



Comparison of Physical Activity of Generation Z and Millennial Running Participants in Sports Tourism

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Abstract

Mass running events have emerged as an increasingly popular lifestyle trend among different age groups, connecting sport and recreation with public health. In this study, the researcher wants to evaluate and compare the physical activity of Gen Z and Gen Y (Millennials) who run sport tourism in Bandung city, West Java. Comparative descriptions were used to evaluate the behaviors of these two cohorts, and the methods used were descriptive. Out of the 100 non-athletes that participated in the research, 50 were Millennials and 50 were Generation Z participants. The International Physical Activity Questionnaire Short Form was used to determine the amount of energy expended in MET-minutes/week. The data analysis was descriptive statistics, crosstabulation and Mann-Whitney U test which were selected due to the results of prerequisite evaluation that showed the data were not normally distributed and not homogeneous. The descriptive data revealed that, mean physical activity score for Generation Z is 2439.30 MET-minutes/weeks which is slightly higher than that of Millennials (2356.86 MET-minutes/weeks). Moreover, 22.0 per cent of participants in Generation Z had high activity levels, while 14.0 per cent of participants in the Millennials category had high activity levels, but the majority of response categories were classified into the moderate activity category. The Mann-Whitney U test, however, found an asymptotic significance value of 0.129. This figure is less than 0.05, which suggests that the overall physical activity levels are not measurably different between the two generations. The study finds that sport tourism is a lifestyle factor that brings people together regardless of age. Generation Z and Millennials exhibit similar active behaviours, which means mass running events are a successful initiative for public health and whole-of-person wellness, transcending the generational divide.

How to Cite

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INTRODUCTION

Amateur athletes have been seen to be increasingly involved in competitive sporting events over the last several years, which is a growing field of so-called "sports tourism" (Lopez Londoño et al., 2026). A notable trend that has occurred over the last few years is that of more amateurs being involved in competitive sporting events, which is commonly referred to as "sports tourism", a sector that is quickly growing (Lopez Londoño et al., 2026). This is also evident when tens of thousands of people travel long distances and stay overnight to compete as amateur athletes in masses, like the half-marathon.

Sport tourism is more than just enjoying a sports event, and it also presents a new category: "active sport tourism" where the reasons for travel are related to sports and physical activity as a leisure pursuit environments (Gibson, 1998). These activity participants are not driven by professional competition; instead they are seeking to keep their levels of physical participation high when travelling, find a feeling of personal accomplishment, or experience their favourite sport in a new location environments (Gibson, 1998). This conceptual model is consistent with the proliferation of non-athletes in mass running events, where people are coming to appreciate that they are encouraged to participate in these events for the benefits that they offer as a recreation and active lifestyle.

The ongoing active sport tourism development is marked by a tremendous volume of mass level participatory sport events, like mass running events, being organized. The sudden increase in the number of events aimed at the general public has led academics to categorize these sports enthusiasts who are not athletes as event active sport tourists. This particular classification is relevant to highlight the difference between persons who undertake tourism mobility with the aim of participating in an organised sport activity and those who are only present as a passive spectator (Gibson et al., 2018).

According to (Prakash & Tiwari, 2021), usually generational cohorts are divided by birth years. The term "millennials" or Generation Y is used to describe those born from 1981 to 1995, while Generation Z or "post-millennials" are those who have been born since 1995. Both generations constitute a substantial share of the population today and are strong actors in many areas, such as the labor market, consumer and tourist participation.

Balancing work and life for the younger

generation of working individuals is an essential component in their everyday lives to manage the modern day professional world. These people are willing to find any opportunity to replenish themselves physically and cognitively to help relieve the stresses they experience in today's work environment. Engaging in active personal time outside of the workplace is, therefore, seen as vital in order for young employees to replenish their energy, prevent burnout and remain healthy (Lee et al., 2024).

Lifestyle and leisure activities for GenZ is deeply intertwined with their digital world and digital interactions. They may be especially susceptible to social comparison with peers and influencers as they are on platforms that rely on visual communication like Instagram and TikTok. This continued exposure often results in a sense of missing out (FOMO), compelling them to make an active choice for engaging in trending experiences such as popular mass running events. Participating in such activities and sharing visual data, including "selfies" and status updates, is their way of seeking social confirmation and easing the fear of social rejection (Matijašević et al., 2025).

In the last few years, the reasons for engaging in school-based physical activities during travelling have changed considerably to a more comprehensive health-oriented approach. The trend for people to adopt physical activity as a part of their tourism experiences has grown, and this movement is building on mass running specialties. This phenomenon exemplifies a shift in lifestyles in which active sport participation is considered a key means of balancing the body, mind, and soul in order to improve quality of life (Valente-Mosqueda et al., 2025).

It is important to grasp the physical activity behaviour of the younger generation in the city context prior to assessing participation in sport tourism. Preliminary data in recent years indicates that urban dwellers are not always sedentary, for instance, students from densely populated areas of Bandung have been measured with a high average physical activity (PA) level of 3600 MET-minutes/week for generation Z (Syahvira et al., 2024). The present study builds upon this current lifestyle trend of peoples and aims to examine how participation as a non-athlete in mass running events can lead to a person's overall level of physical activity.

This shift in sport tourism research has led to the greater consideration of the importance of sport tourists who are physically active and who travel specifically for physical activity, often

referred to as the "event active sport tourist". This point of view puts the study of sport and recreational host events, which had been largely focused on issues of macro-economic impacts on hosting large events and the performance of elite athletes, into a broader context. The study of non-athletes participating in mass participation activities such as a fun run can help researchers fill the void in the literature related to the motivations people have for personal health and lifestyle when participating in sports tourism (Gibson et al., 2018).

When considering physical activity behaviour, it is important to consider the physiological changes across age groups, including changes in muscle strength and dynamics, which varies significantly across an individual's lifespan. There is meta-analytical evidence that concentric strength is at all times lower than eccentric strength, but that the ratio changes significantly with age and sex. Furthermore, older adults tend to maintain eccentrics better than concentric strength than younger people do, indicating that additional birth cohorts (Generation Z and Millennials) may have different physical exertion profiles when engaging in recreational sporting activities (Nuzzo et al., 2023).

Volunteering in recreational running is now a goal of physical fitness as well as experiences of nature and culture. Modern active sport tourists think of running routes in connection with natural scenery or historical sites as elements that should increase their emotional satisfaction to enhance the running activity. This dual motivation gives sport tourism event organisers an opportunity to develop experiences which bring both physical improvements as well as deepening the appreciation of the surrounding tourist destination (Guereño-Omil et al., 2024).

In order to plan a sport event well, knowledge about the motivational mix of sport participants in various demographic groups should be deep and extensive. These motives – social interaction, identity, and a break from the norm – significantly influenced their choice to undertake mass running events and are common motives for amateur sport tourists. Through assessing these intrinsic and extrinsic motivations, event organisers can progress to foster a more welcoming and enjoyable experience for participants, ensuring that their appeal to younger generations is maintained for the pursuit of collective experiences (Rozmiarek, 2025).

With regards to sporting events sites, the environmental attributes, such as green spaces,

proximity to water, directly affect the reaction and performance of novice participants or non-athletes. Access to the natural environment and spending time in public spaces can decrease the competitive pressure for the individual just getting more active and can certainly increase the comfort level for the individual during the exercise. This indicates that event location design is a critical determinant of whether an amateur participant will have a positive experience that encourages them to maintain an active lifestyle after the event (Gilburn, 2025).

Mass participation sporting events hold great potential to be utilized as strategic instruments in creating a sustainable public health legacy. Although mass running events are currently very popular, the primary challenge for organizers is ensuring that the fleeting enthusiasm from the day of the event can be translated into long-term increases in physical activity routines among participants. Strategies that integrate public health campaigns with sport event promotion are essential to reach community groups that tend to have sedentary lifestyles so that they are willing to start moving actively (Murphy et al., 2015).

In fact, the health consequences of a mass sporting event actually begin well before the day of the event as participants begin preparing to participate by augmenting their training, and finally culminating on the day of the event when they actually compete. Registration in a running event is a psychological trigger for many people who have not previously committed to structured and measurable physical activity, to commit to a program of physical activity. This physical activity in the preparation period makes an important contribution to the overall cardiovascular health, and thus the value of sport tourism as an important health intervention is strengthened (Schoemaker et al., 2020).

The objectives of this study are to explore and compare physical activity levels between the Generation Z and Millennials, in the sport tourism field, when they take part in mass participation running events as non-athletes. Results of this research are hoped to give practical experience value to organizers, local tourism boards and the public health promoters. The thorough characterization of specific profiles for physical activity and generational features of the recreational participants, can help stakeholders to create more inclusive, targeted and sustainable sports events. Overall, this customised approach not only increases tourist satisfaction, but also proves to be an effective leveraging active sport

tourism as a community health promotion strategic intervention.

The main contribution of this study lies at the intersection of three areas: demographic analysis, recreational sport tourism, and public health. Unlike traditional sports research that mainly examines elite athletes or the influence of mega events on the macro level of the economy, this investigation centers on the behaviours of the amateur sports population, through a comparative analysis between the behaviours of the generations Z and Y and an analysis of the missing variables and structural differences between them. This novel method seems to fill a meaningful lack in the existing literature on lifestyle paradigms in the present day, and thus bridges the dual objectives of maximizing tourists' enjoyment and promoting public health goals. The results provide a real-world approach for stakeholders (including event organizers, tourism authorities and health practitioners) to design a more inclusive, targeted and sustainable mass participation event, by defining specific physical activity profiles as a function of generational attributes.

METHOD

The method used in this study was quantitative with cross sectional research design. The cross-sectional design is an observational approach in which the population or a representative sample of the population is obtained at one time; essentially a "snapshot" of a particular phenomenon. This design was chosen as it is very efficient and useful for comparing variables between different groups at the same time. In the context of this study, it enabled the researchers to simultaneously observe and compare the Physical Activity levels of Generation Z and Millennials, while they were actively involved with the sport tourism phenomenon, without the need for follow-ups over time. The research was done in Bandung, West Java, in which participants included persons who participated in mass-participation running events (fun runs).

The population of this study were those who participated in sport tourism. The total number of the subjects to be obtained, which comprised respondents with no intentions of competing in sports, was determined as 100 by purposive sampling based on the subject selection procedures proposed by (Fraenkel et al., 2012). The sample was split into two based on generational cohort, with 50 participants in each of the Millennial generation birth cohort range (1981 to

1995) and the Generation Z cohort (post-1995 to 2012) including a mixed-gender sample for each. Inclusion criteria were: (1) not compete in a professional sport as an athlete; (2) no physical deformities that impede motor movement; and (3) less than 3 years of experience running in mass events.

Physical activity level of participants was the main variable. The assessment was carried out by the International Physical Activity Questionnaire (IPAQ) short form with 7 items. The instrument was administered in Indonesian translated version to make sure its content was understood by the local sample, the psychometric properties and cultural adaptation was validated for the Indonesian population (Dharmansyah & Budiana, 2021).

A digital procedure was employed to collect in situ data during fun run activities (Fraenkel et al., 2012). QR codes or barcodes were handed out to researchers to take the participants to a Google Form. This digital interface was used to gather demographical information (name, age and gender) and screening data to ensure that the individual met inclusion criteria (not athlete, physical health, experience level). Indonesians who fulfilled these criteria subsequently filled out the IPAQShort Form in Indonesian.

The data collected were processed with statistical software. Descriptive statistical analysis was utilized to give the portrait of the sample profile and categorization of physical activities. Inferential analysis, first of all, performed a normality test to find out the distribution of data. The Mann-Whitney U test, a non-parametric test, was used to compare the physical activity levels between the two generation groups as the test results showed that the data were not normally distributed.

RESULTS AND DISCUSSION

The first type of analysis performed was descriptive, which was intended to give an overview of the data distribution across each group.

Table 1. Descriptive Statistics

	N	Range	Min	Max	Mean	Std. Deviation
Millennial	50	4656	894	5550	2356.86	1074.356
Gen Z	50	5635	925	6560	2439.30	1664.609

Based on the results, Millennial generation students (n = 50) had a mean of 2356.86 compared to the mean of 2439.30 for the Gen Z group (n = 50) with a standard deviation of 1074.356

and 1664.609, respectively. The range score for a variable is larger in the Gen Z group (5635) than in the Millennial group (4656), indicating that there is more variability in the responses of the Gen Z group. This indicates that although the average score is relatively similar, the dispersion of data is more pronounced in the Gen Z group.

Table 2. Tests of Normality

Group	Kologorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Milenial	.174	50	.001	.846	50	.000
Gen Z	.284	50	.000	.763	50	.000

The next step involved testing the assumption of normality using Kolmogorov-Smirnov and Shapiro-Wilk tests. The results show that both groups have significance values below 0.05 in all tests, indicating that the data are not normally distributed. This violation of the normality assumption implies that parametric statistical tests are not appropriate for further analysis.

Table 3. Tests of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Based on Mean	8.922	1	98	.004
Based on Median	2.440	1	98	.121
Based on Median and with adjusted df	2.440	1	79.565	.122
Based on trimmed mean	6.478	1	98	.012

Following this, the homogeneity of variance was assessed using Levene's test. The result based on the mean shows a significance value of 0.004, which is less than 0.05. This indicates that the variances between the Millennial and Gen Z groups are not homogeneous. Therefore, the assumption of equal variance is not met, further supporting the use of non-parametric statistical methods.

Table 4. Test Statistics

	Score
Mann-Whitney U	1030.0000
Wilcoxon W	2305.000
Z	-1.517
Asymp. Sig. (2-tailed)	.129

Given that the assumptions of normality and homogeneity are not satisfied, the Mann-Whitney U test was employed to examine differences between the two groups. The results show

a Mann-Whitney U value of 1030.000, with a Z score of -1.517 and a significance value of 0.129 ($p > 0.05$). This indicates that there is no statistically significant difference between the Millennial and Gen Z groups. Thus, the null hypothesis stating that there is no difference between the two groups is accepted.

Table 5. Crosstabulation Category

Group	Total	Medium	High	Total
Milennial	Count	43	7	50
	% within group	86.0%	14.0%	100.0%
Gen Z	Count	39	11	50
	% within group	78.0%	22.0%	100.0%
	Count	82	18	100
	% within group	82.0%	18.0%	100.0%

Although the inferential test indicates no significant difference, further analysis using crosstabulation provides additional insights into the distribution of categories. In the Millennial group, 86.0% of participants fall into the moderate category, while 14.0% are in the high category. In contrast, the Gen Z group shows 78.0% in the moderate category and 22.0% in the high category. This suggests that Gen Z has a higher proportion of individuals in the high category compared to Millennials.

A lack of statistically significant differences between Gen Z and Millennials in the level of sport activity consumption indicates a remarkable change in the perception of sport active tourism among the younger and the older generations. While descriptively there was a higher energy expenditure in Generation Z, the distribution of both generations into a mostly moderate activity category implies a shared characteristics pattern related to physiological self-regulation. This alignment takes on this modern health consciousness. Recent literature suggests that, more than ever before, mass participation sports events are being used as a space that is readily available for the community to engage in a noncompetitive, health-focused sport experience designed to encourage the adoption of a healthy lifestyle for the prevention of chronic disease (Tomino & Perić, 2022). Thus, it could be said that both generations of Millennials and Gen Z have the same "wellness oriented" attitude towards running events. With the growing focus on health consciousness in mass running events, the individuals have to pay attention to how fast they run so as it brings the most to their heart rate without sporting injury (Chernbumroong et al., 2023). Thus, when they did not find any statistical differences among

their physical output, the authors see this as evidence of an intentional practice over generations to keep the action of running at a moderate level, and that mass running events are effective as a standardized tool for maintaining moderate action independent of age group.

However, at this event a striking result also came to light which was not what had been anticipated. The initial assumption was that Generation Z would show a marked increase in physical activity because of the supernormal benefits to physical fitness that follow age. The data, however showed that there was no real difference between the two groups. This deviation was seen due to the fact that the participants in the sport tourism settings prefer social and recreational experiences. Like the ability to stroll side by side, to admire the beauty, photograph it, without doing more than their utmost for a sport. In addition, there are some methodological limitations in this study. The use of the self-reported International Physical Activity Questionnaire Short Form (IPAQ-SF) may lead to recall bias or to overestimation of levels of physical activity, and the small number of participants (100) reduces the generalizability of results.

Future studies need to employ stronger research methodology to further fill these shortcomings and extend current results. Future work is highly encouraged to use objective measurement devices, such as wearables (fitness trackers, HR monitors, GPS), to gather current and accurate physiological data as opposed to relying on participant recall. Further, the wider the demographic coverage, the larger the sample sizes in various geographic areas, increasing the understanding of generational behavior in the fast-growing and active sport tourism industry.

CONCLUSION

The conclusion of this study indicates that there is no statistically significant difference in the physical activity levels between Millennials and Generation Z participants in sport tourism running events in Bandung. Although descriptive data showed that Generation Z had a higher mean physical activity score and a larger percentage of individuals in the high activity category, the statistical verification via the Mann-Whitney U test confirmed that these differences did not reach significance. Both generational groups demonstrated high engagement in physical activity, with a majority of participants falling into the moderate category.

This study concludes that the physical exertion level of the non-athletes in the sport tou-

rism context is not determined by their generational affiliation. Mass running events are not a representation of a generational gap, but rather a unifying event that shows that despite their differences, the Millennials and the Generation Z have similar energy expenditure, mostly in the moderate range. This common pattern of behavior is the result of the universal emphasis placed on the nature of the event (social, experiential, leisure) rather than on the athletic competition. Thus, such mass events can be employed as a general healthcare approach to the improvement of local quality of life by national, state, and local tourism boards and public health promoters. Stakeholders can create sustainable, inter-generational engagement in active sport tourism by designing events with some "moderate" level of physical pacing that is preferred by the 'masses' and events that look and feel more appealing to 'Millennials' and 'Zs' in terms of their psychological drivers.

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