.	2.83	.790
NEU1	I get stressed easily.	2.79	.791
Satisfaction (SAT)			
SAT4	I am very satisfied with the customer service of an online running event.	4.18	.529
SAT3	I am very satisfied with the website design of an online running event.	4.15	.611
SAT1	I think I do the right things when decide to participate in an online running event.	4.09	.544
SAT6	I am very satisfied with the value received from an online running event.	4.08	.600

Table 14 Mean and standard deviation of measurement items (n=400) (Continue)

Items	Description	Mean	S.D.
SAT2	I decide to participate in the next online running event.	4.02	.653
SAT5	I am very satisfied with the service outcome of an online running event.	4.01	.639
Loyalty (LOY)			
ATT1	I enjoy using the online running event platform at my free time.	4.2	0.595
ATT3	I have a positive attitude toward an online running event.	4.17	0.647
ATT2	I consider online running event as my first preference.	4.16	0.705
ATT4	I will always participate in online running event.	4.02	0.605
BEH1	I will definitely keep participating in an online running event.	3.96	0.726
BEH3	The latest time I participated in a running event, I participated in an online running event.	3.91	0.769
BEH2	I participate in almost all online running events.	3.8	0.671
INT2	I will try to participate in an online running event again in the future.	4.06	0.678
INT3	There is no doubt that I will attend an online running event in the future.	3.9	0.762
INT1	I plan to participate in an online running event in the future.	3.87	0.684
REF2	I say positive words about online running event to others.	4.06	0.846
REF3	I recommend an online running event to others.	4.05	0.772
REF1	I encourage my friends and relatives to participate in an online running event.	3.98	0.724

The results of customer service items revealed that the mean score was over four (4 = likely), meaning that participants confirmed positive attitude toward customer service. The first rank of mean score was CS3, the running event website has customer service representatives available online (mean = 4.39). The second rank was CS2, the running event website provides a contact detail to reach the event organizer (mean = 4.31). The third rank was CS6, customer service (live chat) helps me to solve the problem effectively and rapidly (mean = 4.26). The next rank was CS7 Customer

service (live chat) answers my inquiries promptly (mean = 4.21), CS5 The running event website offers the ability to speak to a live person if there is a problem (mean = 4.16), CS4 The running event website provides me with a tailor-made service (mean = 4.13), and CS1 My experience with customer service when I have a problem is excellent (mean = 4.12).

For website design, the results showed that the mean score for all items was ranked between 3.85 and 4.33. Items with top three mean score were WV4 The display of the website is good (mean = 4.41), WV6 The interactive features of website help me navigate and search on the website (mean = 4.39), and WV3 The graphic is attractive and has high quality (mean = 4.33) respectively. Meanwhile the lowest mean score was 3.85, SI5 The website makes me feel that I belong to a runners' network.

The overall mean score of customer outcome items was ranked from 3.69 to 4.20. The top three items consisted of CHA2 An online running event is an event that is a challenge (mean = 4.20), CHA1 An online running event is an event that I can challenge myself (mean = 4.03), and CHA3 An online running event is an event where I can challenge others (mean = 3.98) respectively. The lowest mean score was VAL5 An online running event offered me more value than other normal running events (mean = 3.69).

Personality traits items had mean score range from 2.96 to 4.11. The top three items were OPE2 I enjoy thinking about several matters (mean = 4.11), OPE4 I enjoy looking for a deeper meaning (mean = 4.00), and CON2 I pay attention to detail (mean = 3.92) respectively. The three lowest mean score were NEU4 I am filled with doubts (mean = 2.96), NEU5 I feel panic easily (mean = 3.07), and AGR1 I sympathize with others' feelings (mean = 3.13).

Satisfaction items consisted of the mean score over four, meaning that participants satisfied with the online running event. The top mean score was SAT4 I am very satisfied with the customer service of an online running event (mean = 4.18). The second rank was SAT3 I am very satisfied with the website design of an online running event (mean = 4.15). The third rank was SAT1 I think I do the right things when decide to participate in an online running event (mean = 4.09). The lowest mean

score was SAT5 I am very satisfied with the service outcome of an online running event (mean = 4.01).

For loyalty, the mean score of all items was between 3.80 and 4.20. Items consisting of top three mean score were ATT1 I enjoy using the online running event platform at my free time (mean = 4.20), ATT3 I have a positive attitude toward an online running event (mean = 4.17), and ATT2 I consider online running event as my first preference (mean = 4.16). The three lowest mean score were BEH2 I participate in almost all online running events (mean = 3.80), INT1 I plan to participate in an online running event in the future (mean = 3.87), and INT3. There is no doubt that I will attend an online running event in the future (mean = 3.90).

4.2.4.2 Gender and age group

The age of 35 male respondents or 8.75% and 27 female respondents or 6.75% were around 20-29 years old. 61 male respondents or 15.25% and 50 female respondents or 12.5.% were 30-39 years old. 53 male respondents or 13.25% and 106 female respondents or 26.5% were 40-49 years old. 41 male respondents or 10.25% and 18 female respondents or 4.5 % were 50-59 years old. Only 9 female respondents or 2.25% were higher than 60 years old. Table 15 indicates frequency and percentage of gender for each age group.

Table 15 Gender frequency and percentage regarding to age group (n=400)

Age	**Gender**				**Total**
	Male		**Female**		
	Frequency	**%**	**Frequency**	**%**	
20-29 years	35	8.75	27	6.75	62
30-39 years	61	15.25	50	12.50	111
40-49 years	53	13.25	106	26.50	159
50-59 years	41	10.25	18	4.50	59
60 years or over	-	-	9	2.25	9

The age for male was mostly around 30-35 years old, while female were 40-49 years old. The second rank for male was 40-49 years old, and for female was 30-39 years old. The third rank for male was 50-59 years old, and for female was

20-29 years old. The fourth rank for male was 20-29 years old, while for female was 50-59 years old. The last rank for female was 60 years old and over. Figure 21 shows percentage of gender for each age group in bat chart.

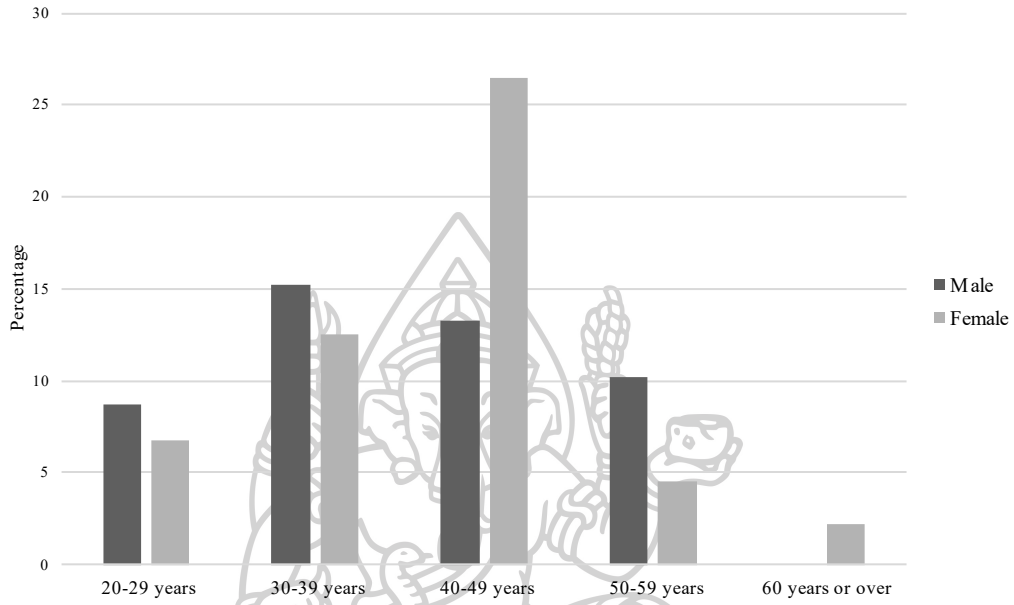

Figure 21 Gender percentage regarding to age group

4.2.4.3 Gender and spending behavior

When comparing between gender and spending behavior, female had more frequent spending than male. The total spending accounted as 52.25% for female and only 47.50% for male.

1) Gender and registration spending

For registration spending, most male and female spending less than $100, accounted as 131 respondents or 32.75% for male and 159 respondents or 39.75% for female. 50 male respondents or 12.5% and 42 female respondents 10.5% spent money between $101 and $200. 9 female respondents or 2.25% spent money for registration around $201 to $300. 9 male respondents spent or 2.25% money around $301-400 for registration per event. Table 16 shows gender regarding to registration spending.

Table 16 Gender frequency and percentage regarding to registration spending (n=400)

Registration Spending (Per event)	Gender				Total
	Male		Female		
	Frequency	%	Frequency	%	
- Less than $100	131	32.75	159	39.75	290
- $101-$200	50	12.50	42	10.50	92
- $201-$300	-	-	9	2.25	9
- $301-$400	9	2.25	-	-	9

The information about registration spending per event is presented in figure 22. The data were described as percentage of gender on registration spending. Male and female mostly spent their money less than $100. The second registration spending rank was $101-$200 per event. The third rank was equally spending $201-$300 and $301-$400 per event.

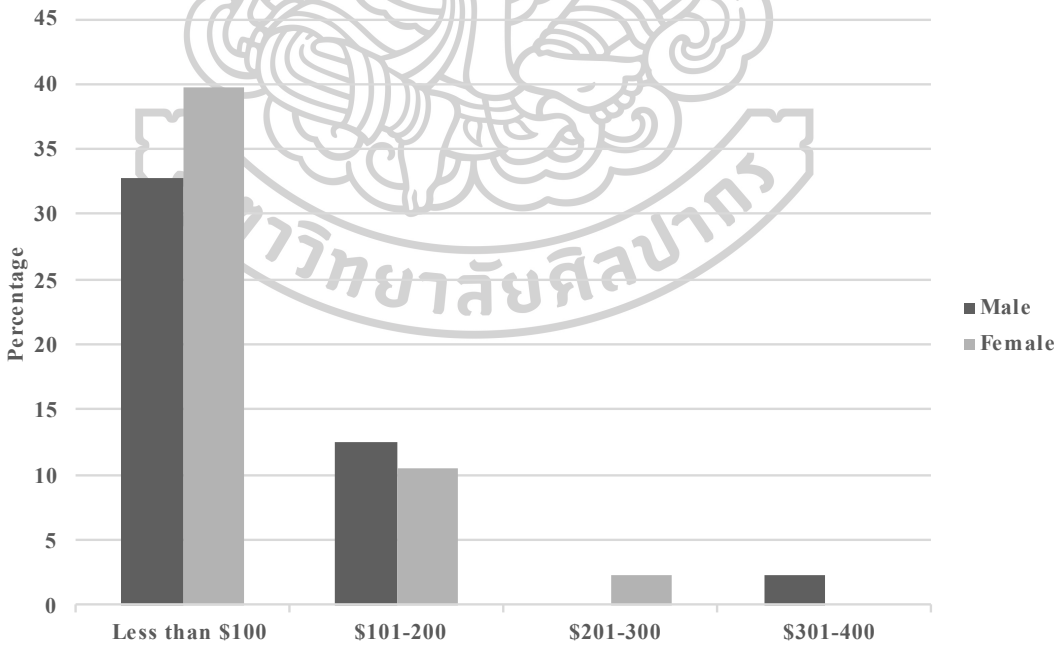

Figure 22 Gender percentage regarding to registration spending

2) Gender and race gear spending

147 female respondents or 36.75% spent less than $100 for buying race gears, while only 50 male respondents or 12.5% spent their money less than $100. 57 male respondents or 14.25% and 46 female respondents or 11.5% spent between $101 and $200 for buying race gears. 39 male respondents or 9.75% spent money around $201-$300 for buying race gears. 23 male respondents or 5.75% spent $301 to $400 per event for buying race gears. 21 male respondents or 5.25% and 17 female respondents or 4.25% spent money more than $501 for buying race gears. Table 17 shows gender regarding to race gears purchase.

Table 17 Gender frequency and percentage regarding to race gears spending (n=400)

Race gears Spending (Per event)	**Gender**				**Total**
	Male		**Female**		
	Frequency	**%**	**Frequency**	**%**	
- Less than $100	50	12.50	147	36.75	197
- $101-$200	57	14.25	46	11.50	103
- $201-$300	39	9.75	-	-	39
- $301-$400	23	5.75	-	-	23
- $501 or more	21	5.25	17	4.25	38

From the percentage of race gears spending according to the gender, female mostly spent less than $100 for buying race gears, while male mostly spent around $101-$200. The second spending rank for female was $101-$200, while for male was less than $100. The third rank for male was $201-$300 spending for the race gears, and female was $301-$400. The final rank for buying the race gears was more than $501 for both male and female. Figure 23 indicates gender percentage based on the race gears spending behavior.

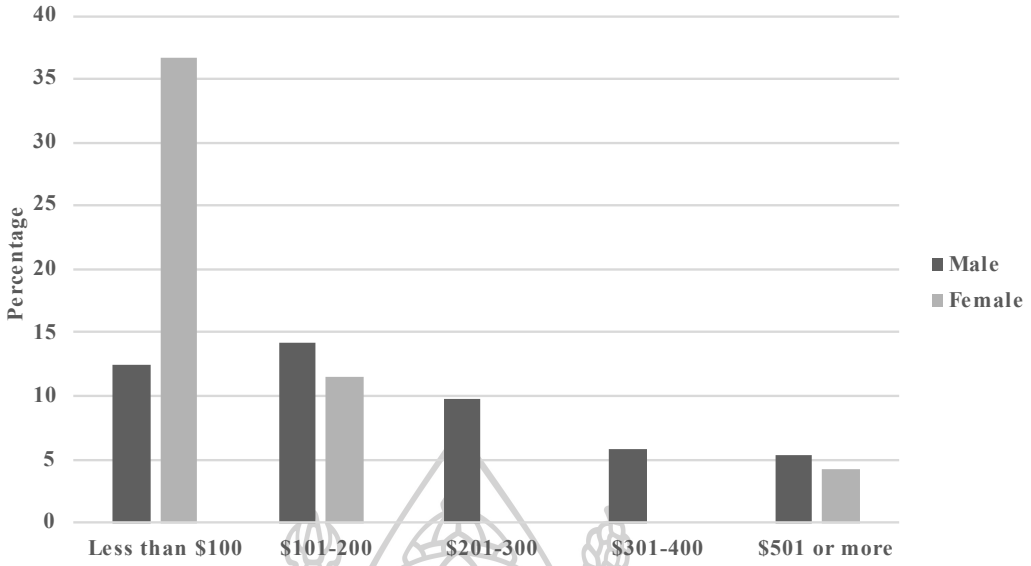

Figure 23 Gender percentage regarding to race gears spending

3) Gender and other products spending

For buying other products, most male and female spent less than $100, accounted as 92 male respondents or 23% and 159 female respondents or 39.75%. 48 male respondents or 12% and 20 female respondents or 5% paid for other products around $101 to $200 per event. 43 male respondents or 10.75% paid for other products around $201 - $300 per event. 17 female respondents or 4.25% spent around $301-$400 for buying other products during the event. 7 male respondents or 1.75% and 14 female respondents or 3.5% spent money more than $501 for buying other products per event. Table 18 shows gender and the other products spending behavior.

Table 18 Gender frequency and percentage regarding to other products spending (n=400)

Other products Spending (Per event)	**Gender**				**Total**
	Male		**Female**		
	Frequency	**%**	**Frequency**	**%**	
- Less than $100	92	23.00	159	39.75	251
- $101-$200	48	12.00	20	5.00	68
- $201-$300	43	10.75	-	-	43

Table 18 Gender frequency and percentage regarding to other products spending (n=400) (Continue)

Other products Spending (Per event)	Gender				Total
	Male		Female		
	Frequency	%	Frequency	%	
- $301-$400	-	-	17	4.25	17
- $501 or more	7	1.75	14	3.50	21

From the percentage of other products spending, female and male mostly spent less than $100 to purchase other products in the event. The second rank was spending around $101-$200 for both male and female. The third rank was spending $201-$300 for male, while female spent $301-$400 for purchasing other products. Both male and female rarely spent more than $501 for buying other products during the online running event. Figure 24 shows the percentage of gender regarding to spending behavior on other products.

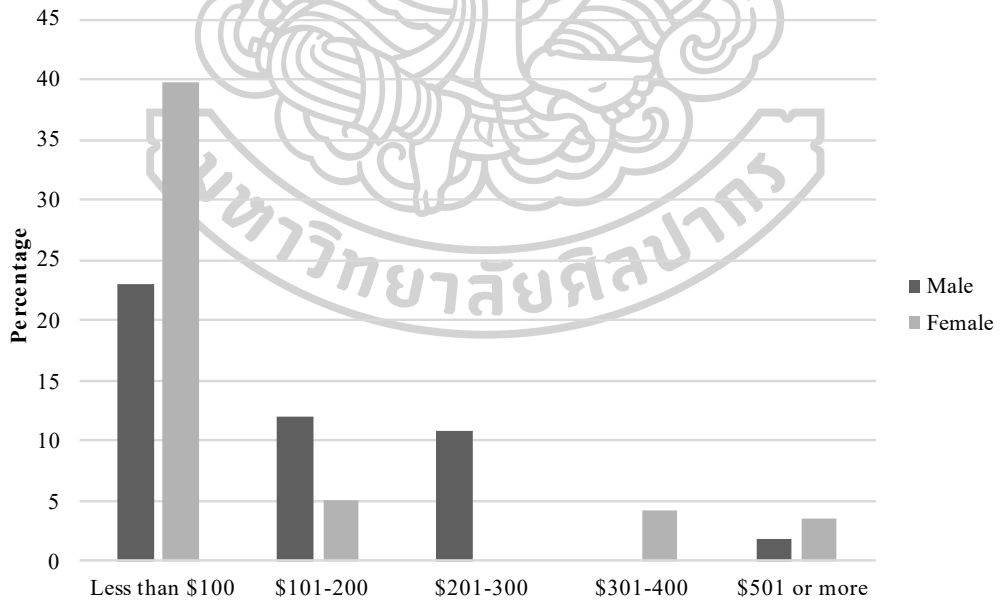

Figure 24 Gender percentage regarding to other products spending behavior

4.2.4.4 Gender and running distance

There were female participating in mini marathon (10 km.) more than male, 163 respondents (40.75%) were female, and 102 respondents (25.50%) were male. For half marathon (21.1 km.), there were more male participating than male, accounted as 17 male respondents (4.25%) and 8 female respondents (2%). 35 male respondents (8.75%) participating in marathon, while only 5 female respondents or 1.25% participating. For ultra-marathon (longer than 42.2 km.), 36 male respondents (9%) participating and 34 female respondents (8.50%) participating, accounted from total number of respondents. Table 19 indicates gender regarding to running distance.

Table 19 Gender frequency and percentage regarding to running distance (n=400)

Distance of the race	**Gender**				**Total**
	Male		**Female**		
	Frequency	**%**	**Frequency**	**%**	
Mini Marathon: 10 km.	102	25.50	163	40.75	265
Half Marathon: 21.1 km.	17	4.25	8	2.00	25
Marathon: 42.2 km.	35	8.75	5	1.25	40
Ultra-Marathon: longer than 42.2 km.	36	9.00	34	8.50	70

Figure 25 indicates that both male and female mostly participated in mini marathon. The second rank for male was marathon while, for female, was ultra-marathon. The third rank for male was marathon and for female was half marathon. The fourth rank for male was half marathon while for female was marathon.

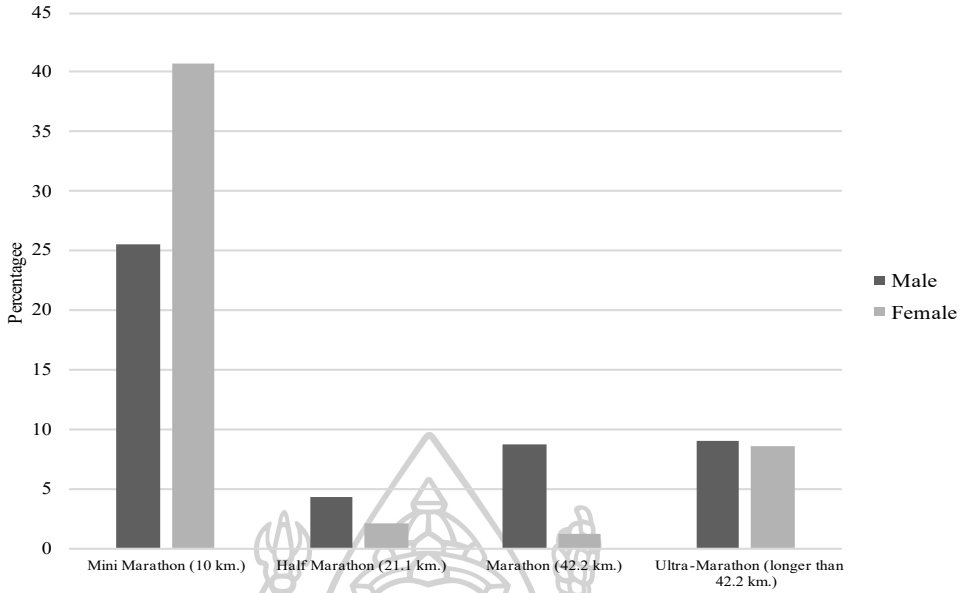

Figure 25 Gender percentage regarding to running distance

4.2.4.5 Gender and nationality

Thai respondents consisted of 190 females or 47.50% and 149 males or 37.25%. British respondents included 27 males, accounted as 6.75%, and 20 females or 5%. Chinese respondents consisted of 9 males, accounted as 2.25%. All 5 Malaysian respondents were male, accounted as 1.25%. Table 17 identifies gender of participants regarding to their nationalities.

Table 20 Gender frequency and percentage regarding to nationality (n=400)

Nationality	**Gender**				**Total**
	Male		**Female**		
	Frequency	**%**	**Frequency**	**%**	
Thai	149	37.25	190	47.50	339
British	27	6.75	20	5.00	47
Chinese	9	2.25	-	-	9
Malaysian	5	1.25	-	-	5

The figure below indicates that most respondents were Thai, female. British respondents were mostly male. All the Chinese and Malaysian

respondents were male. Figure 26 shows percentage of gender regarding to their nationalities.

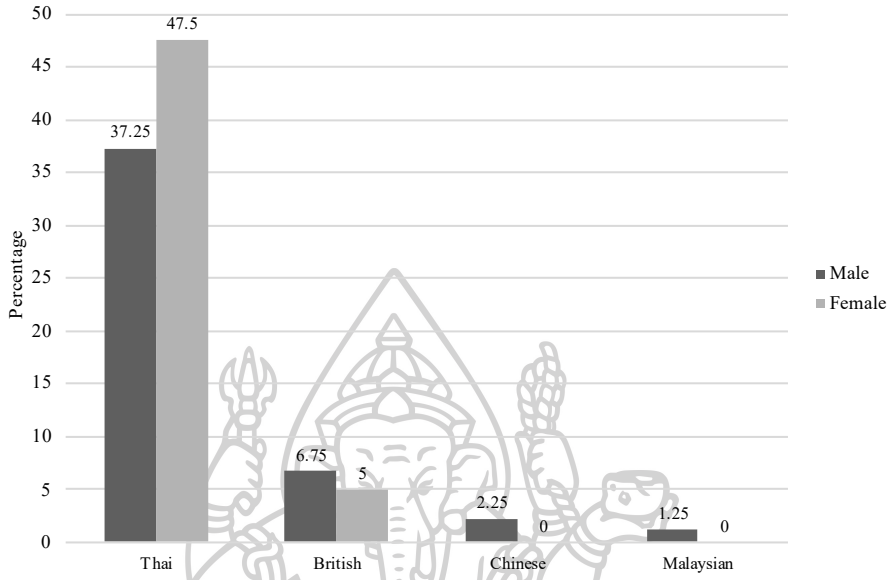

Figure 26 Gender percentage regarding to nationality

4.2.4.6 Gender and online running event programs

60 male respondents or 15% and 20 female respondents or 5% participated in Strava. 35 female respondents or 8.75% and 8 male respondents or 2% participated in 40th RX KKU, 30 Female respondents or 7.5% and 11 male respondents or 2.75% participated in 42Race. 40 male respondents participated in Peloton. 26 male respondents or 6.5% and 10 female respondents or 2.5% participated in Zwift. Equally number of females, 35 respondents or 8.75% participated in the Mask Runner, and Fit Don't Quit. 20 female respondents or 5% and 9 male respondents or 2.25% participated in NTT Virtual Run. 17 female respondents or 4.25% and 9 male respondents or 2.25% participated in Drunker Runner. 18 male respondents or 4.5% participated in Romruarun 3. 9 male respondents or 2.25 and 8 female respondents or 2% participated in ThaiRun. Table 21 indicates gender of respondents regarding to the running event programs.

Table 21 Gender frequency and percentage regarding to online running event programs (n=400)

Online running event programs	Gender				Total
	Male		Female		
	Frequency	%	Frequency	%	
Strava	60	15.00	20	5.00	80
40th RX KKU	8	2.00	35	8.75	43
42Race	11	2.75	30	7.50	41
Peloton	40	10.00	-	-	40
Zwift	26	6.50	10	2.50	36
The Mask Runner	-	-	35	8.75	35
Fit Don't Quit	-	-	35	8.75	35
NTT Virtual Run	9	2.25	20	5.00	29
Drunker Runner	9	2.25	17	4.25	26
Romruarun 3	18	4.50	-	-	18
ThaiRun	9	2.25	8	2.00	17

Strava mostly participated by male respondents, meanwhile 40th RX KKU, The Mask Runner, and Fit Don't Quit were mostly participated by female respondents. The second rank of event program participated by male respondents was Peloton, and for female respondents was 42Race. The third rank of running event program participated by male respondents was Zwift, while for female respondents was Strava and NTT Virtual Run. The fourth rank for males was Romruarun 3, and for females was Drunker Runner. The fifth rank for males was equal between NTT Virtual Run, Drunker Runner, and ThaiRun. Meanwhile, the fifth rank for female respondents was Zwift. The sixth rank for female respondents was ThaiRun. Figure 27 indicates gender percentage regarding to the online running event program.

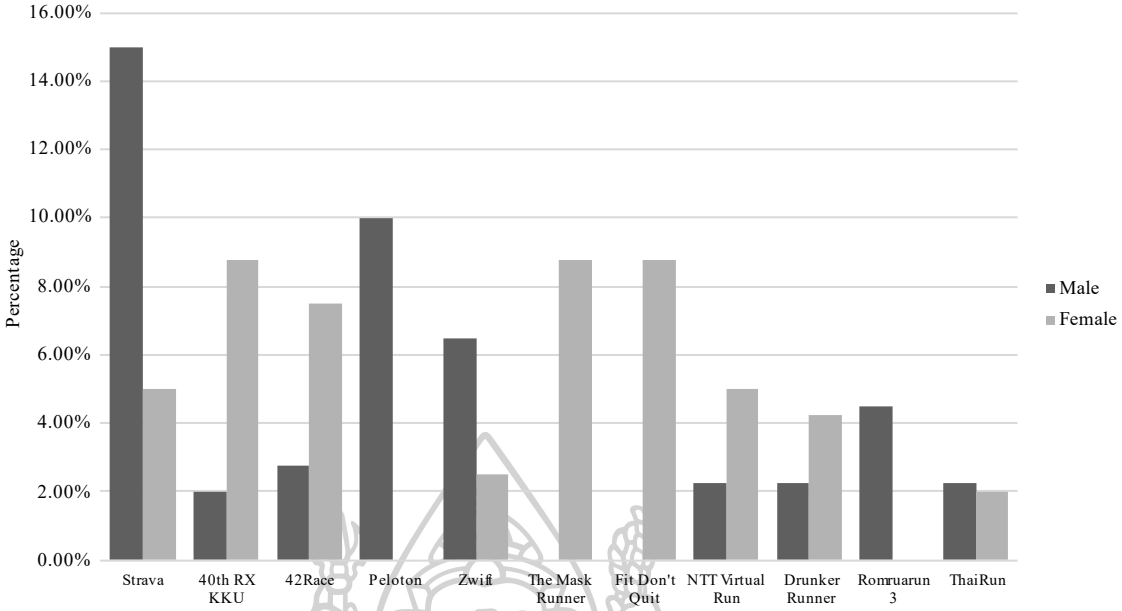

Figure 27 Gender percentage regarding to online running event programs

4.2.4.7 Age and spending

1) Age and registration spending

For registration purchase, 53 respondents or 13.3% who were between 20-29 years old spent less than $100, and only 9 respondents or 2.3% spent money around $101-$200 per event. 57 respondents or 14.3% who were between 30-39 years old spent less than $100 and 54 respondents or 13.5% spent between $101-$200 for registration. 112 respondents or 28% who aged 40-49 years old were mostly spent less than $100 for registration. 29 respondents or 7.3% who were 40-49 years old spent around $101-$200 for registration, and 9 respondents or 2.3% who were 40-49 years old equally spent between $200-$300, and $301-$400 respectively. Respondents who aged 50-59 years old spent less than $100 for registration, accounted as 59 respondents or 14.8%. Only 9 respondents or 2.3% who were 60 years old and over spent less than $100 to pay for registration. Table 22 identifies age groups regarding to registration spending.

Table 22 Age frequency and percentage regarding to registration spending (n=400)

Registration Spending (Per event)	Age (years old)										Total
	20-29		30-39		40-49		50-59		60 and over		
	N	%	N	%	N	%	N	%	N	%	
- Less than $100	53	13.3	57	14.3	112	28.0	59	14.8	9	2.3	290
- $101-$200	9	2.3	54	13.5	29	7.3	-	-	-	-	92
- $201-$300	-	-	-	-	9	2.3	-	-	-	-	9
- $301-$400	-	-	-	-	9	2.3	-	-	-	-	9

From the table above, respondents of all age ranges mostly spent less than $100 for registration. While the second rank were age 20-29, 30-39, and 40-49 who spent around $101-$200 per event. Figure 28 indicates age percentage regarding to registration spending.

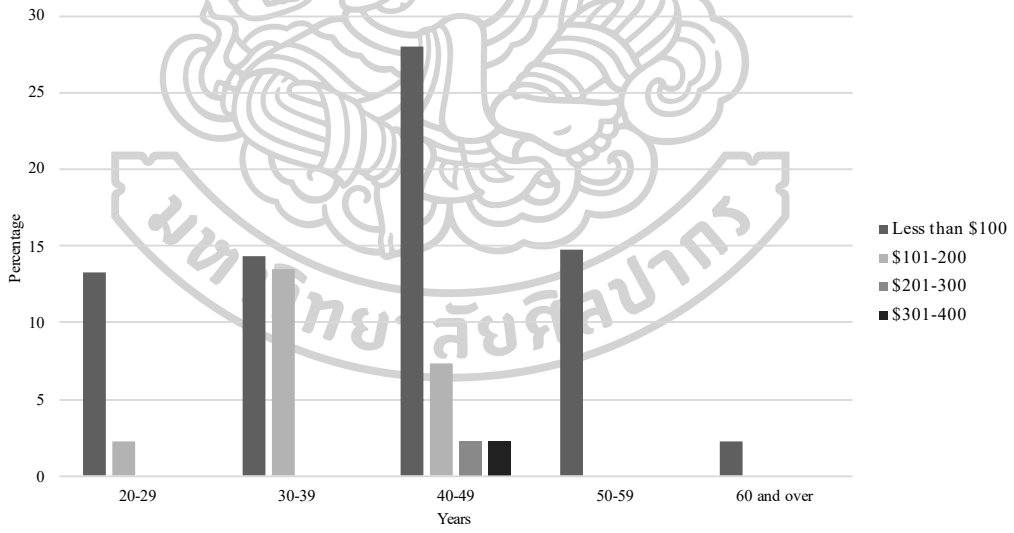

Figure 28 Age percentage regarding to registration spending

2) Age and race gears spending

For race gears purchase, 39 respondents or 9.8% who age 20-29 years old spent less than $100, 9 respondents or 2.3% with the same age spent $201-$300, and 14 respondents or 3.5% spent $301-$400 per event. 8 respondents or 2% who

age 30-39 years old spent less than $100 for purchasing race gears, 68 respondents or 17% of the same age spent around $101-$200, 11 respondents or 2.8% spent between $201-$300, 9 respondents or 2.3% spent $301-$400, and 15 respondents or 3.8% spent more than $501. For respondents who age between 40-49 years old, there were 115 respondents or 28.8% spent less than $100, 35 respondents or 8.8% spent between $101-$200, and 9 respondents or 2.3% spent more than $501 purchasing race gears per event. For respondents who age between 50-5-9 years old, there were 26 respondents or 6.5% spent less than $100, 19 respondents or 4.8% spent between $201-$300, and 14 respondents or 3.5% spent more than $501 purchasing race gears per event. There were 9 respondents or 2.3% who age 60 years old and over spent less than $100 to purchase race gears. Table 23 identifies age groups regarding to race gears spending.

Table 23 Age frequency and percentage regarding to race gears spending (n=400)

Race gears Spending (Per event)	**Age (years old)**										**Total**
	20-29		**30-39**		**40-49**		**50-59**		**60 and over**		
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
- Less than $100	39	9.8	8	2.0	115	28.8	26	6.5	9	2.3	197
- $101-$200	-	-	68	17.0	35	8.8	19	4.8	-	-	103
- $201-$300	9	2.3	11	2.8	-	-	-	-	-	-	39
- $301-$400	14	3.5	9	2.3	-	-	14	3.5	-	-	23
- $501 or more	-	-	15	3.8	9	2.3	-	-	-	-	38

For buying race gears, respondents aged 40-49, 20-29, 50-59, and over 60 years old mostly spent less than $100. Only respondents who aged 30-39 years old mostly spent around $101-$200 to purchase race gears. Figure 29 indicates percentage of age of respondents who purchase race gears.

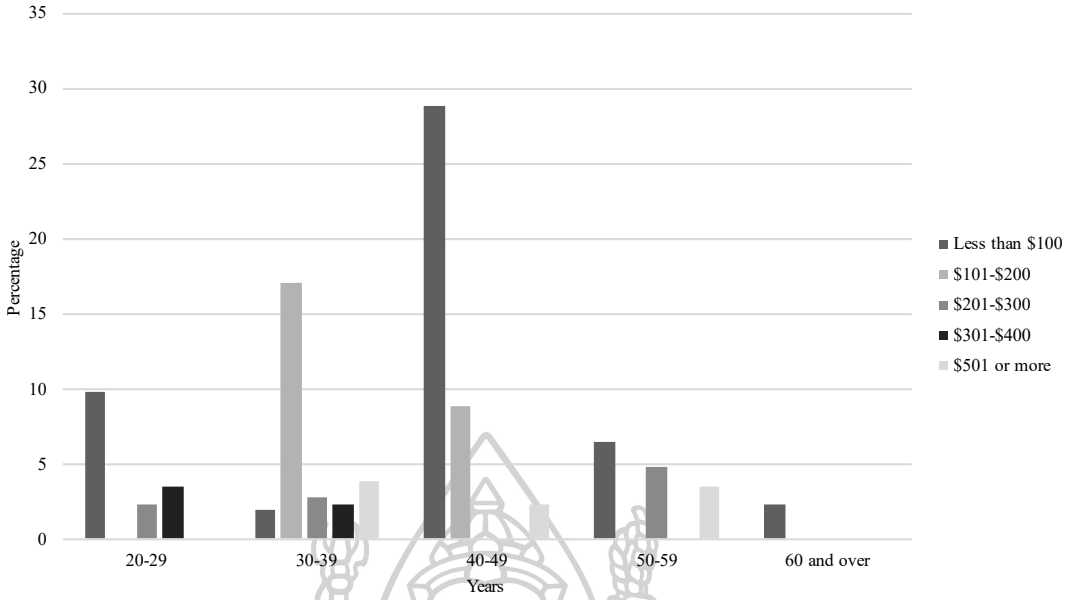

Figure 29 Age percentage regarding to race gears purchase

3) Age and other products spending

For other products purchase, 48 respondents or 12% who age between 20-29 years old purchased other products less than $100, 14 respondents or 3.5% of the same age spent between $101-$200 per event. For respondents who age between 30-39 years old, there were 17 respondents or 4.3% spent less than $100, 45 respondents or 11.3% spent around $101-$200, 20 respondents or 5% spent $201-$300, 8 respondents or 2% spent around $301-$400, and 21 respondents or 5.3% spent more than $501 to purchase other products per event. For respondents who age between 40-49 years old, there were 132 respondents or 33% spent less than $100. 9 respondents or 2.3% spent around $101-$200, $201-$300, and $301-$400 equally. 45 respondents or 11.3% age between 50-59 years old spent less than $100, and 14 respondents or 3.5% at the same age spent $201-$300 for purchasing other products. 9 respondents or 2.3% who age 60 years old and over spent less than $100 to purchase other products. Table 24 indicates age and other products spending per event.

Table 24 Age frequency and percentage regarding to other products spending (n=400)

Other products Spending (Per event)	Age (years old)										Total
	20-29		30-39		40-49		50-59		60 and over		
	N	%	N	%	N	%	N	%	N	%	
- Less than $100	48	12.0	17	4.3	132	33.0	45	11.3	9	2.3	251
- $101-$200	14	3.5	45	11.3	9	2.3	-	-	-	-	68
- $201-$300	-	-	20	5.0	9	2.3	14	3.5	-	-	43
- $301-$400	-	-	8	2.0	9	2.3	-	-	-	-	17
- $501 or more	-	-	21	5.3	-	-	-	-	-	-	21

Respondents aged 20-29, 40-49, and 50-59 years old mostly spent less than $100 for purchasing other products per event. While respondents who aged 30-39, and 60 years old and over mostly spent around $101-$200 for buying other products. Figure 30 illustrates age percentage regarding to other products purchase.

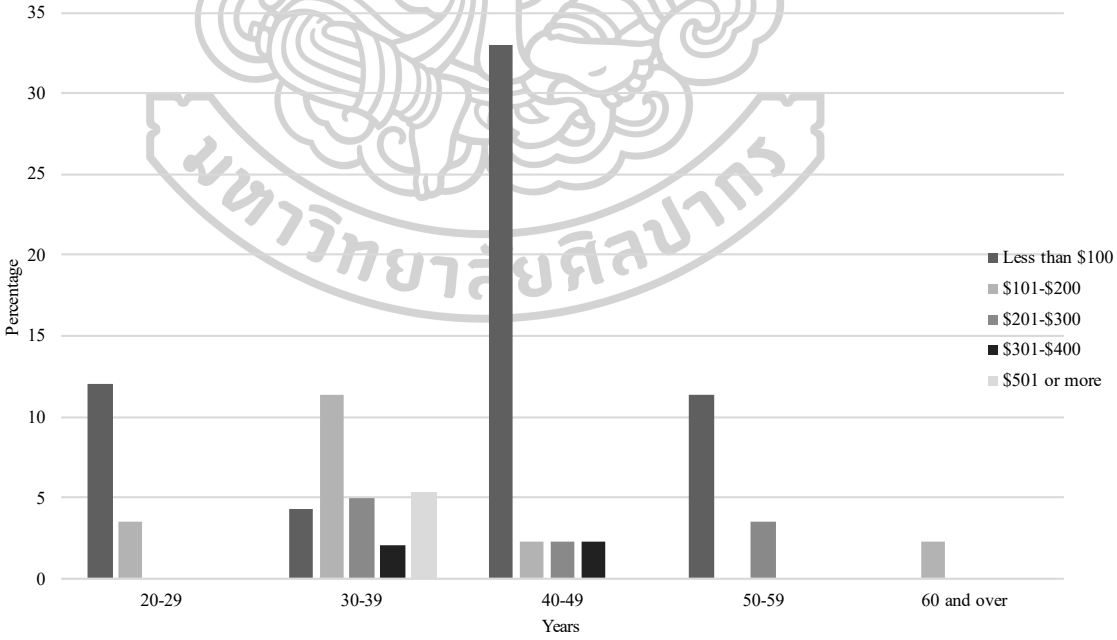

Figure 30 Age percentage regarding to other products purchase

4.2.4.8 Age and running distance

103 respondents or 25.75% aged between 40-49 years old were mostly participated in mini marathon. The second rank was aged 30-39 years old, accounted as 96 respondents or 24%. Third rank was aged 20-29 years old, counted as 53 respondents or 13.25%. The final rank for mini marathon was aged 50-59 years old with 19 respondents and 3.25%.

16 respondents or 4% aged around 40-49 years old, and 9 respondents or 2.25% for participated in half marathon. 24 respondents or 6% who aged 50-59 years old were likely to take a marathon. Only few respondents, 9 respondents or 2.25%, aged 40-49 years old, and 7 respondents or 1.75% who liked to participate in marathon.

31 respondents or 7.75% aged around 40-49 years old liked to participate in ultra-marathon. The second rank was aged 50-59, accounted as 22 respondents or 5.5%. The third rank was 30-39, account as 8 respondents or 2% of running event. Finally, the fourth rank was aged 60 years old and over, accounted as 9 respondents or 2.25%. Table 25 indicates age of runners according as running distance.

Table 25 Age frequency and percentage regarding to running distance (n=400)

Running Distance	**Age (years old)**										**Total**
	20-29		**30-39**		**40-49**		**50-59**		**60 and over**		
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Mini marathon	53	13.25	96	24	103	25.75	13	3.25	-	-	265
Half marathon	9	2.25	-	-	16	4	-	-	-	-	25
Marathon	-	-	7	1.75	9	2.25	24	6	-	-	40
Ultra-marathon	-	-	8	2	31	7.75	22	5.5	9	2.25	70

Figure 31 indicates percentage of age regarding to the running distances participated by respondents. Mini marathon was participated by all age range, except 60 years old and over. Half marathon participated by respondents aged 20-29 and 40-49 years old. Marathon participated by all age range, except 20-29 years old.

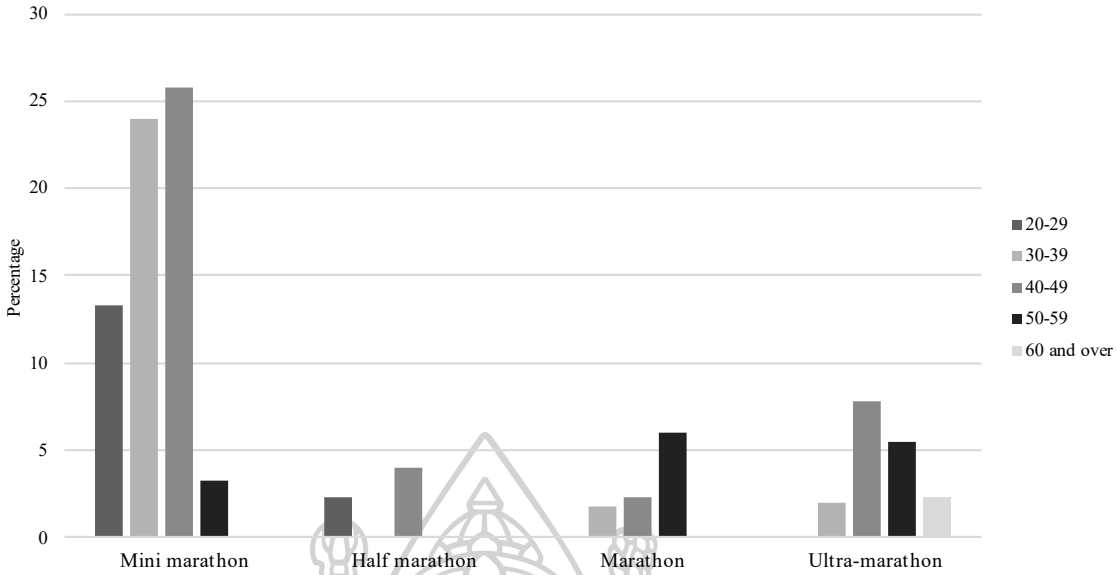

Figure 31 Age percentage regarding to running distance

4.2.4.9 Age and online running event programs

Strava was the most popular online running event programs joined by all age range of respondents, except 60 years old and over. Respondents who aged between 20-29 years old participated in Romruarun 3, 42Race, 40th RX KKU, ThaiRun, and Strava, accounted as 16 respondents (4%), 14 respondents (3.5%), 12 respondents (3%), 11 respondents (2.75%), and 9 respondents (2.25%) respectively.

Respondents aged between 30-39 years old participated in Peloton, ThaiRun, Fit Don't Quit, Strava, 40th RX KKU, The Mask Runner, and 42Race, accounted as 27 respondents (5.67%), 24 respondents (6%), 18 respondents (4.5%), 16 respondents (4%), 10 respondents (2.5%), 9 respondents (2.25%), and 7 respondents (1.75%) respectively.

Respondents aged between 40-49 years old participated in Zwift, Strava, NTT Virtual Run, The Mask Runner, Drunker Runner, 40th RX KKU, and Romruarun 3, accounted as, 43 respondents (10.75%), 33 respondents (8.25%), 21 respondents (5.25%), 20 respondents (5%), 17 respondents (4.25%), 14 respondents (3.5%), and 11 respondents (2.75%) respectively.

Respondents aged between 50-59 years old participated in Strava, 42Race, Romruarun 3, Peloton, and NTT Virtual Run, accounted as 22 respondents

(5.5%), 19 respondents (4.75%), 8 respondents (2%), 5 respondents (1.25%), and 5 respondents (1.25%) respectively.

Respondents aged 60 years old and over participated only in Peloton, accounted as 9 respondents (2.25%). Table 26 indicates the age frequency and percentage according to the running programs.

Table 26 Age frequency and percentage regarding to online running event programs (n=400)

Online running event programs	**Age (years old)**										**Total**
	20-29		**30-39**		**40-49**		**50-59**		**60 and over**		
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Strava	9	2.25	16	4	33	8.25	22	5.5	-	-	80
40th RX KKU	12	3	10	2.5	14	3.5	-	-	-	-	36
42Race	14	3.5	7	1.75	-	-	19	4.75	-	-	40
Peloton	-	-	27	6.75	-	-	5	1.25	9	2.25	41
Zwift	-	-	-	-	43	10.75	-	-	-	-	43
The Mask Runner	-	-	9	2.25	20	5	-	-	-	-	29
Fit Don't Quit	-	-	18	4.5	-	-	-	-	-	-	18
NTT Virtual Run	-	-	-	-	21	5.25	5	1.25	-	-	26
Drunker Runner	-	-	-	-	17	4.25	-	-	-	-	17
Romruarun 3	16	4	-	-	11	2.75	8	2	-	-	35
ThaiRun	11	2.75	24	6	-	-	-	-	-	-	35

Figure 32 indicates that Romruarun 3 was popular among respondents aged 20-29 years old. Peloton was popular among respondents aged 30-39 years old and over 60 years old. Swift was very popular among respondents aged 40-49 years old. Strava was popular among respondents aged 50-59 years old.

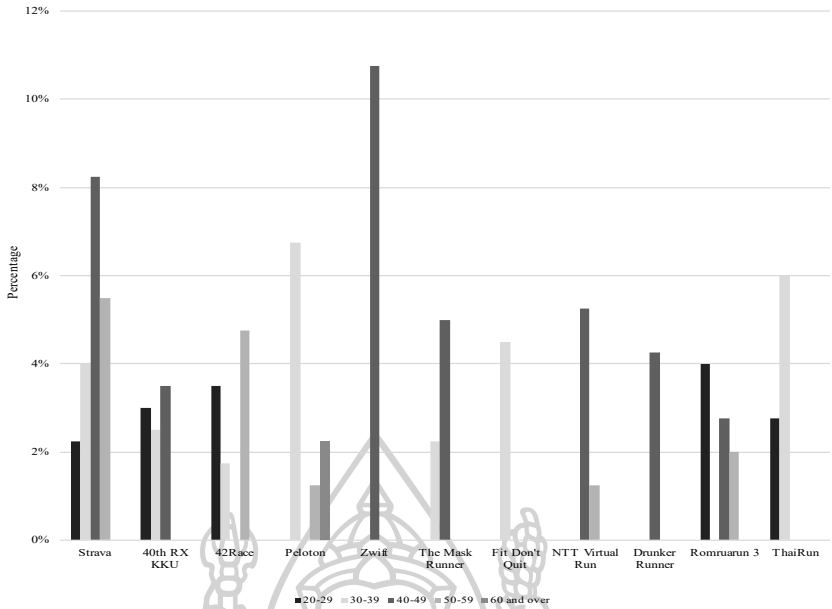

Figure 32 Age percentage regarding to online running event programs

4.2.4.10 Nationality and running distance

213 Thai respondents (53.25%) participated in Mini marathon, while 47 British (11.75%) and 5 Malaysian respondents (1.25%) participated in the same distance range. For half marathon, 16 Thai respondents (4%) and 9 Chinese respondents (2.25%) participated. 40 Thai respondents accounted as 10% participated in Marathon. 70 Thai respondents accounted as 10% participated in Ultra-marathon. Table 27 identifies nationality of respondents regarding to their running distances.

Table 27 Nationality frequency and percentage regarding to running distance (n=400)

Running Distance	**Nationality**							
	Thai		**Chinese**		**British**		**Malaysian**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Mini marathon	213	53.25	-	-	47	11.75	5	1.25
Half marathon	16	4	9	2.25	-	-	-	-
Marathon	40	10	-	-	-	-	-	-
Ultra-marathon	70	17.5	-	-	-	-	-	-
Total	**339**		**9**		**47**		**5**	

Figure 33 indicates that Thai respondents mostly participated in mini marathon. Chinese respondents participated in half marathon. British and Malaysian respondents also participated in mini marathon.

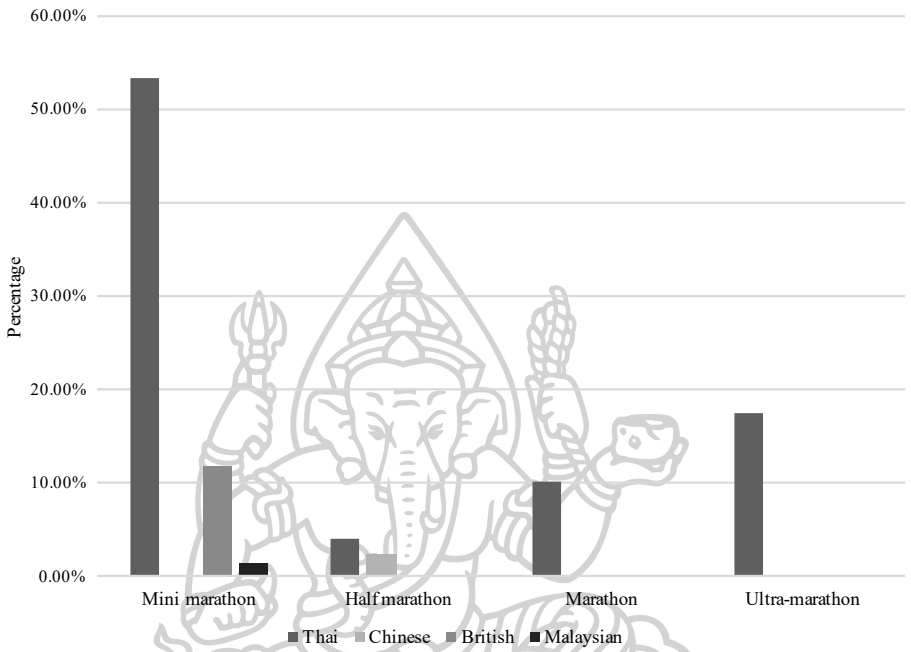

Figure 33 Nationality percentage regarding to running distance

4.2.4.11 Nationality and spending

1) Nationality and registration spending

For registration spending, 263 Thai respondents or 65.75% spent less than $100. While 58 Thai respondents or 14.5% spent between $101-$200 for registration. 9 Thai respondents or 2.25% spent between $201-$300 and 301-$400 equally. For Chinese, there were 9 respondents (2.25%) spent around $101-$200 on registration. For the British, 27 respondents (6.75%) spent less than $100, and 20 respondents (5%) spent around $101-$200 on registration. 5 Malaysian (1.25%) spent around $101-$200 on registration. Table 28 identifies nationalities of respondents regarding to registration spending.

Table 28 Nationality frequency and percentage regarding to registration spending (n=400)

Registration Spending (Per event)	Nationality								Total
	Thai		Chinese		British		Malaysian		
	N	%	N	%	N	%	N	%	
Less than $100	263	65.75	-	-	27	6.75	-	-	290
$101-$200	58	14.5	9	2.25	20	5	5	1.25	92
$201-$300	9	2.25	-	-	-	-	-	-	9
$301-$400	9	2.25	-	-	-	-	-	-	9

From the table above, Thai respondents mostly spent less than $100 for registration. Chinese respondents spent around $101-$200. British respondents mostly spent less than $100 for registration. Malaysian respondents spent around $101-$200 for registration. Figure 34 indicates nationality of respondents regarding to registration spending per each running event.

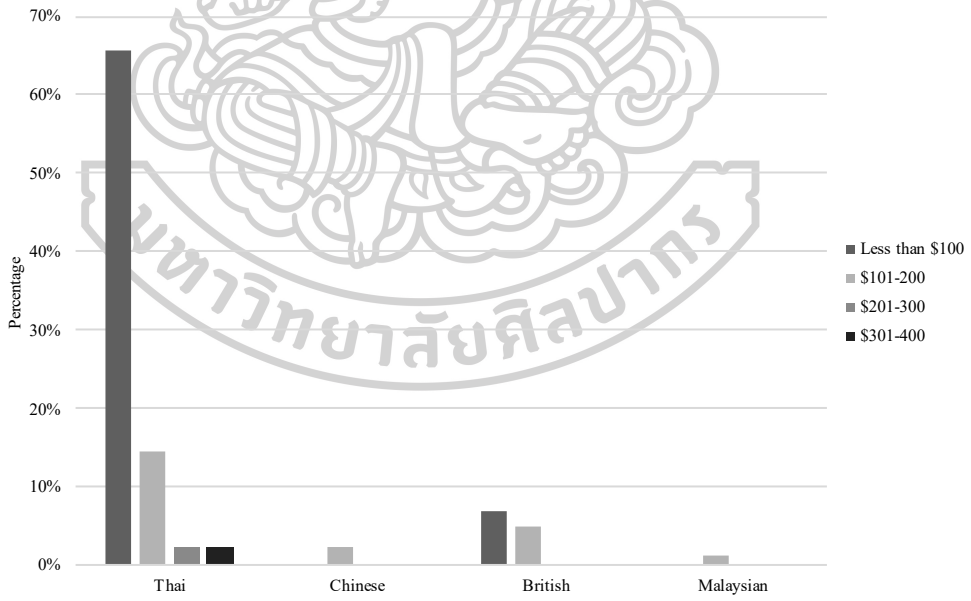

Figure 34 Nationality percentage regarding to registration spending

2) Nationality and race gears spending

Thai respondents' behavior on buying race gears varied among range of spending. Among all Thai respondents, 164 Thai respondents or 41% spent

less than $100 to purchase race gears, 98 respondents or 24.5% spent around $101-$200, 30 respondents or 7.5% spent between $201-$300, 9 respondents or 2.25% spent $301-$400, and 38 respondents or 9.5% spent more than $501 for buying race gears during the event. All 9 Chinese respondents or 2.25% spent around $201-$300 on race gears. 33 British respondents or 8.25% spent less than $100, and 14 respondents or 3.5% spent $301-$400 on race gears. All 5 Malaysian respondents or 1.25% spent around $101-$200 on race gears purchase. Table 29 shows nationality of respondents regarding to their spending behavior on race gears purchase.

Table 29 Nationality frequency and percentage regarding to race gears spending (n=400)

Race Gears Spending (Per event)	**Nationality**								**Total**
	Thai		**Chinese**		**British**		**Malaysian**		
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Less than $100	164	41	-	-	33	8.25	-	-	194
$101-$200	49	24.5	-	-	-	-	5	1.25	103
$201-$300	43	7.5	9	2.25	-	-	-	-	39
$301-$400	17	2.25	-	-	14	3.5	-	-	23
$501 or more	38	9.5	-	-	-	-	-	-	38

From the table above, Thai respondents mostly spent money on race gears less than $100. Chinese respondents spent money around $201-$300 on buying race gears. British respondents mostly spent less than $100 for race gears purchase. Malaysian respondents spent around $101-$200 to purchase race gears. Figure 35 indicates nationality of respondents regarding to race gears spending per each running event.

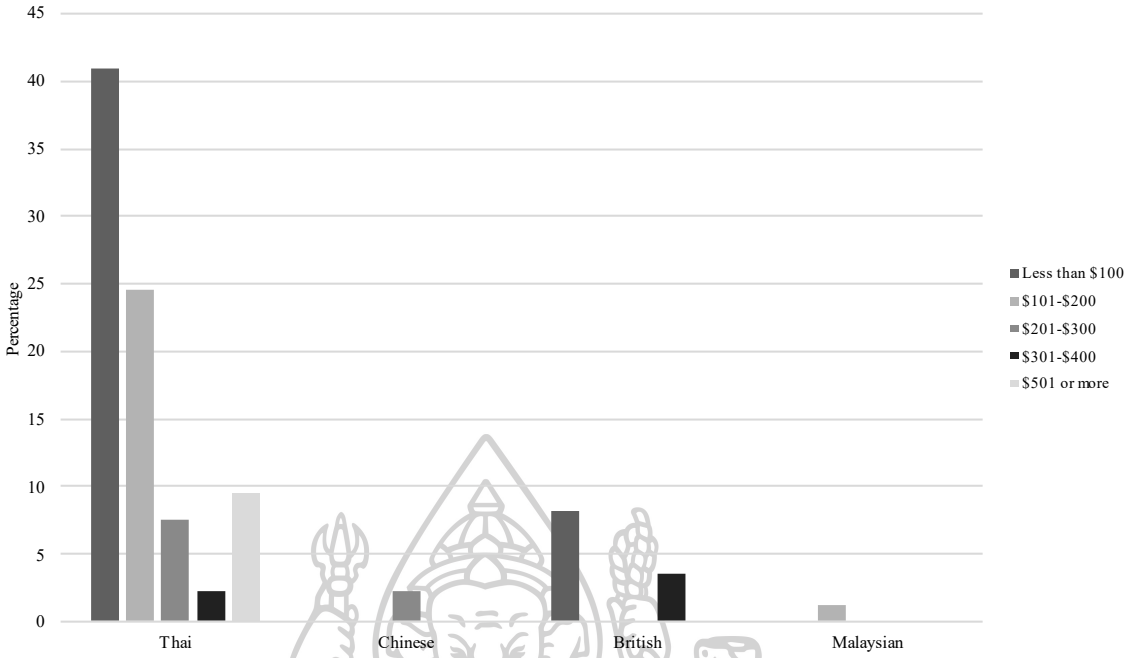

Figure 35 Nationality percentage regarding to race gears spending

3) Nationality and other products spending

Among total number of Thai respondents, 209 respondents or 52.25% spent less than $100 on other products purchase. 49 Thai respondents or 12.25% spent between $101-$200 on other products. 43 Thai respondents or 10.75% spent around $201-$300 to purchase other products. 17 respondents or 4.25%, and 21 respondents or 5.25% spent $301-$400, and more than $501 respectively on other products purchase. 9 Chinese respondents (2.25%) and 33 British respondents (8.25%) also spent less than $100 on other products purchase. 14 British respondents (3.5%) and 5 Malaysian respondents (1.25%) spent around $101-$200 on other products purchase. Table 30 shows nationality of respondents regarding to other products spending behavior.

Table 30 Nationality frequency and percentage regarding to other products spending (n=400)

Other Products Spending (Per event)	Nationality								Total
	Thai		Chinese		British		Malaysian		
	N	%	N	%	N	%	N	%	
Less than $100	209	52.25	9	2.25	33	8.25	-	-	251
$101-$200	49	12.25	-	-	14	3.5	5	1.25	68
$201-$300	43	10.75	-	-	-	-	-	-	43
$301-$400	17	4.25	-	-	-	-	-	-	17
$501 or more	21	5.25	-	-	-	-	-	-	21

Thai respondents mostly spent less than $100 when purchasing other products from the running event. Chinese respondents and British respondents also spent less than $100 on other products. Malaysian respondents spent less around $101-$200 on other products purchase. Figure 36 indicates nationality of respondents regarding to other products spending per each running event.

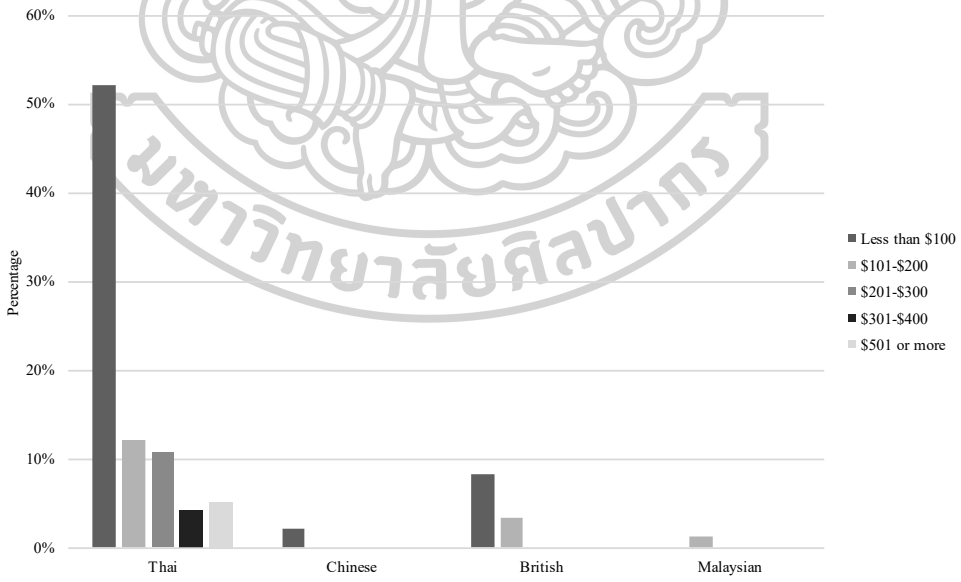

Figure 36 Nationality percentage regarding to other products spending

4.3 Data Screening, Data Normality, and Reliability

4.3.1 Missing value

The author applied the expectation maximization (EM) to estimate the missing data. This approach, introduced by Little & Rubin (1987), suggested that the missing data can be ignored. For this study, the missing data were estimated using imputation where the missing data will be replaced with substituted values. The estimation of missing data will be generated from the observed data and the process will be repeated until the actual values stabilized.

4.3.2 Data normality

The data normality is essential in structural modeling equation (SEM) analysis. The normality of all univariate variables was observed using skewness and kurtosis. According to Kline (2005), the skew index of univariate normality should be between -3.0 and 3.0, while the kurtosis index should be between -8.0 and 8.0. The data distribution that falls outside this rank is considered having a serious problem of non-normal distribution.

Table 31 demonstrates data distribution testing. The result of univariate normality test was acceptable. The results of skewness distribution for all variables were acceptable, all values were not below 3.0. The kurtosis results fall into an acceptable level, all variables were lower than 8.0.

Table 31 Univariate normality test (n=400)

Items	Mean	S.D.	Skew.	Kur.
Customer Service (CS)				
CS1	4.12	.319	2.423	3.889
CS2	4.31	.464	.812	-1.347
CS3	4.39	.488	.453	-1.804
CS4	4.13	.339	2.176	2.749
CS5	4.16	.362	1.914	1.671
CS6	4.26	.439	1.098	-.797
CS7	4.21	.410	1.411	-.009

Table 31 Univariate normality test (n=400) (Continue)

Items	Mean	S.D.	Skew.	Kur.
Website Design (WD)				
WV1	4.23	.418	1.322	-.253
WV2	4.31	.563	-.107	-.676
WV3	4.33	.561	-.090	-.664
WV4	4.41	.623	-.571	-.598
WV5	4.19	.609	-.127	-.471
WV6	4.39	.643	-.577	-.630
CT1	4.08	.583	-.009	-.086
CT2	4.24	.742	-.422	-1.085
CT3	4.26	.638	-.284	-.678
CT4	4.28	.718	-.463	-.963
CT5	4.20	.653	-.228	-.714
SI1	4.25	.736	-.421	-1.060
SI2	4.11	.757	-.181	-1.233
SI3	3.99	.746	.016	-1.198
SI4	4.03	.805	-.050	-1.455
SI5	3.85	.825	-.194	-.650
Service Outcome (SO)				
CHA1	4.03	.768	-.051	-1.302
CHA2	4.20	.759	-.352	-1.192
CHA3	3.98	.909	-.132	-1.410
CHA4	3.92	.760	-.179	-.562
VAL1	3.76	.784	.268	-.988
VAL2	3.70	.775	.408	-.946
VAL3	3.87	.756	.225	-1.220
VAL4	3.79	.895	.436	-1.613
VAL5	3.69	.745	.566	-1.003

Table 31 Univariate normality test (n=400) (Continue)

Items	Mean	S.D.	Skew.	Kur.
Personality Traits (PT)				
OPE1	3.66	.890	.349	-1.066
OPE2	4.11	.774	-.192	-1.308
OPE3	3.79	.722	.335	-1.034
OPE4	4.00	.803	-.005	-1.447
OPE5	3.81	.713	.290	-1.006
CON1	3.80	.714	.309	-1.006
CON2	3.92	.820	.154	-1.497
CON3	3.82	.726	.285	-1.069
CON4	4.02	.801	-.036	-1.439
CON5	3.80	.797	.369	-1.334
EXT1	3.55	.754	.244	-.406
EXT2	3.42	.891	.493	-.572
EXT3	3.51	.850	-.105	-.601
EXT4	3.35	.792	.397	-.198
EXT5	3.42	.860	.396	-.506
AGR1	3.13	.894	.586	-.293
AGR2	3.78	.722	.354	-1.030
AGR3	3.63	.837	.128	-.700
AGR4	3.82	.836	-.194	-.646
AGR5	3.83	.789	.311	-1.331
NEU1	2.79	.791	-.332	-.225
NEU2	2.84	.808	.046	-.970
NEU3	2.83	.790	.561	-.490
NEU4	2.99	.799	.466	-.284
NEU5	2.94	.855	-.276	-.816

Table 31 Univariate normality test (n=400) (Continue)

Items	Mean	S.D.	Skew.	Kur.
Satisfaction (SAT)				
SAT1	4.09	.544	.055	.307
SAT2	4.02	.653	-.015	-.639
SAT3	4.15	.611	-.093	-.419
SAT4	4.18	.529	.156	.112
SAT5	4.01	.639	-.060	-.354
SAT6	4.08	.600	-.031	-.241
Loyalty (LOY)				
ATT1	4.20	.595	-.094	-.399
ATT2	4.16	.705	-.228	-.976
ATT3	4.17	.647	-.172	-.664
ATT4	4.02	.605	-.009	-.248
BEH1	3.96	.726	-.607	.615
BEH2	3.80	.671	.254	-.803
BEH3	3.91	.769	-.016	-.933
INT1	3.87	.684	.167	-.862
INT2	4.06	.678	-.071	-.821
INT3	3.90	.762	.179	-1.257
REF1	3.98	.724	.026	-1.083
REF2	4.06	.846	-.444	-.721
REF3	4.05	.772	-.082	-1.318

All variables had skewness and kurtosis less than the criteria (< 3 for skewness and < 10 for kurtosis). Thus, all variables are distributed normally.

4.3.3 Reliability test of measurement models

Reliability is used to identify the measurement whether all different indicators falls into the same trait or not (Nunnally & Bernstein, 1994). A Cronbach's α was employed to evaluate reliability of the measurement items. Table 32 reveals

reliability results for all measurement models. The Cronbach's α is ranked between .807 and .941.

Table 32 Item-total correlation and coefficient alpha (n=400)

Items	**Item-to-total correlations**	**Alpha if item deleted**	**Reliability Coefficient**
Customer Service (CS)			.807
CS1	.521	.787	
CS2	.472	.797	
CS3	.521	.789	
CS4	.652	.767	
CS5	.675	.761	
CS6	.497	.791	
CS7	.543	.781	
Website Design (WD)			.941
WV1	.440	.942	
WV2	.645	.938	
WV3	.602	.939	
WV4	.603	.939	
WV5	.659	.938	
WV6	.704	.937	
CT1	.709	.937	
CT2	.710	.937	
CT3	.663	.938	
CT4	.770	.935	
CT5	.691	.937	
SI1	.715	.937	
SI2	.771	.935	
SI3	.779	.935	
SI4	.761	.936	
SI5	.726	.937	

Table 32 Item-total correlation and coefficient alpha (n=400) (Continue)

Items	Item-to-total correlations	Alpha if item deleted	Reliability Coefficient
Service Outcome (SO)			.940
CHA1	.672	.938	
CHA2	.760	.934	
CHA3	.823	.930	
CHA4	.807	.931	
VAL1	.847	.929	
VAL2	.726	.935	
VAL3	.747	.934	
VAL4	.761	.934	
VAL5	.809	.931	
Personality Traits (PT)			.865
OPE1	.376	.862	
OPE2	.486	.858	
OPE3	.497	.858	
OPE4	.498	.858	
OPE5	.504	.858	
CON1	.453	.859	
CON2	.441	.860	
CON3	.443	.860	
CON4	.379	.861	
CON5	.417	.860	
EXT1	.360	.862	
EXT2	.587	.855	
EXT3	.483	.858	
EXT4	.539	.857	
EXT5	.542	.856	
AGR1	.347	.863	

Table 32 Item-total correlation and coefficient alpha (n=400) (Continue)

Items	Item-to-total correlations	Alpha if item deleted	Reliability Coefficient
AGR2	.516	.858	
AGR3	.434	.860	
AGR4	.436	.860	
AGR5	.294	.864	
NEU1	.490	.858	
NEU2	.280	.864	
NEU3	.190	.867	
NEU4	.295	.864	
NEU5	.283	.865	
Satisfaction (SAT)			.879
SAT1	.607	.870	
SAT2	.674	.861	
SAT3	.660	.862	
SAT4	.636	.866	
SAT5	.764	.844	
SAT6	.783	.841	
Loyalty (LOY)			.920
ATT1	.656	.914	
ATT2	.555	.917	
ATT3	.616	.915	
ATT4	.302	.925	
BEH1	.544	.918	
BEH2	.805	.908	
BEH3	.752	.910	
INT1	.891	.905	
INT2	.721	.911	
INT3	.572	.917	

Table 32 Item-total correlation and coefficient alpha (n=400) (Continue)

Items	Item-to-total correlations	Alpha if item deleted	Reliability Coefficient
REF1	.707	.912	
REF2	.610	.916	
REF3	.809	.907	

Nunnally and Bernstein (1994) suggested that the cut-off point of Cronbach's α is .50, the α greater than .50 considered as a good indication of construct reliability. According to Hair et al. (2014b), however, the more acceptable value of α coefficient should not less than .60 since it is suitable for exploratory research. Thus, all measurement models are reliable.

4.4 Construct Validity of The Measurement Model

This section reveals results of construct validity of all measurement models. Each section identifies the results of exploratory factor analysis (EFA), confirmatory factor analysis (CFA), convergent validity, and discriminant validity. The results of construct validity are validated with 400 samples. Internal reliability, convergent validity, and discriminant validity for each construct are also expressed here.

4.4.1 Construct validity of critical factors

The critical factors consist of three constructs: customer service, website design, and service outcome. The results of EFA, CFA, convergent validity, and discriminant validity of three factors are as follow.

4.4.1.1. Exploratory factor analysis

1) Customer service

There are 7 measurement items for customer service. The result of exploratory factor analysis shows that seven items was fall into 2 components. Component 1 consisted of 5 items: CS1, CS4, CS5, CS6, and CS7, while component 2 included 2 items: CS2 and CS3. The eigenvalue was 1.236 which was greater than the criteria. The variance was approximately 66% with the KMO of .697, which indicated appropriateness of factor analysis. Bartlett's test of sphericity was 1297.943 and statistically significant. The reliability coefficient was .807 which signaled a good

internal consistency of customer service items. Table 33 shows exploratory factor analysis result of customer service.

Table 33 Exploratory factor analysis of customer service

Items	Factor Loadings		Eigenvalue	Variance Explained	Reliability Coefficient
	Component 1	Component 2			
Customer Service			1.236	66.240	.807
CS1	.687				
CS2		.613			
CS3		.628			
CS4	.807				
CS5	.834				
CS6	.626				
CS7	.694				

KMO .697; Bartlett's test: Chi-square = 1297.943, Sig. = .00

Even though the eigenvalue, KMO, factor loadings and reliability of all 7 items of customer service were good. However, according to Hair et al. (2009), two items per one factor was not recommended since it can cause identification problem when doing a confirmatory factor analysis. In this case, although the communalities of component 2 (CS2 and CS3) were higher than .40, the factor loadings of CS2 and CS3 were cross-loaded and higher than .40, meaning that these two items were not suitable to explain customer service factor. Thus, component 2 has been deleted from the study and 5 items of the component 1 remained to measure customer service factor. Table 34 indicates the factor loadings of revised measurement items of customer service factor and new Cronbach's Alpha.

Table 34 Revised exploratory factor analysis of customer service

Items	Factor Loadings	Reliability Coefficient
Customer Service		.813
CS1	.693	
CS4	.801	
CS5	.894	
CS6	.651	
CS7	.768	

The revised customer service measurement items illustrate a good internal consistency of customer service items. All 5 items had factor loading and communalities higher than .40 and reliability coefficient was .813. This result shows that all measurement items were having enough explanation for measuring customer service with the high internal consistency.

2) Website design

There are 16 items used to measured website design. The results suggested 2 components for website design factor. Component 1 consisted of all items accept WV1 which fall into component 2. Table 35 shows exploratory factor analysis result of website design.

Table 35 Exploratory factor analysis of website design

Items	Factor Loadings		Eigenvalue	Variance Explained	Reliability Coefficient
	Component 1	Component 2			
Website Design			1.038	59.923	.941
WV1		.641			
WV2	.692				
WV3	.653				
WV4	.651				
WV5	.704				
WV6	.749				

Table 35 Exploratory factor analysis of website design (Continue)

Items	Factor Loadings		Eigenvalue	Variance Explained	Reliability Coefficient
CT1	.754				
CT2	.757				
CT3	.709				
CT4	.803				
CT5	.735				
SI1	.754				
SI2	.805				
SI3	.812				
SI4	.796				
SI5	.766				

KMO .860; Bartlett's test: Chi-square = 5037.938, Sig. = .00

Even though the communalities of all 16 items for both components were higher than .40. The eigenvalue was 1.038 which was greater than the criteria. The variance was approximately 60% with the KMO of .860, showing an appropriateness of factor analysis. Bartlett's test of sphericity was 5037.938 and statistically significant. The reliability coefficient was .941 which indicated a good internal consistency of website design items. However, suggested by Hair et al. (2009), one item could not measure a factor. Therefore, component 2 (WV1) has been deleted and only the component 1 (15 items) remained to measure website design. The new factor loadings of revised exploratory factor analysis and Cronbach's Alpha result were illustrated in table 36 below.

Table 36 Revised exploratory factor analysis of website design

Items	Factor Loadings	Reliability Coefficient
Website Design		.942
WV2	.685	
WV3	.660	
WV4	.658	
WV5	.711	
WV6	.751	
CT1	.751	
CT2	.760	
CT3	.702	
CT4	.809	
CT5	.729	
SI1	.759	
SI2	.809	
SI3	.816	
SI4	.787	
SI5	.769	

The result of revised EFA indicates high factor loading of all measurement items, which means that these 15 items could be used to explain website design. Furthermore, the reliability coefficient was .942 which marked as a good internal consistency of website design items.

3) Service outcome

The results indicated that all nine items had factor loading and communalities higher than .40, meaning that no indicator had been deleted during this analysis. All indicators, thus, can be used to explain service outcome. Table 37 shows exploratory factor analysis of service outcome.

Table 37 Exploratory factor analysis of service outcome

Items	Factor Loadings	Eigenvalue	Variance Explained	Reliability Coefficient
Service Outcome		6.120	67.998	.940
CHA1	.733			
CHA2	.817			
CHA3	.869			
CHA4	.854			
VAL1	.888			
VAL2	.784			
VAL3	.799			
VAL4	.813			
VAL5	.853			

KMO .867; Bartlett's test: Chi-square = 3312.759, Sig. = .00

According to table above, there were 9 items measuring service outcome. The factor loadings of all items were greater than .60 meaning that these items were best explain service outcome factor. The eigenvalue was 6.120 (greater than the criteria of 1.0). The variance was 68% with the KMO of .867, indicating a good factor analysis. Bartlett's test of sphericity was 3312.759 and statistically significant. The reliability coefficient was .940 which inferred a good internal consistency of service outcome items.

4.4.1.2 Confirmatory factor analysis

Confirmatory of factor analysis indicates absolute fit indices for the initial and adjusted measurement models of customer service, website design, and service outcome. According to the results of exploratory factor analysis, the total number of observed variables used to measure 3 latent variables: customer service, website design, and service outcome have been reduced to 29 items. Table 38 shows the Absolute fit indices of confirmatory factor analysis of 3 latent variables.

Table 38 Absolute fit indices of customer service, website design, and service outcome

Dimensions and Items	**Factor Loadings**	**t-test**	**R^2**	**CR**	**AVE**
Customer Service				.830	.507
CS1	.623***	10.462	.389		
CS4	.846***	11.761	.715		
CS5	.903***	12.862	.816		
CS6	.465***	10.534	.217		
CS7	.631	-	.399		
Website Design				.942	.524
WV2	.615***	12.384	.378		
WV3	.563***	12.143	.317		
WV4	.667***	12.065	.445		
WV5	.704***	14.185	.495		
WV6	.707***	17.575	.500		
CT1	.732	-	.536		
CT2	.659***	13.31	.434		
CT3	.683***	13.799	.466		
CT4	.797***	14.056	.635		
CT5	.748***	15.221	.560		
SI1	.771***	13.614	.595		
SI2	.806***	16.501	.650		
SI3	.816***	16.67	.665		
SI4	.776***	15.829	.602		
SI5	.766***	15.657	.587		

Table 38 Absolute fit indices of customer service, website design, and service outcome (Continue)

Dimensions and Items	**Factor Loadings**	**t-test**	**R^2**	**CR**	**AVE**
Service Outcome				.937	.626
CHA1	.674***	.674	.454		
CHA2	.854***	.854	.730		
CHA3	.894***	.894	.799		
CHA4	.881***	.881	.777		
VAL1	.909***	.909	.827		
VAL2	.661***	.661	.437		
VAL3	.711***	.711	.506		
VAL4	.688***	.688	.473		
VAL5	.796***	.796	.634		

Absolute Model Fit Indices

Model	χ^2	***d.f.***	χ^2***/ d.f.***	***p-value***	**GFI**	**CFI**	**RMSEA**	**RMR**
Initial	3109.296	461	6.745	.000	.691	.724	.120	.026
Adjusted	964.684	333	2.897	.000	.865	.929	.069	.020

Table 38 indicates that the initial model was rejected because the value of RMSEA higher than .05. GFI and CFI were below the acceptance value of .90. After the model has been modified, the factor loadings of all observed variables were higher than .40. The RMSEA was .069 which close to .05 as suggested by Byrne (2009) that RMSEA that less than .08 is acceptable. GFI was also close to .90 with the CFI was .929. This result, therefore, indicates moderate fit indices for the model. Figure 37 shows model fit of 3 latent variables: customer service, website design, and service outcome in SEM.

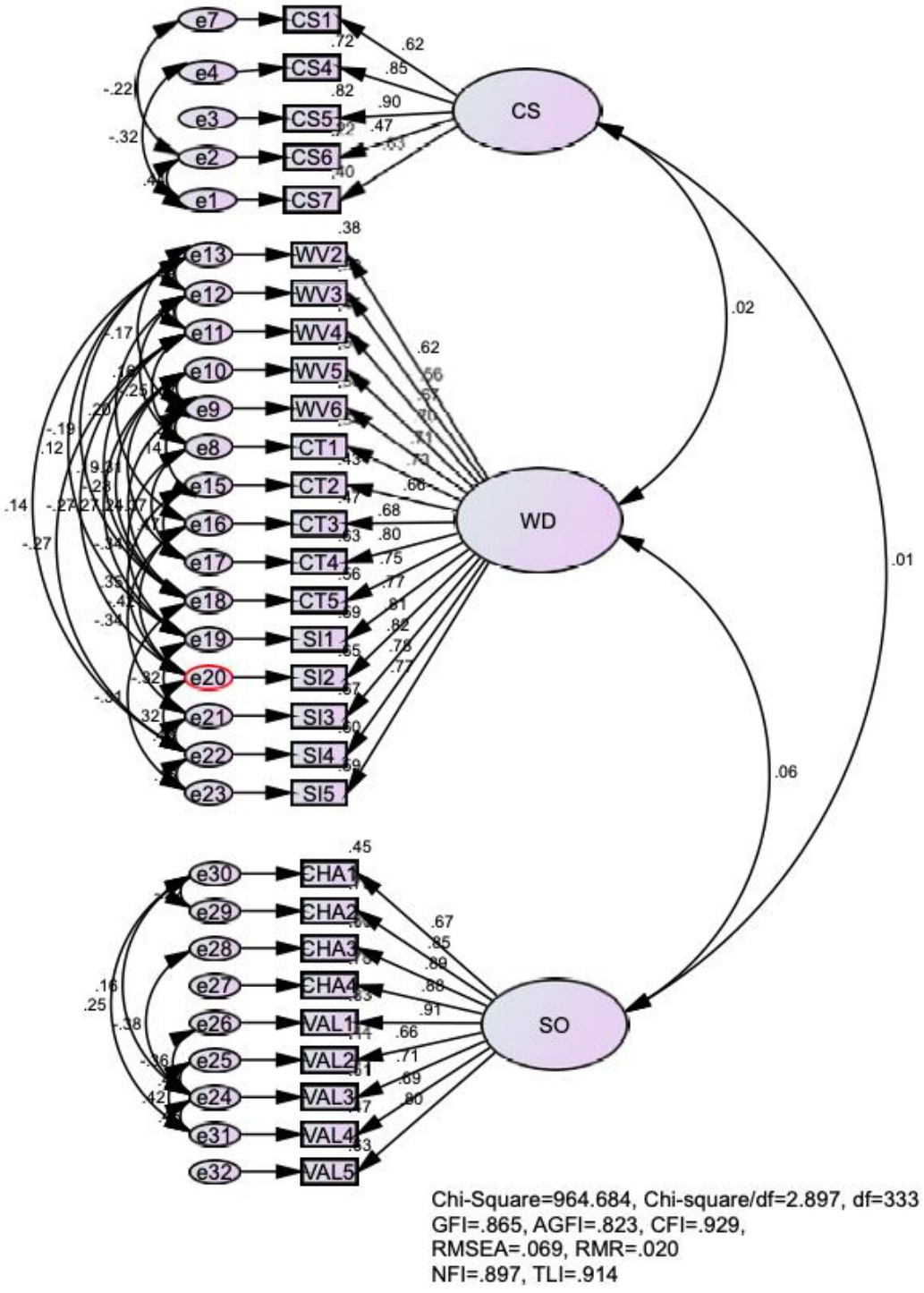

Figure 37 Model fit of customer service, website design, and service outcome

4.4.1.3 Convergent validity

Hair et al. (2014) suggested that the composite reliability (CR) value should be higher than the suggested value of .70 and average extracted variance (AVE) value should be higher than .50. According to the result of AVE and CR in table 18, the results of adjusted model show that the CR values of customer service was .830, website design was .942, and service outcome was .937. This indicated that three latent variables were reliable. The AVE of all latent variables were also higher than .50: customer service was .507, website design was .524, and service outcome was .626, indicating that all variables can be explained by 50% of the variance. Therefore, the adjusted model had high internal consistency reliability and good convergent validity. Table 39 illustrates convergent validity results of customer service, website design, and service outcome.

Table 39 Composite reliability and average extracted variance of customer service, website design, and service outcome

Dimensions	**CR**	**AVE**
Customer service	.830	.507
Website design	.942	.524
Service outcome	.937	.626

4.4.1.4 Discriminant validity

Discriminant validity explains the degree of variables' concept differs from each other. It is measured using correlation coefficients between those latent constructs. Table 40 indicates how website design, customer service, and service outcome concepts differ from each other.

Table 40 Discriminant validity of customer service, website design, and service outcome

Dimensions	Customer Service	Website Design	Service Outcome
Customer Service	**.712**		
Website Design	.025	**.724**	
Service Outcome	.008	.059	**.791**

The result of discriminant validity shows that website design, customer service, and service outcome had a positive correlation. Therefore, three latent variables had a discriminant validity.

4.4.2 Construct validity of personality traits

4.4.2.1 Exploratory factor analysis

The result suggests that 25 measurement items were divided into 4 components. Component 1 consisted of OPE1-OPE5 and CON1-CON5. Component 2 included EXT1-EXT5 and AGR1-AGR5. Component 3 consisted of NEU2-NEU4. Component 4 included NEU1 and NEU5. The communalities of all items were higher than .40 with eigenvalues was 1.508 and variance was 66.9%. Cronbach's alpha was .801. Table 41 identifies exploratory factor analysis of personality traits.

Table 41 Exploratory factor analysis of personality traits

Items	Factor Loadings				Eigenvalue	Variance Explained	Reliability Coefficient
	Component 1	Component 2	Component 3	Component 4			
Personality Traits					1.508	66.974	.801
OPE1	.628						
OPE2	.783						
OPE3	.785						
OPE4	.792						
OPE5	.808						

Table 41 Exploratory factor analysis of personality traits (Continue)

Items	Factor Loadings				Eigenvalue	Variance Explained	Reliability Coefficient
	Component 1	Component 2	Component 3	Component 4			
CON1	.741						
CON2	.739						
CON3	.706						
CON4	.635						
CON5	.662						
EXT1		.558					
EXT2		.707					
EXT3		.667					
EXT4		.738					
EXT5		.788					
AGR1		.536					
AGR2		.743					
AGR3		.643					
AGR4		.601					
AGR5		.587					
NEU1				.108			
NEU2			.768				
NEU3			.836				
NEU4			.766				
NEU5				.482			

KMO .766; Bartlett's test: Chi-square = 8345.477, Sig. = .00

As suggested by Hair et al. (2009), three items were the minimum number suitable for evaluating a factor. In this study, component 4 consisted of only two items, in which NEU1 had low factor loading and NEU5 had cross-load of factors more than .40. Thus, component 4 was deleted from personality traits factor. Table 42 indicates the revised exploratory factor analysis of personality traits.

Table 42 Revised exploratory factor analysis of personality traits

Items	Factor Loadings			Reliability Coefficient
	Component 1	Component 2	Component 3	
Personality Traits				.840
OPE1	.664			
OPE2	.836			
OPE3	.835			
OPE4	.839			
OPE5	.863			
CON1	.796			
CON2	.802			
CON3	.753			
CON4	.687			
CON5	.706			
EXT1		.606		
EXT2		.772		
EXT3		.720		
EXT4		.800		
EXT5		.859		
AGR1		.573		
AGR2		.809		
AGR3		.696		
AGR4		.646		
AGR5		.630		
NEU2			.774	
NEU3			.843	
NEU4			.721	

The revised personality traits measurement items indicate that after deleting component 4 (NEU1 and NEU5), the factor loadings and Cronbach's alpha and of all 23 measurement items were higher than the original scale, which shows

an appropriateness of all items for explaining personality traits factor and a good internal consistency of personality traits items. Due to the factor loading suggested three components of personality traits, it will be named as creativity, cooperation and sociability, and neuroticism.

4.4.2.2 Confirmatory factor analysis

The confirmatory factor analysis indicates moderate fit of the measurement model. From the result of EFA, the initial model consisted of 3 latent variables and 23 observed variables. However, the initial model was rejected because the RMSEA was higher than the critical value of .05, and GFI and CFI were below .90 which indicated the unfit model. Therefore, the model has been adjusted by deleting 3 items: OPE1, AGR4, and AGR5 because their factor loadings were less than .50. Table 43 shows the absolute fit indices of modified model after deleted 3 observed variables (OPE1, AGR4, and AGR5) from personality traits factor.

Table 43 Absolute fit indices of personality traits

Dimensions and Items	**Factor Loadings**	**t-test**	**R^2**	**CR**	**AVE**
Creativity				.934	.613
OPE2	.850***	22.952	.723		
OPE3	.804***	20.944	.646		
OPE4	.855***	22.614	.731		
OPE5	.873	-	.761		
CON1	.805***	25.197	.648		
CON2	.779***	19.544	.607		
CON3	.774***	15.981	.599		
CON4	.591***	12.726	.350		
CON5	.674***	15.592	.454		

Table 43 Absolute fit indices of personality traits (Continue)

Dimensions and Items	**Factor Loadings**	**t-test**	**R^2**	**CR**	**AVE**
Cooperation and Sociability				.888	.507
EXT1	.586	-	.343		
EXT2	.787***	11.476	.619		
EXT3	.770***	12.02	.592		
EXT4	.897***	13.137	.804		
EXT5	.880***	13.092	.775		
AGR1	.559***	8.433	.313		
AGR2	.566***	10.496	.320		
AGR3	.535***	9.044	.286		
Neuroticism				.868	.693
NEU2	.868	-	.754		
NEU3	.971***	22.534	.944		
NEU4	.618***	14.455	.382		

Absolute Model Fit Indices

Model	χ^2	***d.f.***	χ^2/ ***d.f.***	***p-value***	**GFI**	**CFI**	**RMSEA**	**RMR**
Initial	3288.903	249	.000	13.208	.598	.617	.175	.086
Adjusted	383.010	139	.000	2.755	.920	.961	.066	.034

According to the adjusted model, there were 3 latent variables with 20 observed variables left for measuring personality traits factor. The adjusted model was acceptable with RMSEA close to .05, and GFI and CFI higher than the criteria value of .90. Therefore, this model was moderate fit. Figure 38 illustrates model fit of personality traits.

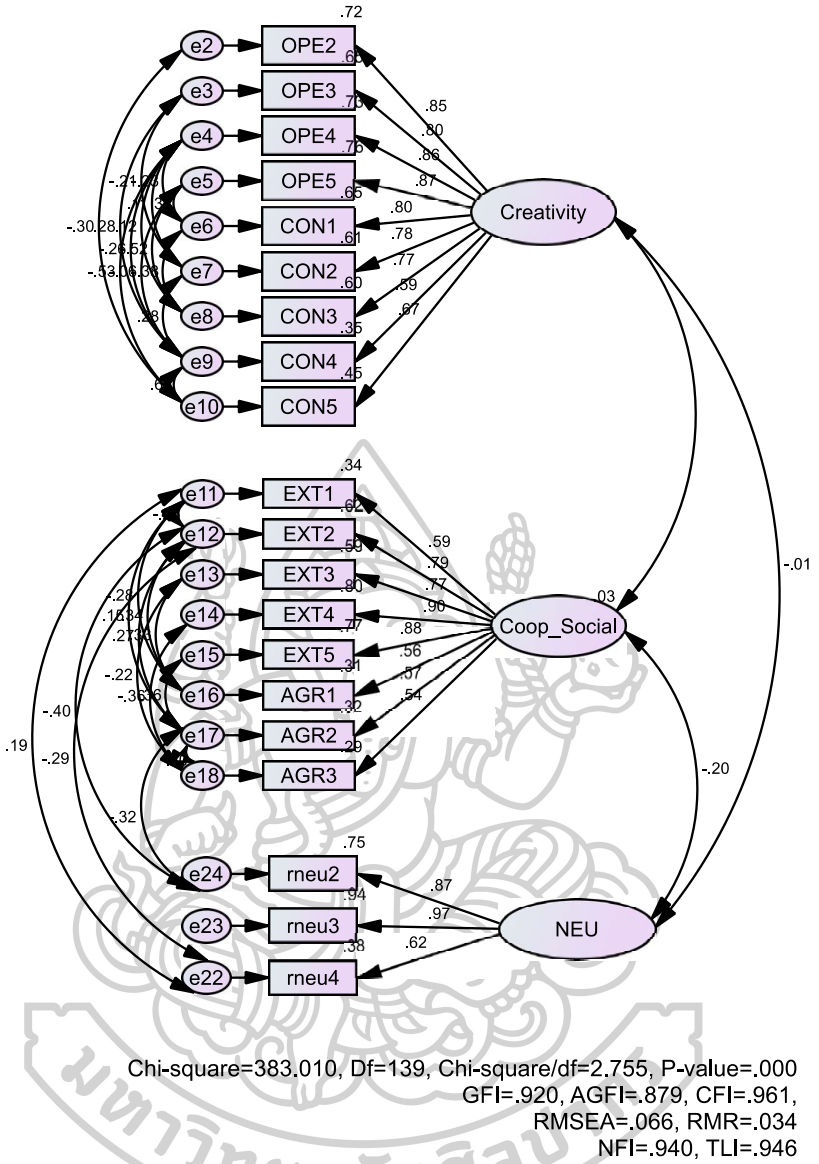

Figure 38 Model fit of personality traits

4.4.2.3 Convergent validity

The value of CR for creativity was .934, Cooperation and Sociability were .888, and neuroticism was .868, which is higher than the minimum criteria. The AVE of three latent variables were higher than .50: creativity was .613, Cooperation and Sociability were .507, and neuroticism was .693, meaning that these variables consisted of more than 50% of the total variance. As a result, the adjusted model reflexed a high consistency and good convergent validity. Table 44 illustrates convergent validity results of personality traits.

Table 44 Composite reliability (CR) average extracted variance (AVE) of personality traits

Dimensions	CR	AVE
Creativity	.934	.613
Cooperation and Sociability	.888	.507
Neuroticism	.868	.693

4.4.2.4 Discriminant validity

All latent variables had positive correlation between each other, except neuroticism that had a negative correlation with other variables. Table 45 shows discriminant validity of personality traits.

Table 45 Discriminant validity of personality traits

Dimensions	Creativity	Cooperation and Sociability	Neuroticism
Creativity	**.783**		
Cooperation and Sociability	.030	**.712**	
Neuroticism	-.013	-.200	**.832**

The result of discriminant validity indicates that creativity, cooperation and sociability, and neuroticism are distinct from each other.

4.4.3 Construct validity of satisfaction

4.4.3.1 Exploratory factor analysis

The results indicated that all six items had factor loading and communalities higher than .40, meaning that no indicator had been deleted during this analysis. All indicators, thus, can be used to explain satisfaction. Table 46 indicates the results of exploratory factor analysis of satisfaction

Table 46 Exploratory factor analysis of satisfaction

Items	Factor Loadings	Eigenvalue	Variance Explained	Reliability Coefficient
Satisfaction		3.750	62.507	.879
SAT1	.715			
SAT2	.779			
SAT3	.771			
SAT4	.749			
SAT5	.855			
SAT6	.864			

KMO .838; Bartlett's test: Chi-square = 1251.013, Sig. = .00

According to table above, there were six items measuring satisfaction. The eigenvalue was 3.750 (greater than the criteria of 1.0). The variance was 62.5% with the KMO of .838, indicating a good factor analysis. Bartlett's test of sphericity was 1251.013 and statistically significant. The reliability coefficient was .879 which inferred a good internal consistency of satisfaction items.

4.4.3.2 Confirmatory factor analysis

The confirmatory factor analysis of satisfaction indicates moderate fit of the model. The initial model consisted of 6 observed variables. Table 47 shows absolute fit indices of satisfaction.

Table 47 Absolute fit indices of satisfaction

Dimensions and Items	Factor Loadings	t-test	R^2	CR	AVE
Satisfaction				.873	.543
SAT1	.497	-	.247		
SAT2	0.659***	11.079	.434		
SAT3	0.674***	10.345	.454		
SAT4	0.777***	9.329	.603		

Table 47 Absolute fit indices of satisfaction (Continue)

Dimensions and Items	Factor Loadings	t-test	R^2	CR	AVE
SAT5	0.857***	10.009	.734		
SAT6	0.885***	10.376	.782		

Absolute Model Fit Indices

Model	χ^2	*d.f.*	χ^2/ *d.f.*	*p-value*	GFI	CFI	RMSEA	RMR
Initial	127.850	9	14.206	.000	.905	.905	.182	.020
Adjusted	12.594	5	2.519	.027	.990	.994	.062	.007

Table 47 shows the absolute fit indices of satisfaction. The model presented 6 observed variables. The initial model was rejected due to RMSEA was higher than the critical value of .05. All factor loadings reached the critical value of .50. After the model had been adjusted, it was acceptable with RMSEA close to .05 with GFI was greater than .90. Consequently, this modified model was moderate fit. Figure 39 shows model fit of satisfaction.

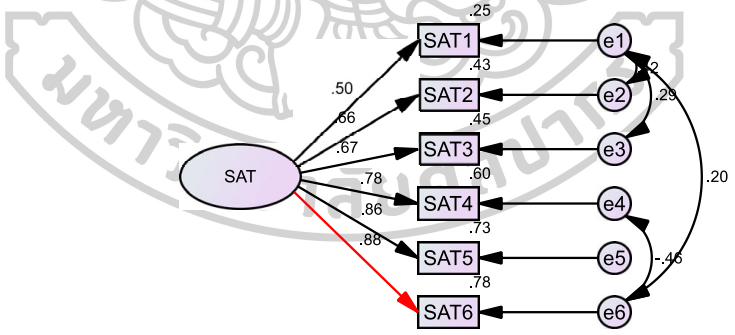

Figure 39 Model fit of satisfaction

4.4.3.3 Convergent validity

The AVE of adjusted model was .543 which is greater than .50, meaning that all observed variables can be explained by 50% of total variance. The CR was .873, higher than .70, indicating a good internal consistency of reliability. Therefore, the adjusted model had high consistency and good convergent validity. Table 48 illustrates convergent validity results of satisfaction.

Table 48 Composite reliability (CR) average extracted variance (AVE) of satisfaction

Dimensions	CR	AVE
Satisfaction	.873	.543

4.4.4 Construct validity of loyalty

4.4.4.1 Exploratory factor analysis

The results indicated that 13 original items of loyalty divided into 2 components: component 1 consisted of all items, except ATT4 which fall into the component 2. Eigenvalues of loyalty factor was 1.688 with variance of 65.67%. Table 49 indicates the results of exploratory factor analysis of loyalty.

Table 49 Exploratory factor analysis of loyalty

Items	Factor Loadings		Eigenvalue	Variance Explained	Reliability Coefficient
	Component 1	Component 2			
Loyalty			1.688	65.671	.920
ATT1	.699				
ATT2	.616				
ATT3	.670				
ATT4		.739			
BEH1	.605				
BEH2	.853				
BEH3	.809				
INT1	.919				

Table 49 Exploratory factor analysis of loyalty (Continue)

Items	Factor Loadings		Eigenvalue	Variance Explained	Reliability Coefficient
	Component 1	Component 2			
INT2	.782				
INT3	.649				
REF1	.760				
REF2	.691				
REF3	.854				

KMO .808; Bartlett's test: Chi-square = 4118.371, Sig. = .00

Even though, the KMO was .808, indicating a good factor analysis, Bartlett's test of sphericity was 4118.371 and statistically significant, the component of loyalty has been revised. The component 2 (ATT4) had been deleted since one item could not measure the factor (Hair et al., 2009). The result of revised EFA of loyalty was shown in table 50.

Table 50 Revised exploratory factor analysis of loyalty

Items	Factor Loadings	Reliability Coefficient
Customer Service		.925
ATT1	.695	
ATT2	.598	
ATT3	.658	
BEH1	.594	
BEH2	.857	
BEH3	.808	
INT1	.920	
INT2	.786	
INT3	.665	

Table 50 Revised exploratory factor analysis of loyalty (Continue)

Items	Factor Loadings	Reliability Coefficient
REF1	.758	
REF2	.711	
REF3	.862	

The revised result indicates that only 12 items were used to measure loyalty. The factor loadings and communalities of all loyalty items were higher than .40 which indicates that it could be used to measure loyalty factor. The reliability coefficient also increased to .925 which inferred a better internal consistency of loyalty items.

4.4.4.2 Confirmatory factor analysis

The result of EFA indicates 12 items used to measure loyalty. The initial model was rejected due to χ^2/ *d.f.* was higher than 3, RMSEA was high than .05, and GFI was lower than .90. Thus, the loyalty model has been adjusted. Table 51 illustrates result of loyalty absolute fit indices.

Table 51 Absolute fit indices of loyalty

Dimensions and Items	Factor Loadings	t-test	R^2	CR	AVE
Loyalty				.922	.506
ATT1	.679	-	.461		
ATT2	.501***	11.757	.251		
ATT3	.634***	11.518	.402		
BEH1	.509***	10.474	.259		
BEH2	.835***	14.634	.698		
BEH3	.855***	13.098	.731		
INT1	.932***	14.611	.868		
INT2	.812***	12.281	.659		
INT3	.568***	11.205	.323		

Table 51 Absolute fit indices of loyalty (Continue)

Dimensions and Items	**Factor Loadings**	**t-test**	**R^2**	**CR**	**AVE**
REF1	.730***	12.999	.533		
REF2	.530***	10.461	.281		
REF3	.779***	13.779	.607		

Absolute Model Fit Indices								
Model	χ^2	***d.f.***	χ^2**/ *d.f.***	***p-value***	**GFI**	**CFI**	**RMSEA**	**RMR**
Initial	1076.417	54	19.934	.000	.736	.733	.218	.045
Adjusted	50.148	26	1.929	.003	.980	.994	.048	.017

The result of adjusted model indicates that the model had 12 observed variables. The factor loadings of all 12 observed variables were higher than .50. The RMSEA was below .05 with GFI and CFI was greater than .90. Therefore, this adjusted model was considered a good fit. Figure 40 shows model fit of loyalty.

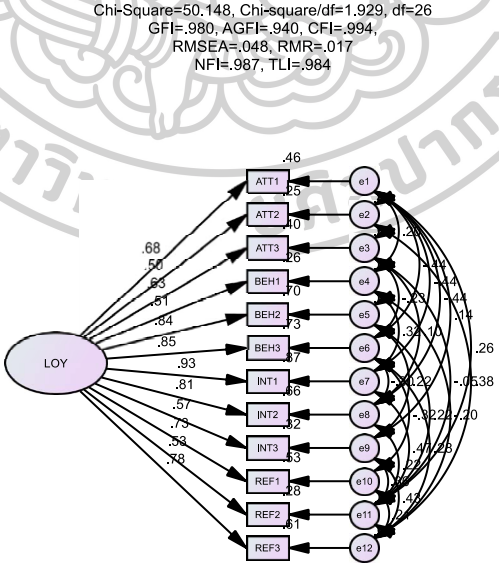

Figure 40 Model fit of loyalty

4.4.4.3 Convergent validity

The AVE of loyalty was .506 and CR of loyalty was .922 which are greater than the critical value of .50 and .70 respectively. The model of loyalty, therefore, was considered as high consistency and good convergent validity. Table 52 illustrates convergent validity results of loyalty.

Table 52 Composite reliability (CR) average extracted variance (AVE) of loyalty

Dimension	CR	AVE
Loyalty	.922	.506

4.4.5 Overall measurement model

The results below indicate factor loadings (β) and squared multiple correlation (R^2) of all measurement models. There are six measurement model in this research, three for exogenous variables, two for endogenous variables and one for mediator variable. Table 53 identifies how overall measurement model relates to the research constructs.

Table 53 Factor loadings and squared multiple correlation of overall measurement model

Dimensions and Items	Factor loadings (β)	R^2
Customer service		
CS1	0.623	.388
CS4	0.847	.717
CS5	0.903	.815
CS6	0.464	.216
CS7	0.632	.399
Website design		
WV2	.615	.378
WV3	.563	.317
WV4	.667	.446
WV5	.703	.495

Table 53 Factor loadings and squared multiple correlation of overall measurement model (Continue)

Dimensions and Items	**Factor loadings (β)**	**R^2**
WV6	.707	.500
CT1	.732	.536
CT2	.659	.434
CT3	.683	.466
CT4	.797	.635
CT5	.748	.560
SI1	.771	.595
SI2	.806	.650
SI3	.816	.665
SI4	.776	.602
SI5	.766	.587
Service outcome		
CHA1	.649	.421
CHA2	.886	.786
CHA3	.864	.747
CHA4	.910	.828
VAL1	.894	.798
VAL2	.688	.474
VAL3	.690	.476
VAL4	.677	.459
VAL5	.871	.758
Personality traits		
Creativity	.237	.056
OPE2	.853	.727
OPE3	.807	.652
OPE4	.857	.735
OPE5	.876	.767

Table 53 Factor loadings and squared multiple correlation of overall measurement model (Continue)

Dimensions and Items	**Factor loadings (β)**	**R^2**
CON1	.809	.654
CON2	.782	.612
CON3	.777	.603
CON4	.595	.355
CON5	.678	.459
Cooperation and	.360	.130
Sociability	.555	.308
EXT1	.797	.636
EXT2	.766	.587
EXT3	.891	.794
EXT4	.876	.768
EXT5	.554	.307
AGR1	.558	.311
AGR2	.555	.308
AGR3	-.357	.127
Neuroticism	.865	.749
rneu2	.970	.940
rneu3	.638	.407
rneu4		
Satisfaction		
SAT1	.537	.288
SAT2	.672	.451
SAT3	.689	.474
SAT4	.786	.619
SAT5	.849	.721
SAT6	.873	.762

Table 53 Factor loadings and squared multiple correlation of overall measurement model (Continue)

Dimensions and Items	Factor loadings (β)	R^2
Loyalty		
ATT1	.657	.432
ATT2	.516	.266
ATT3	.628	.395
BEH1	.557	.311
BEH2	.871	.759
BEH3	.827	.685
INT1	.964	.930
INT2	.789	.622
INT3	.571	.325
REF1	.716	.513
REF2	.599	.359
REF3	.779	.607

The table above explains the overall measurement model relates to the research constructs. For customer service, CS5 had the highest score of factor loadings, β = .903 with squared multiple correlations (R^2) equal to .815, indicating best explanation of customer service construct. The second rank was CS4 which had factor loadings of .847 and R^2 of .717. The lowest one was CS6 which had factor loadings of .464 and R^2 of .216. For website design, SI3, SI2, and CT4 were among top three highest factor loadings (β of SI3 = .816, SI2 = .806, and CT4 = .797) with squared multiple correlations equal to .665, .650, and .638 respectively, indicating best explanation of website design construct. For service outcome, CHA4 had the highest factor loadings, β = .910 with R^2 equal to .828 which indicating best explanation of service outcome construct. The second rank was VAL1 with the factor loadings equal to .894 and R^2 was .798. For personality traits, OPE5 had the highest factor loading of .876 and squared multiple correlations (R^2) of .767 for the creativity dimension. EXT4 had the highest factor loading of .891 and squared multiple correlations (R^2) of .794 for the cooperation and sociability dimension. NEU3 had the highest factor loading of .970

and squared multiple correlations (R^2) of .940 for neuroticism dimension. For satisfaction, SAT6 and SAT5 had high score of factor loadings, β of SAT6 = .873, SAT5 = .849, with squared multiple correlations (R^2) of SAT6 = .762, and SAT5 = .721 which indicating best explanation of satisfaction construct. For loyalty, INT1, BEH2, and BEH3 had high score of factor loadings (β of INT1 = .964, BEH2 = .871, and BEH3 = .827) with squared multiple correlations (R^2) equal to .930, .759, and .685 respectively, indicating best explanation of loyalty construct. Figure 41 shows the factor loadings and squared multiple correlations of overall measurement model.

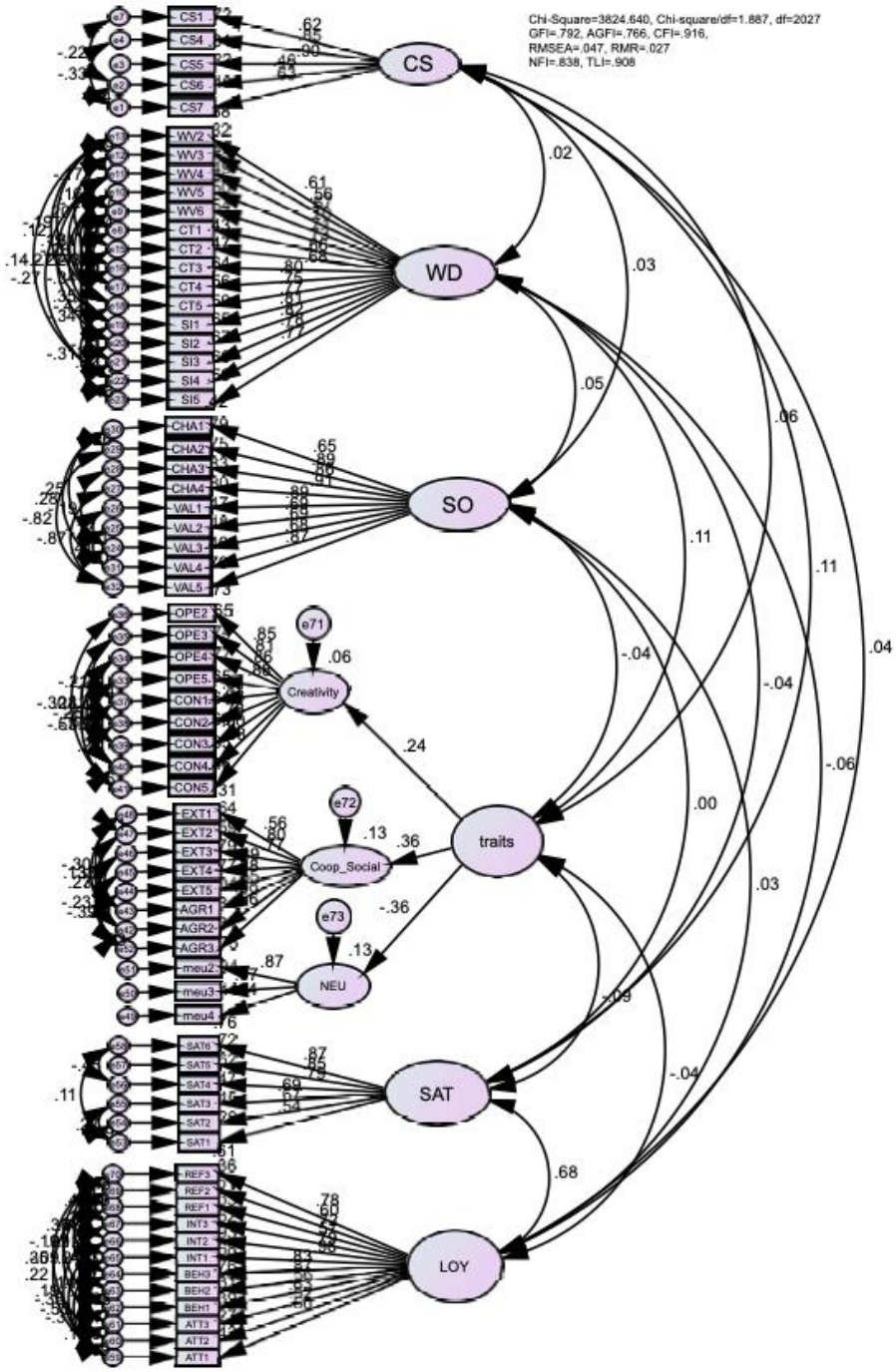

Figure 41 Factor loadings and squared multiple correlations of overall measurement model

Note: CS = Customer service, WD = Website design, SO = Service outcome, Traits = Personality traits, Coop-Social = Cooperation and sociability, NEU = Neuroticism, SAT = Satisfaction, LOY = Loyalty

The overall measurement model indicates a moderate fit of the adjusted model. The initial measurement model had been rejected due to the RMSEA was higher than the critical value of .05. After the initial model had been adjusted, the RMSEA was .047, RMR was .027 and CFI was .916. Consequently, this model was considered a good fit. Table 54 illustrates result of absolute fit indices of overall measurement model.

Table 54 Absolute fit indices of overall measurement model

Model	χ^2	***d.f.***	χ^2/ ***d.f.***	***p-value***	**GFI**	**CFI**	**RMSEA**	**RMR**
Initial	8015.467	2133	3.758	.000	.639	.725	.083	.032
Adjusted	3824.640	2027	1.887	.000	.792	.916	.047	.027

The convergent validity of all measurement models was higher than the minimum criteria (CR should not less than .70, and AVE should not less than .50), except personality traits, which indicated low CR and AVE. Table xx indicates the CR and AVE of overall measurement model.

Table 55 Composite reliability (CR) average extracted variance (AVE) of overall measurement model

Dimensions	**CR**	**AVE**
CS	.830	.507
WD	.942	.524
SO	.940	.638
PT	.021	.104
SAT	.879	.553
LOY	.925	.517

Discriminant validity and correlation matrix among the research constructs indicated that all constructs differed from each other. Table 56 indicates discriminant validity and correlation matrix of the research constructs.

Table 56 Discriminant validity and correlation matrix of the research constructs

Constructs	CS	WD	SO	PT	SAT	LOY
CS	**.712**					
WD	.025	**.724**				
SO	.027	.051	**.799**			
PT	.058	.114	-.041	**.323**		
SAT	.113	-.035	-.001	-.087	**.743**	
LOY	.044	-.057	.032	-.036	.678	**.719**

4.5 Structural Model

Relationship of the conceptual model was tested using Structural Equation Modeling (SEM) analysis. There are three exogenous variables, two endogenous variable, and one mediator for this structural model. Multiple fit indices were used in this research to measure the model fit. These indices include chi-square/df (χ^2/d.f.), Goodness-of-Fit index (GFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Root Mean Square Residual (RMR). In this research, the model presents a moderate fit. Table 57 indicates absolute fit indices of the structural model.

Table 57 Absolute fit indices of the structural model

Absolute Model Fit Indices								
Model	χ^2	***d.f.***	χ^2**/ *d.f.***	***p-value***	**GFI**	**CFI**	**RMSEA**	**RMR**
Overall	4734.648	2049	2.311	.000	.754	.874	.057	.145

The model fit indices indicate the RMSEA was close to critical value of .05 while the CFI was .874 which close to the critical value of .90. With the χ^2/ *d.f.* was less than 3.0, this model was said to have a moderate fit.

Factor loadings (β) and squared multiple correlation (R^2) of the structural model are shown in table 58 below.

Table 58 Factor loadings and squared multiple correlation of the structural model

Dimensions and Items	Factor loadings (β)	R^2
Customer service		
CS1	.617	.381
CS4	.859	.738
CS5	.907	.822
CS6	.372	.139
CS7	.463	.214
Website design		
WV2	.612	.375
WV3	.525	.276
WV4	.703	.494
WV5	.698	.487
WV6	.626	.392
CT1	.427	.183
CT2	.656	.430
CT3	.691	.478
CT4	.827	.684
CT5	.749	.561
SI1	.801	.642
SI2	.805	.647
SI3	.821	.675
SI4	.778	.605
SI5	.768	.590

Table 58 Factor loadings and squared multiple correlation of the structural model (Continue)

Dimensions and Items	Factor loadings (β)	R^2
Service outcome		
CHA1	.392	.154
CHA2	.852	.725
CHA3	.896	.803
CHA4	.908	.824
VAL1	.914	.835
VAL2	.589	.347
VAL3	.409	.168
VAL4	.549	.302
VAL5	.814	.663
Personality traits		.557
Creativity		
OPE2	.622	.387
OPE3	.901	.812
OPE4	.867	.751
OPE5	.905	.819
CON1	.925	.856
CON2	.874	.764
CON3	.848	.719
CON4	.835	.698
CON5	.686	.471
Cooperation and	.761	.579
Sociability	.055	.003
EXT1	.571	.326
EXT2	.798	.637
EXT3	.769	.592
EXT4	.892	.795
EXT5	.880	.775

Table 58 Factor loadings and squared multiple correlation of the structural model (Continue)

Dimensions and Items	**Factor loadings (β)**	**R^2**
AGR1	.556	.309
AGR2	.566	.320
AGR3	.562	.316
Neuroticism	-.030	.001
rneu2	.855	.731
rneu3	.982	.964
rneu4	.631	.399
Satisfaction		.595
SAT1	.833	.694
SAT2	.860	.739
SAT3	.858	.736
SAT4	.881	.776
SAT5	.928	.861
SAT6	.934	.872
Loyalty		.813
ATT1	.836	.699
ATT2	.725	.526
ATT3	.798	.636
BEH1	.774	.600
BEH2	.925	.855
BEH3	.885	.784
INT1	.971	.944
INT2	.882	.778
INT3	.723	.523
REF1	.825	.680
REF2	.749	.562
REF3	.814	.663

The results indicates that CS5 and CS4 were among the highest observed variables that could explain customer service, the factor loadings were β of CS5 = .907 and CS4 = .859 with squared multiple correlation was .738 and .822 respectively. CT4, SI3, and SI2 were among the top three observed variables that could explain website design (β = .827, .821, and .805 with R^2 = .684, .675, and .647 respectively). For service outcome, the top high of factor loadings were VAL1 (β = .914) and CHA4 (β = .908) with R^2 = .835 and .824 respectively, indicating a good explanation of service outcome. The highest factor loading of personality traits was creativity variable (β = .622 and R^2 = .387), meanwhile β of cooperation and sociability was .055 (R^2 = .003). However, the β of neuroticism had a negative effect on personality traits. Its β was -.030 (R^2 = .001). For satisfaction, the highest factor loading was SAT6 (β = .934) while SAT5, the second rank, had factor loading equal to .928 (R^2 = .861 and .872. respectively). The top three β of loyalty were INT1 (β = .971), BEH2 (β = .925), and BEH3 (β = .885) respectively.

4.6 Path Analysis

The path analysis is used to test relationship between exogenous and endogenous latent variables. As the path diagram presents, customer service, website design, and service outcome have direct effect on personality traits and have indirect effect on satisfaction. Satisfaction, then, has direct effect to loyalty. Figure 42 shows the path diagram of the structural model.

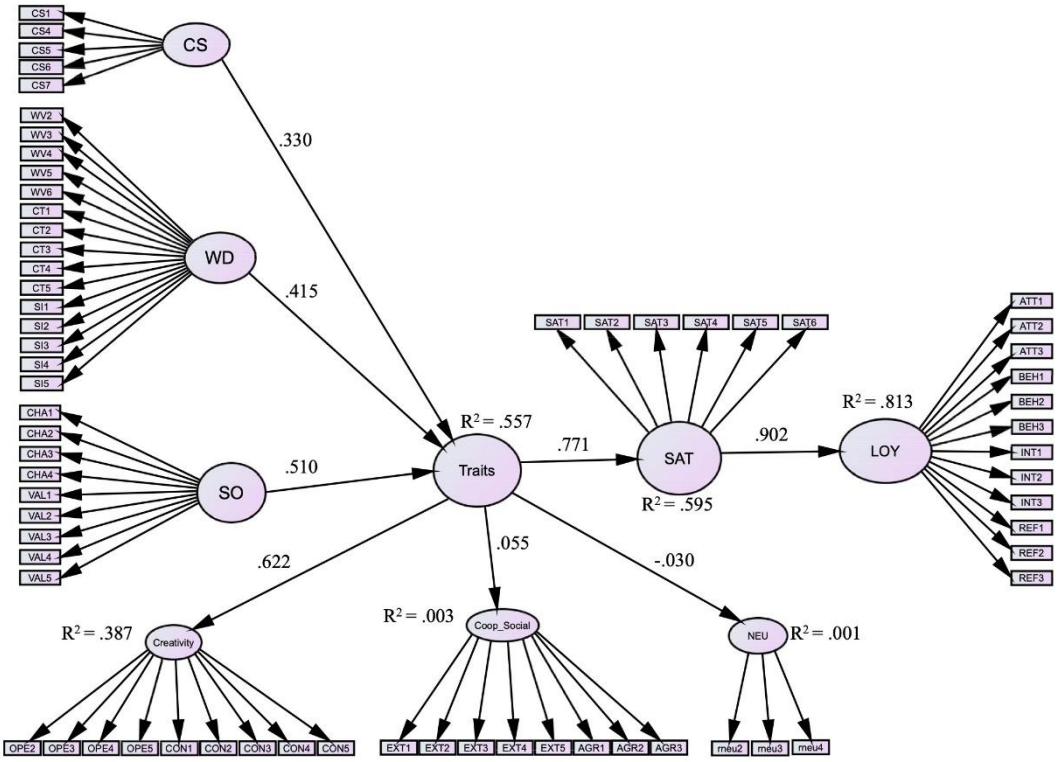

Figure 42 Path diagram of the structural model

Note: CS = Customer service, WD = Website design, SO = Service outcome, Traits = Personality traits, Coop-Social = Cooperation and sociability, NEU = Neuroticism, SAT = Satisfaction, LOY = Loyalty

The figure 42 shows that service outcome had the highest influence on personality traits (β=.510). The second rank was website design, β=.415 and customer service was the third rank, β=.330. The influence of personality traits on satisfaction was β=.771 and satisfaction on loyalty was β=.902 respectively.

To illustrate the direct effect, indirect effect, and total effect of the overall model, table 59 is created.

Table 59 Direct, indirect, and total effect of overall model

Dimensions	Personality Traits			Satisfaction			Loyalty		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
Customer service	.330	-	.330	.132	.255	.357	-	.230	.230
Website design	.415	-	.415	.085	.320	.405	-	.288	.288
Service outcome	.510	-	.510	.105	.393	.498	-	.355	.355
Personality Traits	-	-	-	.771	-	.771	-	.696	.696
Satisfaction	-	-	-	-	-	-	.902	-	.902
R^2	.557			.595			.813		

Note: DE = direct effect, IE = indirect effect, and TE = total effect

From table above, service outcome had a medium positive direct effect on personality traits around (DE = .330). Service outcome had a strong positive effect on personality traits DE = .510) and website design has a medium direct effect on personality traits (DE = .415). Personality traits had strong positive direct effect on satisfaction (DE = .771). Satisfaction had a strong direct effect on loyalty (DE = 902).

For indirect effect, customer service indirectly affected on satisfaction via personality traits (IE = .255). Website design and service outcome had a medium indirect effect on satisfaction, IE = .320 and .393 respectively. Customer service, website design, and service outcome also had a positive medium indirect effect on loyalty (IE = .230, .288 and .355 respectively) via personality and satisfaction. Personality traits, moreover, had a strong indirect effect on loyalty via satisfaction (IE = .696). The R^2 value of personality traits, satisfaction, and loyalty had a strong explanatory impact, R^2 = .557, .595, and .813 respectively.

4.7 Hypothesis Testing

According to the path analysis, all hypothesis is tested to evaluate relationship of all variables in the conceptual model. Table 60 shows the summary results of the direct effects for hypotheses testing.

Table 60 Direct effects of hypotheses results

Hypotheses	β	Effect	Results
H_1: Customer service of online international running event positively influences participants satisfaction	.132	Direct	Not Supported
H_2: Website design of online international running event positively influences participants satisfaction	.085	Direct	Not Supported
H_3: Service outcome of online international running event positively influences participants satisfaction	.105	Direct	Not Supported
H_4: Personality traits positively influences participants satisfaction	.771**	Direct	Supported
H_5: Customer service of online international running event positively influences on personality traits	.330**	Direct	Supported
H_7: Website design of online international running event positively influences on personality traits	.415**	Direct	Supported
H_9: Service outcome of online international running event positively influences on personality traits	.510**	Direct	Supported
H_{11}: Satisfaction on online international running event positively influences participants loyalty	.902**	Direct	Supported

Note: ** $p < .01$

There were three exogenous variables (customer service, website design, and service outcome) and three endogenous variables (personality traits, satisfaction, and loyalty) with eleven hypotheses in this model. Table 60 indicates the hypotheses results in terms of direct effects. Hypothesis H_1 is rejected since there was nonsignificant effect between customer service and satisfaction. Thus, customer service has no direct

influence on satisfaction. Hypothesis H_2 presents that website design has no direct effect on satisfaction due to it has non-significant effect. Thus, H_2 is rejected. Hypothesis H_3 is also rejected as it indicates that service outcome has no direct effect on satisfaction with no significant level. Hypothesis H_4 is supported. The result indicates a direct effect between personality traits and satisfaction. Thus, personality traits positively influence on satisfaction (β = .771**). Hypothesis H_5 is supported as the evidence shows the significant direct effect of customer service on personality traits (β = .330**). The result of hypothesis H_7 shows that website design has direct effect on personality traits (β = .415**). Thus, hypothesis H_7 is supported. Hypothesis H_9 is supported as there is direct effect of service outcome on personality traits (β = .510**). The hypothesis H_{11} is supported. The result indicates a strong direct effect of satisfaction on loyalty (β = .902***). Therefore, satisfaction positively influences loyalty. Table 61 indicates indirect effects of three hypotheses testing.

Table 61 Indirect effects of hypotheses results

Hypotheses	***β***	**Effect**	**Results**
H_6: Personality traits mediate the relationship between customer service and participants satisfaction	.255***	Indirect	Supported
H_8: Personality traits mediate the relationship between website design and participants satisfaction	.320**	Indirect	Supported
H_{10}: Personality traits mediate the relationship between service outcome and participants satisfaction	.393**	Indirect	Supported

Note: ** p < .01, *** p < .001

From table 61, hypothesis H_6 is supported as there is indirect effect of customer service on satisfaction via personality traits (β = .225***). The result also suggests that personality traits fully mediate the relationship between customer service and satisfaction since there is no direct effect of customer service on satisfaction. The evidence of H_8 indicates indirect effect of website design on satisfaction via personality

traits (β = .320**). Since there is no direct effect of website design on satisfaction, thus personality traits fully mediate the relationship between website design and satisfaction. Thus, hypothesis H_8 is supported. As suggested by the result of hypothesis H_{10}, service outcome has indirect effect on satisfaction (β = .393**). The empirical evidence indicates that personality traits fully mediate the relationship between service outcome and satisfaction. Therefore, the hypothesis H_{10} is supported.

To summarized, this chapter explained the finding of this study based on both content analysis and statistical analysis. There are three critical factors found on qualitative research approach. These three includes customer service, website design, and service outcome. After building the measurement based on these factors, the researcher set the new hypothesis and test it using structural equation model (SEM) to find the relationship among all variables including customer service, website design, service outcome, personality traits, satisfaction, and loyalty. During construct validity stage, some observed variables are deleted and modified to improve the model fit. The study also explored the relationship of all variables in the structural model analysis. All findings are discussed in Chapter 5.

Chapter 5
Conclusion, Discussion, and Recommendation

This chapter will conclude, discuss, and recommend the results found in chapter 4. The first section provides discussion about the findings and literatures related with research questions. The second section describes conclusion on how critical factors influence participants behaviors. The last section reports recommendations for future research.

5.1 Discussion

5.1.1 Qualitative approach finding

Research question 1: What are critical factors of online international running event?

The finding from qualitative method answers research question 1. It suggested four factors necessary to organize online running event. Among these four categories, three of them were pre-determined from the hierarchical approach of service quality theory developed by Brady and Cronin (2001). These hierarchical approach factors consisted of interaction quality, physical environmental quality, and outcome quality. Another factor found in this study was the successful factor. These four factors are discussed as follow.

5.1.1.1 First factor: customer service

The interview data showed that when the running event has been conducted only through the Internet, others online aspects need to be considered. For example, in the work of Brady and Cronin, interaction quality concerned the quality of staff who interact with customers. In the case of online event, staff does not directly interact with participants. The quality of service provided by the staff through medium channels should be accounted. These channels were viewed as the first contact points where participants interact with running organizers. In this study, website, application, and social media were used to contact with the participants. To be more specific, website and application were used to provide contact detail and give information to participants. Meanwhile, problem solving service tends to be provided via social media, such as Facebook and Instagram. Participants used social media, such as the online chat

box to ask some questions from the event organizers. Customer service tends to be the key factors when evaluating service operation in other studies, although the name is different. For instance, Calabuig-Moreno et al. (2016) used the term 'personnel' dimension to explains the four aspects of personnel in Service Quality in Sporting Events Scale or EVENQUAL model including knowledge, reliability, empathy, and professionalism. Kelley and Turley (2001) proposed the factors of 'employees' in their study. Likewise, Theodorakis & Alexandris (2008) also mentioned personnel dimension in their SPORTSERV model. Lately, Armbrecht (2019) also included personnel aspects in service quality measurement scale in order to evaluating event quality of participatory running events.

Cristobal et al. (2007) suggested that when deliver service through the Internet, customer service should be evaluated since customers contact with the company via online channels. It is necessary to monitor how staffs treat customers and how they behave via online platforms. Rahi et al. (2017) further stated that in an online banking service, customer service was proved to be a key element enhancing customer loyalty. Abu-ELSamen et al. (2011) also suggested that customer service skills play a vital role in creating customer service satisfaction in mobile communication industry. This is also true in sport industry, Álvarez-García et al. (2019) mentioned that facility staffs in sport and health centers was one of the key factors to satisfy users toward the organization who conducting the sport activities. Thus, customer service serves as a key element in providing a good service in online running event.

5.1.1.2 Second factor: website design

The interview data showed that when conducting online event, the online platforms served as the main communication channel to contact to participants. Thus, running event organizers should pay attention on selecting these platforms. As mentioned earlier in customer service section, the online platforms included website, application, and social media. To select the right platform for organizing online running event, template of website or application should be considered since it can attract customer attention. In this study, the online running event platforms, Even Pop and Map My Fitness had standardized display. Thus, they do not allow the running organizers to change any display function. Moreover, the layout of the website is fixed with the website template which, sometimes, it hard to use by the organizers and, eventually,

resulting in a difficulty to access by participants. Blanco, Sarasa, and Sanchlemente (2010) suggested that a schematic display of visual and textual information of the product appears on the website can enhance users' responses rate. Therefore, the visual website design should be carefully monitor when organizing the online running event.

Contents of the running event posted on various online channels including website, application, and social media should also be considered. Normally, these contents gave information of the running event. Karimov et al. (2011) suggested that content design should combined three aspects: informativeness, brand alliances, and e-assurances. The informativeness refers how the website provides accurate information about products or services. Brand alliances refers to the way a brand pursues to make customers familiar with their brands. E-assurances relates with legal or technological protection regarding on data lost. In this study, the contents of the website tend to base on informativeness and brand alliances since it provided the accurate information about the running event on all platforms. Brand alliances also focused to attract first time participants.

User interface and tool bars are interactive tools that help participants to search for contents on the website and application. However, website and application were not used, by event organizers, as a tool to communicate with participants due to it has no chat function on both channels. The running organizers, mostly, connect with participants via social media instead. Social interaction tool on the website plays a vital role in encouraging people to interact with others. It creates social link between groups of people. There are many web sites provides social interaction service. Girgensohn and Lee (2002) study on the design of two social interaction web sites called CHIplace and Portkey. They suggested that there were five key design challenges included in their study. These five challenges consisted of: 1) promoting visibility of people and their activities; 2) encouraging user participation; 3) supporting sociability; 4) designing for usability; and 5) maintaining the site with minimal resources. In this study, however, the researcher found that both Even Pop and Map My Fitness did not provide social interaction tool on their website and application. Instead, both organizers applied social media to engage with their participants. This is because social media emphasis real-time updates and 'live' content. The participants can show their success 'stories' via social media. Moreover, in other type of sports,

social media can empower athletes to share their stories and engage with fans (Barnhart, 2020).

Therefore, website design is considered as delivery channel and important in participants point of view. As this research focuses on online event, website is used as a medium of communication between participants and the event organizers. To attract participants attention, design of the website and availability of all information play important role. In this study, social media was used as communication tool. Information available for participants was about running campaign, such as distance information, purpose of the event, and contact detail. This result is similar to the work of Wolfinbarger and Gilly (2003) who suggested that website design contributed to overall quality, satisfaction, loyalty intention and attitude of customer towards website. Thus, website layout also plays a vital role for achieving a good performance of the running organizers. The result is consistent with Wu et al. (2014) as they confirmed that design and layout of the website in an online store can increase customer loyalty and brand image.

5.1.1.3 Third factor: service outcome

For service outcome, participants were challenge by themselves and other runners. As suggested by Alexandris et al. (2017), service outcome in running event deals with the contest feeling experienced by participants. In their work, experiential outcomes are important to create loyalty among the low-involved group of runners. They suggested that the personal characteristics of each runner related to their personal goals and expectations to join a marathon, which, in turn, lead to runners' satisfaction. Getz and Anderson (2010) also stated that the main goals of leisure-oriented and less involve runners to running in a marathon were that having fun, entertainment, engage in social group, and have cultural experiences. Personal achievement also the main goal for those leisure-oriented runners since they can challenge themselves to the finish line. This study, thus, was consistent with these previous studies.

The service outcome in this study also included perceived value through reward achieving. A reward giving, such as medal or certificate establishes a pride to runners as they can achieve their goal. According to previous studies, value is defined as consumers' assessment of what product or service received and what they

have paid for it. This factor measured the different between perceived quality and perceived sacrifice (Dodds, Monroe, & Grewal, 1991). The higher the different, the better value received from buying that product or service. In this study, the interview data shows that value that participants perceived was come into both physical form and psychological form. The work of Biscaia et al. (2021) further suggested that perceived value is one of the key factor enhance spectators' satisfaction and behavioral intentions. Romiti and Sarti (2016) also confirmed that challenge and value were among important factors that influenced intention to return in active sport tourism. Therefore, challenge and value of running event had been emerged in this study.

5.1.1.4 Forth factor: successful of the event

The interview data indicated that the outcomes of the sport consumer decision making was evaluated by the success of the online running event. The organizers found that participants' satisfaction plays an important role for succession in service production. Various research focused on customer satisfaction. The study of Chen et al. (2021) supported this result that event service quality has significant effect on satisfaction among city marathon runners. They also found that event service quality plays an essential role in creating destination loyalty. Another aspect of satisfaction also mentioned in the work of Grunseit, Richards, and Merom (2017) who studied parkrun and personal well-being. The authors suggested that park runners were satisfied with their physical health. This is another aspect of satisfaction which not based on the event, rather based on the runners' health satisfaction. The study of Koo et al. (2014) also supported the current study that the event image were positively influence runners' satisfaction in a small-scale marathon event. They further stated that participants' satisfaction acted as a mediator between event image and intention to re-participate in the event. Likewise, Tsuji, Bennett, and Zhang (2007) stated that satisfaction was positively influenced by service quality, which lead to the intention to return to a large-scale action sports event in the future. Therefore, successful of the event, in this study, refers to satisfaction and loyalty factors of the online running event.

All four factors found in qualitative research had been converted into proposed conceptual framework as stated in chapter 3. The next section presented the findings from quantitative research method.

5.1.2 Quantitative approach finding

The finding of structural model indicated the moderate fit of the model, which means that this model is acceptable to measure participants behaviors. This result was consistent with Browne and Cudeck (1992) who argued that RMSEA value of <.08 indicated a 'reasonable model-data fit' which is acceptable. Thus, it was appropriate to this structural model to test the influence of critical factors on participant behaviors. The next section discusses on each research question.

5.1.2.1 *Research question 2: How do critical factors influence on participants satisfaction?*

It was confirmed by the results that these three critical factors had no direct effect on participants satisfaction. Details of this results were stated as followed.

1) Customer service and satisfaction

This result shows that customer service had no direct effect with participant satisfaction. The researcher found that there was nonsignificant effect between customer service and customer satisfaction. The current study was inconsistent with the previous research where customer service often leads to customer satisfaction. Wolfinbarger and Gilly (2003), for instance, who created eTailQ which is a measurement of online retail quality towards customer satisfaction, retention, and loyalty in product and services, stated that there were four factors of quality including website design, reliability, privacy or security and customer service. All of these factors strongly influenced customer satisfaction, loyalty and attitudes of customers toward website. Froehle (2006) also suggested that the reason why customer service had no effect on satisfaction was that it failed to account the richness of media sent through technologies-based communication channels. According to Froehle, there was a possibility that technologies-based media were less richness than face-to-face when delivering service to customers. Choi et al. (2018) who study the effects of service quality on consumer satisfaction and behavioral intentions in virtual golf suggested that personnel, one of dimension in evaluating service quality in virtual golf, had positive and direct influence on satisfaction. Many scholars, such as Álvarez-García et al. (2019) also mentioned that facility staff had direct effect on overall satisfaction, satisfaction with the organization of activities, and satisfaction with the activity. This means that

facility staff influence the satisfaction of both the organization and the activity itself. Likewise, Verhagen et al. (2014a) stated that for online service encounters, virtual customer service agents play an important role in determining the success of the company. Technological tools, such as live chats, customer communities, frequently asked questions, and social media can help the company provide effectively and efficiently information seeking and problem solving to customers. Their work suggested that friendliness and expertise of customer service agents had direct effect on social presence and personalization, which in turn, predicted service encounter satisfaction. For this study, however, since participants received customer service via online channels (no face-to-face), customer service may not be able to deliver to customers. Hence, it had no effect on satisfaction.

2) Website design and satisfaction

The results shows that website design had no direct effect on participants satisfaction. This is, perhaps, because online running event was organized through the event platform, in which all the visual design and social interactive tools cannot change or adjusted by the running organizers. It is inconsistent with (Cristobal et al., 2007) who studied perceived e-service quality (PeSQ) influencing customer satisfaction and website loyalty. In their study, website design was considered as one dimension in PeSQ scale, and it had strong direct effect on satisfaction. They suggested that for an online ship, information about products provided on the website is very important for customer to compare their choices. The direct effect of website design and satisfaction can also be seen in the case of fantasy sports websites. Suh and Pedersen (2010) who studied perceived service quality of participants using fantasy sports websites, such as ESPN.com Fantasy Games, FOX Fantasy Sports, and NFL Events: Fantasy Sports suggested that service quality of the website including ease of use, trust, content, and appearance of the page on the website were main factors influence customer satisfaction. Their results indicated a strong and direct effect of perceived service quality of the website on satisfaction. They also stated that content dimension was the most important factors for fantasy sports participants. For visual design, Varela et al. (2013) stated that visual appeal (VA) showed a direct impact on user preferences and satisfaction. Users normally prefer the websites that has a differentiated visual appear and color. Likewise, Zeithaml et al. (2002) suggested that

many website providers increase their spending on visual of the website since visual or appearance dimension influence the customer satisfaction and decision to visit the website. The current study is consistent with Ha and Im (2012) who studied role of website design quality on satisfaction and word-of-mouth in an online shopping context that web sites design quality had indirect effects on satisfaction via pleasure, arousal and perceived information quality.

3) Service outcome and satisfaction

Unlike the previous study, the result of his study showed that service outcome had nonsignificant impact on participants satisfaction. This is, probably, because the online running event did not provide the sense of competition like the physical running event. Even though participants see the score board online, they do not feel the pressure from opponents. Since they did not experience the fun and join from participating in the online running event, they would perceive less value for their money, time, and effort. This result was inconsistent with Murray and Howat (2002) who suggested that value of joining sports and leisure activities had direct effect on satisfaction. The work of Koh et al. (2012) also mentioned that sport participants who had a positive experience in sport would have a better satisfaction of psychological needs. Biscaia et al. (2021) who studied service quality effects on consumer outcomes also supported Koh et al. that for sports spectators, the perceived value had a positive effect on their satisfaction. This means that trade-off between the costs and benefits should be considered when evaluating the event. In the work of Howat et al. (2008) outcome dimension had a strong and direct influence on overall satisfaction. It shows that customers had good feeling and experience while participating in the public aquatic centres.

5.1.2.2 Research question 3: How do personality traits mediate relationship between critical factors and participants satisfaction?

All three critical factors: customer service, website design, and service outcome had indirect effect on participants satisfaction via personality traits. The following section discusses how these critical factors influence on personality traits and satisfaction. The mediating effect of personality traits on those critical factors and satisfaction is argued here.

1) Personality traits mediate relationship between customer service and satisfaction

The finding showed that customer service had a strong direct effect on personality. This is, perhaps, customer service needs to be customized according to each participant's requirement. Especially when customers do not attend the running event in a physical place, online customer service would be only one contact point for runners. Hence, personalizing service resolution to each trait of customers would help online running event organizers increasing participants' satisfaction. This study is consistent with Verhagen et al. (2014b) who suggested that customer service, such as responsiveness and expertise of staffs had a positive effect on personalizing service to each customer. They further stated that the personalized service can produce a strong impact on service satisfaction. Tan, Foo, and Kwek (2004) also proposed that the agreeableness in customers was positively influenced customer satisfaction toward the service provider. Therefore, this research confirmed previous studies that personality traits can mediate the relationship between customer service and satisfaction.

2) Personality traits mediate relationship between website design and satisfaction

The results revealed that website design predicted personality traits. For runners' perspective, a good website design can catch their attention when searching for online running events to participate. This result was consistent with the previous research. Golbeck et al. (2011) recommended that website features, content and information posted on the website could predict personality traits of customers. Their research indicated that website design had a positive impact on openness, and extroversion, while had a negative impact on conscientiousness, agreeableness and neuroticism. The result also supported by Kosinski et al. (2014) that a person who like to go outside was attracted by the exciting websites. The work of Naoui and Zaiem (2013) argued that the website design influenced e-trust, which is considered as one of the important key in satisfaction, for those customers who are extroverts, agreeable, and open to experiences. However, this result was different than Golbeck et al. as the neuroticism had not been accounted due to it vulnerably valued security and privacy of the website. Moreover, the author found that personality traits mediated the relationship between website design and satisfaction. This result showed the significant indirect

effect between website design and satisfaction, with the nonsignificant direct effect between website design and satisfaction. As to the author knowledge, there was less attempt to test mediation effect of personality traits of website design and satisfaction in sport field. Thus, this research provided the significant evidence of this relationship. According to the mediation result, personality traits, especially for creativity element, influenced the relationship between website design and satisfaction. This means the website design that had been personalized according to runners' traits would enhance customer satisfaction.

3) Personality traits mediate relationship between service outcome and satisfaction

For service outcome, the result revealed that service outcome can influence personality of participants. Witkowski and Piepiora (2018) affirmed that personality of the athletes would depend on the challenge pressure imposed by the opponent who compete with the same sport. According to the mediation result, personality traits fully mediated relationship of service outcome on satisfaction. It was consistent with the work of Haslam et al. (2009) who proposed that the relationship between value and subjective well-being was fully mediated by personality traits. Although they studied the mediation effect of personality traits, their study based on the subjective well-being, not satisfaction. This research, therefore, confirmed that service outcome had a direct effect on personality traits. It also revealed the new finding that service outcome could predict satisfaction only when it mediated by personality traits, meaning that service outcome perceived by different groups of personality traits can influence customer satisfaction level.

The most interesting point found in this research was that personality traits were not consisting with five traits as the previous research suggested. The result of EFA on personality traits indicated that all twenty-five items had felled into three components instead of five. This is, perhaps, because the respondents came from different nationalities and had different characteristics than the previous studies. This result was consistent with Diener & Lucas (2019) who stated that the big five traits model cannot apply to all situation since a person may behave differently in different situation. Moreover, Gurven et al. (2013) who tested the big five traits theory on indigenous society in Bolivian Amazon suggested that personality variation may be

organized different than the big-five traits. They argued that there are Big Two dimensions indicating personality traits for this small-scale community: sociality and industriousness. For this current research, we can conclude that participants who came from different societies may cause a variation on personality traits. Therefore, participants who join online international running events can divide into three groups regarding to their personality traits. These three groups were named as creativity, cooperation and sociability, and neuroticism and had been given according to the big-five personality traits characteristics.

5.1.2.3 *Research question 4: How do participants satisfaction influence loyalty?*

The result exposed that satisfaction had a positive influence on loyalty, with 90% of the satisfaction effect on loyalty. This means participants who satisfied with online running events would turn into the loyal participants in the future. This result was consistent with previous studies, where the significant impact of customer satisfaction on loyalty had been reported (Almohaimmeed, 2019; Bhaskar & Kumar, 2016; Chen et al., 2021). The result of satisfaction had direct effect on loyalty also supported by the work of who mentioned that satisfaction had strong and positively direct effect on behavioral intention in small-scale marathon event. The authors suggested that participants satisfaction would increase the intention to return to the marathon event again. As Tsuji et al. (2007) explained that number of participants in action sports has growing across the world. This trend encourages sport organizers to examine the relationships of service quality, satisfaction, and future intentions of attendees as it could enhance participating rates from repeat participants. Although the result revealed the same direction of effect, the current study provided the new aspects of loyalty. The attitudinal and behavioral of the loyalty theory has been tested as the same identity. Thus, this study defined loyalty that participants should have positive attitude, show behavioral loyalty, intend to re-participate and refers the event to others.

5.2 Conclusion

Based on the research findings, we can conclude that personality traits of participants play a vital role in making them satisfied with customer service, website

design, and service outcome. Once participants are satisfied with these three factors, they will be loyal to this international online race.

To examine critical factors associated with online international running event, the interview finding in chapter 4 is concluded here. Three critical factors associating with organizing online international running event are customer service, website design, service outcome, and the success of the event. The event organizers also suggested online platform used for conducting the online running events. These online platforms included website, application, and social media. For customer service factor, the online platform used to contact, answer, and response to enquiries was social media, meanwhile website and application was only used to provide information about the event to participants. This finding is consistent with the result from participants profile where social media, such as Facebook was the most popular social media applied as social interactive tool use by running organizers. Website design was also applied on three online platforms: website, application, and social media. The design on website and application related on information providing, process of registration, payment, and result recording. For social media, on the other hand, contents related with running activities and contact detail were concerned. For service outcome, organizers applied those three platforms for showing results to encourage participants to run more distance. This result is shown in participant profile as there were 17.5 percent of participants who join a long-distance run (ultra-marathon). The success of the event, the last factor, evaluated satisfaction since it can enhance the success of the event as well as to build participants networking. This practice of networking, in turn, can distribute participants loyalty in the future.

Three critical factors: customer service, website design, and service outcome did not directly influence on participants satisfaction. Instead, it had an indirect effect on participants satisfaction via personality traits. Thus, personality traits mediate the relationship between three critical factors and participants satisfaction. Moreover, there was a high direct effect of participants satisfaction on loyalty. Therefore, participants' personality traits play a critical role in making them satisfied with customer service, website design and service outcome, which can lead to the online running event loyalty in the future.

To summarize, customer service, website design, and service outcome were confirmed as critical factors measuring participants behaviors. When evaluating participants' satisfaction, personality traits were fully mediated the relationship between critical factors and satisfaction. Once participants had positive satisfaction with the customer service, website design, and service outcome, they will turn into a loyal customer for that online international running events.

5.3 Recommendations for Future Research

Conducting online international running events may be easy for running organizers. However, retaining the number of participants might be tough if the organizers do not know participants behaviors. Therefore, measuring organizers' performance is needed to identify critical factors that can lead to loyalty.

When examining the results, the researcher found that the big-five traits theory could not explain online running event participants' characteristics. Thus, it is worth for the future research to challenge the big-five traits theory in order to discover the new types of participants who joining a particular sport setting.

Questions of online customer services via the Internet should be revised regarding on technological tools, such as frequently ask questions, and live chat service. There should be a comparison between first-time runners and frequent time runners as suggested by Chen et al. (2021) since it can impact on loyalty. The media richness of social interactive tools used to contact with runners could be evaluated to find its influence on satisfaction (Mahan et al., 2015). It would be recommended that the influence of critical factors on each type of personality traits should be tested and compared.

Moreover, to understand the reason why an individual joins a physical or online running event, the new factor regarding to participants characteristics may be included in the future research.

5.4 Research Contributions

This research has academic and practiced contributions. For academic, the originality of online international running event factors can enhance the concept of service marketing in online running event field. Marketers could use the new measurement model to assess the quality of online running events which, in turn, can

enhance participants loyalty on the event. Moreover, the mediating effect of personality traits found in this research is proved to be the main influencer that drive participants satisfaction. Thus, it is worth to further apply personality traits in other types of online sporting events.

For practiced contribution, this research helps running event organizers to conduct a high-quality event. They can also use the result of this research to create strategic planning and marketing campaigns to provide better value to participants and achieve higher revenue. Participants who join the high quality of online running events will receive good experience and turn into a loyal participants of that online running event in the future.

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Appendix

Appendix A

Semi-Structure Interview Questions

1. What are channels that you provide your service for runners? How do you provide service?
2. If there is a problem with your website, how would you resolve the problem?
3. What are your online channels? How would you provide service through those channels?
4. When designing your website, what could be your concerns?
5. How did you design your website?
6. What are the areas that website content covering? How many platforms you posting those contents? How did you post it?
7. How does a runner use website to connect with other runners or event organizers?
8. How does your website create runners' networking?
9. How can your online running event create challenges to runners?
10. How can your online running event create value to runners?
11. How does a runner evaluate satisfaction over the online event?
12. How can your online running event create runners' loyalty process?

Appendix B

Questionnaire

Critical Factors of Online International Running Event Influencing Participants Behaviors

The purpose of this research is to explore critical factors and degree of impact of online international running event towards participants' behaviors. It also investigates the relationship between personality traits of participants and their behaviors. All provided information will be kept confidential and will be used for academic purpose only. Please give your unbiased and frank opinion.

Part 1 Critical Factors of Online International Running Event

Instruction: Please give a score for a service that you've received from participating in online international running event.

No	Items	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely
Customer Service						
1	My experience with customer service when I have a problem is excellent.					
2	The running event website provides a contact detail to reach the event organizer.					
3	The running event website has customer service representatives available online.					
4	The running event website provides me with a tailor-made service.					
5	The running event website offers the ability to speak to a live person if there is a problem.					
6	Customer service (live chat) helps me to solve the problem effectively and rapidly.					
7	Customer service (live chat) answers my inquiries promptly.					
Website Design						
	Visual website design					
8	The home page of website is visually appealing.					
9	The layout of webpage is attractive and well organized.					
10	The graphic is attractive and has high quality.					
11	The display of the website is good.					
12	The color used in the website is attractive.					
13	The interactive features of website help me navigate and search on the website.					
	Content design					

No	Items	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely
14	The content provides clear contact information and channel.					
15	The content provides running event information in detail.					
16	The content is clear, easy to understand, and interesting.					
17	The content on various online platforms is consistent.					
18	The content shared to others easily.					
	Social interaction design					
19	The website provides tools to interact with running event organizer.					
20	The website provides a chance to interact with other runners.					
21	Other runners consistently make me to have a good impression of the online running event.					
22	Other runners' attitudes impact on effectiveness of the website.					
23	The website makes me feel that I belong to a runners' network.					
Service Outcome						
	Challenge					
24	An online running event is an event that I can challenge myself.					
25	An online running event is an event that is a challenge.					
26	An online running event is an event where I can challenge others.					
27	An online running event presents to me the challenge that I am looking for.					
	Value					
28	An online running event was worth for my money.					
29	An online running event was worth for my time.					
30	An online running event was worth for my effort.					
31	An online running event offered me more value than that I expected.					
32	An online running event offered me more value than other normal running events.					

Part 2 Personality Traits

Instruction: Please give a score for personality traits that suits you the most

No	Items	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely
Opening to experience						
33	I get excited by new ideas and activities.					
34	I enjoy thinking about several matters.					
35	I enjoy hearing new things or ideas.					
36	I enjoy looking for a deeper meaning.					
37	I have a clear imagination.					
Conscientiousness						
38	I comply with my plans.					
39	I pay attention to detail.					
40	I always prepare.					
41	I make plans and am strict to them.					
42	I am exact in my work.					
Extraversion						
43	I talk to lots of different people at online running events.					
44	I feel comfortable around other people.					
45	I am the one who start conversations.					
46	I make friends easily.					
47	I like being center of attention.					
Agreeableness						
48	I sympathize with others' feelings.					
49	I am concerned about others.					
50	I respect others.					
51	I believe that others have good intention.					
52	I trust what people say to me.					
Neuroticism						
53	I get stressed easily.					
54	I worry about several matters.					
55	I fear the worst.					
56	I am filled with doubts.					
57	I feel panic easily.					

Part 3 Satisfactions

Instruction: Please give a score for satisfaction that suits you the most

No	Items	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
58	I think I do the right things when decide to participate in an online running event.					

No	Items	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
59	I decide to participate in the next online running event.					
60	I am very satisfied with the website design of an online running event.					
61	I am very satisfied with the customer service of an online running event.					
62	I am very satisfied with the service outcome of an online running event.					
63	I am very satisfied with the value received from an online running event.					

Part 4 Loyalty

Instruction: Please give a score for level of loyalty that suits you the most

No	Items	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely
Attitudinal loyalty						
64	I enjoy using the online running event platform at my free time.					
65	I consider online running event as my first preference.					
66	I have a positive attitude toward an online running event.					
67	I will always participate in online running event.					
Behavioral loyalty						
68	I will definitely keep participating in an online running event.					
69	I participate in almost all online running events.					
70	The latest time I participated in a running event, I participated in an online running event.					
Re-participation intention						
71	I plan to participate in an online running event in the future.					
72	I will try to participate in an online running event again in the future.					
73	There is no doubt that I will attend an online running event in the future.					

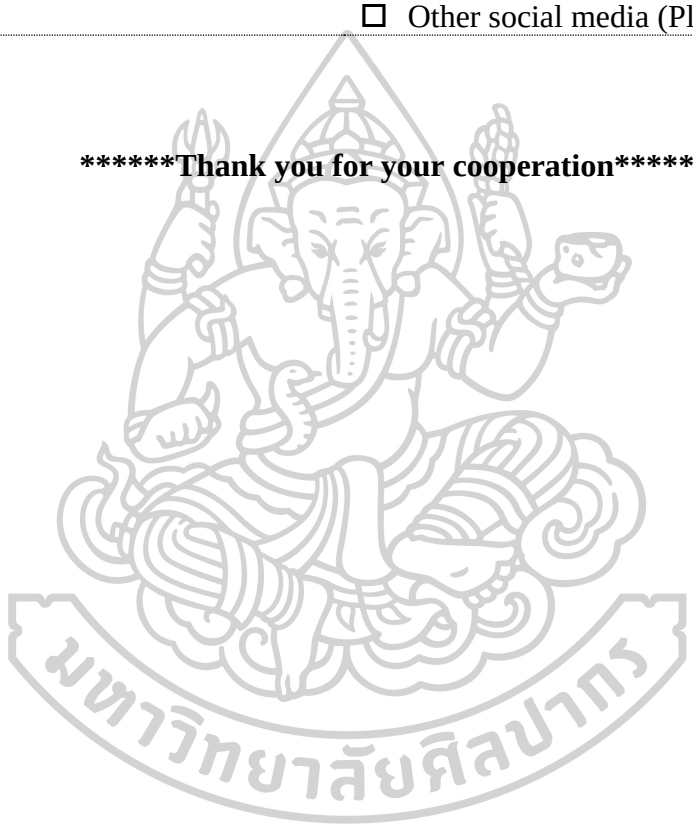
No	Items	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely
Refer to others						
74	I encourage my friends and relatives to participate in an online running event.					
75	I say positive words about online running event to others.					
76	I recommend an online running event to others.					

Part 5 General Information

1. Gender	☐ Male ☐ Female
2. Age	☐ 17-19 years ☐ 20-29 years ☐ 30-39 years ☐ 40-49 years ☐ 50-59 years ☐ 60 years old or over
3. Nationality	Please Specify .....
4. Spending	
4.1 Total spending for registration per event	☐ Less than $100 ☐ $101-200 ☐ $201-300 ☐ $301-400 ☐ $401-500 ☐ $501 or more
4.2 Total spending for buying race gears per event	☐ Less than $100 ☐ $101-200 ☐ $201-300 ☐ $301-400 ☐ $401-500 ☐ $501 or more
4.3 Total spending for buying other products per event	☐ Less than $100 ☐ $101-200 ☐ $201-300 ☐ $301-400 ☐ $401-500 ☐ $501 or more
Please identify the name of online running event that you have participated recently.	Please Specify .....
What is the distance you have taken for that race?	☐ Mini Marathon: 10 km. (6.21 miles) ☐ Half Marathon: 21.1 km. (13.1 miles) ☐ Marathon: 42.2 km. (26.2 miles)

	☐ Ultra-Marathon: longer than 42.2 km (26.2 miles) ☐ Other (Please Specify ….....)
Please choose social interactive tools that you mostly use when contact with online running event organizer (you can choose more than one choice)	☐ Facebook ☐ Twitter ☐ Instagram ☐ YouTube ☐ Website ☐ WhatsApp ☐ Snapchat ☐ Line ☐ Other social media (Please Specify.....)

********Thank you for your cooperation********



Appendix C

Content Validity Index Result

The result of content validity indicates that the measurement scale is relevant to objectives of this research.

No.	Items	Rating of Content Validity Index												Total Valid	I-CVI
		Expert 1				Expert 2				Expert 3					
		1	2	3	4	1	2	3	4	1	2	3	4		
Customer Service															
1	My experience with customer service when I have a problem is excellent			✓					✓				✓	3	1.00
2	The event website provides a contact detail to reach the event organizer			✓					✓				✓	3	1.00
3	The event website has customer service representatives available online				✓			✓					✓	3	1.00
4	The event website provides me with a tailor-made service			✓				✓					✓	3	1.00
5	The event website offers the ability to speak to a live person if there is a problem			✓					✓			✓		3	1.00
6	Customer service (live chat) help me to solve the problem effectively and rapidly			✓					✓				✓	3	1.00
7	Customer service (live chat) answers my inquiries promptly			✓					✓				✓	3	1.00
Website Design															
	Visual Design														
8	The home page is visually appealing			✓					✓				✓	3	1.00
9	The layout of webpage is attractive and well organized				✓				✓				✓	3	1.00
10	The graphic is attractive and high quality			✓					✓				✓	3	1.00
11	The display of the home page is good				✓				✓				✓	3	1.00
12	The color used in the home page is attractive				✓				✓				✓	3	1.00
13	The interactive features help me navigate on the website			✓					✓				✓	3	1.00
	Content design														
14	The content provides contact information			✓					✓				✓	3	1.00
15	The content provides race information in detailed				✓			✓					✓	3	1.00
16	The content is clear, easy to understand, and compelling				✓				✓				✓	3	1.00
17	The content on various online platforms is consistent				✓				✓				✓	3	1.00
18	The content is easily shareable				✓				✓				✓	3	1.00

No.	Items	Rating of Content Validity Index												Total Valid	I-CVI
		Expert 1				Expert 2				Expert 3					
		1	2	3	4	1	2	3	4	1	2	3	4		
	Social interaction design													3	
19	The website provides tools to interact with race organizer				✓				✓				✓	3	1.00
20	The website provides a chance to interact with other runners			✓					✓				✓	3	1.00
21	Other runners consistently leave me with a good impression of the online running event			✓					✓				✓	3	1.00
22	Other runners' attitudes impact on effectiveness/efficiency of the website			✓				✓				✓		3	1.00
23	The website makes me feel that I belong to a runners' network.				✓				✓				✓	3	1.00
Service Outcome															
	Challenge														
24	An online running event is an event that I can challenge myself			✓					✓				✓	3	1.00
25	An online running event is an event that is a challenge								✓				✓	3	1.00
26	An online running event is an event where I can challenge others				✓			✓					✓	3	1.00
27	An online running event provides me the challenge that I am looking for				✓				✓				✓	3	1.00
	Value														
28	An online running event was worth for my money			✓					✓				✓	3	1.00
29	An online running event was worth for my time				✓				✓				✓	3	1.00
30	An online running event was worth for my effort			✓					✓				✓	3	1.00
31	An online running event offered me more value than expected				✓			✓					✓	3	1.00
32	An online running event offered me more value than did other physical running events				✓			✓				✓		3	1.00
Personality Traits															
	Openness to experience														
33	I get excited by new ideas or activities				✓				✓				✓	3	1.00
34	I enjoy thinking about things				✓				✓				✓	3	1.00
35	I enjoy hearing new things or ideas				✓				✓				✓	3	1.00
36	I enjoy looking for a deeper meaning				✓			✓					✓	3	1.00

No.	Items	Rating of Content Validity Index												Total Valid	I-CVI
		Expert 1				Expert 2				Expert 3					
		1	2	3	4	1	2	3	4	1	2	3	4		
37	I have a strong imagination				✓				✓				✓	3	1.00
	Conscientiousness														
38	I implement my plans				✓			✓					✓	3	1.00
39	I pay attention to detail				✓			✓					✓	3	1.00
40	I am always prepared				✓			✓					✓	3	1.00
41	I make plans and stick to them				✓			✓					✓	3	1.00
42	I am exact in my work			✓				✓					✓	3	1.00
	Extraversion														
43	I talk to lots of different people at online running events			✓				✓					✓	3	1.00
44	I feel comfortable around people			✓				✓					✓	3	1.00
45	I am the one who start conversations			✓				✓					✓	3	1.00
46	I make friends easily				✓			✓					✓	3	1.00
47	I do not mind being center of attention			✓				✓					✓	3	1.00
	Agreeableness														
48	I sympathize with others' feelings			✓					✓				✓	3	1.00
49	I am concerned about others				✓				✓				✓	3	1.00
50	I respect others				✓				✓				✓	3	1.00
51	I believe that others have good intentions				✓			✓					✓	3	1.00
52	I trust what people say to me				✓			✓					✓	3	1.00
	Neuroticism														
53	I get stressed out easily				✓				✓				✓	3	1.00
54	I worry about things			✓				✓					✓	3	1.00
55	I fear the worst				✓				✓				✓	3	1.00
56	I am filled with doubts				✓			✓					✓	3	1.00
57	I panic easily				✓			✓					✓	3	1.00
Satisfaction															
58	I think I did the right thing when decided to participate in an online running event				✓				✓				✓	3	1.00
59	I decide to participate in an online running event when participating in running event			✓					✓			✓		3	1.00
60	I am very satisfied with the website design				✓				✓				✓	3	1.00
61	I am pleased to use the online running event website				✓				✓				✓	3	1.00
62	I am very satisfied with the service outcome of the event				✓				✓				✓	3	1.00
63	I am very satisfied with the value received from the event				✓				✓				✓	3	1.00
Loyalty															
	Attitudinal loyalty														
64	I enjoy running at my free time using the online running platform			✓					✓				✓	3	1.00

No.	Items	Rating of Content Validity Index												Total Valid	I-CVI
		Expert 1				Expert 2				Expert 3					
		1	2	3	4	1	2	3	4	1	2	3	4		
65	I decide to participate in an online running event as my first preference				✓			✓					✓	3	1.00
66	I have a positive attitude toward an online running event				✓				✓				✓	3	1.00
67	I will always participate in an online running event				✓				✓				✓	3	1.00
	Behavioral loyalty														
68	I will keep participating in an online running event				✓				✓				✓	3	1.00
69	I mostly participate in an online running event			✓					✓				✓	3	1.00
70	The last time I participate in a running event, I participate in online running event			✓				✓					✓	3	1.00
	Re-participation intention														
71	I plan to participate in an online running event in the future				✓			✓					✓	3	1.00
72	I will try to participate in an online running event again in the future			✓				✓					✓	3	1.00
73	There is no doubt that I will attend an online running event in the future				✓			✓					✓	3	1.00
	Refer to others														
74	I encourage my friends and relatives to participate in an online running event				✓				✓				✓	3	1.00
75	I say positive things about online running event to others				✓				✓				✓	3	1.00
76	I recommend an online running event to others				✓				✓				✓	3	1.00

The result of item-level CVI (I-CVI) indicated rating of 3 or 4 which means all items are quite or highly relevant to the research content and objectives. The result is supported by the work of Polit & Beck (2006) who suggested that the excellent content validity for I-CVI should equal to 1.00 with 3 to 5 experts. Moreover, the result of scale-level index (S-CVI) indicated 76 items was rated 3 or 4 by three experts. Thus, the S-CVI is equal to 1.00 showing the scale of the research is relevant to the objective of the research.

The table below illustrates item-level CVI (I-CVI) of the measurement scale.

No.	Expert 1	Expert 2	Expert 3	Total valid	I-CVI
1	✓	✓	✓	3	1.00
2	✓	✓	✓	3	1.00
3	✓	✓	✓	3	1.00
4	✓	✓	✓	3	1.00
5	✓	✓	✓	3	1.00
6	✓	✓	✓	3	1.00
7	✓	✓	✓	3	1.00
8	✓	✓	✓	3	1.00
9	✓	✓	✓	3	1.00
10	✓	✓	✓	3	1.00
11	✓	✓	✓	3	1.00
12	✓	✓	✓	3	1.00
13	✓	✓	✓	3	1.00
14	✓	✓	✓	3	1.00
15	✓	✓	✓	3	1.00
16	✓	✓	✓	3	1.00
17	✓	✓	✓	3	1.00
18	✓	✓	✓	3	1.00
19	✓	✓	✓	3	1.00
20	✓	✓	✓	3	1.00
21	✓	✓	✓	3	1.00
22	✓	✓	✓	3	1.00
23	✓	✓	✓	3	1.00
24	✓	✓	✓	3	1.00
25	✓	✓	✓	3	1.00
26	✓	✓	✓	3	1.00
27	✓	✓	✓	3	1.00
28	✓	✓	✓	3	1.00
29	✓	✓	✓	3	1.00
30	✓	✓	✓	3	1.00
31	✓	✓	✓	3	1.00
32	✓	✓	✓	3	1.00
33	✓	✓	✓	3	1.00

No.	Expert 1	Expert 2	Expert 3	Total valid	I-CVI
34	✓	✓	✓	3	1.00
35	✓	✓	✓	3	1.00
36	✓	✓	✓	3	1.00
37	✓	✓	✓	3	1.00
38	✓	✓	✓	3	1.00
39	✓	✓	✓	3	1.00
40	✓	✓	✓	3	1.00
41	✓	✓	✓	3	1.00
42	✓	✓	✓	3	1.00
43	✓	✓	✓	3	1.00
44	✓	✓	✓	3	1.00
45	✓	✓	✓	3	1.00
46	✓	✓	✓	3	1.00
47	✓	✓	✓	3	1.00
48	✓	✓	✓	3	1.00
49	✓	✓	✓	3	1.00
50	✓	✓	✓	3	1.00
51	✓	✓	✓	3	1.00
52	✓	✓	✓	3	1.00
53	✓	✓	✓	3	1.00
54	✓	✓	✓	3	1.00
55	✓	✓	✓	3	1.00
56	✓	✓	✓	3	1.00
57	✓	✓	✓	3	1.00
58	✓	✓	✓	3	1.00
59	✓	✓	✓	3	1.00
60	✓	✓	✓	3	1.00
61	✓	✓	✓	3	1.00
62	✓	✓	✓	3	1.00
63	✓	✓	✓	3	1.00
64	✓	✓	✓	3	1.00
65	✓	✓	✓	3	1.00
66	✓	✓	✓	3	1.00
67	✓	✓	✓	3	1.00

8	✓	✓	✓	3	1.00
69	✓	✓	✓	3	1.00
70	✓	✓	✓	3	1.00
71	✓	✓	✓	3	1.00
72	✓	✓	✓	3	1.00
73	✓	✓	✓	3	1.00
74	✓	✓	✓	3	1.00
75	✓	✓	✓	3	1.00
76	✓	✓	✓	3	1.00

Appendix D

Interview Descriptions

The following is the script from interviewing two informants who are working with online running event organizers. All ten questions of semi-structure interview were asked. This also included background of the event.

Interview 1

This interview data was collected from informant who is a manager of the event organizer. The event was conducted during May and June 2021 via Event Pop. The content of the interview is as follow.

Researcher: Can you introduce your event background?
Informant no.1: It is an exercise event that people who participates will count their steps and report to us. Then we will convert those steps into money and donate to community that support COVID-19. We make people want to exercise even at home. We make them feel like exercise is meaningful, not only for themselves, but also for others because finally it will become a donation. They also get the small gifts from us as rewards for exercising.

Researcher: Do they have to register?
Informant no.1: Yes, they have a register fee.

Researcher: What are channels that you provide your service for runners? How do you provide service?
Informant no.1: Actually, we only have the online because we don't have a platform to communicate with participants. So, we use 'Event Pop' as our main platform for information display, registration, payment, and steps collection record. But for different kind of post and marketing activities, we are mainly using the Facebook and Instagram. So, we use various channels like social media and the website.

Researcher: If there is a problem with your website, how would you resolve the problem? Since you didn't meet the runners online, do they have any complain?

Informant no.1: The complaint was not from the runners themselves but come from our team because some time the Event Pop user interface is not so well. It hard to find the correct tool bars. Sometime if we want to set something like check the data of the runners and registers, it hard to find the page that we can use. So, we have to communicate with web team very often and we also have a private group with them to ask some questions, detail setting, and different kind of communications

Researcher: Oh, that means the complaint doesn't come from the customers, but came from your team?
Informant no.1: Yes. And we are trying to register, but we found out that it is hard for people to upload the steps record because they cannot find the page and the page is not very clear.

Researcher: So, this is the problem about the interface and the 'Event Pop' is that right?
Informant no.1: Yes.

Researcher: If you don't use the Event Pop, can you use another website?
Informant no.1: Yes, we have many choices during our pitching. We search for different kind of platforms. But it seems like Event Pop is the one that most people using for virtual run and different kind of sport events. So, we picked it because we see that many people are trying to sell the tickets, both online and offline, on Event Pop. So, we think it is a good platform for our event.

Researcher: What are your online channels? How would you provide service through those channels?
Informant no.1: We use website, and social media like Instagram and Facebook. We posted our related contents about our sports and how does it work. We just promoted our small event and activities that we have during the event phase.

Researcher: Did you check on the traffic on the Facebook?
Informant no.1: Yes. But we just have a small event so the traffic is not very good.
Researcher: When designing your website, what could be your concerns?

Informant no.1: We cannot design our website because it had a format already. And we concern about the format since it is not what we think. We can only put the photos and give a description. It is not what we imagine at the first time. We though it should have, at least, the details and display. It only scrolls down and scrolls down. We have asked them, but we cannot change the format. So, we just leave it like that and try to work more on Instagram and Facebook because we can post many kinds of artworks for our event, and we can manage how it looks.

Researcher: How did you design your website?
Informant no.1: We can only give them the file of our posters and artworks.
Researcher: Have you provide a contact information in all channels?
We provide contact information via all channels, and they can contact us if they have any problem.

Researcher: What are the areas that website content covering? How many platforms you have posting those contents? How did you post it?
Informant no.1: For the Event Pop, we provide the description and information about our t-shirt design. We also provide the online lectures about the exercise topics. The information is less details than on the social media.

Researcher: How does a runner use website to connect with other runners or event organizers?
Informant no.1: We normally use Facebook messenger to answer questions from runners.

Researcher: How does your website create runners' networking?
Informant no.1: We have a leader board for runners to look. So, they know who the leader of the board are. But they did not communicate with each other since it has no tool for them to communicate inside the event.
Researcher: How can your online running event create challenges to runners?
Informant no.1: I think the challenge is created by runners themselves since they have a leader board. And some of the runners in the leading position is hard working. So,

when others upload their records, they will be motivated and workout more. Since in the tool bar there are name of competitors, so they may feel like I want to compete with them.

Researcher: How can your online running event create value to runners?
Informant no.1: We are trying to make them feel value for the exercise because normally this kind of running event will give them a medal or certificate. We have the cloth, e-certificate and gifts for make them feel value by choosing to donate money to people who need money during a COVID time. We got a feedback about the event that it is fresh and new for them because not all of this kind of event donate the profit to the community and it make them feel like special when they workout and motivate them.

Researcher: How does a runner evaluate satisfaction over the online event?
Informant no.1: They satisfied because it not difficult for them since people workout already. We are just another platform for them to upload their workout record. So, it is no limitation for them to join. We also provide online session like online webinars and provide information to them. The only thing that we see unsatisfaction is that the price is too high.

Researcher: How can your online running event create runners' loyalty process?
Informant no.1: After we finish the event, we try to build up our connection with participants by providing information about workout and COVID-19. We try to make them get familiar with us. However, using only the online channels is difficult to get in touch with people. We prefer for an offline event instead. They have a passion to participate.

Researcher: Thank you for the interview.

Interview 2

This interview data was collected from informant who is an administrative of the event organizer. The event was conducted during 18-24 September 2021 via Map My Fitness. The content of the interview is as follow.

Researcher: What are channels that you provide your service for runners? How do you provide service?
Informant no.2: We use Facebook to contact and promote our virtual run. It is easy for us to use chat box in social media to response to our runners. The runners can use Map My Fitness to participate in the online running event."

Researcher: If there is a problem with your website, how would you resolve the problem?
Informant no.2: If runners have problem with Map My Fitness, they can ask some questions on Facebook page.

Researcher: What are your online channels? How would you provide service through those channels?
Informant no.2: We use only Facebook and Map My Fitness to provide service for our runners.

Researcher: How do you use Map My Fitness in your event?
Informant no.2: We use 'Map My Fitness' to record the step of each runner and there is no problem with the app since it's quite stable.

Researcher: Can you design your own application feature?
Informant no.2: No, we cannot design as there is a template. We can only send the information, pictures, and some text to them and let them post on the application for us.

Researcher: What are the areas that website content covering? How many platforms you have posted those contents? How did you post it?

Informant no.2: We have only 2 platforms. We normally used Facebook for posting information about our virtual run activity and contact with runners. We used Map My Fitness to only record the results.

Researcher: How does a runner use application to connect with other runners or event organizers?
Informant no.2: Runners do not use application to contact each other. They use Facebook page to chat with other runners.

Researcher: How does your website create runners' networking?
Informant no.2: We collect the email of runners and send information and survey via email after the event finish.

Researcher: How can your online running event create challenges to runners?
Informant no.2: It is a competition between runner, so they may feel challenge as they want to be on top of the score board.

Researcher: How can your online running event create value to runners?
Informant no.2: Participants who join the event receives the certificate, and gifts from us. This will make them proud as they can finish the race.

Researcher: How does you get a satisfaction survey result from runners?
Informant no.2: We collect the satisfaction survey via Google form and post the survey on Facebook.

Researcher: Thank you for the interview.

Appendix E

Ethics Certificate

มหาวิทยาลัยศิลปากร

หนังสือฉบับนี้ให้ไว้เพื่อแสดงว่า

รหัสโครงการ: REC.64.0810-105-4281

ชื่อโครงการ (ภาษาไทย): ปัจจัยสำคัญของงานวิ่งออนไลน์ระดับนานาชาติที่ส่งผลกระทบต่อพฤติกรรมผู้เข้าร่วมงานวิ่ง

ชื่อโครงการ (ภาษาอังกฤษ): Critical Factors of Online International Running Event Influencing Participants Behaviors

ผู้วิจัยหลัก: นางสาวนลิน สีมะเสถียรโสภณ **สังกัด:** วิทยาลัยนานาชาติ

เอกสารที่รับรอง:

1. แบบเสนอเพื่อขอรับการพิจารณาจริยธรรมการวิจัยในมนุษย์ เวอร์ชั่น 01 ฉบับลงวันที่ 10 สิงหาคม 2564
2. แบบเสนอโครงการวิจัยเพื่อการพิจารณาจริยธรรมการวิจัยในมนุษย์ (ฉบับภาษาไทย) เวอร์ชั่น 01 ฉบับลงวันที่ 10 สิงหาคม 2564

ได้ผ่านการรับรองจากคณะกรรมการจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยศิลปากร โดยยึดหลักเกณฑ์ตามคำประกาศ เฮลซิงกิ (Declaration of Helsinki) และมีความสอดคล้องกับหลักจริยธรรมสากล ตลอดจนกฎหมายข้อบังคับ และข้อกำหนดภายในประเทศ

(ศาสตราจารย์ ดร.พรศักดิ์ ศรีอมรศักดิ์)
ประธานกรรมการจริยธรรมการวิจัยในมนุษย์
มหาวิทยาลัยศิลปากร

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สำนักงานบริหารการวิจัย นวัตกรรมและการสร้างสรรค์
6 ถนนราชมรรคาใน ตำบลพระปฐมเจดีย์ อำเภอเมืองนครปฐม จังหวัดนครปฐม 73000
โทร 0-3425-5808 โทรสาร (Fax) : 0-3425-5808
email : su.ethicshuman@gmail.com

VITA

NAME	Nalin Simasathiansophon
DATE OF BIRTH	23 March 1986
PLACE OF BIRTH	Khon Kaen
HOME ADDRESS	5/1 Moo. 1 Watchalor, Bangkrui, Nontaburi 11130
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