Article
Social Media in Sustainable Tourism Recovery

Beata Hysa [1] , **Iwona Zdonek** [1,*] **and Aneta Karasek** [2]

1   Department of Economy and Informatics, Faculty of Organization and Management,
    Silesian University of Technology, Akademicka 2A, 44-100 Gliwice, Poland; beata.hysa@polsl.pl
2   Institute of Management and Quality Sciences, Maria Curie-Skłodowska University, Plac Marii
    Curie-Skłodowskiej 5, 20-031 Lublin, Poland; aneta.karasek@umcs.pl
*   Correspondence: iwona.zdonek@polsl.pl

Abstract: In the light of the COVID-19 pandemic, it is crucial to manage tourist destinations to allow the recovery of tourism on the one hand and reduce its negative impact on the environment and the local community on the other. Information provided via social media (SM) by both residents and tourists can help restart tourism. This paper identifies ways of sharing travel experiences by tourists on social media. The research was conducted in Poland on a sample of 271 respondents from each generation using questionnaires. Results showed that the way tourists use SM during and after their trip differs by generation and gender what could be used in promoting responsible behaviour for sustainable tourism. Differences between generations can be observed in behaviours such as ongoing planning the trip, obtaining information about the place to stay, keeping a photo album for friends, and writing reviews. Moreover, more often than men, women use SM to obtain information about the place of stay and share their impressions of the trip by sending MMS or emails. Tracking tourists' travel behaviour on social media will allow city managers to gather information and respond to their needs and expectations and ensure effective urban management and city promotion.

Keywords: social media; SM; sustainable tourism; urban management; smart tourism; tourism recovery

1. Introduction

Efficient urban management is a big challenge to meet the needs of residents as well as tourists. Tourism is a multi-faceted phenomenon that affects both the environment and the society that is associated with the tourist region. In recent years we have observed diversified tourist behaviour in tourism. On the one hand, we have experienced the problem of overtourism, [1,2] that caused the intense concentration of tourists in the visited places, negatively influencing both the environment and residents. On the other hand, in the last year, due to the COVID-19 pandemic, there has been a drastic decline in tourist travel, resulting in significant losses in the overall tourism industry, which had an impact on urban management and city revenues. Due to the COVID-19 pandemic, there is a decline of 1 billion international tourist arrivals in 2020, resulting in a loss of $1.3 trillion in total international tourism revenue [3]. International tourist arrivals (overnight visitors) in the first seven months of 2021 were 40% below the levels of 2020 and still 80% down when compared to the same period of the pre-pandemic year 2019 [3]. In addition, between 100 and 120 million tourism jobs were at risk [3]. It is estimated that tourism recovery worldwide to pre-pandemic conditions will occur in 2024 [4].

It can be predicted that if the number of people vaccinated increases and the number of cases of disease decreases, more and more countries will open up to travellers. This indicates that as soon as the restrictions are lifted, we can expect a significant increase in the number of tourists, which will undoubtedly help the tourism industry to recover financially. However, mass travel may threaten the sustainability and cause the spread of the coronavirus outbreak and increase the epidemic risk. Therefore, tourism city managers face a significant challenge to ensure the right conditions for sustainable tourism.

Modern technologies come to the rescue, including the Internet, AI, open data [5], Big Data [6], which have been aggressively used in tourism for many years [2,7,8]. Increasingly in cities, effective tourism management results from collecting large data sets and implementing smart city solutions. The effectiveness of new technologies and social media as data sources and analytical tools has been widely demonstrated as an example of Mount Etna, an active volcano located in Southern Italy inserted in the UNESCO World Heritage List since 2017 [9]. Moreover, studies indicate that smart tourism significantly impacts tourism destinations, businesses, and tourists themselves [10]. Sustainability is at the crux of the growth of smart tourism, and more destinations are now prioritising it as a strategic objective in the tourism planning process [11]. Moreover, information on implemented sustainable smart city solutions can be used during their image promotion of cities and contribute to their attractiveness.

A particularly important factor is the development and prevalence of the Internet as a medium for rapid communication. In January 2021, Poland had 31 million Internet users or 84.5% of the total population [12]. In Poland, being online every day is common among the youngest: Over 90% of people aged 16–24 [13]. The majority (80%) of people aged 25–54 also use the Internet every day [13]. The Internet is least popular among people aged 55–74 as fewer than 40% declare using it daily [13]. With the development and universality of the Internet, social media (SM) have become everyday life for all generations. They have constantly been developing and gaining popularity since their creation. The number of active social media users in Poland is 25.9 million, which is 68.5% of the whole population [12]. Compared to 2020, when the active users of social media were 19 million, it is as much as a 36% increase [14]. Therefore, we can observe an increasing number of social media users, both in Poland and in the world and the use of this communication channel in many areas of life [15], both for personal and professional reasons [16,17]. Therefore social media are more and more willingly used in tourism, both by marketers [18,19], destination managers [20] and also tourists themselves [21,22]. Research indicates that the more residents use social media, the better a city performs in the ranking [23]. The overall objective of smart tourism is to provide an interface between the visitor and the destination for a responsive orientation towards solving specific needs [11]. With the information gained, it is possible to improve the services provided in the city. Therefore, it is worth researching the use of social media by tourists whose opinions are important for improving urban management and providing information about the behaviour of tourists.

Although there are literature publications available on the use of social media by different generational groups [22,24,25], few studies present the use of this medium for sustainable tourism management and the return of sustainable tourism. That creates a research gap that needs to be filled. Thus, the following research questions were also formulated:

RQ1: How to provide information supporting city management to tourists? Does the way tourists use social media differ by gender and age?

RQ2: What means can we expect to disseminate information about the city? How do tourists share their travel experiences on social networks, and are there gender and generational differences?

RQ3: How much travel information becomes publicly available? What are the settings of social media user profiles according to age and generation?

Therefore, in the presented paper, the main objective is to identify ways tourists share travel experiences on social media to support sustainable tourism recovery. The specific aim of the study is to examine how to obtain information that can improve city promotion. Accomplishing this goal will allow this knowledge to be used in developing the adaptation of new strategies to return sustainable tourism through efficient tourism management. In addition, it will enable cities to prepare for increased tourist traffic and develop options for urban management.

The article was organised as follows. Section 2 presents the current knowledge of sustainable development and the generational differences in sharing tourism experiences. Section 3 describes the methodology of empirical research. The findings and discussion

compared to other researchers' studies are presented in Section 4. Whereas discussions, limitations and further research are covered in Section 5.

2. Literature Review and Hypothesis Development

2.1. Using Social Media to Restore Tourism Sustainably

Tourism is an integral component of urban policy, which is understood as an organised and purposeful activity of local authorities, established and carried out in cooperation with other entities pursuing their objectives and meeting their needs in the city area. Ensuring both a high quality of life for residents and a high quality of stay for visitors is an overarching objective of local, sustainable development strategies [26]. Therefore, it is necessary to implement solutions in the area of sustainable development that will help achieve this goal.

In August 2015, 193 UN (United Nations) member states reached a compromise on the final document of the new agenda, "Transforming our world: Agenda for Sustainable Development—2030", which contains 17 goals and 169 tasks. Sustainable development requires action on many levels and entails the implementation of regulations in particular areas [27]. Achieving sustainable development goals requires ensuring the coherence of three key elements—economic growth, social inclusion, and environmental protection— which are important for achieving the well-being of individuals and entire societies [2]. The World Tourism Organization defines sustainable tourism as "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities". [3]

There is a trend of "Revenge Tourism" among tourists due to the limited travel opportunities over the past year due to the COVID-19 pandemic [28–30]. Research indicates that the most anticipated activity of tourists after the lifting of restrictions related to the pandemic is the possibility of travel and spontaneous trips [31]. This situation may change the game's rules in tourism and is currently under debate regarding the proper role of tourism [32]. On the one hand, it is inferred that the current situation should be an opportunity to reconsider the transformation of the global tourism system more aligned with sustainable development goals [33]. On the other hand, proponents of a rapid revival of the tourism industry oppose broader efforts to reform tourism to be more ethical, responsible and sustainable [32]. Furthermore, the opinions of tourists are also worth noting. Research indicates that tourists' decisions to travel abroad after the COVID-19 pandemic are influenced by tourism companies' engagement with communities, the country's response to the outbreak, and prevention efforts related to COVID-19 [21]. Thus, the challenge is increasing to provide the right conditions for tourism fulfilment, as well as to study the behaviour of tourists to enable a sustainable return to tourism. Tourists, encouraged by visiting destinations that are open to travellers, may visit them in crowds, so it is essential to prepare for this tourism boom by carrying out activities that will enable efficient tourism management.

The current situation creates an opportunity to reconsider the transformation of the global tourism system that is more aligned with sustainable development goals [33]. The literature emphasises the relevance of implementing sustainable development principles in tourism [34]. Therefore, the ongoing discussion is an opportunity to consider diverse ways to transform tourism [32]. Several stakeholders are involved in tourism activities, each expecting individual benefits. Regions are interested in obtaining standardised and high-quality tourism data, which enable them to make coordinated decisions between different management entities, thus improving the articulation of tourism products and the management of information and impacts [35]. In turn, tourists expect to relax in safe conditions, which is a challenge for urban management. Therefore, it is necessary to create and maintain appropriate conditions and undertake actions aimed at smart city management.

The development of Industry 4.0 allows organisations to use many innovative technologies, which affects the development of society 5.0 [22]. The use of AI, Big Data, or the

Internet in tourism is becoming more and more common. Cities are implementing new technologies in urban planning and management, which enable them to gather information from various sources and then use it to manage the city. They are described as sustainable, creative, smart, eco, green, sensitive, participatory, etc. [36]. Smart cities can be defined as cities that use innovative technologies to achieve resource optimisation, effective and fair governance, sustainability, and quality of life [37].

Digital technologies, sensors and hardware devices, software and big data—the core components of smart city systems—provide ways to understand and manage increasingly complex systems. These solutions are used in various types of applications, including intelligent transportation systems, cognitive assistance, health and social services [38,39]. Tourism regions are interested in implementing modern solutions, which enables them to be smart tourism [10,40]. Thus, they promote their offer to customers who are changing their behavioural patterns and massively use digital technologies [41]. In turn, tourism managers receive a large amount of data about consumers, have the opportunity to better profile tourists, and customise the tourist experience, which results in a better market offer [8]. In addition, user-generated content (UGC) can be used by policymakers and destination managers trying to accomplish better urban management especially, the distribution of tourists over the entire [42]. The need to use IT solutions in tourism is increasingly emphasised [33]. Among them, social media are extremely popular, which are increasingly used to collect and gather information provided by potential and current customers of tourism services [43,44]. This is related to the large expansion of the use of social media. For example, Poles spend on average 1 h 59 min per day using social media, most often on YouTube channels (25.9 million), while the second most popular site is Facebook (17 million), [12]. Social media in tourism are used to promote places [18,19], to develop effective communication strategies [24], to create a clear image of the travel destination chosen by tourists [9,45], and to analyse tourists' moods (Tourist Sentiment Analysis) [46].

Information presented in social media without barriers is distributed around the world. Research has been conducted by retrieving public comments from an online comment board which made it possible to identify problems in urban management [47].

Therefore, a tourist's experience of visiting a remote corner of the world can be a valuable source of information for other inhabitants of the globe. Tourism companies that enhance social opportunities for indigenous peoples can enhance the potential of online and social media to enable indigenous communities to engage in the global arena and direct the marketing of their culture without intermediaries [48]. Moreover, through social media, a selected image of a tourist region can be created through elements that build specific associations in tourists [49].

How important is the role of social media in sustainable smart cities is shown by the situation related to the COVID-19 pandemic? In February 2020, social media provided information for Chinese residents to be careful to maintain social distance from tourists coming from Hubei province, where coronavirus was detected [50]. Additionally, the need to keep the online community alive during the pandemic is emphasised in order to try to stay in the minds of consumers when it comes to meeting their travel needs once the crisis is over [51]. That indicates that obtaining information from tourists is an important task to be carried out in order to manage the city efficiently.

When a tourism destination gets smarter, the tourists' needs and demands are expected to be fulfilled more efficiently to create a better tourist experience [40]. This indicates that social media is an important channel of communication about tourist behaviour/experience. Through AI-enabled social media, well-targeted, personalised travel options can be offered that relate to a person's lifestyle. Already, social media is being used during the reinstatement of tourism under new rules. Tourists are encouraged to share their travel stories by adding the hashtag "#TogetherInTravel" [52].

In addition, as the results of the study indicate [50], active participation in social media serves as a distraction in mitigating the negative effect of psychological stress caused by

travel anxiety during the COVID-19 pandemic. Therefore, this indicates that the reasons are varied for using social media when sharing the travel experience.

2.2. Generational and Gender Differences in Sharing Tourism Experiences through Social Media

One of the activities that can contribute to urban management is the use of community-based tourism (CBT). Increasingly, community-based tourism activities are implemented, which allow local communities to take initiatives to encourage tourists to get involved in their communities and cultural events. Building their inter-relationships can help the local community to solve their problems, share knowledge and integrate. By identifying them, marketing and management strategies can be implemented in terms of sustainable community-based tourism [20]. Social media can be used to connect tourists with the local community. In the current situation, the need to maintain a relationship with this online community is emphasised, which can also provide a forum to co-create new destination products and services [51,53].

Tourists may use social media during different stages of their trip (e.g., before, during, and after their trip (pre-trip phase, on-site phase, post-trip phase)), when they share their impressions and experiences [24,44,54]. The travel experience can be defined as, "An individual's subjective evaluation and undergoing (i.e., affective, cognitive, and behavioural) of events related to his/her tourist activities which begin before (i.e., planning and preparation), during (i.e., at the destination), and after the trip (i.e., recollection)." [55]. When and to what extent tourists will use social media depends on many factors and motivations.

As studies indicate, the level of e-literacy of users and their use of social media is significantly influenced by income [56], nationality [57] and education [44]. Above all, however, the greatest differences in the use of social media in tourism can be seen according to the age, and gender of users [43,58,59]. Since tourists are not demographically and psychographically homogeneous, the need for research to compare different personal factors of tourists is also emphasised [21,60]. It is also important to note that social media users range from regular tourists to professional social media users, travel bloggers, and content creators.

The gender of tourists can easily influence their ratings, perceptions and attitudes about social media content. According to [61] study, women use social networks to build relationships while men use them for reporting. In addition, [58] indicated that men use the Internet for recreation and entertainment while women use it for interpersonal communication and educational assistance. Based on these findings, it can be concluded that men and women's motivations for using social media are different. Furthermore, in a study [59] conducted on social media, the motivations for using social media, the time spent on it, and the importance attached to the content may differ by gender. In addition, women are more likely than men to visit travel agencies' websites and read reviews from other visitors for details. In addition, it has been observed that women can make decisions more easily through the opinions of other visitors. Consequently, women use social media for detailed information.

Tourists planning a trip have different expectations, requirements or preferences regarding the purpose, place, and time of spending their holiday. These differences primarily depend on the age they are [2,25]. Currently, literature studies focus on four generations: Baby Boomers (born between 1945 and 1964), Generation X (born between 1965 and 1980), Generation Y (born between 1981 and 1994), and Generation Z (born after 1995). Each generation is conditioned by different economic, business, or political factors. At the same time, in the literature, this division is not unambiguous [62–64] and varies from country to country [2,65–67]

Baby Boomers (BB) are born between 1945 and 1964, the so-called baby boom and economic boom generation. Because most of this generation are retirees, they are increasingly frequent and willing to vacation and travel in different parts of the world. The growing mobility of this generation is primarily related to their established social position, financial capabilities, and having more free time. According to the annual survey of AARP (the

American Association of Retired Persons), the American Baby Boomer is full of optimism and, despite the COVID-19 pandemic, does not give up his dreams of seeing the world [68]. According to Levy (2021), in his research, just over half of Boomers (54%) plan to travel in 2021 and are actively selecting destinations, booking accommodations, and reviewing COVID-19 security protocols. Among those who wish to travel, most state that they are "hopeful" and "excited" about the prospect. However, for nearly half of the Baby Boomers surveyed, the biggest obstacle to travel is concern about their health [68]. The Levy (2021) survey also found that 41% of boomers believe it is dangerous to travel during a pandemic, and 47% who intend to travel will only do so if a vaccine is available. The majority (74%) of them also said that travel restrictions by COVID-19 have prevented or are preventing them from taking all the trips they would like to take in 2021. However, most of those (57%) who will not be going anywhere in 2021 are setting aside money for future travel. Still, the Baby Boomers are the generation that expects to spend the most on travel in 2021, averaging $6691, while Generation X travellers expect to spend about $5000 and Millennials $4000 [68]. According to AARP, 85% of Generation BB travellers use the Internet to plan their trips (Levy, 2020). BBs take their smartphone with them when they go on a trip; 84% of BBs use it for international travel while 94% use it for domestic travel. The BB Generation uses smartphones primarily to communicate, take pictures, use maps, or find places to eat and do various activities [69]. Most Boomers (80%) save their vacation memories and share them through digital methods such as sending photos via MMS (44%) and Facebook posts (32%) [69]. On vacation, Baby Boomers are more likely to seek out quiet, peaceful places where they can enjoy native foods, traditions, and entertainment. The main motivators of the Baby Boomers generation in choosing holidays are having fun and enjoying the trip, relieving stress and tension, relaxation, the need for change and novelty, as well as the attractiveness of the physical environment and taking care of better health [70].

Generation X are those born between 1965 and 1980, now 41–56 years old, who grew up in Poland and entered adult life during economic restructuring and political changes. This generation highly values family and close friends [69], so they plan trips together with family and children or friends (54%). They are willing to look for new places where they can learn about the culture and traditions of the local community. They particularly value healthy eating [71]. According to a study by Expedia Group Media Solutions [72], as many as 71% of people from this generation like to discover new places off the beaten track and look for local recommendations, while 70% visit museums, historical sites and art and culture. Although people of this generation were born in the analogue era, they are perfectly familiar with the modern digital world and modern technologies, which is why they willingly use the Internet while planning and booking their trips [71].

The phenomenon that shaped Generation Y, also called Millennials, was globalisation, which resulted in the blurring of barriers between countries, merging of cultures, increasing accessibility to products and services from all over the world. Millennials are now between 27 and 40 years old. This generation is very mobile; they often travel, move from one place to another and have friends and acquaintances all over the world. Representatives of Generation Y travel more than people from Baby Boomers or Generation X. They visit more destinations, spend more while travelling and are hungry for intense experiences [73]. According to a study conducted in Poland by Kowalczyk A. [74], this generation rarely travels alone (less than 7%); they instead choose the company of friends (70%) or family (58%) [74]. According to research [72], Millennials make the largest number of trips per year. They are frequent but undecided travellers who enjoy experiencing and discovering nature, often with young children in their arms. Millennials like variety, so some like adventurous and unique experiences [75], while others want to relax on the beach, taste the local cuisine [69]. Generation Y tourists tend to shy away from mass tourism as they are more independent in their travel planning and are more concerned about protecting the environment [60]. Compared to Baby Boomers and Generation X, Generation Y plan their trips and book their accommodation through dedicated websites or social media, such as TripAdvisor.

Generation Z are those born between 1995 and 2010, and although they share many of the same characteristics as Millennials, some of their characteristics are more visible, and in many ways, they are very different [63,69]. Generation Z is a generation very open to the world, and all technological innovations make it easier for them to explore new places. The main form of communication for them is social media. People from Generation Z are very open to the world and willing to travel. However, they often lack financial resources, as they are not yet financially independent. For this reason, domestic holidays with family or friends dominate in this group. A study conducted by Expedia Group Media Solutions in 11 different countries in 2018 showed that representatives of Generation Z most often travel to relax (54%), visit interesting places (44%), visit family (42%) [76]. Furthermore, 84% of Generation Z believe that social media plays an important role when travelling (Generation Y 77%), and more than 50% use platforms such as Twitter, Snapchat, Facebook, Instagram, and YouTube when planning and during their trips [76].

There are numerous studies in the literature on the use of social media sustainable tourism. However, the results of the study indicate that smart cities are failing to capitalise on possibilities offered by social media [77]. The literature emphasises that social media and smart tourism are the themes with the greatest potential, while sustainable cities, changes in tourist behaviour are underdeveloped streams with enormous relevance and growth in the new normal reality after COVID-19 [78]. However, there is a lack of work that addresses this topic, particularly across generations. The existing works are mostly conducted among the younger generation [24]; hence there is a research gap in this area. Thus, the following research hypotheses were identified:

Hypothesis 1a (H1a). *Social media use while travelling varies significantly by generation.*

Hypothesis 1b (H1b). *Social media use while travelling varies significantly by gender.*

Hypothesis 2a (H2a). *How people report on their stay differs significantly by generation.*

Hypothesis 2b (H2b). *How people report on their stay differs significantly by gender.*

Although social media is rapidly being adopted by seniors, there are very common concerns about the leakage of private data and the risks associated with sharing information.

Such risks are partly due to the fact that seniors (knowingly or unknowingly) share private information that others can abuse. They frequently share their posts publicly because they are unaware of the appropriate settings for their profiles. Moreover, as research on older users' use of Facebook shows, they are more likely to share public information when their friends do the same [79]. On the other hand, they are more likely to keep their Facebook photos private if more of their friends do the same [79,80]. Lack of awareness about privacy settings on social media platforms also affects younger users, as confirmed by a study conducted by Adjei et al. [81]. However, it is also the case that once users choose the right access control settings to protect their privacy, they rarely change them afterwards. Changes in users' lives and relationships, as well as in the social media platforms themselves, may then result in discrepancies between the active privacy setting of the entry and the desired setting [82]. Obviously, with the increasing popularity of social networks, research interests in methods to protect the privacy of individuals who participate in them have increased [80,83–85]. Most research efforts are devoted to identifying and formalising privacy violations [86], anonymising network data [54], or developing privacy settings strategies [87]. When analysing different aspects of data privacy by gender, often the research results are contradictory. For example, in studies by [21,80], women are more vulnerable to privacy risks because they are less likely than men to be concerned about the misuse of their personal information. In contrast, survey results of [88] indicated that women were more concerned about information privacy than men. Thus, there is a significant research gap in identifying generational or gender

differences in social media privacy awareness during travel use. Thus another research hypothesis was formulated:

Hypothesis 3a (H3a). *Generation affects the settings of social media users' profiles.*

Hypothesis 3b (H3b). *Gender affects the settings of social media users' profiles.*

3. Methods and Analysis

3.1. Data Collection and Research Sample

To answer the research questions and verify the hypotheses, a survey was conducted. To select the sample for the study, quota and random sampling methods were used. The proportions between representatives of particular generations were selected to match the proportions of the population of Polish society. To determine what these proportions are for the aforementioned population, research on the everyday Internet activity of Poles by age groups, available in the 2020 report "Poland on the path of sustainable development", was used [13]. As the survey collected data from the remaining generations in greater numbers than the calculated proportions, the data were reduced by random sampling. In the end, the sample included 271 people. Thus we obtained desired proportions of numbers between generations and thus balanced the sample. The structure of the research sample is presented in the Table 1 below.

Table 1. Structure of the research sample.

Generation	[%]	Gender	[%]
BB	16.2%	Man	44.6%
X	32.5%	Woman	55.4%
Y	32.1%		
Z	19.2%		
Level of education	**[%]**	**Length of using SM**	**[%]**
Basic/Junior high	0.4%	Over 6 years	70.8%
Secondary	23.6%	From 4 to 6 years	8.5%
Vocational	0.4%	From 2 to 4 years	4.8%
Higher I	19.9%	Up to 2 years	4.8%
Higher II	52.0%	I do not remember	10.0%
Postgraduate	1.1%	Never used	1.1%
PhD	2.6%		

Source: Own study.

Research on the use of social media (SM) in tourism was conducted in Poland in the last quarter of 2019 and the first quarter of 2020 and supplemented in 2021. The questionnaire asked tourists about issues related to social media use at the planning stage, during, and after the trip. Research on behaviour at the planning stage of a tourist trip has been published in an earlier article [22]. The use of social media during the trip is the focus of this article and thus the questions in this area are summarised in Table 2. Responses to these questions were measured using a five-point Likert scale. This allowed for the selection of one of five response options ranked symmetrically in terms of positive or negative reference to the issues addressed. The choice of an intermediate answer meant a neutral attitude to the issue under review or no opinion on a given topic. The obtained answers were coded so that a positive attitude to a given phenomenon was graded with a value of 2—for a strongly positive answer, or 1—when the positive answer was not supported only partially. In the case of a negative grade, the assigned value was −2, unless it was partially negative, then the assigned value was −1. The neutral grade was awarded a value of 0. This type of coding was taken from the work [2]. With such coding of the responses, the mean value of a given variant of the response higher than zero means a positive attitude towards the issue by all respondents. At the same time, a negative mean value indicated a negative

attitude to the given opinions of all respondents. That allowed comparing the responses given by nonparametric statistical tests in individual groups designated by generational identification. Therefore, the questionnaire included metrics characterising respondents by gender, age and education, and tourism experience, differentiated by length and frequency of tourism trips.

Table 2. The relationship of research questions and questions in the questionnaire.

Research Question	Questionnaire Questions	Response Scale
Research question no. 1	I use social media during a tourist trip to: Ongoing planning of further stages of a trip Obtaining information about the place of stay Commenting on events taking place in the place of stay Making contact with the local community Obtaining information about current events (cultural, entertainment, etc.) Current sharing experiences from a tourist trip Making contact with other tourists Obtaining information about current difficulties (e.g., traffic jams, accidents)	Order scale (Likert): Strongly agree Agree I have no opinion Disagree Strongly disagree
Research question no. 2	I use social media to share the experience of a travel trip by: Sending email/text messages Photo/video album for friends Public photo/video album Writing reviews Posting statements and photos in social groups/ forums Posting on blogs	Order scale (Likert): Strongly agree Agree I have no opinion Disagree Strongly disagree
Research question no. 3	Please select which settings your profile has on the following social media: Blogs and microblogs Social portals Content communities Rating portals Travel forums	Nominal scale: "Friends only" privacy settings I customise my privacy settings Public profile I do not know what my privacy settings are I do not have a profile

3.2. Research Model and Data Analysis

Each research question posed in the work was formulated in such a way that it contained an exploratory part and a hypothesis verification part. We answered the exploratory parts of the questions by analysing the distribution of the answers received. In turn, we used statistical tests to verify the hypotheses. The research model with specific hypotheses is shown in Figure 1.

To detail the methods of processing the collected data, it should be stated that it consisted of performing statistical analyses, both one- and two-dimensional. One-dimensional analysis was performed based on classical and positional descriptive analysis. The two-dimensional analysis examined the significance level of the differences between the obtained mean values for each generation and gender group. The U Mann–Whitney test was used to compare two groups with a non-normal distribution, and the Kruskal–Wallis test was used for many groups of variables with a non-normal distribution. The Chi-square test of independence was also used when examining the relationship between two nominal variables. When a relationship between variables was detected, further analyses were undertaken to explain the nature of the relationship using correspondence analysis. All statistical tests were performed considering significance at the level of $\alpha = 0.05$.
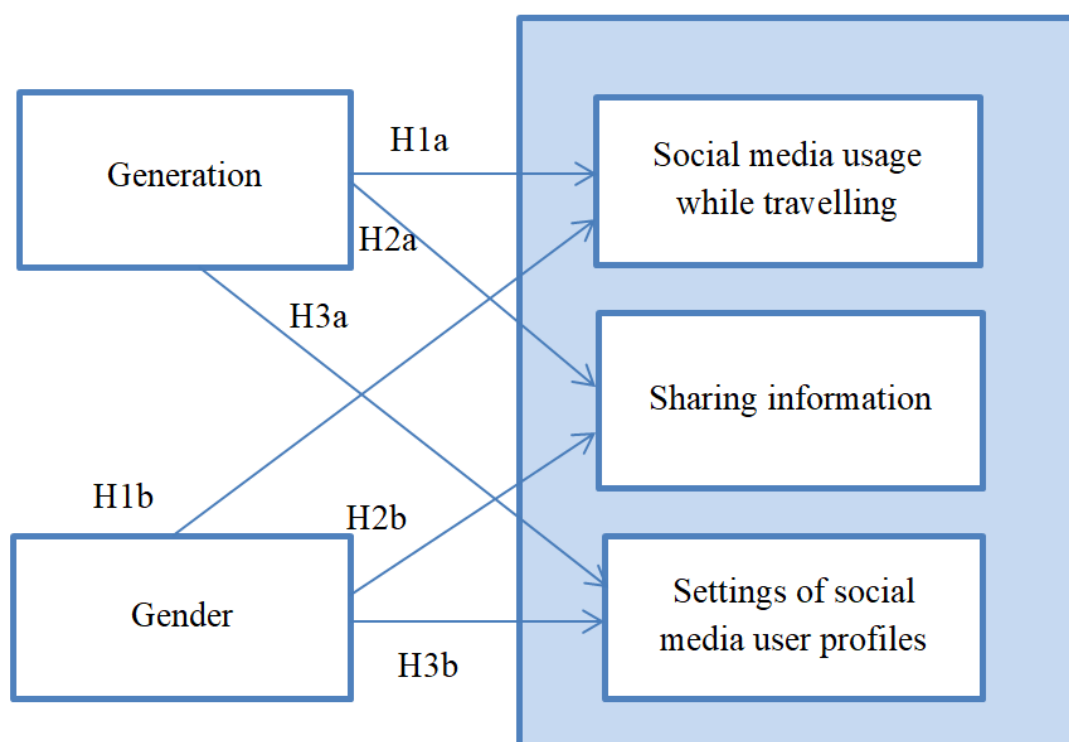
Figure 1. Research model. Source: Own study.

4. Results and Discussion

4.1. Using SM While Travelling

In seeking to answer the first RQ1 research question: "How to provide information supporting city management to tourists?" Does the way tourists use social media differ by gender and age?" nonparametric tests of comparison of multiple independent samples were performed. The performed analyses were to answer the exploratory part of the question and verify the H1a and H1b research hypotheses. Analysing the overall answers of the respondents (without generational and gender divisions) to the questions about their agreement with the opinions presented to them, it is possible to indicate the opinions about which a high degree of identification with them was perceived, and those to which the respondents showed a neutral attitude. Figure 2 below represents the distribution.

Respondents maintained a neutral attitude towards activities such as commenting on events taking place at the place of stay, connecting with the local community and other tourists, and sharing travel experiences on an ongoing basis. For using SM while travelling, four important reasons have been identified. They are as follows: obtaining information about current difficulties, current events, place of stay, and planning of further trip stages. In this way, the answers to the questions concerning information important for tourists about the city and supporting city management were found.

To verify the H1a and H1b hypotheses, the Kruskal–Wallis and the Mann–Whitney U tests were performed. The Kruskal–Wallis test showed that there were statistically significant generational differences ($p = 0.032$). The multiple pairwise comparisons test showed that differences exist between Generations BB and Z ($p = 0.009$) and Y and BB ($p = 0.015$) regarding ongoing planning for the next trip steps. Generations Z and Y show a more favourable attitude than Generation BB towards this form of social media activity. The research also showed that this activity differs between men and women ($p = 0.021$). Women are more likely to use ongoing planning for the next steps of their trip using SM. Intergenerational and gender differences were also observed for the current location information acquisition. The Kruskal–Wallis test showed that there were statistically significant generational differences ($p = 0.008$). The multiple pairwise comparisons test showed differences between Generations Z and BB ($p = 0.044$) and Y and BB ($p = 0.036$).

In both cases, Generations Z and Y presented a more favourable attitude towards writing online reviews than Generation BB. The Mann–Whitney U test (*p* = 0.005) showed that women are more willing to use this form of activity. The results described are presented in the table below (Table 3).
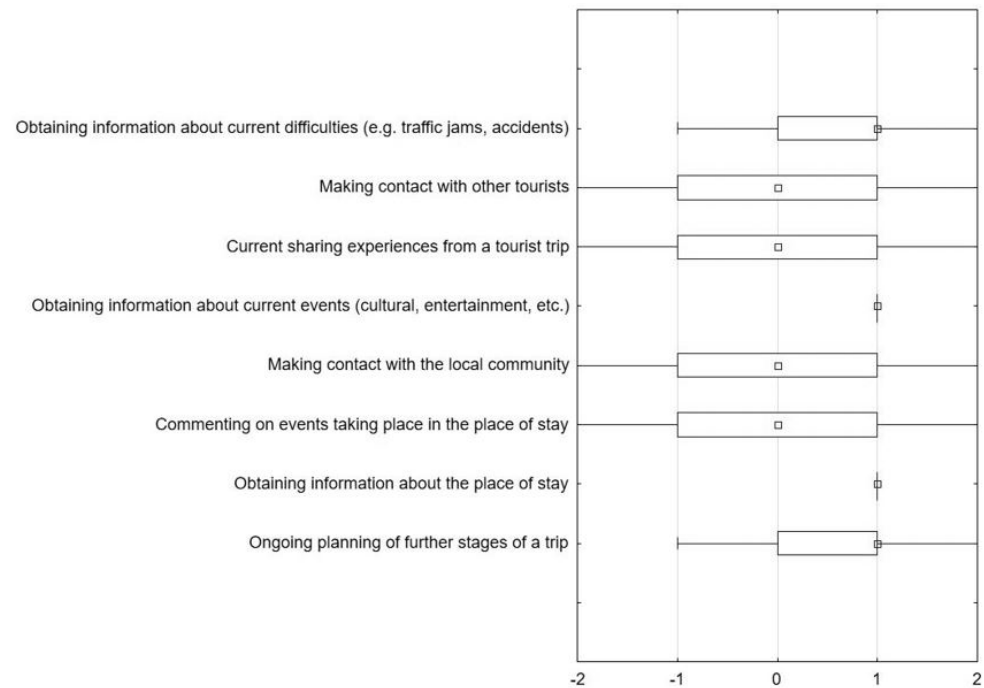

Figure 2. Reasons for using SM while travelling—distributions of respondents' answers (from –2 = strongly disagree to 2 = strongly agree). Source: Own study.

Table 3. Results of the mean scores of compliance of the respondents from different generations with the presented opinions on SM use during a tourist trip.

I Use SM for	Measure	BB	X	Y	Z	Kruskal–Wallis Test	Man	Woman	Mann–Whitney U Test
Ongoing planning of further stages of a trip	Mean Med. SD	0.05 0.00 1.24	0.59 1.00 1.06	0.73 1.00 1.09	0.84 1.00 0.99	0.032	0.44 1.00 1.11	0.72 1.00 1.10	0.021
Obtaining information about the place of stay	Mean Med. SD	0.39 1.00 1.26	0.86 1.00 0.93	1.02 1.00 0.91	1.10 1.00 0.77	0.008	0.74 1.00 0.94	0.99 1.00 1.00	0.005
Commenting on events taking place in the place of stay	Mean Med. SD	−0.28 0.00 1.26	0.00 0.00 1.29	−0.02 0.00 1.20	−0.35 0.00 1.15	0.280	−0.09 0.00 1.21	−0.14 0.00 1.25	0.733
Making contact with the local community	Mean Med. SD	−0.49 −1.00 1.20	−0.30 0.00 1.21	−0.12 0.00 1.20	−0.40 −1.00 1.16	0.290	−0.33 −0.50 1.15	−0.27 0.00 1.24	0.627
Obtaining information about current events (cultural, entertainment, etc.)	Mean Med. SD	0.67 1.00 1.34	0.80 1.00 0.99	0.92 1.00 0.89	1.02 1.00 0.67	0.790	0.80 1.00 0.91	0.91 1.00 1.02	0.146
Current sharing experiences from a tourist trip	Mean Med. SD	0.02 0.00 1.35	−0.05 0.00 1.35	0.41 1.00 1.25	0.31 0.00 1.09	0.110	0.18 0.00 1.22	0.18 0.50 1.33	0.931
Making contact with other tourists	Mean Med. SD	−0.37 −1.00 1.38	−0.36 0.00 1.20	−0.21 0.00 1.16	−0.50 −1.00 1.13	0.570	−0.30 0.00 1.17	−0.38 0.00 1.23	0.554
Obtaining information about current difficulties (e.g., traffic jams, accidents)	Mean Med. SD	0.42 1.00 1.42	0.55 1.00 1.14	0.78 1.00 1.06	1.04 1.00 0.82	0.070	0.64 1.00 1.13	0.74 1.00 1.13	0.423

Source: Own study. Note: Statistically significant values are marked in red.

The study showed that hypotheses H1a and H1b were partially verified (significant differences by generation and gender for ongoing planning of the next steps in travel, ongoing acquisition of information about location and stay).

Discussion of the Obtained Results

Identifying the most important information about the city for tourists allows for formulating conclusions about the content of the city's profile on social media. Information on current difficulties, current events and other information about the city can be enriched with information allowing for a more sustainable journey. For example, advice on how to get to the city's events by public transport or rented bikes will reduce air pollution and traffic jams in the city. An interactive map with fountains with drinking water available in the city will allow limiting the purchase of bottled water and the amount of rubbish generated by tourists in this way. A map with local restaurants can play a similar role. It will support local producers and limit disposable containers used in fast-food restaurants. An interesting solution would also be an application with an interactive city guide. It would promote local culture, local specialities and show interesting places in the city. In addition, social media promotions allow tourists to find out about current accommodation offers. Using the right app would enable quick booking of accommodation.

Our study refers to the research of [59], who indicated that motivations for using social media vary by gender. Females focus more on details than males and allocate more attention to multiple sources of information and external sources.

Comparing the obtained results with the results of Levy's research [69], we can see that the representatives of the BB Generation in Poland have a more neutral attitude towards planning the next stages of their trip, searching for information about the place of stay or sharing travel experiences on a current basis. Polish Boomers have a more positive but still neutral attitude when it comes to searching for information about current cultural events or difficulties in their place of stay. This may result from the fact that the representatives of the BB Generation in Poland prefer relaxation and peace, quiet during their trips. As indicated by Naidoo et al. (2015) [70], the main motivators of their travel trips are enjoyment, relaxation, and stress relief. Therefore, they often travel with their adult children and their young children. So they focus on family relations and taking care of their grandchildren. They do not look for additional attractions and do not use SM. In contrast, representatives of the other generations in Poland show similar behaviours to those presented in [69] and [61,66] study. These generations view the role of SM as significant during their travels. That is particularly evident in activities such as seeking information about where to stay, current impediments, and current events. This attitude stems from a focus on travel full of experiences, adventures, and unique experiences, as highlighted by Dębski in his research [75]. Moreover, in contrast to the BB Generation, which meticulously plans their trips [68] and often complements their knowledge about the place they want to visit, younger Generations Y and Z like spontaneity and lack of planning, so they are more willing to use social media to plan the stages of their trip and obtain information about the place of their stay.

4.2. Using SM to Share Information

In seeking to answer the second RQ2 research question: "By what means can we expect to disseminate information about the city? How do tourists share their travel experiences on social networks, and are their gender and generational differences?" We analysed ways of using SM during a trip and performed nonparametric multiple independent sample comparison tests. The performed analyses were to answer the exploratory part of the question and verify the H2a and H2b research hypotheses.

Analysing the overall answers of the respondents (without the division by generations) to the questions asked about their agreement with the opinions presented to them, one can indicate opinions, which were perceived as having a high degree of identification with

them and which the respondents disagreed with. The issue is presented in the figure below (Figure 3).
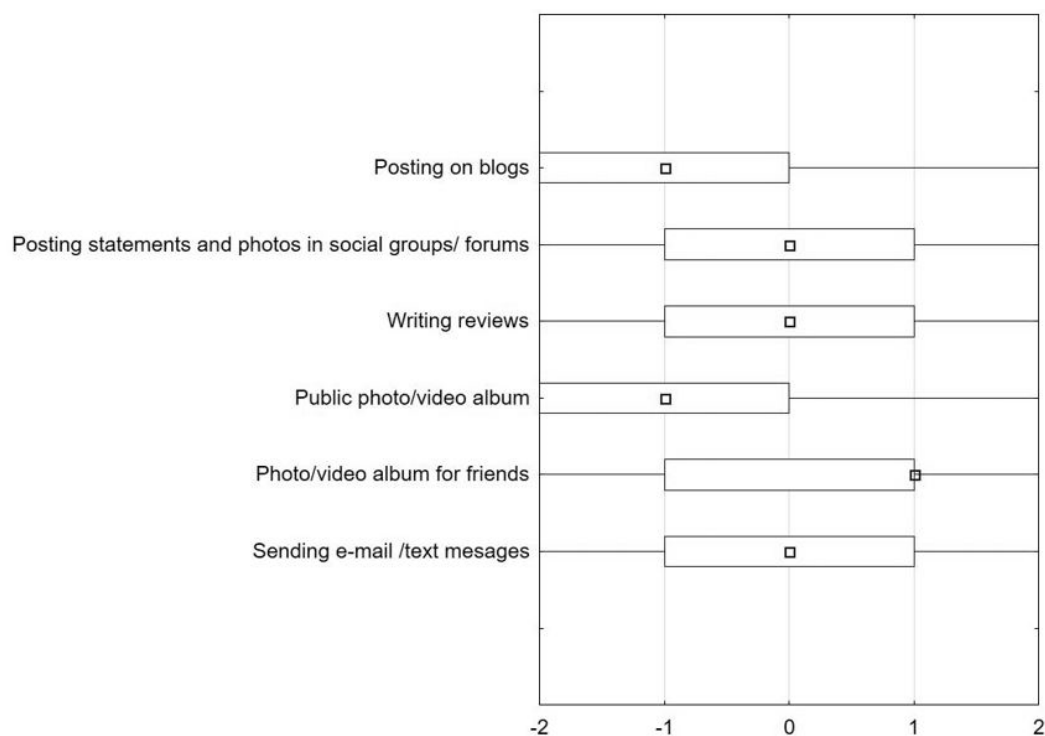

Figure 3. SM used when reporting the trip—distributions of respondents' answers (from −2: strongly disagree to 2: strongly agree). Source: Own study.

The respondents maintained a neutral attitude towards most forms of reporting on their stay on social media except for keeping a publicly available online album and posting on a blog. These two forms of reporting on their stay at SM were identified by respondents as ones they do not use. On the other hand, keeping a photo/video album for friends is a readily used form. Thus, we can conclude that this is the way tourists will promote a sustainable city among their friends.

To verify the H2a and H2b hypotheses, the Kruskal–Wallis and the Mann–Whitney U tests were performed. The Kruskal–Wallis test showed statistically significant differences between generations ($p = 0.008$) on keeping a photo/video album for friends. The multiple pairwise comparisons test showed that there are differences between the BB and Y Generations ($p = 0.007$). Generation Y shows a more favourable attitude than Generation BB towards this form of reporting on their stay via social media. Intergenerational differences were also observed for writing online reviews. The Kruskal–Wallis test showed statistically significant generational differences ($p = 0.004$). The multiple pairwise comparisons test showed that differences exist between Generations Y and Z ($p = 0.007$), Y and BB ($p = 0.011$), X and Z ($p = 0.008$), X and BB ($p = 0.012$). In both cases, Generations X and Y presented a more favourable attitude towards writing online reviews than Generation BB and Z. The only gender difference was in sending emails or text messages from their stay ($p = 0.014$). The study showed that women were more likely to perform this task. The results discussed are presented in Table 4.

The study showed that hypotheses H2a and H2b were partially verified (significant differences by generation only for keeping photo albums for friends and writing reviews online; significant differences by gender only for emailing and texting from residence).

Table 4. Results of the mean scores of the compatibility of the respondents from different generations with the presented opinions sharing the experiences of the tourist trip.

	Measure	BB	X	Y	Z	Kruskal–Wallis Test	Man	Woman	Mann–Whitney U Test
Sending e-mail/text messages	Mean	0.32	−0.02	0.14	0.18	0.524	−0.09	0.30	0.014
	Med.	1.00	0.00	0.00	1.00		0.00	1.00	
	SD	1.51	1.45	1.24	1.28		1.31	1.38	
Photo/video album for friends	Mean	−0.41	0.08	0.48	0.29	0.008	0.10	0.23	0.389
	Med.	−1.00	1.00	1.00	1.00		1.00	1.00	
	SD	1.45	1.42	1.35	1.29		1.39	1.41	
Public photo/video album	Mean	−1.00	−0.67	−0.78	−0.80	0.525	−0.75	−0.81	0.619
	Med.	−1.00	−1.00	−1.00	−1.00		−1.00	−1.00	
	SD	1.10	1.25	1.28	1.20		1.22	1.23	
Writing reviews	Mean	−0.52	0.05	0.07	−0.53	0.004	−0.06	−0.22	0.252
	Med.	−0.50	0.50	0.00	−1.00		0.00	0.00	
	SD	1.27	1.25	1.23	1.22		1.27	1.26	
Posting statements and photos in social groups/forums	Mean	−0.32	−0.01	−0.07	−0.24	0.546	−0.23	−0.04	0.262
	Med.	−1.00	0.00	0.00	0.00		0.00	0.00	
	SD	1.49	1.35	1.30	1.30		1.29	1.39	
Posting on blogs	Mean	−0.95	−0.85	−0.83	−0.94	0.839	−0.82	−0.92	0.503
	Med.	−1.00	−1.00	−1.00	−1.00		−1.00	−1.00	
	SD	1.20	1.13	1.14	1.08		1.15	1.12	

Source: own study. Note: statistically significant values are marked in red.

Discussion of the Obtained Results

Our analysis revealed that the most preferred way for tourists to use social media while travelling is by sharing photos with their friends. Therefore, the previously mentioned application with an interactive city guide would give tourists plenty of opportunities to take photos and then to share them with their friends. These could be not only photos of interesting places in the city, but also photos of solutions used in smart cities and sustainable technologies, which would promote the city as a modern one. The obtained research results, in terms of generational differences, should be particularly commented on in the context of the study [69]. There is a certain divergence in the behaviour of Poles representing the BB Generation. While [69] shows some activity of boomers in terms of sending MMS messages or FB travel photos, in the case of Polish tourists from this generation, we can see a neutral or even reluctant attitude towards these activities. Perhaps this is due to the communication style of this generation, which prefers phone calls to send messages via smartphones, or perhaps this attitude is related to research [70], which indicates the need for relaxation, calming down and relieving tension as the main motivators for undertaking tourist trips. Therefore, one could speculate that excessive activity on, for example, FB could interfere with the fulfilment of these needs.

4.3. Profile Setting

In seeking to answer the second RQ3 research question: "How much travel information becomes publicly available? What are the settings of social media user profiles according to age and generation?" corresponding visualisations of the response distribution were made (Figures 4 and 5), and Chi-square test of independence was performed (Table 5).
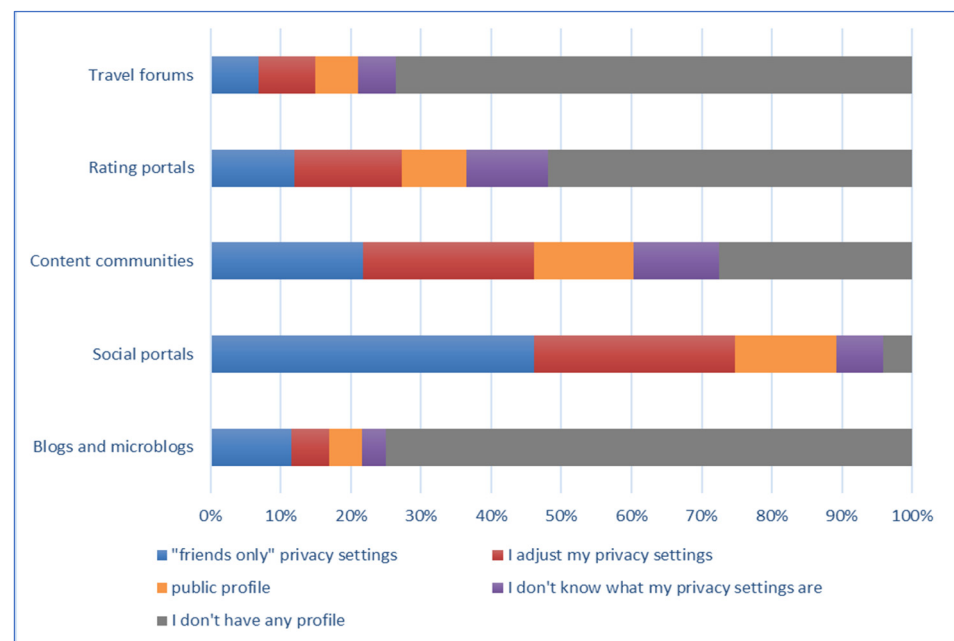
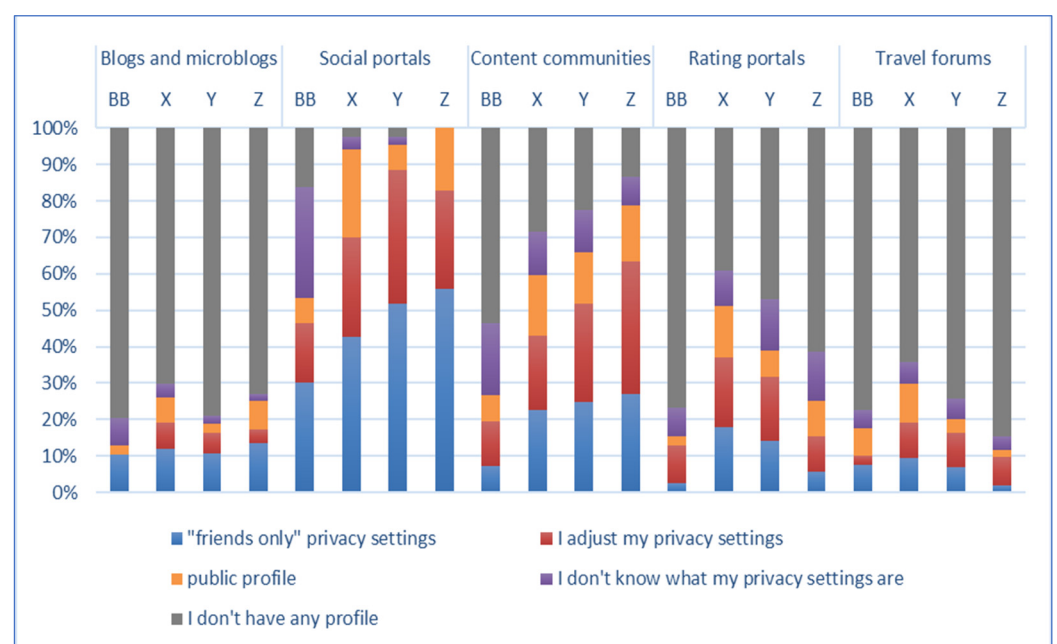**Figure 4.** Profile settings in different SM. Source: Own study.

Figure 5. Profile settings in different SM by generation. Source: Own study.

Table 5. Relationship results between social media types, gender, and generation.

	Generation		Gender	
	The Value of the Chi-Square Statistics	***p*-Value**	**The Value of the Chi-Square Statistics**	***p*-Value**
Blogs and microblogs	9.824	0.631	8.268	0.082
Social portals	81.727	0.000	5.745	0.219
Content communities	30.674	0.002	9.625	0.047
Rating portals	24.837	0.016	8.424	0.077
Travel forums	12.398	0.414	10.074	0.039

Source: Own study. Note: Statistically significant values are marked in red.

Analysing the overall answers of the respondents (without generational division) to the questions about profile settings in particular social media, it can be indicated that the respondents in less popular media do not have profiles, while in more popular media profile settings are highly personalised. The issue is presented in the figure below (Figure 4).

The results show that there are differences in profile settings in using SM by generation, as presented in Figure 5.

To investigate the profile setting, the Chi-square test of independence was applied and the results are presented in Table 5.

When analysing profile settings by gender, a Chi-square test showed a correlation for media such as content communities and travel forums. To look at differences by gender, multivariate tables were also created. These show that for content communities, the differences are because men are more likely than women to have profiles there. On the other hand, if they have a profile, women are more likely than men to declare privacy settings such as "friends only" and "I adjust my privacy" settings. As for travel forums, the differences between the groups result mainly from the fact that men more often have profiles there and more often declare settings such as "I adjust my privacy" settings.

When analysing profile settings by generation, it can be observed that most representatives of the BB Generation do not know what profile settings they have or do not have a profile. Generation X does not have a profile in such media as blogs/microblogs (70% of respondents), travel forums (64%), rating portals (39%). For such popular media as social networking sites, the majority (43%) using them have profiles with privacy settings for friends only, 28% adjust the settings or even have a public profile (24%). In content communities, only about 29% of respondents have no profiles, about 23% have privacy settings for friends only, and about 20% adjust their privacy settings. A similar distribution can be observed in the settings of rating portals. Generation Y mostly does not have profiles for blogs and microblogs (79%). On social networks, on the other hand, 52% of them have profiles with privacy settings for friends only, and 37% adjust their settings. On content communities, 22% have no profiles, 25% have profiles with privacy settings for friends only, and 27% adjust their settings. In rating portals and travel forms, most people in this generation do not have profiles. For Generation Z, privacy settings on social networking sites, more than half (56%) have friends only settings, 27% adjust their privacy settings, and only 17% have a public profile. When it comes to settings on content sites, Generation Z is more like Generation X than Generation Y. Other social media does not get much attention from Generation Z. Most do not have profiles in other media than the previously mentioned sites. Declarations of having no profile reach 62%, only in rating portals (see Figure 4).

A graphical representation of the relationship between the different types of social media and generations was made using correspondence analysis. The results are presented in the following figures (Figures 6–8).

The correspondence analysis showed, above all, that the BB Generation differs significantly from the other generations by declaring that they do not have profiles or do not know what their profile settings are. In the case of social portals and content communities, mainly Generation Y declares privacy settings such as "friends only" and "I adjust my privacy settings". On the other hand, representatives of Generation X most often have public profiles on social portals and Generation Y in content communities. In the case of ratting portals, the percentage of people declaring they do not have profiles is similar for all generations (although BB Generation dominates), while "friends only" privacy settings and "I adjust my privacy settings" are declared by Generation X.

The study showed that hypotheses H3a and H3b were partially verified (significant differences by generation for social portals, content communities, and rating portals; significant differences by gender for content communities and travel forums).
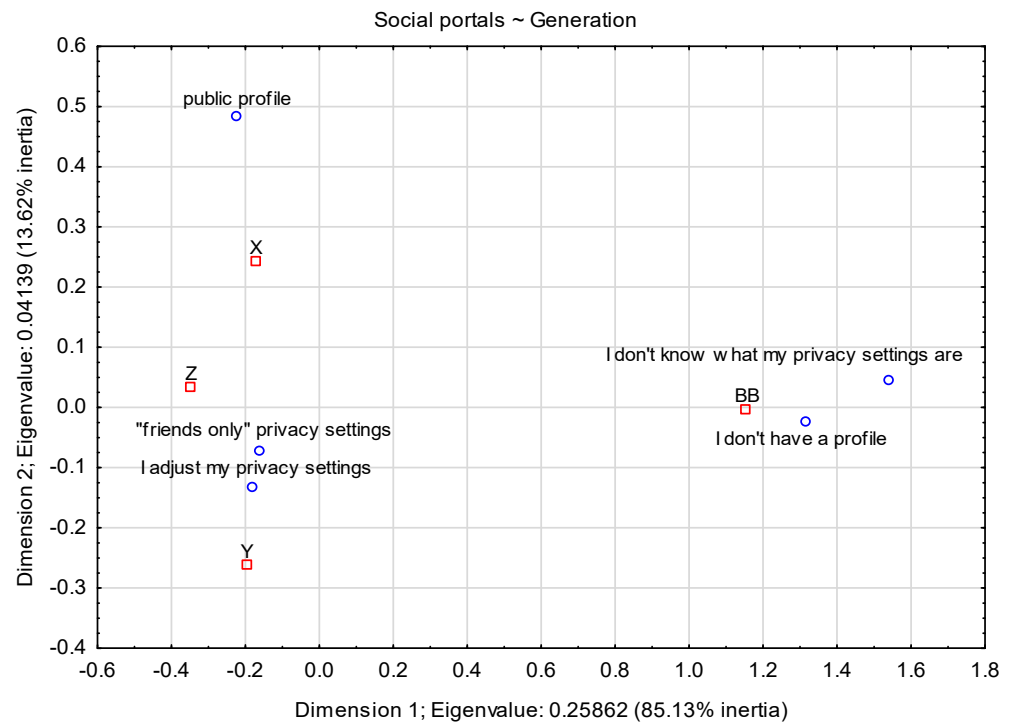
Figure 6. Correspondence analysis for the variables: Social portals and Generation. Source: Own study.
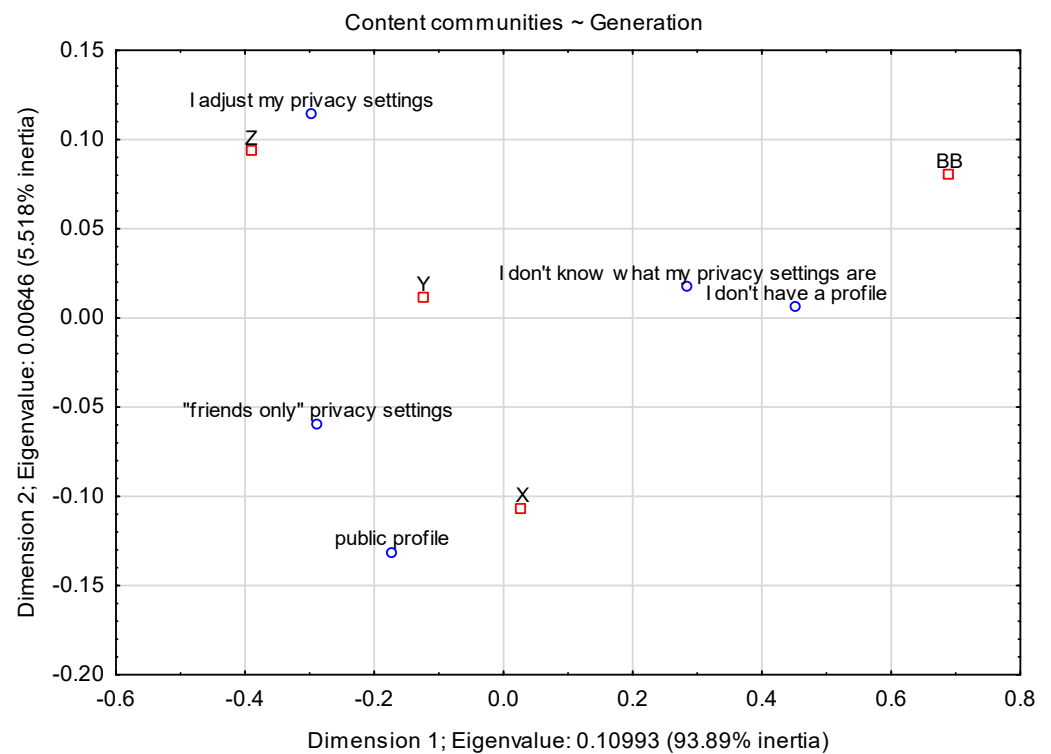

Figure 7. Correspondence analysis for the variables: Social portals and Generation. Source: Own study.
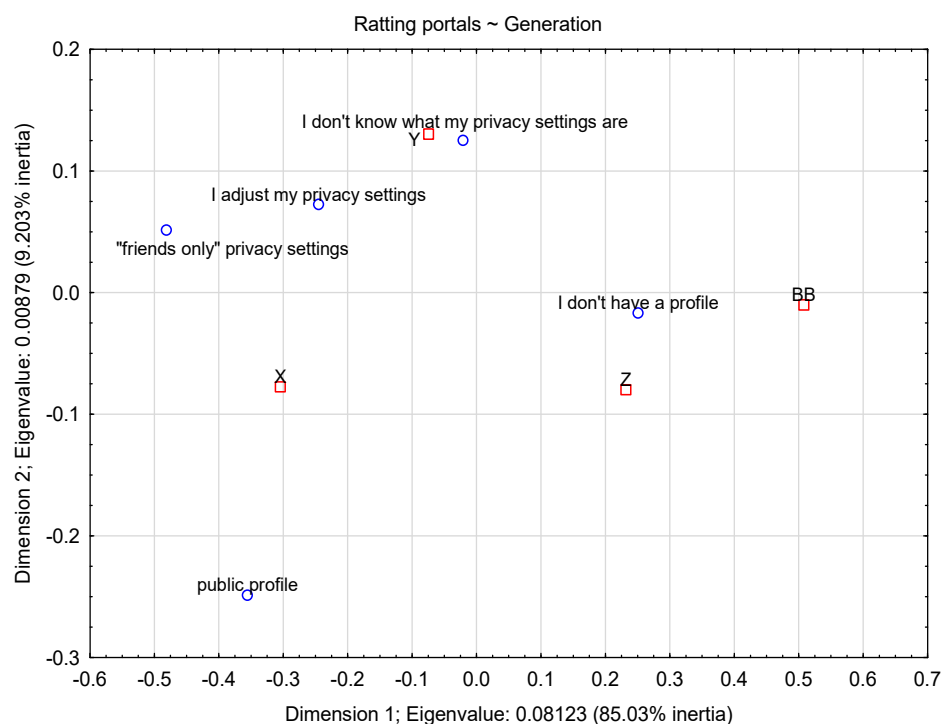
Figure 8. Correspondence analysis for the variables: Rating portals and Generation. Source: Own study.

Discussion of the Obtained Results

Our analysis revealed that tourists protect their privacy when using social media. That means that their behaviours in social media in terms of promoting the place of their travel will be the word of mouth marketing. The study conducted shows a convergence with the results of [79]. BB Generation representatives are not aware of the settings of their profiles. On the other hand, for younger generations, a discrepancy can be seen with the research [81], which indicates that younger generations are also unaware of this issue. This discrepancy can be seen especially for SM such as social portals and content communities. Awareness of the younger generations in Poland about online safety may be due to widespread campaigns in schools informing about the dangers of the Internet.

5. Conclusions

5.1. Theoretical Implications

The article filled a research gap for theory in tourism management, sustainability city, and how to use social media. It provided new knowledge on tourist behaviour during and after the trip. A proprietary survey Questionnaire was used in the study. The presented article enhances the knowledge of sustainable cities and sustainable return from tourism and possibilities to use social media in this regard. It also extends it with the information that tourists share during and after their trip and their preferences for social media profile settings. Furthermore, scholars have evaluated generational and gender differences in aspects related to sharing travel experiences during and after the trip and social media profile settings.

The findings presented in this paper firstly indicate the desirability of applying sustainability principles in a city. In conditions of restoring tourism, a balanced return is necessary, which has so far been indicated in a few literature sources [33]. In the literature, there is an ongoing discussion about the restoration of tourism [32], while the Authors advocate a sustainable return to tourism. Secondly, the state of knowledge about smart cities and the possibilities of using social media has been expanded. With the increasing use of social network platforms on the Internet, it is possible to use a large volume of social media data to monitor the trend of the tourist market [89]. With residents active on social media, city

promotion improves. This study contributes to current literature indicating the importance of using social media by tourists who also use the services of cities [23]. Observing the behaviour of tourists on social media and the information provided therein, including photos of their trips, makes it possible to identify cultural changes. These changes can also be created by the managers of a tourist region by publishing photos on social media [49]. Thirdly, the social media behaviour of the public has been studied [24,44,54], but only a few studies are examining their behaviour in sharing their experience during and after their trip. Therefore, the present work is an important contribution to the study of identifying tourist behaviours. In addition, previous works have investigated the behaviours of younger generation tourists [24]; however, there is a research gap in examining the differences between generations from BB to Generation Z. The literature highlighted that social media use varies in aspects related to younger generations [2] and gender [88,90]. The article extended the theory by identifying intergenerational differences in aspects related to the four generations of Generations BB, X, Y, Z. Fourth, the literature has explored methods of protecting the individuals' privacy [80,83–85]. However, there has been a lack of work on the differences between the generations and genders. Through the research conducted, the existence of such differences in profile settings has been identified. This indicates varying levels of involvement in social media information sharing (profile ownership) and privacy profile settings by different generations.

5.2. Practical Implications

In order to efficiently manage and promote a city, it is necessary to implement social media that improve it. Obtaining information about experiences is essential both from residents and tourists. They are an important source of information that supports the activities undertaken by the city authorities. The return to increased tourism poses a challenge for both tourists and those who manage them. With the planned increase in tourism, it is important to provide the right conditions for residents and tourists, where social media can be of help. Implications for practice are aimed at city managers as well owners of facilities and tourist attractions, tourist organisations involved in managing smart tourism. The return to increased tourism under the new rules requires implementing a balanced approach and new technologies. Therefore, it is recommended the use social media to study tourists' behaviour during and after their tourist trips. Tracking their behaviour will allow them to gather information from them and respond to their needs and expectations, and also ensure effective urban management and city promotion.

Several managerial implications derive from this study. First, the current situation requires a new approach to tourism management and marketing [51]. It is worthwhile to use the smart solutions applied in sustainable development to sustainably restore tourism. This will benefit the environment, the local community and will provide a suitable environment for tourists. Secondly, by studying tourists' travel behaviour, we can obtain information about tourists' location since the information is posted in real-time, which can help urban management and city promotion. Social media data analysis has greatly improved the accuracy and precision of the evaluation results in the era of e-tourism [89]. Reporting on a trip as it is happening on social media gives a picture in terms of traffic volume in the area, which helps tourism management and reduce inconvenience to residents. Through their posting, it is possible to monitor the current situation and how tourists react to the event. In case of high tourist traffic, tourists can be encouraged to visit another location nearby where there are fewer tourists. Thirdly, tourists can be encouraged to post hashtags that will provide information about the tourist location, thus promoting the location. Given the large reach of social media, it is important to read the message that is sent by the user to foster the promotion of that place. Such information can also encourage readers to visit a destination. Fourth, by learning the preferences and behaviours of each generation while travelling, we can observe the items in the environment that they pay attention to. Details that attract tourists' attention that is posted on social media will allow identifying social problems that can be solved with the involvement of tourists. This is an opportunity to

create and implement social innovations. Furthermore, the research provided information on what file formats are being shared by each generation. This can be helpful for further use in Big Data processing. With this information, artificial intelligence algorithms can also be created to process this data and better adapt the offer of a place to the needs of tourists. Fifth, the information obtained about the settings of privacy profiles in social media can be used by companies for marketing activities.

The identification of people through social media profiles will allow for reaching a specific group of influencers with whom one can establish cooperation in order to promote a given tourist destination. This can also be an opportunity to establish closer contact with tourists as customers, which will allow building a relationship with them and obtaining more detailed information about the destination/attraction. The information thus gained can be used in the future to improve the offer of a given tourist attraction and implement innovations that are based on identified customer needs.

In conclusion, we can point out that the information can also be used by tourists themselves, who, by following the profiles of other tourists or hashtags of a given location in social media during their trip, can learn about the problems. Sixth, due to the varying preferences for sharing information on social media and privacy profile settings, it is necessary to encourage them to create profiles and share information. Thus, more data will be collected, which can be used by city managers and help urban management and city promotion. Importantly, it is also an opportunity to educate users on ethics and respect for privacy.

5.3. Limitations and Suggestions for Future Studies

The limitation of the research presented in this article is the national scope of the study because it was conducted only in Poland. Plans are considered to carry out comparative research in other countries, which would allow capturing cultural differences. Moreover, the conducted research was based only on the respondents' declarations, which were expressed in the survey, and not on the analysis of their posts on social media. In-depth qualitative research with social media profile owners is also considered, which would allow us to learn about their motivations for sharing their travel experiences during and after the trip.

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