

Antecedents of Behavioral Intentions for Road Running

Markus Chiahan Tsai

Department of Business Administration, National Chiayi University, Taiwan

Yih-Ming Lin (Corresponding Author)

Department of Applied Economics, National Chiayi University, Taiwan

Yu-Han Yang

Department of Business Administration, National Chiayi University, Taiwan

Chin-Fa Tsai

Department of Business Administration, National Chiayi University, Taiwan

Abstract

The purpose of the study is to examine the relationships among serious leisure, flow experience, perceived value, emotional attachment, and behavioral intentions for road runners. It has become popular for people participating in road running events in Taiwan since last two decades. The study took the participants of Kaohsiung Run to Love, a road running event took place in Kaohsiung City, Taiwan, as research subjects. 286 complete questionnaires were collected and a structural equation model (SEM) was employed to examine the associated hypotheses. The main results indicate that (1) serious leisure positively affects flow experience, perceived value, and emotional attachment, respectively. (2) Both perceived value and emotional attachment positively affects behavioral intentions, respectively, while flow experience does not affect behavioral intentions.

Keywords: serious leisure, flow experience, perceived value, emotional attachment, behavioral intentions

1. Introduction

Road running has become increasingly popular in Taiwan since last two decades. In the early 1980s, Altheide and Erdwin (1980) identified the seriousness with which some people engage in leisure activities such as running, and noted the associated feelings of self-accomplishment. Qiu et al. (2020) indicated that participating in marathons has become a serious leisure activity. Serious leisure is the systematic pursuit of an amateur, hobbyist, or volunteer core activity that is highly substantial, interesting, and fulfilling and where, in the typical case, participants find a career in acquiring and expressing a combination of its special skills, knowledge, and experience (Stebbins, 1992, p.3). When engaging in the activity, because of wholehearted devotion, individuals achieve the state of ecstasy, and the change of time sense, etc., which is the so-called flow experience. When the experience is high, it will further increase the participants' willingness of to re-participate and intentions to recommend the event.

Although the flow experience could increase the participants' engagement in events involving serious leisure, no direct discussion regarding the relationship between serious leisure and perceived value was found in Taiwan. Nevertheless, Cheng and Tsaur (2012) indicated that a higher level of serious leisure characteristics leads to higher levels of recreation involvement for recreationists. Dai, Chen, and Mattila (2010) took tourism products as an example, and explored the relationships among price, quality, value, consumer involvement, and repurchase intentions from the perspective of perceptual evaluation. The results pointed out that consumer involvement positively affects the cognitive evaluation of quality and perceived value, which in turn affect the repurchase intentions. Based on these, we could reasonably infer the relationship between serious leisure and perceived value.

In addition, since serious leisure involves pursuit of highly interesting and fulfilling participation in activities and events, there is supposed emotional-laden and target-specific connection between the participants and the activity and events. Researchers have defined the concept of emotional attachment as an emotion-laden target-specific bond between a person and a specific object (Johnson & Rusbult, 1989; Thomson, MacInnis, & Park, 2005; Baldwin, Wampold, & Imel, 2007), which is an important and ubiquitous psychological characteristic. In a research studying older adults participation in games, Heo et al. (2013) suggested that continued participation in serious leisure enhances participants' attachment to the Senior Games. Hence, the link between serious leisure and emotional attachment has been empirically verified.

Most of the recent literature about serious leisure in Taiwan aimed at diving, golf, surfing, volunteering, etc (Chung et al., 2013; Cheng et al., 2015). In addition, studies related to Taiwanese road-running and marathons' participants almost focused on the relationship among participation motivation, satisfaction, and happiness (Lin and Tang, 2015; Lien and Chen, 2015; Chen and Kung, 2016). Rarely discussed were the participants' flow experience (Chen, 2011; Hsiao and Huang, 2015), perceived value, and emotional attachment to the activities and events.

In order to fill this research gap, this study attempted to understand the extent to which the road runners consider road running events a serious leisure, and explore the effect of serious leisure on flow experience, perceived value, emotional attachment, and behavioral intention, and to impose a model to explain the relationships among these five variables altogether. The purpose for this exploration is to further understand how the psychological mechanisms of road runners work when engaging in road running, and hopefully based on the understanding we could put forward relevant suggestions for managers and organizations for road running activities and events.

In the following sections, the systematic review of relevant constructs will be followed with a theoretical model and hypotheses to be tested, and research methodology. Then the empirical results will be discussed, followed by the conclusions and discussion.

2. Theoretical Background and Hypotheses Building

2.1 Serious Leisure

Serious leisure was first formally defined by Stebbins (1982) in his manuscript "Serious leisure: A conceptual statement" published in *Pacific Sociological Review* in 1982. Stebbins argued that social scientists at that time believed that people in industrial society will eventually greatly reduce their working hours, and, as a result, leisure will occupy greater percentage of time in people's lives. Through increasing leisure time, people be able to express unique abilities, realize unique potential, and therefore define themselves uniquely. Serious leisure is defined as "the systematic pursuit of an amateur, hobbyist, or volunteer activity that is sufficiently substantial and interesting for a participant to find a career there in the acquisition and expression of its special skills and knowledge" (Stebbins, 1992, p. 3). According to Stebbins' definition (2001) three types of serious leisure participants could be identified: amateurs, hobbyists, and career volunteers. Among the three types of participants, Stebbins has given the least amount of attention to volunteers. The primary concern of his research has been amateurs and, to a lesser extent, hobbyists (Brown, 2007). The above three types were described as follows:

1. Amateur

Amateurs operate in the fields in which professionals work, primarily those of art, sport, science, and entertainment (Stebbins, 2001). And it seems evident that amateurs are linked to professionals or publics or both in at least seven specific ways, each of which helps promote some or all of the enduring rewards: self-actualization, self-expression, self-enrichment, recreation or renewal of self, feelings of accomplishment, enhancement of self-image, and lasting physical products of the leisure activity (Stebbins, 1980).

2. Hobbyist

Hobbyists, like amateurs, are individuals with lasting serious commitment to a particular pursuit; but hobbyists, unlike amateurs, have no professional counterpart (Baldwin & Norris,

1999). They are classified according to five subtypes: collectors; makers and tinkerers; activity participants (e.g., hunters, barbershop singers, white-water canoeists), competitors in largely non-professionalized sports (e.g., darts, curling, martial arts) and games (e.g., bridge, chess, poker), and liberal arts enthusiasts, who are identified by their voracious interest in reading about, for instance, a kind of cuisine, history, literature, or philosophy (Stebbins, 2001). The hobbyist and the amateur are far more serious, time involved, and regimented than dabblers; but participation is not yet at the level of the professional (Baldwin & Norris, 1999).

3. Career volunteer

Serious volunteers willingly help others for a combination of personal and altruistic reasons. They are found in more than a dozen broad areas of community life, contributing to development there through the use of their valuable skills, knowledge, and experience. Their functions differ from those of the casual volunteers, who are also highly important, but who nevertheless perform simple duties, as seen in the distribution of flyers promoting a political party or the sale of tickets to a performance of the town's amateur theater (Stebbins, 2001).

Stebbins (1992) further proposed that serious leisure has six interrelated qualities: (1) Perseverance: the occasional need to Persevere in the activity to overcome difficulties; (2) Career: the tendency for individuals to create a Career of their activities; (3) Personal effort: a significant personal Effort which leads to the development of special knowledge, training, or skill; (4) Long-lasting benefits: the attainment of some long-lasting Benefits; (5) Identity: the formation of a strong Identity with the activity; and (6) Unique ethos: a unique Ethos that grows around the activity and leads to the development of a special social world (Brown, 2007; Gould et al., 2008; Stebbins, 1982, 1992, 1999). Most studies of serious leisure qualities have been based on the theoretical framework proposed by Stebbins (Barbieri and Sotomayor, 2013; Brown, 2007; Dilley & Scraton, 2010; Getz and Andersson, 2010; Gould, Moore, McGuire, & Stebbins, 2008; Gould et al., 2011; Tsaor and Liang, 2008).

2.2 Flow Experience

Flow theory, as first proposed by Csikszentmihalyi in 1975, considers flow as a psychological state that typically occurs when a person perceives a balance between the challenges associated with a situation and his or her capabilities to accomplish or meet these requirements (Csikszentmihalyi, 1990). The word “flow” is used to describe a state of mind sometimes experienced by people who are totally involved in some activities (Hsu & Lu, 2004). In this state, people are fully absorbed in what they are doing. Time may seem to freeze while one is engaged in a consumption event (Lutz & Guiry, 1994). One example of flow is the case where a professional athlete is playing exceptionally well and achieves a state of mind where nothing else matters but the game; they are completely and totally immersed in it (Korzaan, 2003). The experience is not exclusive to athletics, flow is also experienced in a variety of activities such as playing games, engaging in hobbies or working, playing sports, reading a

book, working, or watching a movie (Korzaan, 2003; Pelet et al., 2017). Csikszentmihalyi (1991) proposed that there are nine dimensions, including clear goals, immediate and unambiguous feedback, a balance between the challenges of an activity and the skills required to meet those challenges, merging of action and awareness, sense of the possibility of control, concentration, loss of self-consciousness, transformation of time, and autotelic experience, to explain the flow experience.

In recent years, flow experience has been widely used in various research fields, including volunteer participation, sports competition, bicycle exercise, swimming, children's rhythm, reading, online games, mountain climbing, river tracing, shopping and consumption, etc. The reason why it was so widely used was mainly because it represented the degree of devotion of the practitioners to the activity.

Csikszentmihalyi (2000) pointed out that the flow experience only occurred in highly engaged athletes. When the athletes experience the flow, they can concentrate their attention, integrate their body and mind, and complete the movement effortlessly. It was often the most enjoyable moment for sports participants to engage in sports, so this study took road running as an example, and discussed the serious leisure and flow experience together.

2.3 Perceived Value

Perceived value is defined as tradeoff between benefits and sacrifices with a focus on the concrete performance characteristics of the products/services (Zeithaml, 1988). Perceived value is a subjective concept because the value of a product or service is the result of subjective judgments by customers (Zeithaml, 1988; Woodruff & Gardial, 1996; Huber, et al. 2007). Many researchers agree that perceived value is a dynamic construct, and that it is a theoretical and “higher-order” construct with multiple dimensions and several levels of abstraction (Graf & Maas, 2008). Babin, Darden, and Griffin (1994) proposed a two-dimension model (i.e., utilitarian value and hedonic value) to measure perceived value. The model is highly applicable for this study since the focus of this study was on road runners. From the perspective of hedonic value, road running is an enjoyable leisure activity for spare time, and in terms of utilitarian value, road runners may participate in races for their own health, to check and accept their own training results, or to collect many medals for finishing races.

Zeithaml (1988) indicated that perceived value plays an important role in consumers' purchase decision making. Jin, Lee, and Lee (2013) showed that in the context of a mega-sports event perceived value has a significant effect on participants' behaviors. Li et al. (2021) studied parents participating in a marathon event, and showed that perceived value as significant predictor of re-participation intentions. Wang and Wei's (2014) research suggested similarly that the perceived value of marathon participants as having a significant impact on participants' behavioral intentions to participate in marathon events again.

2.4 Emotional Attachment

The pioneering work on emotional attachment was conducted by Bowlby (1982) in the realm of parent-infant relationships. Studies have found that, in addition to parents, people can form emotional attachments to a variety of objects, including pets, places, brand, possessions, and celebrities. Emotional attachment refers to a unique emotional connection between an individual and a specific object (Thomson, MacInnis, & Park, 2005), and a specific target (Bowlby, 1979, 1980).

The concept of emotional attachment also applies to some areas of sports marketing (Funk & James, 2001; Trail, Gillentine, Dick, & Robinson, 2003). In the scenario, Filo, Funk, and O'Brien (2010) defined attachment as an individual's emotional, symbolic, and functional meaning to a sport-related object (such as a team, a game, a sport, etc.). Like most consumers, sports enthusiasts do not develop their attachment toward their sports and teams instantly (Funk & James, 2001). It can be inferred that the emotional attachment will be developed through motivation and engagement. In their study investigating the relationships among motives, sponsor image, event attachment, purchase intent, and future participation intent in a Marathon and Relay in 2007, Filo et al. (2010) concluded that event attachment influences future participation intent.

2.5 Behavioral Intentions

Behavioral intention may be defined as a measure of the strength of one's intention to perform a specific behavior (Fishbein & Ajzen, 1975, p. 288). The construct has often been applied in marketing and tourism, frequently referred as the likelihood of customers' repetitive behavior that might be desirable for the business. Previous research focus on consumers' attitude such as satisfaction, loyalty, or perceived value as antecedents for re-consumption behaviors. Ha and Jang (2010) focused on revisit intentions, word-of-mouth, and willingness to recommend as specific forms of behavioral intentions. The behavioral intention scale that has been developed in the study includes re-engagement intention, word-of-mouth, and recommendation behavior as the measure of behavioral intention.

2.6 The Theoretical Model and Hypotheses

As for the relationships among serious leisure, flow experience, perceived value, and emotional attachment. Lin and Tang (2015) studied the relationships among participation motivation, recreation specialization and flow experience in the road running participants, and found that if participants can be further fully integrated into recreational activities, enjoy being part of the event, they are more likely to attain flow experience. And according to previous research, activity participants' serious leisure affected flow experience, and the higher the relative serious leisure, the higher the flow experience (Chung et al., 2013; Chung & Lin, 2014; Cheng et al., 2015). Accordingly, this study proposes the following hypothesis:

H1: Serious leisure of road runners positively affects flow experience.

Regarding the relationship between serious leisure and perceived value, Cheng and Tsaur (2012) found that a higher level of serious leisure led to higher levels of recreation involvement for recreationists. Therefore, serious leisure means that the participants are in a state of high involvement and attention to the leisure activity. Dai, Chen, and Mattila (2010) found that consumer involvement positively affected the cognitive evaluation of perceived value. Chuang, Tien, and Chung (2010) investigated the participation in the Yunlin County Music Carnival in Taiwan, and found that the degree of tourist involvement, perceived value and behavioral intention are significantly positively correlated. Ogles and Masters (2003) argued that the potential cost of long-distance running is particularly high compared to other leisure activities (due to the months of training required), thus, participants who are highly involved should perceive high value (or utility) from the activity or event to persist in engagement. Consequently, it can also be inferred that serious leisure will positively affect perceived value and this study puts forward the following hypothesis:

H2: Serious leisure of road runners positively affects perceived value.

Next, the relationship between serious leisure and emotional attachment has rarely been found in literature. Involvement is a motivational state influenced by a person's perception of the object's relevance based on inherent needs, values, and interests (Zeithaml 1985). As mentioned earlier, recreationists of serious leisure have higher involvement in activities (Cheng & Tsaur, 2012). McEwan, McKay, and Melissa (2020) indicated that the trail running activity fits the serious leisure framework because of high involvement, and Chang and Shu (2015) found that the higher the importance the participants place on bicycle exercise, the higher their emotional attachment to the title sponsor contest. Based on these studies, the following hypothesis is put forth:

H3: Serious leisure of road runners positively affects emotional attachment.

As aforementioned that flow experience was related to people's psychological experience associated with fun, concentrated, immersed, selfless, satisfied, and able to control at will. Chung et al. (2009) indicates the positive effect of flow experience on behavioral intentions. Chen's (2011) study on road runners found that when individuals participate in highly skilled and highly challenging activities and achieve a balance between the two, they will experience happiness, strength, initiative, satisfaction, transfer, and a sense of control, and desire to engage in the activity again, to get the feeling of flow experience. Thus, the following hypothesis can be established:

H4: Flow experience of road runners positively affects behavioral intentions.

Zeithaml (1988) indicated that perceived value plays an important role in consumers' purchase decision making, suggesting that behavioral intentions are consequences of perceived value. Previous studies have also confirmed the relationship between perceived value and behavioral intentions. For instance, Jin, Lee, and Lee (2013) showed that perceived value has

a significant effect on participation intentions in the context of a mega-sports event; Li et al. (2021) showed that perceived value can significant predict of behavioral intentions of engagement; Wang and Wei's (2014) research pointed out that the perceived value of marathon participants also has a significant impact on participants' behavioral intentions to participate in marathon events. Therefore, when the perceived value of the participants is high, the willingness to re-engage and recommend could also be high. Therefore, the following hypothesis can be built:

H5: Perceived value of road runners positively affects behavioral intentions.

Filo et al. (2010) investigated the relationships among motives, sponsor image, event attachment, purchase intent, and future participation intent with the data collected from the 2007 3M Half Marathon and Relay took place in Austin, Texas, USA. Results showed that event attachment influences future participation intent. Through this study, it is believed that the emotional attachment of road running based on the establishment of a strong and lasting emotional connection through the long-term participation in the activity and event, in which the individual participants can obtain emotional companionship, satisfaction, and a sense of accomplishment etc. from road running. Thus, the hypothesis can be proposed:

H6: emotional attachment of road runner positively affects behavioral intentions.

Referring to the behavioral intention scale of Ha and Jang (2010), and using re-engagement intention, word-of-mouth, and recommendation behavior as the measure of behavioral intention of road runners, this study attempts to examine the relationships among the five variables of "serious leisure", "flow experience", "perceived value", "emotional attachment", and "behavioral intention". Based on the aforementioned literature discussion, the research framework of this study is shown in Figure 1.

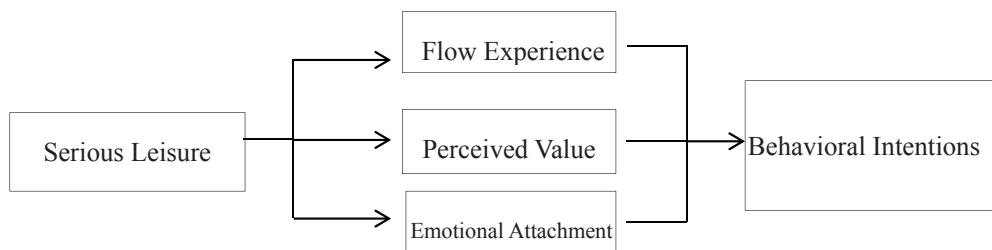


Figure 1 Research Framework

3. Methodology

3.1 Operational Definition and Measure of Variables

The operational definition and measurement of each variable in this study are shown in Table 1. The corresponding survey items can be found in Appendix 1. All of the items were measured on five-point Likert scales, ranging from “strongly disagree (1)” to “strongly agree (5)”.

Table 1 Operational Definition and Measurement of Variables

Variables	Operational Definition	Definition Source
Serious Leisure	Serious leisure was defined by six distinguishing qualities (or characteristics): the need for perseverance, a career in the endeavor, significant personal effort, strong identification, unique ethos, and durable benefits. This study Referred to the scale established by Cheng et al. (2015) and adapted to the characteristics of the participants in this study to modify the items and content of the questionnaire.	Stebbins (1992)
Flow Experience	Flow experience was defined as an optimal psychological state characterized by a profound absorption, total concentration, enjoyment and intrinsic motivation in the road running activity. The scale is a short-form 9-item flow experience scale adapted from Jackson et al. (2008).	Csikszentmihalyi (1990)
Perceived Value	Perceived value was defined as a road runners' overall assessment of the utility of a road running activity based on perceptions of what is received and what is given, including utilitarian value and hedonic value. This scale was based on the Ryu et al. (2010) scale, compiled with road running characteristics.	Babin et al. (1994); Ryu et al. (2010)

Emotional Attachment	This study defined emotional attachment as a unique emotional connection between an individual and road running. The scale referred to the three-factor model of Thomson et al. (2005), which includes the following three dimensions: Affection, Passion, connection, and then compiled according to the characteristics of road running.	Thomson et al. (2005)
Behavioral Intentions	This study defined behavioral intentions as: re-engagement intentions after participating in the road running race, word-of-mouth and willingness to recommend road running event. Measures were adapted from behavioral intention scale proposed by Ha and Jang (2010).	Ha and Jang (2010)

3.2 Pilot-testing and Data Collection

Before conducting the formal survey, a pilot test was administered on 50 students who were interested in and had experience in road running events, and confirmed the reliability of the survey items for each research variable. The criteria for reliability test was the Cronbach's α value of 0.7 or above standard (Churchill, 1995). The results of the pilot test indicated that the Cronbach's α values of each research construct were as follows: serious leisure 0.955, flow experience 0.909, perceived value 0.889, emotional attachment 0.924, and behavioral intention 0.937. The results showed that the questionnaire is appropriate for formal survey.

As for the research subjects, we randomly sampled from the runners participants of the Kaohsiung Love Public Marathon. At the end of the road running, the participants were surveyed with questionnaires, and a total of 287 valid questionnaires were collected. Among the samples, 56.1% of the respondents are male and 43.9% are female; most of the participants are among 25-44 years old (44 %); most of the jogging partners are family members and friends (78.8%); most people participate in 2-4 road running events a year on average (42.9%).

4. Empirical results

4.1 Construct Validity Analysis

Construct validity referred to the degree to which a measurement tool (scale) can correctly measure the essence of the construct based on the literature and indicated by the theory, and included convergent validity and discriminant validity. This study used confirmatory factor analysis (CFA) to test the construct validity of five constructs (serious leisure, flow experience, emotional attachment, perceived value, and behavioral intentions).

In terms of convergent validity, three criteria were used to evaluate: (1) Hair, Anderson, Tatham, & Black (1998) suggested that the factor loading (individual item reliability) should be above 0.5. (2) Fornell & Larcker (1981) suggested that the composite reliability (CR) values should be above 0.6. (3) Fornell and Larcker (1981) recommended that the average variance extracted (AVE) values should be 0.5 or above.

The distribution of standardized factor loadings of the measurement items corresponding to the five constructs all conform to the standard of Hair et al. (1998), as shown in Table 2. In addition, the CR values of the above five constructs are 0.873, 0.910, 0.892, 0.933 and 0.901, respectively, all of which meet the Fornell & Larcker (1981) requirements of exceeding 0.6. Furthermore, the AVE values of the five constructs were 0.537, 0.533, 0.723, 0.823, and 0.754 respectively, all exceeding the criteria of 0.5 or above recommended by Fornell and Larcker (1981). Based on the above data, we believed that the five constructs in this study should have sufficient convergent validity.

Table 2 Items and Related Factor Loadings

Variables	Items	Factor Loadings
Serious Leisure	Perseverance	0.807
	Career:	0.823
	Personal effort	0.714
	Long-lasting Benefits	0.773
	Unique Ethos	0.699
Flow Experience	Identity	0.547
	Challenges and Skills	0.689
	Merging of Action and Awareness	0.787
	Clear Goals	0.809
	Immediate And Unambiguous Feedback	0.722
	Loss of Self-consciousness	0.767
	Sense of the Possibility of Control	0.801
	Concentration	0.729
	Transformation of Time	0.550
	Autotelic Experience	0.679
Emotional Attachment	Affect	0.851
	Passion	0.922
	Connection	0.791
Perceived Value	Utilitarian Value	0.698
	Hedonic Value	0.896
Behavioral	Behavioral Intentions 1	0.778

Intentions	Behavioral Intentions 2	0.891
	Behavioral Intentions 3	0.929

The judgment of discriminant validity was based on the square root of the average variance extracted by each construct must be greater than the correlation coefficient between each pair of constructs (Fornell & Larcker, 1981). From the correlation coefficient matrix in Table 3 below, it can be seen that the correlation coefficients between the constructs in this study were all less than the square root of the AVE corresponding to the constructs (representing the numbers shown on the diagonal of the matrix), which means that the constructs in the measurement model were indeed different from each other, representing all constructs have good discriminant validity.

Table 3 Analysis of Discriminant Validity (SEM correlations)

Variables	Serious Leisure	Flow Experience	Emotional Attachment	Perceived Value	Behavioral Intentions
Serious Leisure	0.733				
Flow Experience	0.601	0.730			
Emotional Attachment	0.725	0.634	0.856		
Perceived Value	0.578	0.688	0.776	0.907	
Behavioral Intentions	0.490	0.496	0.637	0.679	0.868

a: All correlations are significant at $p < 0.001$

b: Diagonal elements in bold are the square roots of the average variance extracted (AVE)

4.2 Reliability Analysis

The Cronbach's α value of each variable was: serious leisure 0.846, flow experience 0.931, emotional attachment 0.840, perceived value 0.929, and behavioral intention 0.868. All values are greater than the minimum standard value of 0.7 suggested by Nunnally (1978), indicating that the measurement items of each construct in this study have sufficient credibility.

4.3 Validation of Model and Path Hypotheses

This study employed Structural Equation Modeling (SEM) to test the proposed model and hypotheses. The results of SEM analysis are shown in Figure 2. The overall model indicated that the chi-square value χ^2 was 662.280 with a degree of freedom of 220 ($p < 0.001$). However,

since the chi-square value is easily affected by the number of samples, the larger the number of samples, the more likely the chi-square value is to be significant. Therefore, the ratio of χ^2 over d. f. is recommended for better goodness of fit than χ^2 (Hair et al. 1998). A common level for the χ^2 /d. f. ratio is less than 5 (although less than 3 is better) (Wheaton, Muthén, Alwin, & Summers, 1977). The chi-square value/degree of freedom in this study is 3.010, which is less than the criteria of 5, indicating a acceptable fit of the model to the data. As for other fitness indicators, they are GFI=0.82, RMSEA=0.084, NFI=0.856, AGFI=0.774, CFI=0.898, IFI=0.899, RFI=0.834, PNFI=0.744 and PGFI=0.653. The above index are generally within the acceptable range, so the results confirmed that the research model proposed in this study has a acceptable fit with empirical data.

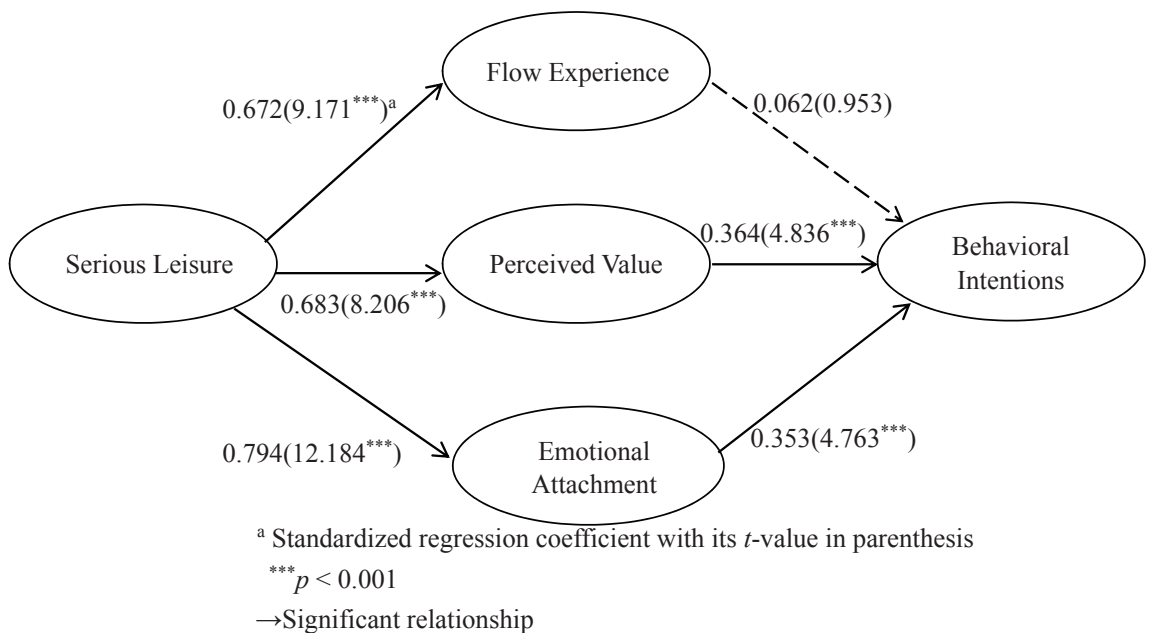


Figure 2 The Estimated Structural Model

First, based on Figure 2, the empirical results indicated that Serious Leisure is significantly positively related to Flow Experience, Perceived Value, and Emotional Attachment, respectively. The first result shown that Serious Leisure is significantly positively related to Flow Experience, which means the more the serious leisure traits of the road runners are, the more they can experience flow during the process of participating in the road running activity, which are consistent with Chung and Lin's (2014). This result is also consistent with Cheng et al. (2015), which indicated that divers with more serious leisure traits were more able to experience flow in the process of participating in activities. Thus, we can conclude that H1 is supported in this study is consistent with previous literature.

The empirical result also shown that Serious Leisure is significantly positively related to Perceived Value, which means that the more the serious leisure traits of the road runners are, the higher their perceived values are. We conclude that hypothesis H2 is supported in this study even though there is no related literature directly exploring the relationship between serious leisure and perceived value in Taiwan. Cheng and Tsaur (2012) have suggested that the more obvious the characteristics of serious leisure are, the more the tourists will be highly involved in the activities. Moreover, Dai, Chen, and Mattila (2010) indicated that the involvement of consumers definitely positively affect the cognitive evaluation of quality and perceived value. Thus, the result of this study is consistent with those of previous studies.

Serious Leisure is significantly positively related to Emotional Attachment, which means that the more obvious the serious leisure characteristics of road runners, the higher their emotional attachment is. Thus, H3 is supported. Zhang & Xu (2015) has found that the higher the participants' attitude towards the importance of bicycle exercise, the higher their emotional attachment to the title sponsor contest. Liang and Tsaur (2007) proved that serious leisure has a significant positive effect on place identity.

Next, the empirical results shown that the flow experience of road runners had no significant positive impact on behavioral intentions, which means that hypothesis H4 was not supported. This result is different from previous studies. For example, Chung et al. (2009) proved that the flow experience of karting racing drivers positively affects behavioral intentions. Wu and Lee (2017) proved that flow experience of road runners positively impacts enduring involvement. This study speculates that part of the reasons for the difference between the results and previous studies may be due to the flow experience scale cited in this study.

Furthermore, the result confirmed that road runners' perceived value has a significant positive impact on their behavioral intentions which means that road runners with higher perceived value of race experience will have a positive impact on subsequent behavioral intentions. This result is consistent with past research by Wang and Wei (2014), which proposed that the perceived value of marathon participants has a significant impact on the behavioral intentions of participants. Also in line with Yang's et al. (2014) research, which found that exercise participants have high perceived value, it will further enhance the behavioral intention of exercise participants. Thus, H5 is supported in this empirical work.

Finally, the result indicated that the emotional attachment of road runners had a significant positive impact on their behavioral intentions, which means H6 is supported in this study. Jawahar and Maheswari (2009) pointed out that emotional attachment plays a role in building brand loyalty in consumers' minds. That is, emotional attachment has a positive relationship with continuous use. Thus, this result of this study was consistent with Jawahar and Maheswari (2009) work.

To sum up, in the overall model in Figure 2, the path coefficients and t values are provided. As shown in Figure 2, the hypotheses H1, H2, H3, H5, and H6 in this research are supported, while H4 is not supported.

5. Conclusion and Discussion

This study constructed a new model of serious leisure runners participating in road running race that combined cognition component (perceived value), affect components (flow experience and emotional attachment), and behavioral component (behavioral intention). The model could better explain the runners' mental state during the road running process and subsequent behavioral intentions after the road running process. This model pointed out that runners with a high degree of serious leisure will have higher emotional attachment to road running, and the flow experience generated during road running will also be higher.

No previous research has explored the relationship between serious leisure and perceived value, but this study proved that in road running activities, serious leisure of participants will not only positively affect flow experience and emotional attachment, but also positively affect his/her perception of the value of road running events. Runners with a higher degree of serious leisure will perceive more utilitarian value and hedonic value.

The results of this study also showed that the "long-lasting benefits" among the characteristics of six serious leisure are an important part of the runners' continuous jogging. The sense of fulfillment, happiness, and self-realization brought about by road running is also an artistic conception and a breakthrough pursued by road runners. Serious leisure runners can easily get a flow experience when engaging in road running, and fully focus on the road running race. As for the perceived value, in terms of utilitarian value and hedonic value, the average score of both registration price and service efficiency were relatively low, which showed that participants believe that there is room for further improvement in the registration process and planning quality of the race. In the future, when holding road running race, quality must be paid attention to, including the complete planning of the entire race, volunteer training, marketing, etc.

References

- Altheide, D.L. & Erdwin, H.P. (1980). Self-accomplishment through running. *Symbolic Interaction*, 3(2), 127-144.
- Babin, B.J., Darden, W.R., Griffin, M., (1994). Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of Consumer Research* 20 (4), 644– 656.
- Baldwin, C. K., & Norris, P. A. (1999). Exploring the dimensions of serious leisure: “Love me—love my dog!”. *Journal of Leisure Research*, 31(1), 1-17.
- Baldwin, S. A., Wampold, B. E., & Imel, Z. E. (2007). Untangling the alliance-outcome correlation: Exploring the relative importance of therapist and patient variability in the alliance. *Journal of Consulting and Clinical Psychology*, 75(6), 842-852.
- Barbieri C and Sotomayor S (2013) Surf travel behavior and destination preferences: An application of the Serious Leisure Inventory and Measure. *Tourism Management* 35(2): 111–121.
- Bowlby, J. (1979). The bowlby-ainsworth attachment theory. *Behavioral and Brain Sciences*, 2(4), 637-638.
- Bowlby, J., 1980, *Loss: Sadness and Depression*, New York: Basic Books Inc.
- Brown, C. A. (2007). The Carolina shaggers: Dance as serious leisure. *Journal of Leisure Research*, 39(4), 623-647.
- Chang, Ching-Hung & Shih-Tung Shu (2015). The Effects of Title-Sponsored Sport Event Attractiveness and Familiarity on Event Attachment and Loyalty. *Physical Education Journal*. 48(4), 399-415. In Chinese.
- Chen, Chun-An (2011). A Study on Flow Experience and Leisure Benefits of Road Running Participants. *Journal of Physical Education Fu Jen Catholic University*. 10, 230 - 244. In Chinese.
- Chen, Ying-Hsing & Chien-Chia Kung (2016). The Research on the Participation Motivation and Well-Being of the Taipei Expressway Marathon. *Journal of Sport and Recreation Management*, 13(3), 78-93. In Chinese.
- Cheng, T. M., & Tsaur, S. H. (2012). The relationship between serious leisure characteristics and recreation involvement: A case study of Taiwan’s surfing activities. *Leisure Studies*, 31, 53–68.
- Cheng, Tien-Ming, & Sheng-Hshiung Tsaur, & Mei-Tsun Chen (2015). Serious Leisure and Flow Experience: The Mediating and Moderating Roles of Situational Involvement. *Journal of Outdoor Recreation Study*. 28(2), 51-74. In Chinese.
- Chuang, Ju-Chien, Li Tien, & Chih-Chiang Chung (2010). The Relationship Among Involvement, Perceived Value And Behavioral Intentions Of The Yunlin Music Festival. *Leisure and Exercise*, 9, 73-84. In Chinese.
- Chung, Cheng-Wei & Chen, Huan-Tui, & Tsai, Li-Yu (2013). A Study on the Relationships among Serious Leisure, Recreation Specialization, Flow Experience and Leisure Benefits

- for Scuba Divers. *Journal of Island Tourism Research*, 6(4), 1-22. In Chinese.
- Chung, Cheng-Wei & Chen-Yu Lin (2014). Study on Relationship among Serious Leisure, Flow Experience, Self-Identity and Life Satisfaction: Using Surfing as an Example. *Annals of Leisure and Recreation Research*, 6(2), 115-140. In Chinese.
- Chung, Chih-Chiang & Lin, Yan-Shin, & Koa Hsiao-Fang. (2009). The Study of the Relationship among Karting Drivers' Involvement, Flow Experience and Behavioral Intentions. *Journal of Taiwan Society for Sport Management*, 9, 31-46. In Chinese.
- Churchill, G. A. (1995). *Marketing Research Methodological Foundations*, Sixth Edition. Fort Worth, Texas: The Dryden Press.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco: Jossey-Bass.
- Csikszentmihalyi, M. (2000). The contribution of flow to positive psychology. *The science of optimism and hope: Research essays in honor of Martin EP Seligman*, 387-395.
- Csikszentmihalyi, M. 1990. *Flow: The psychology of optimal experience*. New York: Harper & Row.
- Dai, You-De, Kuan-Yang Chen, Anna S. Mattila (2010). The Effect of Perception Process and Consumer Involvement on Repurchase Intention for Travel Products. *Journal of Outdoor Recreation Study*, 23(1), 53-83. In Chinese.
- Dilley, R. E. & Scraton, S. J. (2010). Women, climbing, and serious leisure. *Leisure Studies*, 29(2), 125-141.
- Filo, K., Funk, D., & O'Brien, D. (2010). The antecedents and outcomes of attachment and sponsor image within charity sport events. *Journal of Sport Management*, 24(6), 623-648.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error : Algebra and statistics. *Journal of marketing research*, 382-388.
- Funk, D. C., & James, J. (2001). The psychological continuum model: A conceptual framework for understanding an individual's psychological connection to sport. *Sport Management Review*, 4(2), 119-150.
- Getz D and Andersson TD (2010) The event-tourist career trajectory: A study of high-involvement amateur distance runners. *Scandinavian Journal of Hospitality and Tourism* 10(4): 468–491.
- Gould J, Moore D, Karlin NJ, et al. (2011) Measuring serious leisure in chess: Model confirmation and method bias. *Leisure Sciences* 33(4), 332–340.
- Gould, J., Moore, D., McGuire, F., & Stebbins, R. (2008). Development of the serious leisure inventory and measure. *Journal of Leisure Research*, 40(1), 47-68.
- Graf, A., & Maas, P. (2008). Customer value from a customer perspective: a comprehensive review. *Journal für Betriebswirtschaft*, 58, 1-20.
- Ha, J., & Jang, S. S. (2010). Perceived values, satisfaction, and behavioral intentions: The role of familiarity in Korean restaurants. *International Journal of Hospitality Management*, 29(1), 2-13.

- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate analysis*. Englewood : Prentice Hall International.
- Heo, J., Stebbins, R. A., Kim, J., & Lee, I. (2013). Serious leisure, life satisfaction, and health of older adults. *Leisure Sciences*, 35(1), 16-32.
- Hsiao, Yu-Xuan, & Mei-Jen Huang (2015). Research on Nike Women's Road Running Experiential Marketing and Experiential Value. National Kaohsiung Normal University Physical Education, 13, 57-74. In Chinese.
- Hsu, C. L., & Lu, H. P. (2004). Why do people play on-line games? An extended TAM with social influences and flow experience. *Information & management*, 41(7), 853-868.
- Huber F, Herrmann A, Henneberg SC (2007) Measuring customer value and satisfaction in services transactions, scale development, validation and cross-cultural ompareson. *Int J Consumer Stud* 31:554–564.
- Jackson, S. A., Martin, A. J., & Eklund, R. C. (2008). Long and short measures of flow the construct validity of the FSS-2, DFS-2, and New Brief Counterparts. *Journal of Sport and Exercise Psychology*, 30(5), 561-587.
- Jawahar, P. D., & Maheswari, R. (2009). Service perception: emotional attachment as a mediator of the relationship between service performance and emotional brand. *IUP Journal of Marketing Management*, 8(2), 7-22.
- Jin, N., Lee, H., & Lee, S. (2013). Event quality, perceived value, destination image, and behavioral intention of sports events: The case of the IAAF World Championship, Daegu, 2011. *Asia Pacific Journal of Tourism Research*, 18(8), 849-864.
- Johnson, D. J., & Rusbult, C. E. (1989). Resisting temptation: Devaluation of alternative partners as a means of maintaining commitment in close relationships. *Journal of Personality and Social Psychology*, 57, 967-980.
- Korzaan, M. L. (2003). Going with the flow: Predicting online purchase intentions. *Journal of Computer Information Systems*, 43(4), 25-31.
- Li, Y., Kim, A., Liu, O. X., Mastromartino, B., Wang, Y., & Zhang, J. J. (2021). Impact of perceived value on behaviour intention of parent-child runners in a marathon event. *Sport in Society*, 24(10), 1791-1809.
- Liang, Ying-Wen & Sheng-Hshiung Tsaur (2007). The Linking between Serious Leisure and Place Attachment: The Role of Recreation Specialization. *Journal of Outdoor Recreation Study*, 20(3), 1-24. In Chinese.
- Lien, Yang-I & Mei-Yen Chen (2015). A Study on Participation Motivation, Leisure Benefit and Satisfaction of Marathon Runners. *Leisure Study*, 6(1), 48-69. In Chinese.
- Lin, Chih-Jiun & Ho-Chan Tang 2015. A Study of the Relationships among Participation Motivation, Recreation Specialization and Flow Experience in the Road Running Participants. *Xingguo Journal*, (16), 1-20. In Chinese.
- Lutz, R. J., & Guiry, M. (1994, February). Intense consumption experiences: Peaks,

- performances, and flows. In *Winter Marketing Educators' Conference, St. Petersburg, FL, February*.
- McEwan, L., McKay, T., & Melissa, B. (2020). Trail running: Exploring South Africa's serious leisure economy.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
- Ogles, B. M. & Masters, K. S. (2003). A typology of marathon runners based on cluster analysis of motivations. *Journal of Sport Behavior*, 26(1), 69-85.
- Pelet, J. É., Ettis, S., & Cowart, K. (2017). Optimal experience of flow enhanced by telepresence: Evidence from social media use. *Information & Management*, 54(1), 115-128.
- Qiu, Y., Tian, H., Lin, Y., & Zhou, W. (2020). Serious leisure qualities and participation behaviors of Chinese marathon runners. *International Review for the Sociology of Sport*, 55(5), 526-543.
- Ryu, K., Han, H., & Jang, S. (2010). Relationships among hedonic and utilitarian values, satisfaction and behavioral intentions in the fast-casual restaurant industry. *International Journal of Contemporary Hospitality Management*, 22(3), 416-432.
- Stebbins, R. A. (1992). *Amateurs, professionals, and serious leisure*. McGill-Queen's Press-MQUP.
- Stebbins, R. A. (2001). Serious leisure. *Society*, 38(4), 53.
- Stebbins, R.A. (1982). Serious leisure: A conceptual statement. *Pacific Sociological Review*, 25, 251-72.
- Thomson, M., MacInnis, D. J., & Park, C. W. (2005). The ties that bind: Measuring the strength of consumers' emotional attachments to brands. *Journal of Consumer Psychology*, 15(1), 77-91.
- Trail, G. T., Robinson, M. J., Dick, R. J., & Gillentine, A. J. (2003). Motives and points of attachment: Fans versus spectators in intercollegiate athletics. *Sport Marketing Quarterly*, 12(4), 217-227.
- Tsaur, S and Liang Y (2008) Serious leisure and recreation specialization. *Leisure Sciences* 30(4): 325–341.
- Wang, Ming-Yuan & Yi-Chun Wei (2014). A Sport Tourism Research on the Relations Among Satisfaction and Revisiting Willingness to the Participants of 2013 Kaohsiung International Marathon. *Journal of Commercial Modernization*, 7(3), 15 – 29. In Chinese.
- Wheaton, B., Muthén, B., Alwin, D., & Summers, G. (1977). Assessing reliability and stability in panel models. *Sociological Methodology*, 8(1), 84-136.
- Woodruff RB, Gardial SF (1996) *Know your customer: new approaches to customer value and satisfaction*, Cambridge.
- Wu, Ray & Cheng-Jong Lee (2017). A Study on Participation Motivation, Flow Experiences,

- and Enduring Involvement of Road Running Participants. *Journal of Tourism and Leisure Management*, 5(2), 68-77. In Chinese.
- Yang, Wen-Goang, Wen-Cheng Tsai, & Chih-Wei Lin (2014). A Participation Behavioral Model for Tennis Tournaments. *Journal of Sport and Recreation Management*, 11(1), 1-19. In Chinese.
- Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of consumer research*, 12(3), 341-352.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(July), 2-22.

Appendix 1 Questionnaire

Serious Leisure

(1) Perseverance

Even though I am very busy, I will find time to participate in road running activities

Even if I feel tired, I insist on participating in road running activities

Even if I face a low ebb, I insist on participating in road running activities

(2) Career

Road running is an important part of my life for me

If there is no road running in my life, I will feel boring

I am willing to participate in road running activities for a long time

(3) Personal effort

In order to participate in road running activities, I have invested a lot of time and energy

In order to increase my road running skills, I am willing to invest time and money in relevant training

I am willing to spend money on books or videos to increase my road running skills

(4) Long-lasting benefits

Participating in road running activities can give me the opportunity for self-realization.

Participating in road running activities can make me feel happy and satisfied.

Participating in road running activities can make me feel fulfilled.

Participating in road running activities allows me to recognize many friends.

Participating in road running activities can improve my physical strength.

(5) Identity

I don't think there is any other leisure activity that can replace road running

I like watching programs about road running

(6) Unique ethos

After getting along with friends who participated in road running for a long time, we have common beliefs and values

In private, I will participate in activities or gatherings with fellow road runners

In private, meeting with fellow road runners allows me to speak freely

Flow Experience (Short flow items)

When I participate in this activity...

I feel I am competent enough to meet the high demands of the situation

I do things spontaneously and automatically without having to think

I have a strong sense of what I want to do

I have a good idea while I am performing about how well I am doing

I am completely focused on the task at hand

I have a feeling of total control
 I am not worried about what others may be thinking of me
 The way time passes seems to be different from normal
 The experience is extremely rewarding

Perceived Value

(1) Hedonic value
 Participating in the road running gave me a good feeling
 Participating in the road running was fun and pleasant
 The road running experience was truly a joy
 During the road running, I felt the excited
 Although the cost was higher than other sports events, I liked this road running event.

(2) Utilitarian value
 The road running location was convenient
 Participating in road running was both practical and economical
 It was a waste of money when participating in road running
 Service for road running races was quick

Emotional Attachment

(1) Affection
 Road Running races made me feel kind
 I am very affectionate with road running
 Road running makes me feel friendly
 I love road running
 Road running makes me feel peaceful

(2) Passion
 Road running makes me feel passionate
 Road running makes me feel delighted
 I am captivated by road running

(3) Connection
 I am connected to road running
 I feel a strong bond with road running
 I am very attached to road running

Behavioral Intentions

I would like to participate in this road running race again
 I would like to spread positive things about this road running race to others
 I would like to recommend this road running race to others