# The Impact of Marathon Events on Charitable Giving

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**Abstract**

This research tries to study the factors that affect donors' contributions by using marathon events. In this regard, it tries to find out the relationship between the distance run, event size, and type of participants with the amount of donations being given out. Quantitative research is done in conducting this research, wherein 78 participants were obtained through an online survey. From the analysis, larger-sized marathon events significantly enhance donation amount, while the variables distance run and gender do not have any substantial relationship to the amount donated. These findings underline the importance of event scale in fostering donor engagement and point to the need for future research in the areas of fitness philanthropy and corporate sponsorship in charitable events.

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**Keywords:** Marathon events, Charitable giving, Donation behaviour, Donation-based Crowdfunding, Event size, Fitness philanthropy.

# INTRODUCTION

Running is either the most popular form or one of the most popular forms of physical activity worldwide and is an easily accessible exercise as there are minimal equipment requirements (12). Running globally has taken off significantly in the last decade, growing about 57% in popularity. And though 2020 was met with lockdowns and restrictions, it didn't stop people from getting their miles on. This is why outdoor activities like running is the biggest fitness trend of 2021 and 28.76% of runners began during the pandemic. (32)

Starting in the mid-80s, people and charities have used sports to raise funds for diverse purposes, such as supporting individual athletes, building sports infrastructure, and funding social or health-related causes like cancer research or disaster relief. These events have become part of a larger movement called "fitness philanthropy."(41)

The number of people running marathons has grown a lot in the last few decades, changing from a special activity to something very common. Studies show a few reasons for this change. One big reason is that running a marathon has become more open to everyone, which means more people from different backgrounds are taking part. Recent studies have found that the "running boom" number two is causing marathons to be more open to a broader part of the population. (12) The rise in marathon popularity also correlates with more media coverage of the events and the growing number of organized events worldwide. The more visibility the sport gets, the more it will encourage people. (36).

Marathon races are highly effective fundraising platforms, often supporting a diverse array of causes, including healthcare initiatives, community development projects, environmental restoration, and infrastructure improvements. The TCS London Marathon, for instance, has facilitated over £1 billion in donations, with funds benefiting charities focused on health research, children's welfare, and global humanitarian efforts. (Enthuse)

People have different reasons for running a marathon. According to a study by K. Jeffery (2010), those who run in charity marathons are often motivated by the wish to make a real difference in other people's lives. A marathon highlights how fitness philanthropy points to the changing nature of sport, leisure, and physical activity, whereby fundraising is a key motivation for participation. (29)(20)

Next to the running trend, another trend is also emerging within the fundraising industry. An increasingly popular means to generate funds for nonprofit organizations (NPOs) to charities rely on online donation platforms that allow donation-based crowdfunding (e.g., *gofundme.com* or *betterplace.org*) . These platforms offer both existing and potential donors the option to choose from a range of different NPOs or projects hosted by NPOs and donate to them (22). Donation platforms are attractive for individuals and organizations because they simplify the fundraising process securely and efficiently. (9) Donation-based crowdfunding is characterized by low entry barriers, simple operations, and a high cost-benefit ratio. The low entry barriers help with gathering more people to donate. (10)

Despite participation in sports-based events growing in popularity, little research has been done about the emergence of fitness philanthropy and how the characteristics of a marathon event influence the donation behaviour from donors. Therefore my research question is stated as follows: How do the characteristics of marathon events such as distance, size, and participant demographics influence donor behavior in charitable crowdfunding? Some previous studies specify the reasons that make charity event marathons effective because of media exposure and corporate sponsorship (38)(5), and such regard has not been made about personal narratives and their significance to social welfare on the part of the donors. Potential motivations most discussed in current literature are those such as the warm-glow effect (2) and very few works pay attention to how stories of runners during the campaigns developed during training practice influence donations. This thesis seeks to fill this gap by reanalyzing the effects of social distances and event size on donor interaction. This is one of the reasons I wanted to study social distance.

## LITERATURE REVIEW

In the last twenty years, raising money online for non-profit organizations has grown very quickly, making the system more complicated. Non-profits use websites, social media, and online fundraising platforms to collect money over the internet. It's thought that about 10% of all donations to charities come from online fundraising. Over the last three years, these online donations have gone up by about 10%. (27). Most donations are done through online payment methods. The Global Non-Governmental Organization Technology Report from 2019 says that 93% of NGOs around the world take online donations using ways like credit cards, direct debit, PayPal, digital wallets, and even Bitcoin. (25). The transition of non-profits to accepting donations online has significantly increased their reach and enabled people to support the issues they care about from anywhere in the world.(34) Given this it is an interesting topic to research.

Crowdfunding is a method of raising capital for enterprises or projects by soliciting modest contributions from a large number of individuals, typically via websites. This lets people, groups, and companies get the money they need without depending on banks or investors. There are different kinds of crowdfunding, like donation-based, reward-based, equity-based, and debt-based, which differ in what donors get in return. Crowdfunding is a new way to raise money that uses the help of many people to support projects that might not get funding through usual methods. (3). In the area of fundraising, crowdfunding has simplified the process of collecting money for worthy causes by integrating information gathering, donation transactions, and interactive communication into one organized system.(4).

Donation-based crowdfunding is a model that sources funds for a project by asking a large number of contributors to individually donate a small amount. Depending on the amount donated, backers may receive token prizes in exchange. However, contributors may not get anything in return for minor contributions. (3). Nonetheless, donation-based crowdfunding has proven highly effective for social causes where contributors prioritize altruism and emotional connection over financial returns (18).

### Intrinsic motivation to donate

Marathon events fall under the broader umbrella of fitness philanthropy, defined as consumer-oriented philanthropic solutions to health or social problems through physical activity-based events such as fun runs, bike rides, long swims, epic hikes, and multi-sport challenges in which participants seek to raise money and awareness for various causes (28). Because marathon fundraising activities offer a special blend of physical difficulty, individual dedication, and high visibility, they have proven to be especially successful in raising money. According to research, contributors' aspirations for social good and two self-enhancement are highly piqued by these kinds of charity events, since attendees frequently match their objectives with charitable causes. (7).

In particular, marathons provide a significant physical challenge that fosters a sense of success and inspires runners to seek out support from friends, family, and social media. Higher donation amounts are typically the result of this increased sense of personal involvement. Participating in philanthropic fitness-related activities, such as completing a marathon and make monetary donations for marathons, has been associated with increased life satisfaction. Dolan et al. (2014) found that the UK Office of National Statistics (ONS), a gauge of the country's well-being, found a link between increased life satisfaction and physical activity. (14). Recurring participation and a lifetime commitment to charitable organizations might be encouraged by the sense of accomplishment that comes from finishing a marathon while simultaneously earning money for charity (33).

This research will primarily focus on the donation behavior for charity within the context of marathon events. Studies have confirmed that, compared with commercial crowdfunding, charitable crowdfunding presents a unique situation (17). It relies more on donors' emotional responses, such as sympathy for the cause, and their social motivation, rather than the motivation of economic reward (external motivation). Specifically, those who support nonprofit projects through crowdfunding are motivated by sympathy and empathy for the cause, guilt for not contributing, and a continuously strengthened identity and social status (11; 24). Social identity and the satisfaction of being involved as a philanthropist are key motivations for participation.

In addition to the urge to conform to social norms or faithfully accept requests for assistance, giving to charity is driven by interior factors like generosity. (13). The warm-glow effect, which happens when donors feel good about themselves or satisfied after donating, is another well-researched motivator in marathon fundraising circumstances. (2). It would intensify the warm-glow effect and create a mutually beneficial relationship between the runner and the giver if marathon runners, in particular, acknowledged donors in public.

The perceived emotional or relational closeness between donors and the cause or people receiving their gift is known as social distance, and it is an important element in determining donation behavior. Donors are inclined to contribute more when social distance diminishes, i.e., when they feel more connected to the beneficiary or cause. Be-

cause it fosters empathy and a sense of personal engagement in the project, this intimacy improves the chance of donations (9; 1). Both social distance and increased donations from friends, family, and social networks are advantages of marathon activities. People frequently talk about their individual giving experiences and the reasons they choose to support a specific charity(6).

The "Martyrdom Effect" posits that individuals are more inclined to donate to causes when the act of donating is associated with significant personal effort or pain, such as running a marathon. This effect leverages the perception that such activities signal genuine commitment to the cause, making the donation more meaningful both to the donor and the recipient. (26)

People tend to donate to causes where the effort or pain is perceived as directly connected to the mission of the organization or its beneficiaries. For instance, donations might be driven toward health-related causes, such as cancer research, if the effort (like running a marathon) symbolizes resilience or endurance akin to what patients experience. Similarly, disaster relief funds might see increased donations if donors engage in physically demanding volunteer work like building shelters, suggesting solidarity with those in distress.

In essence, the Martyrdom Effect not only increases the perceived value of the donation but also channels support to causes where the donor's effort resonates symbolically with the mission or needs of the cause.

the link between running distance and charity fundraising is well-supported by the Martyrdom Effect, which suggests that people are more inclined to donate when they perceive a significant personal sacrifice in the effort. Completing a full marathon demands a greater level of physical endurance and commitment than a half marathon, which can evoke empathy and a sense of obligation among potential donors. This perceived dedication aligns with intrinsic motivation, where the runner's internal drive enhances the perception of genuine sacrifice for the cause. Concluding the research, the first hypothesis can be formed.

**Hypothesis 1:** *Distance running significantly influences donation amounts within the context of marathon events.*

**Extrinsic motivation to donate**

Donation-based crowdfunding is a common practice in charitable sporting events. Charitable organizations benefit from these activities since they not only encourage healthy, active lifestyles but also work as a means of fundraising and building the charity's reputation(23). Participating in large-scale participatory sports activities that raise money for particular charity causes is considered fitness philanthropy. Fundraising has become an essential component of these events.

Another remarkable factor involves the self-image impression of the free rider, while contributing or while deciding on whether to be a contributor. This is because of the carriers of funds. The donors will provide financial capital with the expectation that it will be useful in the short term. All the research works show that people are willing to work in support of a certain cause if only they can be in a position to see the impact of their efforts. (13). For example, marathon events make use of transparency by displaying how the money is utilized, thereby enhancing donor involvement. Many platforms provide real-time data on the runner's progress, such as tracking their distance and pace, while simultaneously showcasing how the funds raised contribute to the cause. For instance, a marathon supporting cancer research might display the percentage of funds allocated toward purchasing lab equipment or supporting clinical trials (RunningShorts.com). Similarly, disaster relief marathons may share updates on how donations are being used to deliver emergency supplies or rebuild homes. These efforts are often supported by digital tools, like interactive dashboards or apps, offering dynamic insights and fostering trust through transparent impact reporting (NonProfit-Fundraising.com) (5). Building on this, my second hypothesis can be formed namely: that larger marathon events are more effective in raising money per person then smaller marathons.

This is the case because larger marathon events often emphasize transparency in more sophisticated and extreme ways. Think for example about live tracking systems that allow donors to see exactly where everyone is. These systems can track both the runner and the cumulative donation amount creating more engagement.(38). This increased visibility helps build trust for the donors. Larger events draw together increased technology and transparency, which allow the donors to connect deeper with the cause. As larger events allow donors to see not only the progress of the runner but also the cumulative donations, it provides a clearer sense of how each contribution adds to a collective goal. The shared responsibility and achievement create one feeling that motivates the donors to be more active. The high level of transparency encourages a stronger connection with the cause, and that is why charity organizations for example the TCS London Marathon have realised that they get more donations when they give detailed reports to beneficiaries on how the cash is used.(39) This gives the donors a Fellows feeling ("sympathy and fellowship existing between people based on shared experiences or feelings") since they get to know how the cash is being spent. For example, research on charity: water discovered that repeating donations were higher when donors received the geographical location of the

exact wells they funded through construction, showing the impact of accountability in sponsorship (19).

**Hypothesis 2**: *Larger events generate higher donations per person*

Shier and Handy (2012) discovered that social influence has a major effect on people's inclination to donate. When others give, people are more likely to follow suit. Additionally, demographic factors like gender and organizational views have an impact on giving behavior(8). Women seem to interact more with contribution requests during marathon events, which may be explained by research showing that they are more receptive to emotional appeals and causes that benefit the community (37). Building on this, Sisco and Weber (2019) discovered that, according to an examination of online donation behavior on the GoFundMe site, women typically connect with donation appeals more than males do.(37). Wang and Fesenmaier's study also revealed that technical elements are important in determining donation behavior.(40) These include tool efficacy, quality control, donor status, and expectations(31). Research also shows that gender differences influence donation behavior, with women typically contributing more to emotional causes (8). At last, larger marathon events attract more donations due to their greater visibility and prestige, as demonstrated in studies on event size and social influence (30). Given the research, my last hypothesis is that women are more likely to donate more than men.

**Hypothesis 3**: *Within the context of marathon events, women are more likely to donate to charity than men.*

The rise in contributions is also largely attributable to corporate matching programs. Through these campaigns, corporations can nearly double the amount donated to the charity by matching employee contributions. (21). Corporate social responsibility (CSR) initiatives, in particular sponsoring charitable events could improve a company's brand awareness and therefore have more donations. For instance, when big corporations like Nike sponsor marathons. When doing this, it raises their popularity and this motivates participants to raise more funds for charity. (42). These sponsorships have impacted increasing runners' efforts to support charitable endeavors (35).

# RESEARCH METHODOLOGY

This chapter outlines the methodology to explore the relationship between marathon event characteristics and the willingness to donate. A quantitative approach is chosen, combining surveys and statistical analysis to provide insight into the factors that influence donation behavior. This chapter gives the research design, sampling strategy, data collection methods, statistical tools used, and the ethical considerations conducted.

## Research design

A cross-sectional survey design was chosen to gather data from individuals who participated in marathon events and donated to charitable causes and people who did not. This design allows for data collection at a single point in time, which is appropriate for analyzing the relationship between marathon characteristics (e.g., distance run, event size) and donation behavior. The quantitative approach was chosen as it enables the measurement of variables and the identification of significant trends through statistical analysis. Surveys were distributed online to collect responses related to participant demographics and donation behavior.

## Quantitative approach

A quantitative methodology allows for collecting numerical data. This can be analyzed to determine trends and relationships between marathon characteristics and donation behavior. This approach is suitable for examining the influence of variables such as the distance run, event size, and demographics on donation amounts. By quantifying these variables, This research will offer statistical insights into how the characteristics of a marathon influence donor willingness to donate.

## Sampling strategy

A combination of purposive and convenience sampling was employed to select participants, targeting individuals who had participated in marathon events and contributed to charitable causes associated with these events. The survey was distributed across a diverse range of participants, including those from major international events (such as the TCS London Marathon) and smaller, local marathons. Purposive sampling is a non-probability method that selects participants based on specific characteristics relevant to the research (Etikan, Musa, & Alkassim, 2016), (16). This research mainly involves people who are interested or participated in a marathon event. There are also people who filled in the survey that did not participate or have an affection with marathon events but the main respondents od have an affection with Convenience sampling, on the other hand, involves selecting participants who are easily accessible to the researcher (Etikan, Musa, & Alkassim, 2016) (16).

## Data collection

Data was collected through an online survey. This survey was distributed via email, and social media. This approach

enabled the collection of a geographically diverse sample and ensured accessibility for all participants. The survey included questions designed to gather information on:

- Demographics (e.g., age, gender, income level)
- Marathon participation (e.g., distance run, number of events participated in)
- Donation behavior (e.g., amount donated, frequency of donations)
- Perceptions of event experience (e.g., satisfaction with the event, motivation to participate)

## Statistical tools

The main tool for data analysis is ordinal regression analysis. See appendix 6.2 for more information about my ordinal values. This will allow me to examine the relationship between various variables and the impact on donation behavior. These variables are distance run, event size, participants' demographics, and age. The ordinal regression model is structured as follows:

$$\begin{aligned}\log\left(\frac{P(Y \leq j)}{P(Y > j)}\right) = \beta_0^{(j)} \\ + \beta_1(\text{Marathon\_Distance}) \\ + \beta_2(\text{Gender}) \\ + \beta_3(\text{Event\_Size})\end{aligned} \tag{1}$$

- $Y$ **(Donor Contribution)**
  This is the dependent variable, representing the categories of donor contribution. It is an ordinal variable, meaning it has a natural order (e.g., low, medium, high).
  - $Y = 1$ for Less than \$50
  - $Y = 2$ for \$50-\$100
  - $Y = 3$ for \$100-\$200
  - $Y = 4$ for More than \$200

  In the equation, $P(Y \leq j)$ and $P(Y > j)$ represent the probabilities of falling into or above certain categories, where $j$ is one of the categories of donor contribution.

  This was asked in question 8 of my questionnaire.

- $X_1$ **(Marathon_Distance)**
  This is the independent variable representing the distance run in the marathon, mapped to an ordinal scale:
  - $X_1 = 1$ for Less than 10 km
  - $X_1 = 2$ for 10-21 km (Half marathon)
  - $X_1 = 3$ for 21-42 km (Full marathon)
  - $X_1 = 4$ for More than 42 km

  This was asked in question 10 of my questionnaire.

- $X_2$ **(Event_Size)**
  This is the independent variable representing the size of the marathon event, mapped to ordinal categories:
  - $X_2 = 1$ for Less than 500 participants
  - $X_2 = 2$ for 500-999 participants
  - $X_2 = 3$ for 1000-4999 participants
  - $X_2 = 4$ for 5000-9999 participants
  - $X_2 = 5$ for 10,000 or more participants

  This was asked in question 19 of my questionnaire.

- $X_3$ **(Gender)**
  This is the independent variable representing gender, mapped to numeric codes:
  - $X_3 = 0$ for Male
  - $X_3 = 1$ for Female

  This was asked in question 2 of my questionnaire. I only had male and female respondents, which is why the options are limited to 0 or 1.

## Use of dummy variables in ordinal regression analysis

I will use dummy variables. This was used because the predictors such as gender and size of the event do not have intrinsic numeric values. Dummy variables allow such categories to be changed into ordinal numeric forms. For instance, gender was rated on a dummy variable with 0 being male and 1 being female, thus the model could test for any differences in the amount donated between males and females.

Event size was an ordinal scale representing increased size categories, reflecting the hypothesis that larger events may correlate with higher donation behavior. Using such dummy variables allows us to understand in greater detail each categorical variable's unique influence on donation outcomes while maintaining the integrity of the ordinal regression model and ensuring each factor's unique contribution to donation behavior is fairly represented.

## Ethical considerations

This study follows all ethical guidelines for research set by the University of Twente. Participants will provide informed consent prior to participation, and all responses will remain anonymous. Data will be securely stored and used solely for this research, in compliance with legal requirements.

## Limitations

The study's limitations include a reliance on self-reported data, which may introduce biases such as social desirability, where participants overstate positive behaviors like donation amounts, or recall bias, which can affect the accuracy of reported motivations or actions. Additionally, the use of convenience sampling restricts the generalizability of findings, as the sample may not accurately represent the broader population of marathon participants and donors. Another methodological issue emerged in the questionnaire design: certain questions were conditional upon a "yes" response to preceding items, yet more responses were recorded than expected. This discrepancy suggests some respondents bypassed the intended question flow, potentially due to survey structure or misunderstanding. This inconsistency introduces a margin of error, potentially affecting the accuracy of insights drawn from specific conditional responses. Despite these limitations, the study is anticipated to yield valuable insights into how characteristics of marathon events influence donation behaviors, contributing useful information to the field.

# RESULTS

## Introduction

This chapter presents the findings from the survey conducted. The research explores the relationship between marathon event characteristics and donation behavior. Specifically, the study aims to address how factors such as running distance, gender, and the size of the event influence donation patterns.

## Descriptive statistics

### *Participants overview*

A total of 76 individuals participated in the survey. The pie chart highlights the gender distribution, revealing a slightly higher proportion of male participants compared to females. Approximately 66% of the participants are male (labeled as 0, see Appendix 6.2), while around 34% are female.

Figure 1 represents the distribution of age groups using an ordinal scale, where each group has been assigned a corresponding numerical value for easier analysis. The ordinal scale is structured as follows:

- 1: Ages 18–24
- 2: Ages 25–34
- 3: Ages 35–44
- 4: Ages 45–54
- 5: Ages 55–64
- 6: Ages 65 and above

The histogram shows that the majority of participants fall within the youngest age group (18-24), represented by the tallest bar (value 1). This is completely normal because most of my friends are in this age group. There is a noticeable drop in the number of participants in the next age group (25-34), followed by a relatively even distribution across the older age groups (35-64). The frequency of participants within each age range provides an insightful overview of the demographic composition of the survey.

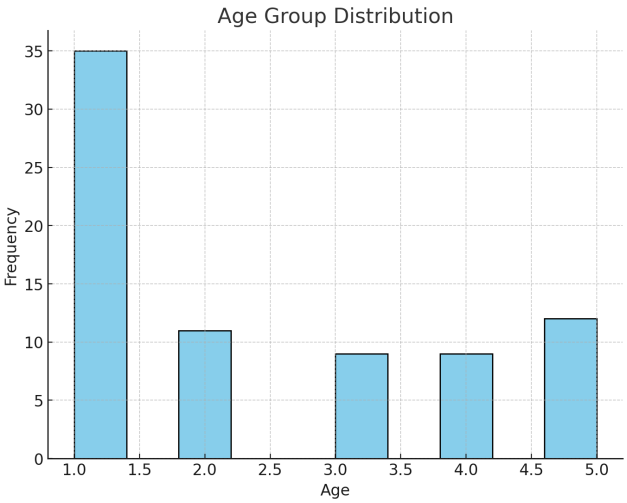


**Figure 1: Age Distribution**

This bar plot here below illustrates the distribution of marathon events by Event Size, categorized on a scale from 1 to 5. The x-axis represents the event size categories, where each number corresponds to a specific range of participant counts. The y-axis shows the count of events within each size category.

From the plot, we observe that the largest number of events falls under category 4, indicating that most marathon events attracted between 5,000 and 9,999 participants. This high frequency suggests that mid-to-large-sized events are prevalent in the dataset, potentially offering a more significant visibility impact and fundraising potential due to higher participant numbers.

On the other hand, Event Size categories 1 and 2 show relatively low counts, meaning there are fewer small-scale

events (under 1,000 participants). This could imply that smaller events are either less common or less popular among donors and organizers in this context. The second most frequent category is 5, encompassing the largest events with 10,000 or more participants, which likely benefits from high visibility and may attract substantial donations.

Overall, this distribution highlights that the data is skewed toward mid- to large-sized events, with a notable concentration in category 4. This trend may have implications for the study's analysis, particularly when exploring how event size impacts donation behaviors.

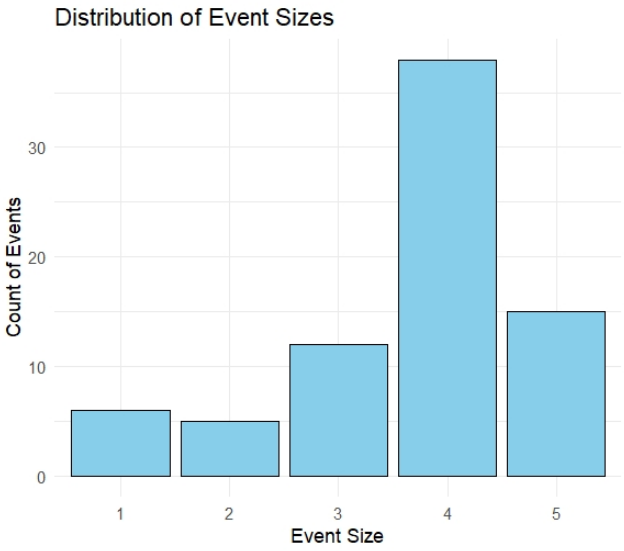


**Figure 2: Event size distribution**

## Multicollinearity

Multicollinearity in a regression model occurs when two or more independent variables can provide a very good linear prediction of the others. The result can be inflated standard errors of the coefficient estimates, making it difficult to determine the individual effect of each predictor on the dependent variable. Essentially, detecting multicollinearity is crucial because it affects the reliability of the model's interpretation.

One of the most common methods for checking multicollinearity is by measuring the Variance Inflation Factor (VIF). The rule of thumb for a high VIF value is typically greater than 10, though many researchers use a threshold of 5 as a more conservative estimate. The lower the VIF value, the less multicollinearity is present.

| Variable | VIF (Variance Inflation Factor) | Interpretation |
|---|---|---|
| Marathon_Distance_num | 1.786 | No multicollinearity issue (VIF < 5) |
| Gender | 1.038 | No multicollinearity issue (VIF < 5) |
| Event_Size_num | 1.736 | No multicollinearity issue (VIF < 5) |

**Figure 3: Outcome of multicollinearity analysis in R Studio**

From the VIFs in my R output, it can be seen that all values are below the generally accepted threshold of 5: *Marathon_Distance_num* (1.786), *Gender* (1.038), and *Event_Size_num* (1.736). This suggests that there is no significant problem of multicollinearity in the model. Hence, the independent variables in the linear regression model do not cause multicollinearity issues, allowing their partial effects on donor contribution to be estimated with reliability.

## Main findings

## Hypothesis 1: distance run & donation behavior

We used ordinal regression analysis to see the relationship between the distance run and the amount donated. The coefficient for distance run was. Below is the outcome of the statistical ordinal regression. Keep in mind that this is under the assumption that the marathon event has already taken place.

| | Predictor | Estimate | Std. Error | t value | p value | Significance |
|---|---|---|---|---|---|---|
| 0 | Marathon_Distance2 | -1.2689 | 0.7942 | -1.5977 | 0.1101 | |
| 1 | Marathon_Distance3 | -1.6812 | 1.0071 | -1.6693 | 0.0951 | . |
| 2 | Gender1 | 0.3671 | 0.4959 | 0.7798 | 0.436 | |
| 3 | Event_Size2 | 2.022 | 1.2562 | 1.6096 | 0.1074 | |
| 4 | Event_Size3 | 2.0573 | 1.1294 | 1.8215 | 0.0685 | |
| 5 | Event_Size4 | 2.7199 | 1.1918 | 2.2822 | 0.0225 | * |
| 6 | Event_Size5 | 3.1096 | 1.3352 | 2.3289 | 0.0199 | * |

**Figure 4: Outcome ordinal regression analysis (R studio)**

In this table, significance levels are indicated by stars next to the p-values:

- * ($p < 0.05$): This indicates that the predictor is statistically significant at the 5% level, suggesting there is a strong likelihood that this variable has an effect on the outcome variable. Here, `Event_Size4` and `Event_Size5` have p-values less than 0.05, marked with one star (*), indicating that these larger event sizes are significantly associated with higher donation levels.
- . ($p < 0.1$): This represents a marginal significance at the 10% level, indicating a trend toward significance. While not conventionally strong evidence, it suggests the predictor may have some effect

that could be important to consider. In this case, `Marathon_Distance3` and `Event_Size3` are marked with a dot (.), showing a potential trend toward significance.

To test whether marathon distance affects donation amounts, the model provides coefficients for two levels of distance relative to the baseline. For Marathon_Distance2, the t-value is -1.5977 and the p-value is 0.1101, which exceeds the 0.05 significance threshold. This indicates that the difference in donation amounts for this distance level is not statistically significant compared to the baseline as you can see in the last column of the table in Figure 4. Similarly, Marathon_Distance3 has a t-value of -1.6693 and a p-value of 0.0951.

Based on these results, we do not have sufficient evidence to reject $H_0$. Therefore, we conclude that marathon distance does not have a significant effect on donation amounts within this model.

### Hypothesis 2: marathon size & donation amount

To investigate whether event size affects donation amounts, we examine the coefficients for various levels of Event_Size. For Event_Size2, the t-value is 1.6096 and the p-value is 0.1074, which is above the 0.05 threshold, indicating no significant effect at this level. Moving to Event_Size3, thet-value is 1.8215 with a p-value of 0.0685, suggesting borderline significance at the 10% level, though not at the conventional 5% level. However, for Event_Size4, the t-value is 2.2822 with a p-value of 0.0225, which is statistically significant at the 5% level. This suggests that events of this size are associated with higher donation amounts per person compared to the baseline. Additionally, Event_Size5 has a t-value of 2.3289 and a p-value of 0.0199, confirming a significant positive effect for the largest event size category.

For Event_Size4 andEvent_Size5, we reject $H_0$ and conclude that these larger event sizes are significantly associated with increased donation amounts. However, for Event_Size2 and Event_Size3, there is insufficient evidence to claim a significant effect at the 5% level, though Event_Size3 shows a weak effect at a 10% level.

### Hypothesis 3: gender & donation amount

The model includes a coefficient for Gender to examine differences in donation amounts between men and women. The effect of Gender is represented by Gender1, with a t-value of 0.7799 and a p-value of 0.4355. This p-value is far above the standard 0.05 threshold, indicating no significant difference in donation amounts between men and women. We conclude that there is no significant difference in donation amounts between men and women within this model.

## CONCLUSION AND RECOMMENDATION

### Conclusion

The findings of this study contribute to the understanding of donor behavior in the context of marathon events, specifically how the size of an event, distance run, and participant demographics influence donation amounts.

One of the key findings was the positive significant relationship between the size of the event and the donations, with larger events attracting a higher donation per person. This supports earlier research suggesting that the visibility and prestige of mega-events are crucial in motivating contributions; for example, media exposure and corporate sponsorship, as referred to in the introduction. However, it somewhat contrasts with studies that stressed personal connections or individual narratives, such as the warm-glow effect or the Martyrdom Effect. It would suggest that, in this context at least, the scale of the event is the more powerful motivator.

Contrary to expectations and some literature suggesting the opposite, no significant relationship with the distance run was found in the current study. Whereas the Martyrdom Effect would imply that the greater the personal effort an individual running a full marathon, for example, more donations are evoked, donors may consider the cause or event scale more than the runner's physical sacrifice. This gives an indication of the limit to which the Martyrdom Effect can be generalized across contexts.

Similarly, the lack of a significant gender difference in donation amounts challenges prior studies that suggested women are more likely to donate due to emotional appeals or community-oriented causes. This could mean that, at least in marathon events, factors such as visibility and organization of the event are stronger than demographic influences like gender.

These findings suggest that, although some established theories, such as visibility and transparency, retain their relevance, others, such as personal narratives and the Martyrdom Effect, have limited applicability based on event context. Further research should investigate how these factors may be interacting, especially in various cultural or organizational settings.

## Limitations

Several limitations of this study are in regard to the self-reported measure, which can easily be subject to biased reporting due to the over- or underestimation of donation behavior. Furthermore, this study was primarily based on a convenience sample, and thus generalization to a wider population is threatened. Future studies will, therefore, be in a position to enhance the randomization and representation of samples for stronger conclusions. Another area for further investigation might be the impact of personal narratives or participant stories in fundraising, because such narratives, when posted on social media platforms, could foster closer emotional bonds between donors and participants, potentially increasing donation levels. While this study did not find any significant effects of gender on donation behavior, future studies might also seek to explore other demographic factors such as age, income level, and cultural background for further insight into donation motivations. This will also provide a deeper understanding of the psychological drivers behind people's decisions to support charities through marathon events: empathy, and a sense of social responsibility, among other new ways that event organizers might use to engage and inspire potential donors.

## SURVEY QUESTIONS

1. What is your age?
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65+
2. What is your gender?
    - Male
    - Female
    - Non-binary/Third gender
    - Prefer not to say
3. What is your annual income level?
    - $< 25$k
    - 25-50k
    - 50-75k
    - 75-100k
    - $> 100$k
4. Have you ever participated in a marathon event before?
    - Yes
    - No
5. If yes, please indicate the marathon event(s) distance. (Select all that apply)
    - Full marathon
    - Half marathon
    - Quarter marathon
    - Other
6. How many marathon events have you participated in?
    - 1
    - 2-3
    - 4-5
    - More than 5
7. Have you ever donated to a charitable cause associated with a marathon event?
    - Yes
    - No
8. If yes, how much money have you contributed to charitable causes within the context of marathon events?
    - Less than $50
    - $50-$100
    - $100-$200
    - More than $200
9. What motivates you to participate in marathon events? (Select all that apply)
    - Personal challenge
    - Social reasons
    - Charity
    - Fitness
    - Other
10. What is the longest distance you have run at a marathon?
    - Less than 10 km
    - 10-21 km (Half marathon)
    - 21-42 km (Full marathon)
    - More than 42 km
11. Were you aware of the charitable cause(s) associated with the marathon event(s) you participated in?
    - Yes
    - No
12. If yes, on a scale of 1 to 10, how much did the involvement with the charitable cause(s) impact your decision to participate in the marathon event? (1 = No impact, 10 = Significant impact)
13. Do you plan to do a marathon in the future?
    - Yes
    - No
    - Maybe
14. If yes, what factors would influence your decision? (Select all that apply)
    - Location of the marathon
    - Cause associated with the marathon
    - Event organization and reputation
    - Personal fitness goals
    - Social aspects (friends/family participating)

15. How confident are you that your donations make a positive impact on the charitable causes you have supported? (Scale 1 to 10)

16. How strongly do the charitable contributions made by your friends and family influence your donation behavior? (Please rate on a scale from 1 to 10)

17. What factors, if any, hinder you from donating to charitable causes more frequently? (Select all that apply)

    - Financial constraint
    - Lack of awareness
    - The trustworthiness of charitable organizations
    - Other

18. How often do you receive updates and information about the charitable causes you support?

    - Never
    - Rarely
    - Occasionally
    - Often
    - Always

19. How many participants were there in the marathon event you participated in?

    - Less than 500
    - 500-999
    - 1000-4999
    - 5000-9999
    - 10,000 or more

20. On a scale of 1 to 10, how would you rate your overall experience at the marathon event? (1 = Very poor, 10 = Excellent)

## ORDINAL VALUES MAPPING

- **Age**: Since age ranges are ordered, I created an ordinal scale
  - '18-24' → 1
  - '25-34' → 2
  - '35-44' → 3
  - '45-54' → 4
  - '55-64' → 5
  - '65+' → 6
- **Gender**: Categories are mapped to numeric codes as there is no inherent order:
  - 'Female' → 1
  - 'Male' → 0
- **Marathon Distance**: Based on the distance, I created an ordinal scale:
  - 'Less than 10 km' → 1
  - '10-21 km (Half marathon)' → 2
  - '21-42 km (Full marathon)' → 3
  - 'More than 42 km' → 4
- **Event Size**: Similarly, event size was mapped into ordered categories:
  - 'Less than 500' → 1
  - '500-999' → 2
  - '1000-4999' → 3
  - '5000-9999' → 4
  - '10,000 or more' → 5
- **Donor Contribution**: For contribution amounts, we used:
  - 'Less than $50' → 1
  - '$50-$100' → 2
  - '$100-$200' → 3
  - 'More than $200' → 4

| Variable Type | Variable Name | Measurement/Scale |
|---|---|---|
| Dependent Variable (DV) | Donation Amount | Ordinal Scale: < $50, $50–$100, $100–$200, > $200 |
| Independent Variable (IV) | Distance Run | Ordinal Scale: < 10 km, 10–21 km (Half Marathon), 21–42 km, > 42 km |
| Independent Variable (IV) | Event Size | Ordinal Scale: < 500, 500–999, 1,000–4,999, 5,000–9,999, ≥ 10,000 |
| Independent Variable (IV) | Gender | Binary: Male (0), Female (1) |
| Control Variables | Age | Ordinal Scale: 18–24, 25–34, 35–44, 45–54, 55–64, 65+ |
| Control Variables | Income Level | Ordinal Scale: < $25k, $25k–$50k, $50k–$75k, $75k–$100k, > $100k |
| Control Variables | Event Participation | Count: Number of Marathon Events Participated |
| Control Variables | Motivation | Categorical: Personal Challenge, Charity, Fitness, Social Reasons |

**Figure 5: Variables table**

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