

What motivates repeated participation in ultra-endurance events? A comparison between runners and cyclists.

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Abstract

Nowadays, there is an increased interest in exploring individuals' motives for participation in ultra-endurance sport events, which can be described as activities requiring at least six hours of exercise and may be held in triathlon, running, swimming and cycling [1]. This study sheds light on factors associated with commitment to ultra-endurance events and more specifically investigates the ability of two different ultra-endurance events (running & cycling) to motivate a wide range of individuals to participate, based on the individuals' attachment to each event, as well as to investigate a potential effect of involvement with ultra-endurance activities and satisfaction from the events on motivation for individuals.

A quantitative method was used and questionnaires were collected from both an ultra-running and an ultra-cycling event, following a similar procedure. The questionnaires were distributed, before the award ceremonies, to each participant by a team of 5 researchers and were completed in the presence of the surveyors. The successful completion of a sum of 321 questionnaires was achieved, which were analyzed by means of the SPSS.

Regression analysis showed that the intention to participate in future events is explained by the three proposed variables, the degree of individuals' attachment to each event, their involvement with the sport and their satisfaction from the current event. The ability of the event to motivate participants was found to have the greatest impact among all predictors.

Furthermore, substantial differences were found between the participants of the cycling and running events. Indicatively, more women participated in the

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running event than in the cycling event and cyclists practiced 4 hours more than runners per week. Moreover, the type of the event (cycling or running) was discovered to significantly affect one's intention to participate again; it was found to be higher among runners than among cyclists.

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1 Introduction

The beneficial outcomes of regular exercise for physical and mental health are documented in detail and exercising has been promoted internationally via considerable provision of sport and recreation infrastructures. The enormous publicity of physical activity followed the acknowledgment of numerous benefits of sport participation, such as physiological, psychological and social benefits. Physiologically, sport participation is associated with a reduction in cardiovascular risk, avoidance/delay of diabetes and prevention of obesity. Psychologically, exercising is correlated with a decrease in anxiety and stress. Furthermore, sport participation heightens self-esteem and offers an apparatus for social interaction (World Health Organization, 2010). These benefits are correlated with a decline in medical care expenses, as well as with higher job efficiency (Alexandris and Carroll, 1997). A main stream of research has shown that the majority of individuals in the developed world are knowledgeable about the necessity of being active and have an eagerness to be more active (Tsai, 2005).

A main type of physical exercise with a significant increase over the last decade, is participation in ultra-endurance sport events. Although formerly thought of as purely a professional task, ultra-endurance sport events participation have become commonplace worldwide among amateur individuals. Ultra-endurance sport events can be described as activities requiring at least six hours of exercise and may be held in triathlon, running, swimming and cycling (Zingg et al., 2013).

One of the prevalent types of ultra-endurance sport events since the 1970's is road running in general and more specifically ultra-marathon running (Van der Nest, 2007). Ultra-marathon running is a recreational activity which has experienced an exceptional development over the last few years, as an increasing number of individuals consider it an appropriate alternative for recreationally based physical activity (Ridinger et al., 2012). Comprehending ultrarunners' motivation to participate in ultramarathon running has long been a point of analysis. An ultrarunner can be characterized as an individual who takes part in ultramarathons, which can be defined as international foot races that surpass the classic marathon range of 42.195 km (American Ultrarunning Association, 2008). Ultramarathons can be organized on or off-road and they are usually arranged to

encompass a particular range or cover a ceiling range within a specific timetable. Ultramarathons are largely segregated by harsh trail circumstances, such as rugged ground, altitude differences, and nasty weather. The most typical ultramarathon courses include 50 kilometers, 80.5 kilometers, and 161 kilometers, but they can also outspread to 24/48 hour, multiday or even transnational (Hanson et al., 2015).

A number of studies have investigated sport participation motives of individuals, but limited empirical support has been assigned to the motives of ultramarathoners, individuals who train for very long periods and often in undesirable conditions. Many of the previous studies about marathoners have examined alterations of mood, stress and/or emotions, but have not straightforwardly assessed motivation to run. Furthermore, a contemporary review of the personality attributes of ultramarathoners proved that there is a scarcity of knowledge concerning their motivation (Knechtle, 2012).

One other prevalent type of ultra-endurance sport events is ultra-cycling. Exploring the factors influencing individuals' participation in the sport of cycling is both crucial and up-to-date. Comparably to ultra-marathon participation, taking part in ultra-cycling events does not merely refer to one's turning up at the starting line at a given timetable and thereafter engaging in heavy physical exertion for several hours until crossing the finish line (LaChausse, 2006). Contrarily, participation in ultra-endurance events requires months of devoted training (Croft, Gray and Duncan, 1999). Consequently, ultra-cyclists are individuals who have to overcome personal and professional obstacles and who take their sport very seriously (LaChausse, 2006).

Previous studies have investigated the sport of cycling with the majority to having been assigned to physiological aspects of cycling, to performance related results and the effectiveness of differing training programs.

However, to date, few empirical studies have directly investigated the psychological aspects of ultra-cycling. On the contrary, previous studies on marathon runners and triathletes unveils a wide variety of possible motives for participation, including well-being, self-esteem, social interaction, health related factors, etc. The reasons motivating individuals to take part in ultra-cycling events are thought to be the result of a number of contributory factors including gender, age, sport activity involvement and type of sport event (Ogles and Masters, 2000).

Scrutinizing influential factors on individuals' motivation to take part in ultra-cycling is crucial for sport event managers in order to organize sustainable and successful sport events, to develop and increase devotion to training, as well as to promote physical activity. Various researches have shown that individuals are not motivated by the same factors, as far as their sport event participation is concerned. More specifically, individuals' participation in marathons and running events is the result of a variety of factors, such as competition, goal orientation and goal achievement (LaChausse, 2006; Ogles and Masters, 2000).

Accordingly, a stream of research that has emphasized the factors influencing participation in cycling events, has shown that competitive cyclists were not as cooperative as recreational cyclists (LaChausse, 2006), that gender is a

crucial factor which differentiates the motives for participation (Ogles and Masters, 2003), as well as that one's motives to participate in cycling may also vary depending on activity level and type of activity (i.e. street vs. mountain cycling) (Ogles and Masters, 2003). Furthermore, according to LaChausse (2006), health related issues may be primary motivating factors to certain cyclists while socializing factors may be more important to others.

Taking into account the recent surge of popularity in ultra-endurance events and the amount of time and funds allocated to the sport, it is both timely and important to comprehend why individuals take part in these events. Both ultra-marathons and ultra-cycling can be organized on or off-road and they are usually arranged to encompass a particular range or cover a ceiling range within a specific timetable. The above-mentioned types of ultra-endurance events are largely segregated by harsh trail circumstances, such as rugged ground, altitude differences, and nasty weather. Moreover, the amount of effort needed to participate in these types of ultra-endurance events is certainly a long way off the training required to obtain elemental health benefits, which may cause tiredness and injury. Regardless of the great sacrifices correlated with training time and exertion, growing numbers of individuals are deliberately taking part in such events systematically (Ogles and Masters, 2003). This contradiction makes one wonder about the factors influencing individuals' participation motives.

Motivation, therefore, is frequently the crucial factor in ultramarathon running participation and performance (Hanson et al., 2015). Motivation performs a crucial role in recreational activities as it affects individuals' degree of participation, the intensity of their commitment and eventually the result of their exertion (Kilpatrick et al., 2005).

The increasing popularity of ultra-endurance events has led researchers to ascertain the multifarious factors that entice individuals to take part in them. Various researches investigating the requirements, motives and behavioral attributes underlying ultra-marathon & ultra-cycling participants have been recognized (Gillet and Kelly, 2006; Shipway and Jones, 2007), and have been discovered to be imbricating, with notions utilized correspondently, such as cognitive, emotional and physiological needs and motivation. Due to inadequate studies on ultra-running & ultra-cycling, data will also be derived from researches on marathon running and cycling.

Ultra-marathon and ultra-cycling participation is the focus of this research due to their increasing popularity as leisure activities and due to the fact that they are correlated with a significant degree of constraints and loyalty. The participation in these types of ultra-endurance events impels a significant amount of time and exercise to prepare for and a higher degree of loyalty has been noticed in relation to sport contests of different distances (Funk et al., 2011). The aim of this research is twofold. First, to single out the perceived significance level of factors associated with commitment to ultra-marathon and ultra-cycling events, and more specifically to examine the relationships among attachment to each ultra-endurance event, involvement with ultra-endurance activities, as well as

satisfaction from ultra-endurance events on motivation in individuals who had taken part in such types of events. The second goal of this study is to compare the motives to participate in ultra-endurance events between individuals who had taken part in an ultra-marathon and those who had participated in an ultra-cycling event. The authors hypothesized that differences in motivation between these two distance groups would be noticed.

2 Theoretical Background

A lot of research has investigated motives of ultra-endurance athletes (Funk et al., 2011), but inadequate consideration has been assigned to the notion of recreation involvement with ultra-endurance events. Involvement can be described as an “imperceptible condition of motivation, insurrection or concernment about a recreational activity or correlated product” (Havitz and Dimanche, 1997). This circumscription largely focuses on the social-psychological facet of involvement (Alexandris et al, 2009). Sport activity involvement refers to the extent to which a person shows sympathy to a specific sport and in this research it is defined as a strong personal affiliation with ultra-running and ultra-cycling. More specifically, ultra-endurance sport involvement refers to the desire on a part of an individual to participate in this ultra-endurance activity (running or cycling), and has been described as one’s assessment of his/her joining in a sport endeavor apropos of being an important part of her/his life, and one that has both hedonic and symbolic value, affecting individuals’ future participation and behavior (Ridinger, Funk, Jordan, and Kaplanidou, 2012; Beaton et al., 2011). Involvement with an activity is one of the variables recommended as a crucial determinant in comprehending recreation compartments, as previous researches have proved that individuals who are involved to a great degree with a specific activity are presumably more loyal customers (Kouthouris, 2009).

It is widely acknowledged nowadays that involvement is a multifaceted variable. A stream of research offered empirical evidence for the variable validity of the tri-dimensional model (Alexandris et al, 2009; Kyle et al., 2006; Kyle and Chick, 2004), with attraction, centrality, and self-expression being the three variables suggested. Attraction pertains to the anticipated significance that ultra-endurance activity holds for an athlete, and the happiness, satisfaction, and amusement that emanates from taking part in this activity. Centrality pertains to the importance that an ultra-endurance activity has in a person’s way of life and embraces both social and individual factors (Walraven et al., 2012). Individuals characterized by a high degree of centrality dimension, are occupied with recreational activities which have played a main part in their way of life (Iwasaki and Havitz, 2004). Lastly, self-expression pertains to “self-portrayal or the perception of the personality that people desire to reveal to others via taking part

in the specific sport” (Kyle and Chick, 2004). This aspect is comparable to the variable of “extended-self” which is utilized in consumer behavior studies for interpreting individuals’ buying behaviors (Alexandris et al., 2009). In this respect, individuals have the intention to acquire goods/services the image of which harmonize with their self-image. In consonance with previous studies, involvement has been verified to be highly correlated with motivation (Funk, Ridinger, and Moorman, 2004; Iwasaki and Havitz, 2004; Kyle et al., 2006). More specifically, the attraction dimension was found to be affected by factors correlated to the sportscape of the sport activity, the centrality dimension by socialization correlated factors and the self-expression dimension by factors correlated to identification and role models (Funk et al, 2004).

Various researches have investigated the motives of athletes, but limited empirical support has been assigned to the notion of sport event attractiveness. An individual’s experience from each ultra-endurance event will conduce to the evolvement of dispositions toward leisure time physical activities in general. Mass participant sport events deputize a type of experiential consumption within the leisure framework via which sentimental reactions are received (Funk et al., 2011). Leisure time physical activities can be innately delectable and the anticipated quality of services received may generate a higher degree of sentimentality. A high degree of sport event satisfaction can result in an athlete attributing more functional, emotional and symbolic meaning to this sport event (Filo, Funk, and O’Brien, 2009). The higher the significance attributed to this meaning, the more pertinent the hedonic perspectives of the consumption experience (Addis and Holbrook, 2001). Therefore, contentment with the ultra-running and ultra-cycling has the capacity to strengthen the advancement of positive stances toward ultra-endurance event commitment and future participation purposes (Funk et al., 2011).

To an increasing extent, consumers’ satisfaction is recognized by academics and practitioners as one of the main strategic business goals, which can be defined as “a summation of cognitive and affective attitudes to a service offered” (Rust and Oliver, 1993). Various researches have examined the theoretical correlations between service quality and diverse customers’ elements such as customer gratification, consumer purchase intention, and consumer benefit perception (Cho, Lee, and Chon, 2004; Kotler, 2003; Murray and Howat, 2002; Theodorakis et al., 2001; Tian-Cole, Crompton, and Willson, 2002; Zeithaml et al., 2006). According to a main stream of research, service quality is anticipated as a precedent of consumer satisfaction (Zeithaml et al., 2006).

Satisfaction has been recognized to be a trustworthy forecaster of repeating purchase intentions (Cho et al., 2004; Cronin et al., 2000; Yoo, Cho, and Chon, 2003). Unsatisfied customers are more prone to complain and have negatively influenced repurchase intentions. On the contrary, satisfied consumers have the intention to be exceptionally dedicated to the service firm and the services offered (Cho et al., 2004; Kelly and Turley, 2001; Tian-Cole et al., 2002). Furthermore,

more sophisticated and devoted consumers are expected to form a loyal consumer base (Tsitskari et al., 2006).

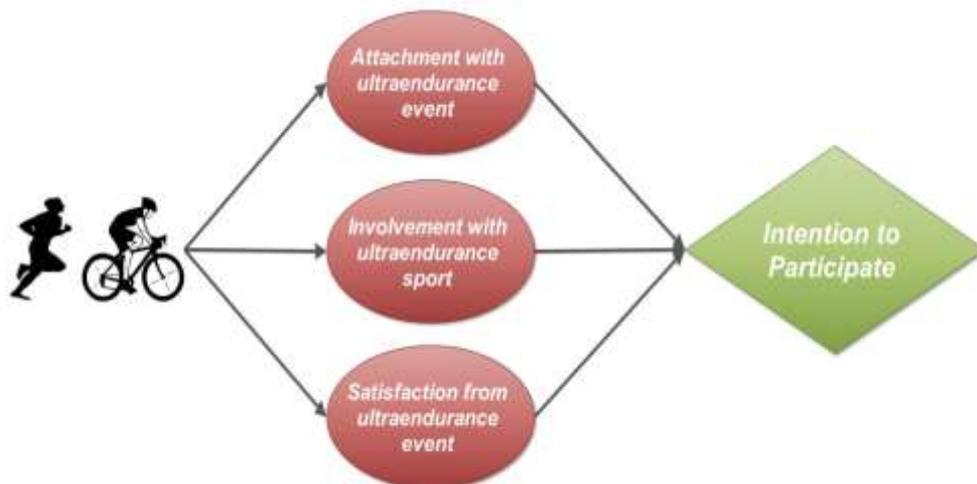
According to previous researches, a major factor influencing consumer satisfaction and repurchasing intentions is the improvement of service quality. Both consumer satisfaction and impressions of quality of services, are positively correlated with the repurchase intentions of the consumer (Cronin et al., 2000; Tian-Cole et al., 2002). More specifically, past studies (Cronin et al., 2000) proposed that consumer satisfaction has a more influential and more persistent effect on their repurchase intentions than the anticipated quality of services. Subsequently, it is extremely crucial for sport organizations to have the ability to ascertain the specific characteristics of their product or service offering, which remarkably conduce to consumer satisfaction (Petrick and Backman, 2002). A lot of research has investigated factors influencing consumer repurchase intentions, but inadequate consideration has been assigned to the notion of satisfaction and its role in repurchase intentions of consumers in the sport sector.

The conception of the sport event experience will compose the ground of contentment. Synoptically, satisfaction depicts a mental evaluation of the grade to which a recreation efficiency enacts pertinent to an individual's substructure expectations (Petrick, Morais and Norman, 2001). As for the perceived quality of services offered, the higher the anticipated quality of the ultra-endurance event experience, the more positive stances of individuals toward running commitment and future participation intention (Tian-Cole et al., 2002). Furthermore, as Wilson and Rodgers (2004) stated, satisfaction derived from participation in a sport event, it is likely to affect future exercise intentions on a regular base.

However, research regarding ultra-endurance athletes' participation motives remains both insubstantial and controversial, seeing that the interactions among the proposed factors are complex and dynamic. Furthermore very little is known about the differentiation of motives between ultra-running and ultra-cycling athletes. The challenges involved in ultramarathon competition are in no way similar to those of ultra-cycling events.

The aim of this study is to single out the factors motivating individuals to take part in ultramarathons and ultra-cycling events. The factors examined were the degree of attachment that individuals have with ultra-marathon and ultra-cycling events, the degree of attachment that individuals have with running and cycling correspondingly as well as the satisfaction derived through participating in these events.

Based on the literature, the suggested model (Figure 1) proposes a number of factors affecting an individual's participation in ultra-endurance events. All the hypothesized variables are displayed in the above mentioned model, which critically investigates the following hypotheses:



H1: Attachment with ultra-endurance event increases the individuals' intention to participate in this event

H2: Involvement with ultra-endurance activity (ultra-running & ultra-cycling) increases the individuals' intention to participate in ultra-endurance events

H3: Individuals' Satisfaction from the ultra-endurance event factors increase their intention to participate again

3 Methodology

The present study investigates the factors influencing an individual's participation in ultra-endurance events as measured from two different sport events. More specifically, elements were obtained from both an ultra-marathon (246km/24h) and an ultra-cycling event (246km/12h), following a similar procedure. Both events have taken place in Southern Greece. A quantitative questionnaire was selected as the predominant means of collecting the data. The questionnaire developed for this research was based on past studies of similar subjects and populations (Hill and Green, 2012; Funk et al., 2011). Items were assessed on interval scales and the time allotted to the completion of the survey was 10-12 minutes.

To elaborate, a team of five researchers was responsible for distributing the questionnaires to the athletes and each one of them was randomly selected by the research team and politely asked to take part in the survey.

As far as the ultra-marathon event is concerned, the questionnaires were distributed at the end of the award ceremony to each participant by the above-mentioned team of researchers and were completed in the presence of the surveyors, with 175 questionnaires being successfully completed. In the case of the ultra-cycling event, the questionnaires were distributed at the end of the race to

each athlete by the same team and the same procedure. The total number of questionnaires successfully completed from this event was 146. Particular circumstances on the field, such as the constant flow of athletes especially on their coming to the award ceremony of the ultra-marathon or the finish line of the ultra-cycling event, favors the selected operation by the researchers. The total number of questionnaires successfully gathered from both events was 321 and analyzed by means of the SPSS.

3 Results

3.1 Measurement of key variables

The proposed model consists of four key variables, one latent and three directly measured. More specifically, attachment with ultra-endurance event refers to the special features of a specific event and the attraction or motivation they provide to the participants. It was constructed using five distinct variables measured with a 5 point Likert scale. Principal component analysis revealed one single factor (KMO=0.860, Bartlett's test of sphericity, $p < 0.001$), which explained 66% of the total variance and was found to be reliable (cronbach's $\alpha = 0.866$).

Involvement with ultra-endurance sport refers to the general relationship that the participants have with the sport of running/cycling in their everyday life. It was measured as the number of hours one practices on a weekly basis in order to prepare for the respective ultra- endurance event.

Satisfaction from ultra-endurance event refers to the satisfaction of the participants from the organization of the event and the services provided during it. It was measured with a 5-point Liker Scale.

Intention to participate in future ultra-endurance events refers to the likelihood with which the participants estimate that they will continue to take part in similar events. It was measured with a 5-point Liker Scale.

3.2 Sample Demographics and habits

The survey's sample consists of 321 respondents, of whom 175 were runners and 146 were cyclists. The great majority of the respondents were men (81.9%) in the total sample as well as among runners and among cyclists. Chi square analysis showed that women were less likely to participate in a cycling event than in a running event ($\chi^2 = 29,752$, $\Phi/V = 0.305$, $p < 0.001$). The average participant was 40 years old ($s = 10.3$) with 62% being between 26 and 45 years old. The great majority of the respondents were at the time employed (83%) and 7% of them were still at school. In terms of education, 63.4% had completed at least a bachelor's degree. Almost 60% of the respondents were married or attached. Their monthly income was under €1,000 for half of the participants (41.7%) and €2,000; 18% earned more than that.

The participants said they trained on average for 10.41 hours ($s=8.73$) on a daily basis. Nevertheless, when examined separately, cyclists were found to practice on average four hours more than runners. This difference was tested using an independent samples t-test and was found to be significant ($t=4.224$, $p<0.001$). Therefore, the involvement with the sport was found to be higher for the cyclists than for the runners. The majority of the participants (74.8%) preferred to train outdoors. While this preference applied to both runners and cyclists, it was more intense for the latter; 95% of cyclists said that they trained mainly outdoors but only 57.7% of runners said the same. Chi square analysis was used to test the significance of this difference; it was found to be significant and moderately strong ($\chi^2=56.64$, $\Phi/V=0.433$, $p<0.001$).

The average age at which the respondents started participating in ultra-endurance events was 33.34 years old ($s=12.1$); cyclists averages slightly older (34.6 years old) than runners, (32.3 years old). An independent samples t-test analysis showed that this difference was statistically significant ($t=2.170$, $p<0.005$).

Attachment with the event was found to provide moderate motivation for both cyclists and runners as it averaged 3.5 on a 5 point Likert scale ($s=0.87$); no significant difference was found between the two. The intention to participate in future events was high; 62.5% of the respondents said the intended to do so. Nevertheless, when examined separately, cyclists showed a much stronger intention to participate in future events (89.7%) than runners (47.4%). The difference was tested using an independent- samples t-test and was found to be significant ($t=7.1237$, $p<0.001$).

3.3 Hypotheses Testing

A series of linear bivariate correlation analyses were conducted to explore the relationship between the intention to participate in future ultra-endurance events and the motivation provided by each of the factors proposed by the model. The Pearson product-moment correlation coefficient was used to measure the linear correlation because all variable were measured on an interval scale and none of them was significantly deviating from the normal distribution. All three relationships were found to be significant. More specifically, attachment with ultra-endurance event, involvement with ultra-endurance sport and satisfaction from ultra-endurance event were all found to correlate positively with the intention to participate in future ultra-endurance events, which is consistent with the proposed hypotheses (H_1 , H_2 , H_3). All results are presented in detail in Table 1.

Next, a series of linear partial correlation analyses were performed to control for the type of event; ultra-endurance cycling and ultra-endurance running. All correlations were again found to be positive and statistically significant; thus, consistent with the proposed hypotheses. The effect on the values of the respective correlation coefficients was not very high. However, it is noteworthy that the correlation between the attachment with ultra-endurance event and the intention to participate in future ultra-endurance events was stronger after controlling for the

type of the event. The remaining two correlations were weaker after controlling for the type of the event.

All results are presented in detail in Table 2.

Multiple linear regression analysis was used to test the combined effect that the various motivation factors (attachment with ultra-endurance event, involvement with ultra-endurance sport, satisfaction from ultra-endurance event) had on the participants' intention to participate in future ultra-endurance events. No significant correlation was found among predictor variables, which meant that there were not any collinearity issues in the model. This was also supported by the results of the regression analysis; the tolerance values for the three predictors were respectively 0.970, 0.981 and 0.989, and the VIF values for the three predictors were 1.030, 1.019 and 1.011. The results of the regression indicated that the three predictors explained 39.4% of the variance ($R^2=0.394$, $F(3.313)=46.8$, $p<0.001$). It was found that attachment with ultra-endurance event significantly predicted the intention to participate in future ultra-endurance events ($\beta=0.654$, $p<0.01$) as did involvement with the ultra-endurance event ($\beta=0.015$, $p<0.05$) and satisfaction from the ultra-endurance event ($\beta=0.155$, $p<0.01$). The results of the regression are presented in detail in Table 1.

Table 1: Intention to participate in future ultra-endurance events linked to motivation factors (N=321)

Variable	Pearson's r			Intention to participate	β	t	b
	Attachment with event	Involvement with sport	Satisfaction from event				
Satisfaction from event				.182***	.155**	2.191	.117
Involvement with sport			.000	.239 ***	.015**	2.604	.138
Attachment with event		.106	.134**	.592***	.636***	10.987	.587
Mean	3.45	10.41	4.34	3.73	Intercept= .853		
SD	.86	8.73	.712	1.031	$R^2= .394***$, $F(3.313)=46.807$		

* $p < .1$, ** $p < 0.05$, *** $p < 0.01$

The type of ultra-endurance sport was used as a moderator variable to explore a potentially different relationship between the model's variables and the intention to participate in future cycling or running ultra-endurance events. It was found to have a significant and strong effect. The moderated model explained 46.8% of the variance ($R^2=0.468$, $F(4.313)=68.751$, $p<0.001$); 7.7% more than the unmoderated model. The relative importance of the two predictors on the dependent variable was not affected by the moderator. Attachment with the ultra-endurance event had the higher coefficient ($\beta=.654$, $p<0.01$) followed by the involvement with the ultra-endurance sport ($\beta=0.014$), while the satisfaction from the ultra-endurance event did not have a significant effect at $p<0.05$; it did however have an effect at $p<0.1$.

The type of sport event was coded as a dummy variable, with cycling coded as "0" and running coded as "1". Therefore, the negative effect shown in the results meant that there was a higher likelihood of participation in future events for the cyclists rather than for the runners. This is in consistency with the findings from the independent samples t-tests, which showed significant differences in the mean values of the model's variables between cyclists and runners.

All results are presented in detail in Table 2.

Table 2: Intention to participate in future ultra-endurance events linked to motivation factors moderated by type of sport (N=321)

Variable	Pearson's r			Intention to participate	β	t	b
	Attachment with event	Involvement with sport	Satisfaction from event				
Satisfaction from event				.130**	.084*	1.376	.058
Involvement with sport			-.086	.171 ***	.014***	2.687	.115
Attachment with event		.073	.116	.608***	.654***	13.164	.551
Moderator					-.591***	-6.621	-.285
					Intercept= 1.285		
Mean	3.45	10.41	4.34	3.73	$R^2= .468^{**}$,		
SD	.86	8.73	.712	1.031	$F(4.313)=68.751$		

* $p < .1$, ** $p < 0.05$, *** $p < 0.01$

4 Discussion and Practical Implications

Understanding what motivates athletes to participate on a recurring basis in ultra-endurance events is of critical importance for sport marketers. It is estimated that the average company spends six times more to get a new customer than it does to withhold a current one (Rosenberg and Czepiel, 1984). Moreover, the findings suggest show that the participants of ultra-endurance events are young, well-educated and currently employed people with the majority of them having a noticeable purchasing power.

This paper attempted to identify key motivational factors that are linked to the athletes' intention to participate in future ultra-endurance events. The actual behavior was not measured; however, the positive relationship between the actual behavior and the intention has been extensively studied in interdisciplinary literature of human behavior. It was initially proposed by Aijen (1985) in the theory of planned behavior (TPB) and in broad terms, it has been found to be well supported by empirical evidence. Armitage and Conner (2010) on a meta-analytic review found that the TPB accounted for 11% more of the variance in behavior than when behavior measures were objective or observed.

The proposed hypotheses were supported by the empirical evidence. The intention to participate in future ultra-endurance events were explained by three predictors; namely, attachment with ultra-endurance event, involvement with ultra-endurance sport and satisfaction from ultra-endurance event. All three predictors had a positive effect to the intention of ultra-endurance athletes to continue participating in ultra-endurance events and explained almost 50% of the latter's variance. The attachment with the ultra-endurance event was found to have the higher impact among the three. The findings suggest that the attachment that participants have with a certain event has a much higher impact on their intention to participate again than their satisfaction from the organization of the event or their involvement with the sport in general.

This is of interest not only for theorists, but has valuable implications for managers who are involved in the organization of such ultra-endurance events. It may suggest that they should pay special attention to the initial choice of the venue; a number of studies have suggested a linkage between the image of a sports event and the image of the destination (Kaplanidou and Vogt, 2007; Getz and Anderson, 2010; Kaplanidou et al., 2012).

Moreover, attention should be paid the special characteristics of the event that define its brand. Brand attachment has been suggested to explain the intentionality of repetitive buying behaviour (Belaid and Behi, 2011; therefore, creating an emotional attachment with the event for the participants should be a top priority.

Involvement with the sport itself was found to have a significant effect on recurring participate in ultra-endurance events. Previous research had linked involvement with attitudinal loyalty (Benett, et al., 2007) and suggested that highly

involved people relate to a product category as part of their lifestyle, and it holds an important place in their daily existence (Lockshin, 2007). Therefore, findings support a strategy that would enhance the athletes' involvement with the sport. There could be an important opportunity for ultra-endurance events' organizers in order to promote participation and recurring participation. They could work towards enabling or assisting the athletes' involvement with the sport. Planning complementary events or activities linked to the main event could contribute to the latter's success directly or indirectly affecting attachment with the event.

The ultra-endurance sport itself was found to have a significant moderating role in the relationship between the predictors and the intention to participate in future events. Cyclists were found to be more involved with their sport; they trained longer hours. They were also found to have a higher intention to participate in future events. This finding suggests that it would perhaps be more effective not to consider ultra-endurance events as one homogeneous market, but rather to attempt to identify distinct segments.

Both runners and cyclists were found to prefer outdoors training; nevertheless, cyclists showed a much stronger preference. This finding suggests that there are different opportunities for marketers in the sports industry dependent on the type of sport an athlete is involved with. Companies should target runners with products and services available for both indoors and outdoors training, while they should target cyclists with products and services mostly used in outdoors training. There are also implications for the organizers and marketers of the ultra-endurance events. They could use this difference in training practices to target more specific sponsorships and to adjust the facilities and the services provided during the main events. Furthermore, organizers and promoters could use findings like this to better design complementary events mentioned before to enhance involvement with the sport (workshops, seminars, coaching sessions, etc) that would enhance involvement with the sport as well as attachment to the event.

5 Limitations and further research

All research hypotheses were supported by the empirical evidence and the model's fit was quite strong; the total variance of the intention to participate in future ultra-endurance events explained by the proposed predictors was almost 50%. Nevertheless, more predictors need to be identified in order to acquire a more complete understanding of what drives recurring participation in ultra-endurance events.

The ratio between men and women respondents poses a strong limitation to the generalization of the findings; the great majority of the sample was men. This is consistent with previous research suggesting that women face more personal constraints, which prevent them from participating in running events (Alexandris and Carrol, 1997). However, more research would be useful to explore potential

differences in the motivation of the two. As far as the intention to participate in future events, previous research from running events only (Koronios et al., 2017) found no significance differences between men and women. Nevertheless, more research is needed in cycling as well as other sports.

The relationship between the intention to participate and the actual participation should be explored in the context of ultra-endurance events in order to test whether the TPB model applies to this specific market and how strong the relationship is.

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