



Marathon Runners: A Fertile Market for "Green" Donations?

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ABSTRACT

Marathon events are hosted annually by various communities around the United States. Within this context, marathon runners train and compete in various natural environments. Nature-based places can be primary training areas and often consist a large part of marathon events. Marathon runners, therefore, may care more about the quality of the nature they train in, as the environmental quality can connect to health benefits. The purpose of this study was to test how various types of marathon runner's motivations influence their environmental concern and donation intentions toward green initiatives. Data was collected from marathon runners of a marathon event using a web-survey. In total, 103 marathon runners responded fully to the questionnaire. Findings indicated motivations related to self-esteem, health benefits, and environmental concern influences significantly and positive marathon runners' donation intentions for green initiatives. Limitations are highlighted, as future research can explore further the conceptual model of this inquiry.

马拉松运动员——“绿色”捐赠的大好商机

每年美国的周边多个社区都会举办马拉松活动。在此背景下，马拉松运动员在各种自然环境中进行训练和比赛。天然的场所既主要是主要的训练区域，也是马拉松主要的比赛场地。因此，马拉松运动员可能更关心他们训练所在的天然场所的质量，因为环境质量对健康有益。这项研究的目的是测试各种类型的马拉松运动员的动机如何影响他们对绿色倡议的环境关注和捐赠意向。数据来源于参加马拉松赛事的马拉松运动员，对他们进行网络调查。共有103名马拉松运动员对调查问卷做出了充分的回应。调查结果表明，马拉松运动员的动机与自尊、健康福利和环境关注有关，环境关注对捐赠意愿产生重大的积极影响。由于未来的研究可以进一步探索这种探究的概念模型，因此突出了其局限性。

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1. Introduction

The number of marathon and running events has risen in the last decades in the United States (Running USA, 2018). Running USA (2018) has reported that the

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number of annual running and marathon events has reached 30,400 in 2016. Numbers and figures from Running USA association showed that in 2016 the number of running race finishers for the United States has increased to 17 million runners and marathon participants (Running USA, 2018), suggesting that there are a lot of people who participate and travel to these events. Marathon running events consist a type of small-scale sport event that has had remarkable growth during the past decade given the increasing number of participants in these events (Kaplanidou, Jordan, Funk, & Ridinger, 2012; Ridinger, Funk, Jordan, & Kaplanidou, 2012). With more marathon runners and more marathon events, it is logical to assume a movement of people is engaging in a healthier lifestyle and is involved in more competitive physical activity (Ridinger et al., 2012). It is not uncommon for individuals who participate in running events, to train many hours per day and several days per week in outdoor environments that link to nature (Shipway & Holloway, 2010). Studies that focused on sport event participation, suggested that events are a platform for healthier lifestyle interventions (Ridinger et al., 2012; Shipway & Holloway, 2010).

Marathon runner motivation to participate in marathon events consists of various aspects. One of the main motivations is self-esteem (Pretty, Rogerson, & Barton, 2017). Pretty, Rogerson and Barton (2017) introduced the green mind theory (GMT), as the link between the human mind and the natural environment discussing the idea of connection between people's self and nature. Therefore, it is logical to assume that motivational aspects related to self-esteem could relate highly with sentiments that support the environment where the running takes place. In addition to self-esteem, motivations related to health benefits are also important given their intrinsic role in the participation process (Deci, Olafsen & Ryan, 2017). Research has reported that runner's health improvement and increase of self-esteem are primary motivations (Funk, Jordan, Ridinger, & Kaplanidou, 2011). These two motives are the key reason that marathon runners are committed and dedicated individuals to the exercise and sport event participation (Filo, Funk, & O'Brien, 2011). The literature however, discusses that motives correlate with attitudinal concepts within a person about a specific topic (Deci et al., 2017). For example, marathon runners' motives to participate in a sport event that takes place in nature can influence their environmental concern given the runners' dependence on the natural environment for their event experience (Wicker, 2017).

Taken together, understanding the influence of key motivations such as self-esteem and health benefits on related behaviors toward protecting the environment becomes an important research question. Therefore, the purpose of this study was to investigate how runners' motivation related to self-esteem and health benefits influence first their environmental concern perceptions and then their donation intentions towards green initiatives (Filo et al., 2011; Jin et al., 2015; Kilpatrick et al., 2005; Walker, 2013).

2. Marathon Runners and the Natural Environment

Natural environments facilitate often marathon events which use natural settings as their main race course (Running USA, 2018). The environmental setting of the running course may provide opportunities to runners to increase their bonding to such environments (Du Preez & Heath, 2016; Wicker, 2017). Accordingly, the

environmental quality of the race course itself, can affect marathon participants' experiences and perceptions (Du Preez & Heath, 2016). As indicated, marathon runners are highly motivated by the health benefits and the increase of their self-esteem that marathon races offer (Funk et al., 2011; Kilpatrick et al., 2005). Considering that running is a sport with carbon neutrality (e.g., does not require any use of machinery) the investigation of runner's perceptions towards pro-environmental donations is an interesting topic that has not been explored in the literature (Funk et al., 2011).

The term environmentally friendly charitable activity is defined as a behavior that includes donations towards green initiatives (Jin et al., 2015; Walker, 2013). Accordingly, the willingness to perform this activity is defined as behavioral intention towards donating for green initiatives (De Leeuw et al., 2015). The most effective pro-environmental practice as far as the environmental protection is concerned, is donations to green initiatives (Jin et al., 2015; Mann, Lloyd & Oreskes, 2017). Precisely, green initiatives are defined as the voluntary financial contribution (i.e., donation) of people towards programs that reduce the carbon dioxide emissions from the atmosphere of Earth globally (Mann et al., 2017). Therefore, marathon runners' readiness to behave in an environmentally friendly way can be operationalized by asking them if they intend to engage in an environmental behavior such as donations towards green initiatives. And consequently, this measure can capture participants' willingness to financially contribute to pro-environmental actions that would have an efficient outcome on global environmental degradation (Mann et al., 2017; Triantafyllidis, Ries & Kaplanidou, 2018).

Walker (2013) found that environmentally friendly initiatives promoted by sport organizations have the potential to influence the local community to support these green initiative practices through donations. Consequently, places and communities across the globe that host marathon running events could benefit from environmentally friendly outcomes and at the same time their residents would benefit from positive health outcomes (e.g., due to the reduced carbon dioxide emissions and pollution) and invest in both marathon preparation and environmental protection advocacy and practices (Jin et al., 2015).

3. Theories and Hypotheses

3.1. Self-determination Theory and Marathon Runners Environmental Concern

The investigation of marathon runners' perceptions towards environmental protection is a matter of self-interest, where the focus of marathon runners' environmentally friendly behavior is on strategies to reduce individuals' own risks (Du Preez & Heath, 2016). As such, people are more likely to form pro-environmental behaviors if they know what to do, and if they believe that they can change an existing negative situation (i.e., environmental degradation) (Deci et al., 2017; Gardner & Stern, 1996). Deci and Ryan (1985) found that self-determined motivations related to people's need to gain knowledge for an environmental issue, were good predictors of people's environmentally friendly behaviors. Individuals' who care for the environmental protection are also concerned with the degradation of the natural environment. This interrelationship between care and concern has been described by Deci and Ryan (1985) as

environmental perceptions, and several studies have found that people who care and are concerned about the environment, are self-motivated and they can act responsibly towards environmental conservation and they can quickly adopt environmentally friendly behaviors (Gardner & Stern, 1996; Kollmuss & Agyeman, 2002). Kollmuss and Agyeman (2002) suggested that people with elevated levels of environmental concern will be more likely to adopt an eco-friendly lifestyle. Accordingly, the first hypothesis was formed:

H1: Marathon runners' environmental concern perceptions will positively influence their donation intentions towards green initiatives.

3.2. Personal Investment Theory and Marathon Runners Self-esteem

Personal investment theory indicates that people who invest in themselves and their well-being, they may also invest in other life and natural settings, such as the protection of the natural environment (Deci et al., 2017; Maehr & Braskamp, 1986). Personal investment theory has been described in terms of sense of self, personal recognition and achievement goals (McInerney, 2008). Personal investment emphasizes the important role that people, and the natural environment can play for individuals who need to perform at a higher level and feel good about themselves (Maehr & Braskamp, 1986). The three conceptual terms of personal investment theory (PIT), i.e., sense of self, personal recognition and achievement goals, can be captured in the concept of self-esteem (McInerney, 2008).

In more detail, self-esteem is about perceptions toward practices that overall benefit oneself, such as a person who believes that it is recognized by their community or an individual who believes it benefits from a clean and undisturbed natural environment (Maehr & Braskamp, 1986). According to PIT, self-esteem can affect marathon runners' environmental concern because the better the quality of natural environment they train and compete, the better their judgment towards themselves and their performance (McInerney, 2008).

There is also discussion about how personal investment determines individuals' environmentally friendly behaviors (Moller, Ryan, & Deci, 2006). Individuals who invest in themselves may be more motivated to engage in ecological activities because of the benefits the environmental quality has on their performance in several tasks (Moller et al., 2006). Also, based on PIT people connect to an activity because they see the activity as an opportunity for self-enhancement (Deci et al., 2017; Maehr & Braskamp, 1986). Moreover, Filo, Funk and O'Brien (2011) found that self-esteem contributes to attachment feelings toward a charitable sport event. Specifically, Filo and colleagues (2011) found that the highest the self-esteem, the largest the amount of money sport event participants contributed towards charitable causes through donations (Israel, 2007). Therefore, this research proposed that marathon runners with high self-esteem will be more likely to donate towards green initiatives. Donating to green initiatives can function as a proxy toward protecting the environment they run in. These implications led to the following hypothesis:

H2: Marathon runners' self-esteem will positively influence their environmental concern perceptions.

H3: Marathon runners' self-esteem will positively influence their donation intentions towards green initiatives.

3.3. Green Mind Theory and Marathon Runners Health Benefits

Green mind theory (GMT) connects human mind and consciousness with their physiological health and at the same time the environment connects with their brain and body (Pretty et al., 2017). Additionally, the connections among mind-body-environment, can be joint in all directions, as body connects and influences the mind, and connects to nature (Pretty et al., 2017). Based on the GMT propositions, it is logical to hypothesize that marathon runners' health-related motivations can influence their environmental concern levels and donation intentions towards green initiatives.

3.3.1. Intrinsic Health-related Motivational Factors

Correspondingly, two-intrinsic health-related motives (i.e., positive health and illness-health avoidance) have been used to capture the reasons that people engage in physical activity such as running (Funk et al., 2011; Kilpatrick et al., 2005). Based on the literature health benefits can be a good predictor of running commitment among marathon runners (Funk et al., 2011). Specifically, marathon runners motivated by positive health, were more experienced athletes and more physically fit, in comparison to other marathon runners, who participated in the sport event (Funk et al., 2011). Marathon runners motivated by positive health outcomes of the race were more likely to participate in running events in the future (Funk et al., 2011). Ridinger et al. (2012) mentioned that an individual's participation in a marathon running event is beyond its training and requires positive health, to avoid fatigue and injuries (Kilpatrick et al., 2005; Oskamp et al., 1991). Given marathon runners' orientation toward health benefits, it is important to review how the quality of the running environment weights in their running activity given the increasing threats to environment quality (De Vries et al., 2003). The clean natural environment and its protection constitutes a significant factor of peoples' quality of life and well-being (De Vries et al., 2003). People generally believe that living in a clean environment is good for one's health (De Vries et al., 2003).

3.3.2. Relationship between Health-related Motivational Factors and Environmental Concern and Behaviors

Given that humans have an innate bond with nature certain kinds of contact with the natural environment provide positive health (Frumkin, 2001). In the environmental psychology scholarship, people's thoughts and feelings towards their potential health risks have determined significantly their pro-environmental behaviors (Gardner & Stern, 1996). As a result, the positive outcomes that running in nature-based contexts have on health and marathon runners' perceived connection to natural spaces and environmental quality may form marathon runners' concern about the quality of the environment they train and compete in (Pretty et al., 2017). For example, long distance marathon runners' performance and physiological conservation requires the

inhalation of air that has reduced carbon emissions which connects directly to their health.

Furthermore, evidence has showed that there is an intercorrelation between positive health, illness-health avoidance and environmental concern and behaviors (Oskamp et al., 1991). Specifically, people who believe and know that air pollution is generated by activities that create carbon dioxide (e.g., driving vehicles/transportation) are more likely to participate and advocate for environmentally friendly initiatives or organizations as they care for their health (Oskamp et al., 1991). Based on the evidence that supports people's perceptions towards the natural environment quality and health benefits in relation to their environmental concern and behaviors it is proposed that:

H4: Marathon runners' health benefits motivations will positively influence their environmental concern perceptions.

H5: Marathon runners' health benefits motivations will positively influence their donation intentions towards green initiatives.

4. Method

4.1. Procedure

This study included marathon runners from an annual local small-scale marathon event that took place in the southeastern United States. The marathon running event takes place every year in February for the past decade. The marathon event was the 11th race that was hosted in the local area and had approximately 1,000 marathon runners participating. This event included a full-marathon (42.2 km) and a half-marathon race (21.1 km). Most of the marathon runners participated in the full-marathon race. Data was collected through web-surveys. The web-survey link was sent to 910 marathon runners via email, after contacting the director of the event, who forwarded the web-survey link to the registered participants. The link was sent 3-weeks after the event. To ensure the quality of responses and elicit a higher response rate, a follow-up email with the web-survey link was sent to participants two weeks later. There were total of 171 responses. Of those responses, there were 103 completed and the rate was 11.3%.

4.2. Measures

All items were evaluated on 7-point Likert scales. For the measurement of donation intentions towards green initiatives the following single item, based on Jin et al. (2015) and Thompson and Barton (1994), was used: "I am willing to donate towards green initiatives" (1 = very unlikely and 7 = very likely). The environmental concern was measured, based on Thompson and Barton (1994), with a single item "I find it hard to get too concerned about environmental issues" (1 = strongly disagree and 7 = strongly agree). Also, the single item that captured environmental concern was coded reverse to avoid negative correlation due to negative question wording. For the measurement of self-esteem, two-items were used and were also evaluated on a 7-point Likert scale (Filo et al., 2011). Specifically, the two-items were (1) "Other people

will think more highly of me if I participate in a marathon event” and (2) “People who are most respected by society are those who participate in marathon events”. Cronbach’s alpha coefficient for the two-items was .89. A new single-item variable was formed by estimating the mean of the two-items.

The health benefits motivation items were adapted by the Exercise Motivation Inventory-2 (EMI-2) by Markland and Ingledew (1997) which was applied to the sport event context. Therefore, seven-items were adapted from EMI-2 which captured positive health with four-items and illness-health avoidance with three-items. Specifically, the four-items for positive health were: “The participation in a sport event helps me live a longer, healthier life”, “The participation in a sport event gives me the opportunity to have a healthy body”, “I participated in a sport event because I want to maintain a good health” and “I participated in a sport event to feel healthier”. The three-items for illness-health avoidance were “The participation in a sport event helps me avoid the heart disease”, “The participation in a sport event prevents me from health problems”, “The participation in a sport event helps me avoid illness”. All seven-items measured in a 7-point Likert scale with 1 = strongly disagree and 7 = strongly agree.

4.3. Data Analysis

A principal component analysis (PCA) was conducted to test whether all seven health benefits items formed one-component. The average correlation coefficient r among the seven-items were examined and results showed a positive and significant correlation and strong relationship ($r = .63, p < .01$), and thus the assumption of factorability of R was not violated (Tabachnick & Fidell, 2013). One-component was extracted from the PCA with direct Oblimin rotation. The component matrix indicated that the smallest loading was equal to .82 and the largest equal to .88. The Kaiser-Meyer-Olkin measure was significant ($p < .001$) with Bartlett’s sphericity equal to 781.13. Only one-component had eigenvalue more than 1 and explained 73.31% of the variance (Tabachnick & Fidell, 2013). A reliability test was conducted to check the internal consistency of the seven-items and Cronbach’s alpha score was .94. Accordingly, the seven-items were combined to form one-variable named Health Benefits.

In order to control the demographic characteristics, past experience in running events and frequency of training for the marathon in a weekly base, these concepts were recoded into dummy variables. Specifically, for demographic characteristics variables recoded as follows, gender (0 = male, 1 = female), age (0 = less than 40 years old, 1 = more than 40 years old), income (0 = less than 80,000 dollars per year, 1 = more than 80,000 dollars per year), education (0 = no college degree, 1 = college degree), marital status (0 = single, 1 = married) and race (0 = non-white, 1 = white). Also, the variable captured past experience recoded in (0 = first timer, 1 = repeated participant) and the variable captured training frequency per week recoded in (0 = less than 3 times, 1 = 3 or more times).

To test H_1 , H_2 , H_3 , H_4 and H_5 , two hierarchical regression analyses were developed. The first hierarchical regression analysis explored the predictive ability of self-esteem and health benefits on environmental concern when controlling for

demographic characteristics, past experience and frequency of exercise per week. The second hierarchical regression analysis investigated the effect of self-esteem, health benefits and environmental concern on donation intentions towards green initiatives, while controlling for runners' demographic characteristics, past experience and frequency of exercise per week.

5. Results

5.1. Sample, Descriptive Statistics and Assumptions

Results revealed that from the 103 respondents, the majority 52.4% were females ($n=54$). Marathon runners on average were 46 years old. The 89.3% were white ($n=92$), and the 78.6% of the sample population were married ($n=81$). The 96.1% of the respondents had run previously in a running event ($n=99$), and the 94.2% respondents ($n=97$) were training/running three or more times per week. Demographic characteristics from marathon runners are presented in [Table 1](#).

Descriptive statistics are presented in [Table 2](#), which illustrates the mean scores and standard deviations for the four-variables tested in the regression models and includes the Cronbach's alpha for self-esteem and health benefits.

Data was checked for the hierarchical regression analysis assumptions by calculating the sample size, multivariate normality and linearity, absence of outliers, multicollinearity and homoscedasticity (Hair et al., 2010). All assumptions were met. The least size of the sample is estimated according to the number of independent variables, so the statistical results can be reliable (Tabachnick & Fidell, 2013). Accordingly, the sample size was calculated based on the following formula: $N > 50 + 8m$ and the results showed that the criteria of this assumption were satisfied according to the three key independent variables (Tabachnick & Fidell, 2013). A Normal P-P plot of the regression standardized residuals showed a diagonal straight line and the histogram illustrated a bell curve of the residuals (Hair et al., 2010; Tabachnick & Fidell, 2013). There were no outliers based on acceptable Mahalanobis distances (Hair et al., 2010). Multicollinearity assumptions were checked and deemed acceptable through the scores for variance inflation factor (VIF), tolerance and the condition index (Tabachnick & Fidell, 2013). For both hierarchical regression analyses the VIF was ≤ 1.04 , the tolerance was $\geq .99$ and the condition index was equal to 20.72. Also, correlation coefficients (r) among the independent variables are presented in [Table 3](#). Homoscedasticity is the last assumption for regression analysis, and this assumption was met as the residuals presented a rectangular shape across the zero-point of the scatterplot (Hair et al., 2010).

5.2. Testing Hypotheses

Results of hierarchical regression analyses are presented in [Table 4](#). For the first hierarchical regression analysis after controlling for demographic characteristics, past experience and frequency of exercise per week, self-esteem and health benefits accounted for an additional 3.9% of variance ($\Delta R^2 = .04, p = .14$) in environmental concern, and thus there was no significant change in R^2 with ($F (2, 92) = 1.98, p = .14$). Self-esteem ($\beta = -.18, p = .10$) and health benefits ($\beta = .13, p = .21$) were

Table 1. Demographic characteristic of survey respondents.

Characteristic	n	%
Gender		
Male	49	47.6
Female	54	52.4
Total	103	100.0
Age <i>M</i> = 46.2 years old <i>SD</i> = 13.8	103	
Household income (\$)		
0–20,000	6	5.8
20,001–40,000	11	10.7
40,001–60,000	12	11.7
60,001–80,000	8	7.8
80,000 or more	66	64.1
Total	103	100.0
Marital Status		
Single	22	21.4
Married	81	78.6
Total	103	100.0
Education		
High School Graduate	1	1.0
Technical College	3	2.9
Some College	7	6.8
College Degree	51	49.5
Advance Degree	41	39.8
Total	103	100.0
Race		
Native American	1	1.0
Black	2	1.9
Hispanic	8	7.8
White	92	89.3
Total	103	100.0
Weekly exercise frequency		
less than 3-times	6	5.8
3-times or more	97	94.2
Total	103	100.0
Past marathon event experience		
First timers	4	3.9
Repeated marathon runners	99	96.1
Total	103	100.0

Note. *M* = mean. *SD* = standard deviation. For *N* = 103, the following variables were divided into two groups. For the age (*M* = 46.2, *SD* = 13.8) two variables created for runners under 40 years old (*n* = 33, 32.0%) and over 40 years old (*n* = 70, 68.0%), for household income with less than \$80,000 (*n* = 37, 35.9%) and with more than \$80,000 (*n* = 66, 64.1%), and for education with no college degree (*n* = 1, 1%) and with a college degree (*n* = 102, 99%), for race with (*n* = 92, 89.3%) whites and with (*n* = 11, 10.7%) non-whites; for weekly exercise frequency with (*n* = 6, 5.8%) trained less than 3-times and with (*n* = 97, 94.2%) trained more than 3-times.

Table 2. Descriptive statistics of key variables.

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Cronbach's Alpha
Donations Intentions towards Green Initiatives	103	5.10	1.12	-
Environmental Concern	103	5.10	1.16	-
Self-Esteem	103	3.50	1.34	.87
Health Benefits	103	5.92	.84	.92

Note. *N* = 103. 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree (neutral), 5 = somewhat agree, 6 = agree and 7 = strongly agree. *M* = mean. *SD* = standard deviation.

not held significant with environmental concern and thus H2 and H4 were not supported. For the second hierarchical regression analysis after controlling for demographic characteristics, past experience and frequency of exercise per week, self-esteem,

Table 3. Intercorrelations among key variables.

Variable	1	2	3	4
1. Donation Intentions Towards Green Initiatives	—			
2. Environmental Concern	.27**	—		
3. Self-Esteem	.22*	-.17*	—	
4. Health Benefits	.22*	.08	.11	—

Note. N = 103, *p < .05. **p < .01.

Table 4. Results of hierarchical regression analyses.

Variable Control	Dependent Variable					
	Environmental Concern			Donation Intentions		
	B(SE)	beta	p	B(SE)	beta	p
Independent Variables	Gender	.03(.24)	.01	.90	-.63(.22)	-.03**
	Age	-.28(.29)	-.11	.37	-.10(.26)	-.04
	Marital Status	-.06(.33)	-.02	.85	-.29(.30)	-.11
	Race	-.32(.40)	-.08	.43	.60(.37)	.17
	Income	.12(.29)	.05	.68	-.10(27)	-.04
	Education	-1.39(1.27)	-.12	.28	-.75(1.18)	-.07
	Past Experience	.32(62)	-.05	.61	.18(.57)	.03
	Frequency of Exercise per Week	-.02(.52)	-.004	.10	.38(.48)	.07
	Self-Esteem	-.15(.09)	-.18	.10	.16(.08)	.19*
	Health Benefits	.18(.14)	.13	.21	.27(.12)	.20*
	Environmental Concern	-	-	-	.30(.09)	.31***

Note. N = 103. *p < .05. **p < .01. ***p < .001.

health benefits and environmental concern accounted for an additional 3.9% of variance ($\Delta R^2 = .17$, $p < .001$) and this change in R^2 was significant with ($F (3, 91) = 7.05$, $p < .001$). Accordingly, self-esteem ($\beta = .19$, $p = .05$), health benefits ($\beta = .20$, $p = .03$) and environmental concern ($\beta = .31$, $p = .001$) all held significant with respect their positive effects on donation intentions. Therefore, H1, H3 and H5 were supported.

6. Discussion

The purpose of this study was to explore how self-esteem and health benefits motivation of marathon runners can affect their environmental concern and donation intentions towards green initiatives. Results revealed that self-esteem and health benefits do not affect environmental concern. In contrast when the research investigated the impact of self-esteem, health benefits and environmental concern there was a significant effect of all the aforementioned concepts on people's donation intentions towards green initiatives.

6.1. Theoretical Implications

The results of this study introduced important theoretical implications in three theoretical frameworks, the SDT, the PIT and the GMT. In H₁, environmental concern was found a significant predictor of donation intentions towards green initiatives. According to SDT a person's attitudes towards the environmental protection levels is matter of self-interest, knowledge, and strong belief that can drive them to engage in an environmentally friendly behavior (Deci et al., 2017; Gardner & Stern, 1996). As it was observed findings showed that marathon event participants with high levels of

environmental concern are strongly willing to contribute financially in green initiatives as observed in previous research (De Leeuw et al., 2015; Jin et al., 2015). Therefore, behavioral outcomes of marathon runners are shaped by the affective component tied to concern for the environment. And this finding confirms the hypothesis where individuals are concerned about the negative impacts their actions have on environmental quality and its resources (Deci et al., 2017; Gardner & Stern, 1996). As a result, it can be suggested that marathon runners' affective psychological aspects influence positively their perceptions towards donations for environmentally friendly interventions (Deci et al., 2017). This could be considered as a theoretical contribution to SDT because the essence of affection relate significantly on sport involvement outcomes (Deci & Ryan, 1985).

In accordance to H₂ and PIT, it can be suggested that marathon runners motivated to participate in an event due to self-esteem reasons, presented a negative interaction and slightly not significant with their concern towards environmental degradation (Maehr & Braskamp, 1986). These findings contrast with PIT, which suggests that people who invest and care for themselves, they will be also concerned for other related matters such as environmental protection (Filo et al., 2011; Maehr & Braskamp, 1986). However, according to findings of H₃ and PIT, marathon runners who invest in themselves and are seeking personal recognition is not affecting their willingness to donate toward green initiatives in a marathon running event context (Frumkin, 2001; Stern, 2000). Correspondingly, these findings do not support the proposition that people who invest in themselves, they will be willing to invest towards environmental protection.

By synthesizing GMT and PIT to support the proposition of H₄ and H₅, people who care about their health, they showed positive intentions to be more environmentally conscious and willing to donate towards green initiatives. Specifically, in support to H₅, marathon runners' health benefits significantly influenced their donation intentions towards green initiatives. These findings support the literature in GMT and PIT because they allow for a connection between personal motivations and relevant behaviors and intentions (Frumkin, 2001; Kilpatrick et al., 2005; Moller et al., 2006). Also, the fact that health is associated with positive intentions for environmental protection donations can indicate a new conceptual connection in sport management literature between health and the natural environment. Although, H₄ was not supported as health benefits did not affect environmental concern, it can be assumed that marathon runners associate their health risks with the quality of the natural environment. Therefore, a polluted natural environment can be the reason that runners willing to behave in a pro-environmental manner to improve the quality of the natural place that they train and compete for marathon races. This finding connects with literature in environmental health, which indicates that the quality of the natural environment affects individuals' environmental perceptions and their health (Frumkin, 2001; Kilpatrick et al., 2005; Pretty et al., 2017).

6.2. Practical Implications

Sport managers should consider that marathon runners motivated by self-esteem and health benefits represent a good fertile market for green initiatives and specifically

donations towards environmental causes. Thus, potential green initiatives for marathon events hosted by communities could be a good intervention to get event participants toward benefiting the environment. With respect the current literature and the findings of this study, marathon events accommodate marathon runners that mainly participate for health benefits and personal recognition. Consequently, this group of people is highly willing to make donations regarding protection of natural environment and its resources.

6.3. Limitations and Future Research

This study was delimited in exploring behavioral intentions of marathon runners and not actual pro-environmental behavior (e.g., De Leeuw et al., 2015). Thus, a longitudinal study with the same runners could provide how intentions translate to behaviors. Second, the donation intentions towards green initiatives focused on general pro-environmental initiatives and did not examine voluntary carbon footprint offsetting intentions precisely (Gardner & Stern, 1996). Finally, the number of respondents who completed the web-survey was 103, which renders a small study sample. However, the sample size represented participants who run full and half marathon races and was also deemed adequate for analysis. In addition, a study that would be beneficial for the global sport management literature is the research of sport event participants' voluntary carbon offsetting behaviors. According to this discovery and the support of marathon event market fertility towards green donations, this study can set the base for future research with regards the amount of money that sport event participants intend to provide to offset their carbon footprint.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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References

- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior*, 4(1), 19–43. doi:[10.1146/annurev-orgpsych-032516-113108](https://doi.org/10.1146/annurev-orgpsych-032516-113108)
- De Leeuw, A., Valois, P., Ajzen, I., & Schmidt, P. (2015). Using the theory of planned behavior to identify key beliefs underlying pro-environmental behavior in high-school students: Implications for educational interventions. *Journal of Environmental Psychology*, 42, 128–138. <https://doi.org/10.1016/j.jenvp.2015.03.005> doi:[10.1016/j.jenvp.2015.03.005](https://doi.org/10.1016/j.jenvp.2015.03.005)
- De Vries, S., Verheij, R. A., Groenewegen, P. P., & Spreeuwenberg, P. (2003). Natural environments-healthy environments? An exploratory analysis of the relationship between green-space and health. *Environment and Planning A*, 35(10), 1717–1731. doi:[10.1068/a35111](https://doi.org/10.1068/a35111)
- Du Preez, E. A., & Heath, E. T. (2016). Determining the influence of the social versus physical context on environmentally responsible behavior among cycling spectators. *Journal of Sport & Tourism*, 20(2), 123–143. doi:[10.1080/14775085.2016.1227274](https://doi.org/10.1080/14775085.2016.1227274)
- Filo, K., Funk, D., & O'Brien, D. (2011). Examining motivation for charity sport event participation: A comparison of recreation-based and charity-based motives. *Journal of Sport Management*, 43(4), 491–518. doi:[10.1080/00222216.2011.11950247](https://doi.org/10.1080/00222216.2011.11950247)
- Frumkin, H. (2001). Beyond toxicity: Human health and the natural environment. *American Journal of Preventive Medicine*, 20(3), 234–240.
- Funk, D., Jordan, J., Ridinger, L., & Kaplanidou, K. (2011). Capacity of mass participant sport events for the development of activity commitment and future exercise intention. *Leisure Sciences*, 33(3), 250–268. doi:[10.1080/01490400.2011.564926](https://doi.org/10.1080/01490400.2011.564926)
- Gardner, G. T., & Stern, P. C. (1996). *Environmental problems and human behavior*. Needham Heights, MA, US: Allyn & Bacon.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis*. (7th Ed.). Upper Saddle River, NJ: Prentice Hall.
- Israel, D. K. (2007). Charitable donations: Evidence of demand for environmental protection?. *International Advances in Economic Research*, 13(2), 171–182. doi:[10.1007/s11294-007-9080-4](https://doi.org/10.1007/s11294-007-9080-4)
- Jin, L., Zhang, J. J., Pitts, B. G., Connaughton, D., Swisher, M., Holland, S., & Spengler, J. O. (2015). Factors associated with an athletic donor's intention to donate to green stadium initiatives of a collegiate athletic program. *International Journal of Event Management Research*, 10(1), 37–62.
- Kaplanidou, K., Jordan, J. S., Funk, D., & Ridinger, L. L. (2012). Recurring sport events and destination image perceptions: Impact on active sport tourist behavioral intentions and place attachment. *Journal of Sport Management*, 26(3), 237–248. doi:[10.1123/jsm.26.3.237](https://doi.org/10.1123/jsm.26.3.237)
- Kilpatrick, M., Hebert, E., & Bartholomew, J. (2005). College students' motivation for physical activity: Differentiating men's and women's motives for sport participation and exercise. *Journal of American College Health*, 54(2), 87–94. doi:[10.3200/JACH.54.2.87-94](https://doi.org/10.3200/JACH.54.2.87-94)
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239–260.
- McInerney, D. M. (2008). Personal investment, culture and learning: Insights into school achievement across Anglo, Aboriginal, Asian and Lebanese students in Australia. *International Journal of Psychology*, 43(5), 870–879. doi:[10.1080/00207590701836364](https://doi.org/10.1080/00207590701836364)
- Maehr, M. L., & Braskamp, L. A. (1986). *The motivation factor: A theory of personal investment*. Lexington, MA, England: Lexington Books/DC Heath and Com.
- Mann, M. E., Lloyd, E. A., & Oreskes, N. (2017). Assessing climate change impacts on extreme weather events: The case for an alternative (Bayesian) approach. *Climatic Change*, 144(2), 131–142. doi:[10.1007/s10584-017-2048-3](https://doi.org/10.1007/s10584-017-2048-3)

- Markland, D., & Ingledew, D. (1997). The measurement of exercise motives: Factorial validity and invariance across gender of a revised exercise motivations inventory. *British Journal of Health Psychology*, 2(4), 361–376. doi:10.1111/j.2044-8287.1997.tb00549.x
- Moller, A. C., Ryan, R. M., & Deci, E. L. (2006). Self-determination theory and public policy: Improving the quality of consumer decisions without using coercion. *Journal of Public Policy & Marketing*, 25(1), 104–116. doi:10.1509/jppm.25.1.104
- Oskamp, S., Harrington, M. J., Edwards, T. C., Sherwood, D. L., Okuda, S. M., & Swanson, D. C. (1991). Factors influencing household recycling behavior. *Environment and Behavior*, 23(4), 494–519. doi:10.1177/0013916591234005
- Pretty, J., Rogerson, M., & Barton, J. (2017). Green mind theory: How brain-body-behaviour links into natural and social environments for healthy habits. *International Journal of Environmental Research and Public Health*, 14(7), 706.
- Ridinger, L. L., Funk, D. C., Jordan, J. S., & Kaplanidou, K. (2012). Marathons for the masses: Exploring the role of negotiation-efficacy and involvement on running commitment. *Journal of Leisure Research*, 44(2), 155–178. <https://doi.org/10.1080/00222216.2012.11950260> doi:10.1080/00222216.2012.11950260
- Running USA. (2018). Retrieved from <http://www.runningusa.org/>
- Shipway, R., & Holloway, I. (2010). Running free: Embracing a healthy lifestyle through distance running. *Perspectives in Public Health*, 130(6), 270–276. doi:10.1177/1757913910379191
- Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407–424. doi:10.1111/0022-4537.00175
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th Ed.). Northridge, CA: Pearson Education.
- Thompson, S. C., & Barton, M. A. (1994). Eco-centric and anthropocentric attitudes toward the environment. *Journal of Environmental Psychology*, 14(2), 149–157. doi:10.1016/S0272-4944(05)80168-9
- Triantafyllidis, S., Ries, R. J., & Kaplanidou, K. K. (2018). Carbon dioxide emissions of spectators' transportation in collegiate sporting events: Comparing on-campus and off-campus stadium locations. *Sustainability*, 10(1), 241. <http://dx.doi.org/10.3390/su10010241> doi:10.3390/su10010241
- Walker, M. (2013). Does green management matter for donation intentions? The influence of environmental consciousness and environmental importance. *Management Decision*, 51(8), 1716–1732. doi:10.1108/MD-10-2012-0732
- Wicker, P. (2017). The carbon footprint of active sport tourists: An empirical analysis of skiers and boarders. *Journal of Sport & Tourism*, 22(2), 1–21. <https://doi.org/10.1080/14775085.2017.1313706>