

Agata Niemczyk¹
Renata Seweryn
Mariusz Łapczyński
Zofia Gródek-Szostak

Article info:

Received 05.12.2021.

Accepted 14.08.2022.

UDC – 004.774.1

DOI – 10.24874/IJQR17.02-07



THE USE OF MOBILE APPLICATIONS IN TOURIST TRAVELS OF GENERATION Z. A CASE STUDY OF POLAND

Abstract: *The aim of the article is to show the usability of mobile apps in the process of satisfying Generation Z's tourist needs (pre-travel, during-travel, post-travel). Theoretical part includes characteristics of Generation Z and the place of modern technologies in satisfying tourist needs, especially mobile apps' functions and advantages. Empirical part presents survey results (N=669) which positively verified main hypothesis: The motive and length of the trip, and the ways in which the Zs' travel needs are met, significantly determine the choices of mobile apps used at each stage of the trip. They prove a leisure trip is more often a positive determinant of pre-travel mobile apps use than a cognitive trip, while during travel the opposite situation is observed, at post-travel stage a significant dependence of mobile app use on the motive of the trip concerns only the negative influence of leisure trips on the use of communication/entertainment-socializing apps.*

Keywords: *Scientifi mobile applications, Pre-travel, During-travel, Post-travel, Survey, Generation Z, Polandc research*

1. Introduction

These days, technology has permeated all areas of everyday life, including leisure time. It used especially to the representatives of Generation Z (Gen Z), for whom the virtual and real worlds have merged. Technology provides a set of multifunctional tools, which meet the needs of tourists at every stage of travel, from imaginary, to real, to reminisced. The aim of the article is to present the usefulness of a group of these tools, i.e. mobile applications, in meeting the needs of Gen Z related to tourism. The legitimacy of this research is based on the indicators of the use of popular mobile applications (including their functions) by representatives of Generation Z in Poland at various stages of their tourist travels, both

domestic and foreign. This perspective should be of particular benefit to mobile marketing of various tourist service providers. The knowledge of the characteristics of individual generations allows reaching them with the tourist offer more effectively. Each generation has a different way of spending leisure time, but also prefers different forms of sales and marketing. They also make different purchasing decisions on the tourist market, following different triggers.

2. Literature review

2.1. Characteristic of Generation Z

One of the most important generations today, the one that will be responsible for the

¹ Corresponding author: Agata Niemczyk
Email: niemczya@uek.krakow.pl

demand and supply in the future is Generation Z, the first generation that has not experienced the analog world. As a result, the virtual and real world are almost the same reality for Gen Z (Altitude, 2015). An alternative that allows the young generation to break away from the virtual world and open to new experiences is tourism. Gen Z likes to travel and feels no anxiety related to leaving home. Their motto is YOLO (You Only Live Once), which is why they "collect" experiences and, given the opportunity, many of them would decide to travel far to gain knowledge of the world and discover different cultures (Monaco, 2018).

2.2. Travel-related decision-making process

Decision-making on the tourism market is a complex process, which results from its character, and from the product itself. What distinguishes it from other consumer goods and services is the fact that it is quite complex and includes a non-local market. For the purpose of this article, an original classification of the functions of tourism applications into six groups was adopted (table 1).

Table 1. Functions of mobile applications in tourism

Function	Purpose details	Examples
Transport	Navigating space	Uber, BlaBlaCar, DiDi, Ola, CityPark
Booking/purchase	Finding goods and services, offering details, comparison and booking/purchasing them	Skyscanner (flights) HotelTonight, Booking, Airbnb (accommodation), Zomato (gastronomy), Kayak, Google Travel
Information/location (perishable/location specific)	Obtaining basic information on the potential/actual destination (weather, current time, topography, interesting places, events, sites, etc., their addresses, opening hours, advice and practical recommendations)	Google Maps, Google Earth, Waze, Grab, Pogoda ICM, AccuWeathe, Circa
Communication/entertainment and social networking	Communicating and maintaining social interaction (including in different languages), organizing attractive leisure time (for oneself and the company), share travel experiences (as posts, photos, videos, etc.)	YouTube, Facebook, Instagram, Twitter, WhatsApp, Messenger, Skype, Google Translate, Google Talk, Dropbox
Opinion-forming	Facilitating the decision-making process based on the opinions and evaluations of other users, inspiring purchase	TripAdvisor, HolidayCheck
Transaction-oriented	Converting currencies (prices), making a transfer/payment for the product	XE Currency, Google Wallet

Especially in the first two phases (mobile) information plays an undeniable role. Due to technology, many travel planning activities characteristic of imaginary travel take place at the stage of the actual travel, almost on-the-go. Accommodation, restaurants, parking, etc is found using mobile devices

with Internet connection. This proves the modification of the classical decision-making process as to the duration of its phases, especially the imaginary travel, as its functions are transferred to the stage of the real travel (a particularly extreme example is the mystery trip). During travel, mobile

applications (Lu et al., 2015; Ismail et al., 2017; Gupta & Dogra, 2017; Gupta et al., 2018; 7. Yi et al., 2019), reality (Sârbu et al., 2018) social media are used to communicate/interact, navigate, search for accommodation, restaurants, tourist attractions, translate, check the weather or the exchange rate, etc. Afterwards, impressions from the trip is shared via social media, thus creating the potential needs of future visitors (Ozansoy Çadircı & Sağkaya Güngör, 2019). Therefore, a model approach to smartphone travel was proposed (Kim et al., 2015; Wang et al., 2016a; Wang et al., 2016b; Mang et al., 2016), based on the perspective of "unblocking" tourist travel through smartphones.

Two of the mentioned functions of mobile applications (communicating/entertainment and opinion-forming) are used at all stages of tourist travel (from pre-, to post-travel phases). The booking/purchasing, information/location and transaction-oriented functions are relevant only in pre-travel and travel phase, and mobile/transport - only in the actual travel phase. According to SensorTower.com (as of September 2019), the top 10 most used travel mobile applications are: Uber, Google Translate, Waze, Grab, Google Earth, Booking, Zomato, DiDi, Airbnb and Ola. However, in addition to tourism-only applications, popular social media applications such as Facebook, Instagram and Twitter play an extremely important role in tourism.

3. Materials and Methods

The following sub-hypotheses were adopted:

H1: Mobile applications used by Generation Z in imaginary, real and reminisced travel differ with regard to the motivation of the travel.

H2: Generation Z representatives traveling abroad are more likely to benefit from transactional-oriented applications than domestic tourists.

H3: Traveling with own car increases the likelihood of using information/location applications at the pre-travel stage.

H4: Accommodation in a private apartment reduces the likelihood of using transport applications before and during the trip.

To achieve the research goal and verify the sub-hypotheses, a study was conducted from November 2019 to February 2020 in Poland. A deliberate sample of 669 respondents born after 1996 were surveyed using a proprietary online questionnaire.

In the research sample, women were a slight majority (68.16%), as were residents of large cities (37.67%) and rural areas (33.48%) (residents of medium-sized towns constituted 16.29%, and small towns - 12.56%).

The logit model was used in the analysis to model the probability of a binary dependent variable based on a set of independent variables (Hilbe, 2018) and is expressed by the following formula:

$$P = \frac{e^{x_i\beta}}{1 + e^{x_i\beta}}$$

where $x_i\beta$ refers to the set of independent variables.

Its purpose is to forecast or explain the studied area, where variable Y has two categories. In this article, the dependent binary variable consists of two categories: 1 (the tourist uses the application) and 0 (the tourist does not use the application). It is used in tourism market research, e.g. to seek determinants of service and marketing innovations in tourism (Divisekera & Nguyen Van, 2018) predict preference for public transports by urban tourists (Romão & Bi, 2021), examine the associations of CSR performance with reporting of hospitality and tourism firms (Koseoglu et al., 2021), and determine factors underlying insurance uptake by small and medium-sized tourism and hospitality enterprises (Dayoura et al., 2020).

In the logit model used for the purposes of this article, the dependent variable referred to the use of the application, while the set of independent variables included the purpose of the trip, the duration of the trip, the means of transport, the place of accommodation and the way of spending leisure time during the trip. Details can be found in table 2 (Appendix).

4. Analysis of results

By analyzing the use of mobile applications in tourist travels of Generation Z at the imaginary travel stage, it was determined that the motivation for travel determines their use. More often than not, the purpose is leisure rather than sightseeing (Table 3a, 3b, Appendix). Empirical data obtained showed that the motive of leisure reduces the probability of using 9 applications in domestic and foreign travels (4 booking, 2 opinion-forming, 1 transaction-oriented, 1 transport, 1 communication/entertainment and social networking); no significant impact with regard to the other application was observed. On the other hand, historical and cultural exploration travels increase the probability of using mobile applications, but only 2 of the studied, i.e. Pogoda ICM (weather app) only for domestic travel and Booking.com for both domestic and foreign travels.

The duration of a tourist trip also determines the use of mobile applications at the stage of imaginary travel. It turned out that a short duration of the trip (1 day) reduces the likelihood of using the Skyscanner app for domestic travel and Booking.com for domestic and foreign travel. In the case of a 2-3 day trip, the likelihood of using the Pogoda ICM weather application decreases (in Poland). A one-week trip abroad, on the other hand, reduces the likelihood of using the following applications on the imaginary travel stage: HolidayCheck, XE Currency, Google Wallet and Hotel Tonight.

The means of transport affect the use of mobile applications to a greater extent than the destination or its duration. Only traveling abroad by a regular coach is a destimulant for one application: Airbnb. Please note that meeting the transport needs, using various means for this purpose, significantly affects the use of almost all analyzed applications; as many as 20 out of 22 relate to train travel, both domestic and foreign, with a predominance of domestic. Driving own car ranks close behind, with positive indicators regarding to 16 applications.

Taking into account the place of accommodation, it should be noted that staying in a guesthouse reduces the probability of using 1 booking application (Google Travel) and 1 opinion-making application (HolidayCheck), as well as 1 information application (Google Maps) for domestic travels. Also, accommodation in a private apartment has a negative and significant impact on the use of as many as 11 applications, i.e. Skyscanner, Hotel Tonight, Google Travel, Google Translator, Dropbox, HolidayCheck, ICM Weather, Skype, Google Wallet, Instagram, and Blabla Car. It is it a stimulus only with regard to Airbnb for domestic travel and Pogoda ICM for foreign travel. Please note that hotel accommodation positively affects the use of 11 applications, including 4 booking applications, 2 opinion-forming, 1 information/ location, 1 communication/ entertainment and social media, 2 transport and 1 transaction-oriented application (for details, see Table 3a, 3b, Appendix).

How time is spent during a tourist stay significantly determines the use of mobile applications by Generation Z at the stage of imaginary travel. Among the analyzed activities, nature viewing has a positive impact on most of the mobile applications - 17 out of 22. Interestingly, 16 of them are used in foreign travels and only 1 (Google Maps) relates to domestic travel. What also draws attention is hiking during domestic travels, which has a negative impact on the

use of 9 applications, i.e. TripAdvisor, Holiday Check, Facebook, WhatsApp, Circa, Hotel Tonight, City, XE Currency, Google Wallet and a positive impact with regard to Google Maps.

Considering the use of mobile applications by Generation Z during travel (Table 4a, 4b, Appendix), please note that traveling to learn historical and cultural values increases the probability of using Google Wallet and 3 applications with a communication/entertainment and social media function (WhatsApp, Messenger and Google Translate), both in Poland and abroad. On the other hand, leisure travel is more often a destimulator than a stimulant to the use of mobile applications. It reduces the likelihood of using Kayak and Circa (both for domestic and foreign travel), and increases the likelihood of using only Google Maps (both for domestic and foreign travel). The analysis of the relationship between the duration of stay and the use of mobile applications shows that one-day trips abroad increase the probability of using WhatsApp, weekly domestic trips - of using Kayak, and domestic 2-3-day trips reduce the probability of using Booking.com.

The means of transport has a much greater impact on the use of mobile applications than the destination or duration of the trip. In addition, only domestic travels are a destimulation of the use of some of them. For example, traveling by own car reduces the likelihood of using Skyscanner, in the case of shared car and camper, of Google Maps, and in the case of a coach trip - of Instagram. In turn, the largest number of mobile applications (as many as 15 out of 22) is positively affected by a shared car travel (e.g., BlaBlaCar), followed by train travel, both domestic and foreign, with a positive relationship for 14 applications. On the other hand, traveling by tourist coach increases the likelihood of using only WhatsApp and Google Translator and only for domestic travel.

Taking into account the place of accommodation, it should be stated that accommodation in a youth hostel has a positive impact on the largest number of mobile applications, i.e. 8, including as many as 6 when it comes to traveling abroad. Ranking next is hotel accommodation, which positively affects the use of 7 applications and negatively affects the use of Facebook. On the other hand, an overnight stay in a private apartment is a destimulator for using all 5 applications with which it is significantly related. Please note that when it comes to communication/entertainment and social media applications, the representatives of Generation Z who enjoy the hospitality of friends or family in the country use WhatsApp more often, and those staying at a hostel - Instagram and Messenger.

The way of spending leisure time does not significantly affect the use of transport applications by the representatives of Generation Z, as well as of Kayak, Circa, TripAdvisor, and XE Currency. On the other hand, active tourism increases the probability of using up to eight applications, including almost all communication/entertainment and social media applications (except Google Translator and Dropbox). Representatives of Generation Z who go nature viewing in their destination more often than others use up to six applications, including almost all information/location applications (except for Circa). Hiking during domestic travels is also worth noting, as it is a destimulator for two applications, i.e. Skyscanner and Instagram, and a stimulant only for one, i.e. Google Maps, both in domestic and foreign travels.

A tourist returning home enters the stage of the so-called reminisced travel. They recall emotions and memories inspiring them to next tourist travels. The data obtained in the study allow for a conclusion that a leisure travel significantly reduces the probability of using two communication applications, i.e., Instagram and WhatsApp (table 5a, 5b, Appendix). Interestingly, the cognitive purpose does not significantly affect the use

of the application in this phase of travel, as does the leisure use in relation to the other 20 analyzed purposes.

A similar regularity is noted with regard to the duration of travel. Only a weekly domestic travel increases the probability of using just 1 out of 22 analyzed applications, i.e. Google Travel. Considering the means of transport, one can observe their positive impact on the use of mobile applications at the stage of reminisced travel, albeit the use of as many as 10 applications is determined by air travel, including: Blabla Car, Booking.com., Google Travel, Circa, Holiday Check, Google Wallet and XE Currency (in Poland) and Whats App, Messenger, Trip Advisor (abroad). When considering accommodation, it can be noticed that a hotel stay increases the probability of use Skyscanner and Kayak, and reduce the use of Facebook in Poland and City Park App abroad.

Much more often than the destination of the trip, its duration, means of transport and accommodation the use of mobile applications in the reminisced travel of Generation Z representatives is influenced by leisure activities. Among the analyzed activities, the majority of mobile applications (i.e. 8 out of 22) have a positive impact on active tourism. Six of the applications relate to foreign travel, including 3 booking applications (which can be explained by subsequent purchases), 2 communication and 1 opinion-forming; 3 relate to domestic travel that increase the probability of using 1 information and 2 communication applications. Another interesting leisure activity is hiking, which has a positive impact on 6 applications abroad (Blabla Car, City, Hotel Tonight, Google Travel, WhatsApp and Google Translator) and one in Poland (Google Travel).

5. Discussion

Lu et al. (2015) found that the features that determine the selection and use of a given

mobile travel application are: convenience, personalization and the sense of empowerment. Please note that the quality of mobile devices available to the user (smartphone self-efficacy) is the direct factor determining the higher performance and higher expectations of personal use of travel applications. This should not be overlooked in the customer satisfaction survey and application effectiveness assessment.

In a study by A. Gupta, N. Dogra (2017) a group of 284 local Indian travelers identified factors influencing a tourist's intention to use smartphone map applications while traveling. Representatives of Generation Z under the age of 20 accounted for 6.33% and respondents aged 20-30 constituted 44.7%. The authors proved, e.g., that the most important determinants of behavioral intentions, i.e. predictors of the intention to use navigation applications during travel, are in the following order: habit, favorable conditions, expected performance and hedonic motivation as identified by Ismail et al., (2017). To best match the needs of tourists, it is recommended for the developers of applications of this type to include: maximum utility functions, resources of effective, useful and reliable information, guaranteed user privacy and safety, as well as elements of fun and pleasure, to meet users' hedonistic motivations. This issue was further explored by the authors in 2018 (Gupta et al., 2018).

6. Conclusion

Conclusion should present one or more conclusions that have been drawn from the results and subsequent discussion. The conducted analyzes allow to confirm the main hypothesis of the article: in terms of the number, and especially the type of mobile applications used by the representatives of Generation Z at particular stages of the tourist travel the choice depends on the motivation for and duration of the trip, as well as the preferred means of transport, accommodation and the mode of

spending leisure time during the stay. These results allow a conclusion that H1 has been confirmed.

Taking into account the activities during the stay itself, it was found that active tourism (cycling, swimming, etc.) increases the likelihood of using both of the discussed transaction-oriented applications, i.e. Google Wallet, and XE Currency, at the pre-travel stage. There was no statistically significant relationship between these variables during and after travel. Therefore, H2 was partially confirmed.

It was confirmed that the type of means of transport positively impacts the use of the largest number of applications during travels of Generation Z representatives. The research confirmed that contemporary tourists travel mostly by own car, which usually involves lots of preparation in terms of logistics at the stage of imaginary travel, both in domestic and foreign travels (which positively verifies the assumed H3).

Accommodation in private apartments reduces the likelihood of using transport applications before and during travel, but to a limited extent. This regularity applies to the BlablaCar application in pre-travel for foreign trips, but is not observed at the actual travel stage, which means that H4 has been rejected.

In conclusion, there is no doubt that the travel model of Generation Z is "unlocked" by smartphones. Traveling does not always

have to be 100% planned in advance, which is an opportunity for mobile marketing managers in tourism. Knowing the theme and duration of travel, and how Generation Z would like to have their tourist needs met, one can determine which mobile applications they would most likely use. The results are of key importance and should be used in formulating assumptions, regulations and guidelines for subsequent programs and public policies supporting the development of IT/ICT technologies, including the development of smart specializations in the tourism industry.

This study naturally has some limitations. The manuscript investigates generation Z representatives from Poland, which means that generalization to other countries is limited. Undertaking research among Generation Z representing other cultural and social patterns would probably offer a broader recognition of the patterns of using application in tourism among the studied generation. As part of the research laboratory, the authors plan to monitor the obtained regularities in subsequent works, expanding the set of applications and the geographical scope (countries other than Poland), as well as the subjective scope (to include other age groups of tourists).

Acknowledgment: Publication financed by the subsidy granted to the Cracow University of Economics.

References:

- Altitude. Through the eyes of gen Z. (2015). Retrieved 21.03.2021 from <https://www.youtube.com/watch?v=iBmFpAMa5x0>
- Dayoura, F., Adongob, Ch. A., & Kimbuc, A. N. (2020). Insurance uptake among small and medium-sized tourism and hospitality enterprises in a resource-scarce environment. *Tourism Management Perspectives*, 34, 100674. doi.org/10.1016%2Fj.tmp.2020.100674
- Divisekera, S., & Nguyen Van, K. (2018). Determinants of innovation in tourism evidence from Australia. *Tourism Management* 67, 157–167. doi.org/10.1016/j.tourman.2018.01.010
- Gupta, A. & Dogra, N. (2017). Tourist adoption of mapping apps: A UTAUT2 perspective of smart travellers. *Tourism and Hospitality Management* 23(2), 145-161. doi:10.20867/thm.23.2.6.

- Gupta, A., Dogra, N., & George, B. (2018). What determines tourist adoption of smartphone apps? An analysis based on the UTAUT framework. *Journal of Hospitality and Tourism Technology*, 9(1), 50-64. doi:10.1108/jhtt-02-2017-0013.
- Hilbe, J. M. (2018). *Practical Guide to Logistic Regression*. Chapman and Hall/CRC.
- Ismail, M. N. I., Hemdi, M. A., Sumarjan, N., Hanafiah, M. H., & Zulkifly, M. I. (2017). Customer's acceptance, usage and M-Satisfaction of Mobile Hotel Reservation Apps (MHRA). *Journal of Tourism, Hospitality & Culinary Art*, 9(2), 425-442.
- Koseoglu, M.A., Uyar, A., Kilic M., Kuzey, C., & Karaman, A.S. (2021). Exploring the connections among CSR performance, reporting, and external assurance: Evidence from the hospitality and tourism industry. *International Journal of Hospitality Management*, 94, 102819. doi.org/10.1016/j.ijhm.2020.102819
- Kim, H., Xiang, Z., & Fesenmaier, D. R. (2015). Use of The Internet for Trip Planning: A Generational Analysis. *Journal of Travel & Tourism Marketing*, 32(3), 276-289. doi:10.1080/10548408.2014.896765
- Lu, J., Mao, Z., Wang, M., & Hu, L. (2015). Goodbye maps, hello apps? Exploring the influential determinants of travel app adoption. *Current Issues in Tourism*, 18(11), 1059-1079. doi:10.1080/13683500.2015.1043248
- Mang, C. F., Piper, L. A., & Brown, N. R. (2016). The Incidence of Smartphone Usage among Tourists. *International Journal of Tourism Research* 18(6), 591-601. doi:10.1002/jtr.2076
- Monaco, S. (2018). Tourism and the new generations: Emerging trends and social implications in Italy. *Journal of Tourism Futures*, 4(1), 7-15. doi:10.1108/JTF-12-2017-0053
- Ozansoy Çadırcı, T., & Sağkaya Güngör, A. (2019). Love my selfie: selfies in managing impressions on social networks. *Journal of Marketing Communications*, 25(3), 268-287. doi:10.1080/13527266.2016.1249390
- Romão, J., & Bi, Y. (2021). Determinants of collective transport mode choice and its impacts on trip satisfaction in urban. *Journal of Transport Geography*, 94, 103094. doi.org/10.1016/j.jtrangeo.2021.103094
- Sârbu, R., Alecu, F. & Dina, R. (2018). Social Media Advertising Trends in Tourism. *Amfiteatru Economic*, 20 (12), 1016-1028. doi:10.24818/EA/2018/S12/1016
- Wang, D., Xiang, Z., Law, R., & Ki, T. P. (2016a). Assessing Hotel-Related Smartphone Apps Using Online Reviews. *Journal of Hospitality Marketing & Management*, 25(3), 291-313. doi:10.1080/19368623.2015.1012282
- Wang, Y-S., Li, H-T., Li C-R., & Zhang, D-Z. (2016b). Factors affecting hotels' adoption of mobile reservation systems: A technology-organization-environment framework. *Tourism Management*, 53(C), 163-172. doi:10.1016/j.tourman.2015.09.021
- Yi, K.Y., del Vas, G.M. & Muñoz, A. (2019). An integral mobile application for pre-travel, on-site and post-travel stages. *International Journal of Information Systems and Tourism*, 4(1), 7-17.

Agata Niemczyk

Cracow University of
Economics,
Cracow,
Poland
niemczya@uek.krakow.pl
ORCID 0000-0002-5594-6296

Renata Seweryn

Cracow University of
Economics,
Cracow,
Poland
sewerynr@uek.krakow.pl
ORCID 0000-0002-5124-668X

Mariusz Łapczyński

Cracow University of
Economics,
Cracow,
Poland
lapczynm@uek.krakow.pl
ORCID 0000-0002-4508-7264

Zofia Gródek-Szostak

Cracow University of
Economics,
Cracow,
Poland
grodekz@uek.krakow.pl
ORCID 0000-0001-6283-6952

Appendix

Table 2. Variables in the logit model

Dependent variable	No. of categories	Definition of the category	
Using the application	2	yes no	
Independent variables	No. of variables	Definition of the category	Number (percentage)
Purpose of the trip	2	leisure sightseeing	yes 354 (52.9%) no 315 (47.1%) yes 126 (18.8%) no 543 (81.2%)
Duration of the trip	3	1 day 2-3 days 1 week	yes 74 (11.1%) no 599 (88.9%) yes 265 (39.6%) no 404 (60.4%) yes 232 (34.7%) no 437 (65.3%)
Means of transport	8	own car	yes 471 (70.4%) no 198 (29.6%) - P yes 206 (30.8%) no 463 (69.2%) - A
		car sharing, e.g. BlaBla car	yes 47 (7.0%) no 622 (93.0%) - P yes 57 (8.5%) no 612 (91.5%) - A
		camper/motorhome	yes 17 (2.5%) no 652 (97.5%) - P yes 13 (1.9%) no 656 (98.1%) - A
		tourist coach	yes 105 (15.7%) no 564 (84.3%) - P yes 134 (20.0%) no 535 (80.0%) - A
		regular coach	yes 124 (18.5%) no 545 (81.5%) - P yes 78 (11.7%) no 591 (88.3%) - A
		train	yes 273 (40.1%) no 396 (59.9%) - P yes 110 (16.4%) no 559 (83.6%) - A
		plane	yes 70 (10.5%) no 599 (89.5%) - P yes 393 (58.7%) no 276 (41.3%) - A
		other	yes 17 (2.5%) no 652 (97.5%) - P yes 17 (2.5%) no 652 (97.5%) - A
Accommodation	11	hotel	yes 292 (43.6%) no 377 (65.3%) - P yes 421 (62.9%) no 248 (37.1%) - A
		motel	yes 66 (9.9%) no 603 (90.1%) - P yes 63 (9.4%) no 606 (90.6%) - A
		guesthouse	yes 154 (23.0%) no 515 (77.0%) - P yes 73 (10.9%) no 596 (89.1%) - A
		tourist house	yes 73 (10.1%) no 596 (89.1%) - P yes 29 (4.3%) no 640 (95.7%) - A
		youth hostel	yes 59 (8.8%) no 610 (91.2%) - P yes 33 (4.9%) no 636 (95.1%) - A
		hostel	yes 144 (21.5%) no 525 (78.5%) - P yes 147 (22.0%) no 522 (78.0%) - A
		private apartment	yes 194 (29.0%) no 475 (71.0%) - P yes 146 (21.8%) no 523 (78.2%) - A
		with friends/family	yes 221 (33.0%) no 448 (67.0%) - P yes 99 (14.8%) no 570 (85.2%) - A
		camping/campground	yes 97 (14.5%) no 572 (85.5%) - P yes 50 (7.5%) no 619 (92.5%) - A
		couchsurfing	yes 3 (0.4%) no 666 (99.6%) - P yes 27 (4.0%) no 642 (96.0%) - A
		other	yes 0 (0.0%) no 669 (100.0%) - P yes 0 (0.0%) no 669 (100.0%) - A

Leisure activity	7	sightseeing	yes 266 (39.8%) no 403 (60.2%) - P yes 390 (58.3%) no 297 (41.7%) - A
		active tourism	yes 244 (36.5%) no 425 (63.5%) - P yes 176 (26.3%) no 493 (73.7%) - A
		walks	yes 277 (41.4%) no 392 (58.6%) - P yes 269 (40.2%) no 400 (59.8%) - A
		hiking	yes 191 (28.5%) no 478 (71.5%) - P yes 58 (8.7%) no 611 (91.3%) - A
		nature viewing	yes 229 (34.2%) no 440 (65.8%) - P yes 226 (33.8%) no 443 (66.2%) - A
		events/concerts	yes 232 (34.7%) no 437 (65.3%) - P yes 147 (22.0%) no 522 (78.0%) - A
		other	yes 15 (2.2%) no 654 (97.8%) - P yes 16 (2.4%) no 653 (97.6%) - A

P = Poland, A = abroad

Table 1a. Mobile applications used PRIOR to a tourist trip by representatives of Generation Z.

Mobile applications	Transport		Booking/purchase					Information/location			
	BlaBlaCar	City	Skyscanner	Hotel Tonight	Booking.com	Airbnb	Kayak	Google Travel	Google Maps	Pogoda ICM	Circa
Variables	Coefficient (SE)										
Purpose: sightseeing					Poland 0.929*** (0.241) Abroad 0.589* (0.246)					Poland 0.436* (0.213)	
Purpose: leisure		Poland -0.728** (0.274) Abroad -0.703** (0.270)	Poland -0.590** (0.172) Abroad -0.584** (0.174)	Poland -0.564* (0.238)		Poland -1.050** (0.347) Abroad -0.970** (0.344)		Poland -0.603* (0.249) Abroad -0.530* (0.245)			
Duration: one day			Poland -0.624* (0.285)		Poland -1.016*** (0.275) Abroad -0.675* (0.277)						
Duration: 2-3 days										Poland -0.376* (0.027)	
Duration: one week				Abroad -0.614* (0.258)							
Transport: private car	Poland 1.252** (0.380) Abroad 0.803** (0.259)	Poland 1.458*** (0.418) Abroad 0.606* (0.265)		Poland 0.665* (0.285)	Poland 0.898*** (0.209)		Poland 1.119** (0.337)	Poland 1.177*** (0.332) Abroad 0.546* (0.237)	Poland 0.572** (0.218) Abroad 0.447* (0.188)	Poland 0.964*** (0.209) Abroad 0.447* (0.188)	Poland 1.223** (0.396) Abroad 0.548* (0.277)
Transport: carpooling, e.g. BlaBlaCar	Poland 0.916* (0.435) Abroad 0.944* (0.415)		Poland 1.257** (0.368) Abroad 1.304*** (0.338)	Poland 0.933* (0.386)		Abroad 0.923* (0.434)	Poland 0.975* (0.423)			Poland 0.834* (0.331) Abroad 0.869** (0.316)	
Transport: camper/motorhome	Poland 2.186** (0.698)	Poland 1.725* (0.732)				Poland 3.346*** (0.851)	Poland 1.690* (0.838)			Poland 1.870** (0.557)	Poland 2.233** (0.760)
Transport: tourist coach		Poland 0.933* (0.374)	Poland 0.769** (0.233)		Poland 0.613* (0.247)			Poland 0.687* (0.347)			

Transport: regular coach service						Abroad -1.598* (0.752)					
Transport: train	Poland 0.720** 1(0.64)	Poland 0.868** (0.284)	Poland 0.766*** (0.177) Abroad 0.759** (0.241)	Poland 1.033*** (0.245) Abroad 0.627* (0.281)	Poland 0.836*** (0.193)	Abroad 0.982** (0.348)	Poland 1.421*** (0.277)	Poland 1.051*** (0.257) Abroad 0.594* (0.284)		Poland 0.838*** (0.180) Abroad 1.111*** (0.239)	Poland 1.198*** (0.293)
Transport: plane	Abroad 0.711* (0.274)		Poland 0.784** (0.296) Abroad 0.690*** (0.187)	Abroad 0.651* (0.259)	Abroad 0.543* (0.182)		Abroad 0.836** (0.298)				Abroad 0.676* (0.316)
Transport: other	Abroad 1.209* (0.626)		Abroad 1.233* (0.617)		Abroad 1.487* (0.794)						
Accommodation: hotel	Poland 0.535* (0.257)	Poland 0.831** (0.277) Abroad 0.801* (0.320)	Poland 0.528** (0.178)	Poland 0.664** (0.242)	Poland 0.677*** (0.185) Abroad 1.154*** (0.193)			Poland 0.681** (0.254) Abroad 0.873** (0.285)		Poland 0.441** (0.169) Abroad 0.482* (0.191)	Poland 0.607* (0.282) 0.952** (0.357)
Accommodation: motel		Abroad 0.819* (0.389)	Poland 0.792** (0.296)		Poland 0.799** (0.302)			Abroad 0.895* (0.3760)			Abroad 0.862* (0.414)
Accommodation: guest house								Poland -0.655* (0.329)	Poland -0.577* (0.233)		
Accommodation: self-service hotel					Abroad 1.294* (0.544)						Abroad 1.000* (0.508)
Accommodation: youth hostel	Abroad 0.899* (0.458)			Abroad 0.924* (0.443)	Abroad 1.244* (0.485)	Poland -2.137* (0.954)				Abroad 1.577** (0.468)	
Accommodation: hostel					Poland 0.837*** (0.234)						
Accommodation: lodge, apartment	Abroad -0.936* (0.366)		Poland -0.544** (0.195)	Poland -0.771** (0.295) Abroad -0.756* (0.306)		Poland 1.004** (0.342)		Poland -0.762* (0.303)		Poland -0.461* (0.187) Abroad 0.773*** (0.220)	
Accommodation: with friends or family											
Accommodation: camping/campsite					Poland -0.475* (0.240)	Poland -2.051* (0.908)	Abroad 1.122* (0.386)	Abroad 0.828* (0.398)			Abroad 1.026* (0.441)
Activities: sightseeing					Poland -0.386* (0.184)	Poland -0.738* (0.364)			Abroad 0.546* (0.237)	Abroad 0.368* (0.188)	
Activities: active tourism (cycling, swimming)	Poland 0.559* (0.251)		Abroad 0.650** (0.199)	Abroad 0.760** (0.256)	Abroad 0.565** (0.208)					Abroad 0.675** (0.206)	
Activities: walks		Abroad 0.585* (0.267)	Poland 0.578** (0.174)	Poland 0.513* (0.237) Abroad 0.706** (0.240)			Abroad 0.657* (0.258)	Poland 0.605* (0.245)			
Activities: hiking		Poland -0.814* (0.350)		Poland -0.682* (0.298)					Poland 0.874*** (0.259)		Poland -0.843* (0.364)

Activities: nature viewing		Abroad 0.698** (0.264)	Abroad 0.763*** (0.189)	Abroad 0.731** (0.243)			Abroad 0.955*** (0.258)	Abroad 0.867*** (0.243)	Poland** 0.577 (0.229)	Abroad 0.895*** (0.185)	Abroad 0.672* (0.272)
Activities: events, concerts			Abroad -0.449* (0.210)			Poland 0.683* (0.335)					
Activities: other			Abroad -1.557* (0.788)								
Poland											
AIC	452.696	413.403	823.918	503.276	819.452	297.626	434.459	474.478	624.617	864.649	396.655
BIC	484.237	449.449	877.987	543.828	869.016	333.672	456.988	515.030	647.146	905.201	423.690
R ² Cox-Snell	0.051	0.073	0.164	0.093	0.140	0.062	0.053	0.087	0.039	0.099	0.061
R ² Nagelkerke	0.100	0.150	0.220	0.165	0.189	0.162	0.107	0.161	0.064	0.133	0.129
Abroad											
AIC	459.792	423.183	823.370	515.929	797.960	304.817	431.857	490.362	633.589	826.704	405.802
BIC	492.332	454.723	877.439	556.481	847.524	331.852	454.386	521.903	647.106	871.762	441.848
R ² Cox-Snell	0.041	0.057	0.165	0.075	0.167	0.046	0.057	0.059	0.021	0.151	0.053
R ² Nagelkerke	0.080	0.117	0.221	0.134	0.226	0.120	0.115	0.110	0.033	0.203	0.113

* alpha < 0.05 ** alpha < 0.01 *** alpha < 0.001

Table 3b. Mobile applications used PRIOR to a tourist trip by representatives of Generation Z, continued

Mobile applications	Communication/entertainment and social networking						Opinion-forming		Transaction-oriented		
	Facebook	Instagram	WhatsApp	Messenger	Skype	Google Translate	Dropbox	TripAdvisor	HolidayCheck	Google Wallet	XECurrency
Variables	Coefficient (SE)										
Purpose: sightseeing											
Purpose: leisure			Poland -0.667** (0.239) Abroad -0.519* (0.240)					Abroad -0.345* (0.174)	Poland -0.872*** (0.195) Abroad -0.779*** (0.196)	Poland -0.628* (0.272) Abroad -0.579* (0.268)	
Duration: one day							Abroad 1.025* (0.514)				
Duration: 2-3 days											
Duration: one week									Abroad -0.561** (0.207)	Abroad -0.580* (0.291)	Abroad -0.646* (0.278)
Transport: private car	Poland 0.878** (0.279)	Poland 0.932** (0.336)	Poland 1.254** * (0.324) Abroad 0.671** (0.240)			Poland 1.627* * (0.480) Abroad 1.321* ** (0.329)		Poland 0.558** (0.199)	Poland 1.354*** (0.268) Abroad 0.608** (0.215)		Poland 0.747* (0.319)
Transport: carpooling, e.g. BlaBlaCar	Abroad 1.044** (0.332)					Poland 1.211* (0.473) Abroad 1.435* * (0.470)	Poland 1.413* (0.580) Abroad 1.293* (0.559)		Poland 1.987*** (0.382) Abroad 1.076** (0.352)	Poland 0.988* (0.409)	Poland 1.537* ** (0.382)
Transport: camper/motorhome					Abroad 1.623* (0.626)	Poland 2.523* * (0.806)	Poland 2.219* (0.879)	Poland 1.887** (0.612)	Poland 2.426*** (0.654)	Poland 1.696** (0.602)	Poland 2.034* * (0.670)
Transport: tourist coach			Poland 0.758* (0.321)						Poland 0.897** (0.283)		

Transport: regular coach service									Poland 0.567** (0.260)		
Transport: train	Abroad 0.766* (0.255)	Poland 1.148** (0.277) * Abroad 1.005** (0.300)	Poland 0.747** (0.242) Abroad 0.657* (0.279)		Poland 0.674* (0.268) Abroad 0.762* (0.304)	Poland 0.819* (0.319) Abroad 1.147* (0.358)	Poland 1.365** (0.457) Abroad 1.351** (0.474)	Poland 0.696** (0.184) * Abroad 0.673** (0.251)	Poland 1.463** (0.218) * Abroad 0.943** (0.256)	Poland 0.676* (0.282)	Poland 1.016** (0.263) *
Transport: plane	Abroad 0.565* (0.235)			Poland 0.688* (0.320)		Abroad 0.828* (0.348)		Poland 0.880** (0.308)	Poland 1.053** (0.323) Abroad 0.576** (0.216)	Poland 1.079** (0.347)	
Transport: other											Poland 1.183* (0.628)
Accommodation : hotel							Poland 1.158** (0.445)	Abroad 0.991** (0.189) *	Poland 0.443* (0.202) Abroad 0.537* (0.220)		Poland 0.628* (0.254) Abroad 0.806* (0.311)
Accommodation : motel										Poland 0.924* (0.360)	
Accommodation : guest house									Poland - 0.808** (0.260)		
Accommodation : self-service hotel	Poland 0.679* (0.316)										
Accommodation : youth hostel								Abroad 0.868* (0.420)	Abroad 1.478** (0.460)	Abroad 1.226** (0.451)	Abroad 1.532** (0.475)
Accommodation : hostel	Poland 0.568* (0.251)							Abroad 0.561* (0.217)			
Accommodation : lodge, apartment		Poland -0.752* (0.331)			Poland -0.953** (0.358)	Poland - 0.821* (0.406) Abroad - 1.426* (0.483) *	Abroad -2.538* (1.054)		Poland - 1.107** (0.240) * Abroad -0.798* (0.246)	Poland -0.751* (0.340) Abroad -0.792* (0.351)	
Accommodation : with friends or family									Poland - 0.771** (0.231)		
Accommodation : camping/campsite				Abroad 1.110** (0.349)	Poland -1.151* (0.533)			Abroad 0.815* (0.335)	Abroad 0.922** (0.339)		Abroad 0.937* (0.399)
Activities: sightseeing							Poland 1.021* (0.441)			Poland 0.725** (0.269)	
Activities: active tourism (cycling, swimming)		Poland 0.539* (0.268) Abroad 1.015** (0.291) *		Poland 0.734** (0.234) Abroad 0.785** (0.250)			Poland 1.467** (0.435) Abroad 1.476*** (0.423)	Poland 0.548** (0.180)	Abroad 0.841** (0.223) *	Abroad 0.894* (0.281)	Abroad 0.793** (0.271)

Activities: walks		Abroad 0.741** (0.281)		Abroad 0.674** (0.235)				Poland 0.574** (0.178)	Poland 0.534** (0.198)	Abroad 0.658* (0.266)	Abroad 0.857** (0.256)
Activities: hiking	Poland -0.687* (0.273)		Poland -0.578* (0.290)					Poland -0.529** (0.186)	Poland -0.527* (0.225)	Poland -0.722* (0.334)	Poland -0.741* (0.312)
Activities: nature watching		Abroad 0.965** (0.278)	Abroad 0.897** * (0.238)	Poland 0.724** (0.233) Abroad 0.994** * (0.233)	Abroad 0.608* (0.273)	Abroad 0.930* * (0.321)		Abroad 0.934** * (0.184)	Abroad 1.026** * (0.209)	Abroad 0.934*** (0.267)	Abroad 0.846** (0.251)
Activities: events, concerts				Poland 0.516* (0.240)			Abroad 0.899* (0.403)	Poland 0.501** (0.183)	Abroad -0.509* (0.235)		
Activities: other											
Poland	567.80					335.19					
AIC	5	410.535	504.640	533.662	411.140	5	216.385	859.503	705.014	422.817	469.492
BIC	590.33	433.064	531.675	556.191	429.163	362.23	247.925	900.055	772.601	467.875	505.538
R ² Cox-Snell	4	0.045	0.052	0.034	0.028	0	0.062	0.120	0.251	0.084	0.069
R ² Nagelkerke	0.035	0.094	0.095	0.061	0.060	0.040	0.201	0.160	0.346	0.168	0.132
	0.060					0.098					
Abroad	568.26					316.65					
AIC	9	396.526	500.515	514.761	412.563	8	223.554	837.814	715.852	433.894	464.822
BIC	586.29	419.055	523.044	537.290	430.586	348.19	259.601	878.366	787.944	469.940	500.868
R ² Cox-Snell	2	0.064	0.055	0.061	0.026	8	0.054	0.148	0.241	0.063	0.076
R ² Nagelkerke	0.031	0.135	0.101	0.109	0.055	0.069	0.177	0.197	0.332	0.126	0.144
	0.054					0.169					

Table 4a. Mobile applications used DURING a tourist trip by representatives of Generation Z.

Mobile applications	Transport		Booking/purchase					Information/location			
	BlaBlaCar	City	Skyscanner	Hotel Tonight	Booking.com	Airbnb	Kayak	Google Travel	Google Maps	Pogoda ICM	Circa
Variables	Coefficient (SE)										
Purpose: sightseeing											
Purpose: leisure							Poland -1.077** (0.359) Abroad -1.095** (0.361)		Poland 0.479* (0.226) Abroad 0.527* (0.221)		Poland -0.900** (0.332) Abroad -0.765* (0.353)
Duration: one day											
Duration: 2-3 days					Poland -0.865* (0.449)						
Duration: one week							Poland 0.682* (0.338)				
Transport: private car			Poland -0.970* (0.417)						Abroad 0.719** (0.270)	Poland 0.993*** (0.210) Abroad 0.372* (0.185)	

Transport: carpooling, e.g. BlaBlaCar	Abroad 1.230** (0.401)			Abroad 1.346** * (0.259)	Poland 1.795*** (0.483)	Poland 1.692** (0.616)	Poland 1.245** (0.474)	Poland 1.013* (0.495) Abroad 1.448** * (0.411)	Poland - 1.233** * (0.354)	Poland 0.682* (0.327) Abroad 0.917** * (0.310)	Poland 1.154* * (0.439) Abroad 1.100* * (0.408)
Transport: camper/motorhome		Poland 1.867* * (0.699)		Poland 1.422* (0.704) Abroad 1.474* (0.730)	Poland 1.960*** (0.483)		Poland 1.445* (0.632) Abroad 1.771* (0.705)	Poland 2.507** * (0.656)	Poland -1.224* (0.556)	Poland 2.003** * (0.558)	
Transport: tourist coach											
Transport: regular coach service											
Transport: train	Poland 1.216** * (0.324) Abroad 1.262** * (0.331)	Poland 1.116* * (0.340) Abroad 0.741* (0.344)		Abroad 0.922* (0.422)	Abroad 1.228** (0.398)			Poland 0.867* (0.380) Abroad 1.003** (0.381)		Poland 0.855** * (0.180) Abroad 0.609** (0.229)	Abroad 0.759* (0.353)
Transport: plane		Poland 0.906* (0.388)	Poland 1.362** (0.462)		Poland 1.195* (0.469)	Poland 1.468** (0.509)	Poland 0.880* (0.438)	Poland 0.938* (0.447)	Abroad 0.607** (0.222)		
Transport: other											
Accommodation: hotel				Poland 1.255** (0.436)		Poland 1.315* (0.544)				Poland 0.425* (0.169) Abroad 0.517** (0.184)	Poland 0.789* (0.323)
Accommodation: motel		Poland 0.867* (0.426)		Poland 1.633** * (0.462)				Poland 0.895* (0.463)			
Accommodation: guest house	Abroad 1.077** (0.364)	Abroad 0.980* (0.382)	Abroad 1.292** (0.445)		Abroad 0.917* (0.454)				Poland - 0.683** (0.245)		
Accommodation: self-service hotel								Abroad 1.359** (0.502)			
Accommodation: youth hostel		Abroad 1.160* (0.471)	Abroad 1.251* (0.585)	Poland 1.173* (0.576)			Abroad 1.654** * (0.465)			Abroad 1.235** (0.427)	
Accommodation: hostel											
Accommodation: lodge, apartment							Poland -1.106* (0.496) Abroad -1.247* (0.552)			Poland -0.403* (0.187) Abroad - 0.659** (0.214)	Poland - 0.932* (0.453)
Accommodation: with friends or family											
Accommodation: camping/campsite		Abroad 1.090* (0.437)								Abroad 0.686* (0.320)	
Activities: sightseeing			Poland 0.840* (0.411)		Abroad -0.984* (0.391)					Poland 0.453* (0.211)	

Activities: active tourism (cycling, swimming)						Abroad 1.248** (0.465)		Abroad 0.701* (0.357)	Poland 0.538* (0.245)	Abroad 0.618** (0.193)	
Activities: walks					Abroad 0.954* (0.401)	Abroad 1.221* (0.485)					
Activities: hiking			Poland -1.190* (0.624)						Poland 0.805** (0.278) Abroad 1.361* (0.610)		
Activities: nature viewing									Abroad 0.761** (0.265)	Abroad 0.781** *	(0.182)
Activities: events, concerts									Poland 0.667** (0.257)		
Activities: other											
Poland		331.02									314.60
AIC	328.918	2	215.402	232.770	237.906	167.625	298.744	279.471	547.873	863.529	1
BIC	337.929	353.55	237.931	255.299	260.435	185.648	330.284	306.505	588.425	899.575	337.13
R ² Cox-Snell	0.023	1	0.031	0.033	0.034	0.030	0.050	0.036	0.070	0.092	0
R ² Nagelkerke	0.057	0.036	0.107	0.106	0.108	0.126	0.132	0.101	0.120	0.124	0.037
		0.089									0.095
Abroad		332.65									320.85
AIC	317.547	5	221.159	236.492	234.117	173.774	297.201	274.898	551.815	850.875	3
BIC	355.570	355.18	234.676	254.515	256.646	187.292	319.730	297.427	578.850	895.933	338.87
R ² Cox-Snell	0.045	4	0.016	0.024	0.039	0.018	0.047	0.039	0.056	0.114	6
R ² Nagelkerke	0.113	0.033	0.057	0.079	0.126	0.076	0.123	0.111	0.096	0.154	0.025
		0.083									0.064

* alpha < 0.05 ** alpha < 0.01 *** alpha < 0.001

Table 4b. Mobile applications used DURING a tourist trip by representatives of Generation Z, continued

Mobile applications	Communication/entertainment and social networking					Opinion-forming			Transaction-oriented		
	Facebook	Instagram	WhatsApp	Messenger	Skype	Google Translate	Dropbox	TripAdvisor	HolidayCheck	Google Wallet	XE Currency
Variables	Coefficient (SE)										
Purpose: sightseeing			Poland 0.804** (0.277) Abroad 0.693* (0.277)	Poland 0.811* (0.242) Abroad 0.771** (0.256)		Poland 0.792** (0.382) Abroad 0.610* (0.255)				Poland 0.979* (0.378) Abroad 0.833* (0.374)	
Purpose: leisure											
Duration: one day			Abroad 0.778* (0.368)								
Duration: 2-3 days											
Duration: one week											
Transport: private car	Poland 1.809** * (0.393)		Poland 0.985** (0.322)	Poland 0.654* (0.262)		Poland 0.780** (0.382)		Abroad 0.814* (0.332)			

Transport: carpooling, e.g. BlaBlaCar		Abroad 0.990** (0.310)	Abroad 1.228*** (0.345)	Abroad 1.315*** (0.329)		Poland 0.993** (0.382) Abroad 1.005** (0.331)		Poland 1.204** (0.424) Abroad 1.513*** (0.407)		Abroad 0.927* (0.478)	
Transport: camper/motorhome	Poland 1.742* (0.855)										
Transport: tourist coach			Poland 0.936** (0.319)			Poland 0.837** (0.306)					
Transport: regular coach service		Poland -0.729* (0.326)									
Transport: train	Poland 0.820* (0.855) Abroad 0.879*** (0.265)	Abroad 0.827*** (0.248)	Poland 0.584* (0.257) Abroad 0.998*** (0.283)	Abroad 0.653* (0.265)		Poland 0.850*** (0.236) Abroad 1.021*** (0.256)		Abroad 0.965** (0.358)		Poland 0.856** (0.321) Abroad 0.821* (0.351)	
Transport: plane						Poland 0.880** (0.309)	Poland 0.961* (0.401)				
Transport: other											
Accommodation: hotel	Poland -0.521* (0.2350)				Poland 1.452** (0.481)			Poland 1.315** (0.466)	Poland 1.216** (0.373)		
Accommodation: motel								Poland 1.199* (0.538)			
Accommodation: guest house											
Accommodation: self-service hotel								Abroad 1.876*** (0.560)			
Accommodation: youth hostel			Poland 0.774* (0.370)					Abroad 1.016* (0.436)		Abroad 1.300** (0.470)	
Accommodation: hostel		Poland 0.644** (0.244)		Poland 0.578* (0.246)							
Accommodation: lodge, apartment				Abroad -0.645* (0.278)						Poland -1.116* (0.451)	
Accommodation: with friends or family			Abroad 0.700* (0.294)							Abroad 0.802* (0.393)	
Accommodation: camping/campsite		Poland -0.854* (0.375)				Abroad 0.862* (0.352)					Poland -1.500* (0.736)
Activities: sightseeing				Abroad 0.522* (0.247)	Poland 0.903* (0.452)					Poland -0.884* (0.393)	
Activities: active tourism (cycling, swimming)	Abroad 0.527* (0.251)	Poland 0.600** (0.224)	Poland 0.762** (0.253) Abroad 0.712** (0.270)	Poland 0.665** (0.222) Abroad 0.808** (0.251)							
Activities: walks					Abroad 1.194** (0.442)		Abroad 0.900** (0.330)				

Activities: hiking		Poland -0.590* (0.271)										
Activities: nature viewing	Poland 0.562* (0.245) Abroad 0.793*** (0.236)		Poland 0.607* (0.258) Abroad 0.745** (0.251)	Poland 0.641** (0.223) Abroad 1.062*** (0.235)		Abroad 0.599** (0.227)						
Activities: events, concerts	Poland 0.836** (0.243)	Poland 0.523* (0.271)	Poland 0.874** (0.260)	Poland 0.599** (0.242) Abroad 0.615* (0.256)					Abroad 1.220* (0.599)			
Activities: other												
Poland	491.412	580.423	477.724	584.198	199.156	549.146	307.462	321.799	201.248	269.442	313.298	
AIC	522.952	611.964	518.276	615.738	212.673	580.684	316.473	321.817	214.765	287.465	331.321	
BIC	0.078	0.051	0.082	0.063	0.020	0.067	0.007	0.010	0.017	0.028	0.028	
R ² Cox-Snell	0.143	0.086	0.153	0.105	0.076	0.115	0.020	0.026	0.065	0.082	0.074	
R ² Nagelkerke												
Abroad	512.012	588.305	475.881	562.769	197.160	544.048	304.748	312.126	197.244	277.030	317.405	
AIC	530.035	601.822	511.927	603.321	210.677	571.443	313.760	330.143	215.267	295.053	330.922	
BIC	0.041	0.028	0.082	0.098	0.023	0.071	0.011	0.030	0.026	0.017	0.019	
R ² Cox-Snell	0.075	0.047	0.152	0.164	0.087	0.122	0.031	0.078	0.098	0.049	0.051	
R ² Nagelkerke												

* alpha < 0.05 ** alpha < 0.01 *** alpha < 0.001

Table 5a. Mobile applications used AFTER a tourist trip by representatives of Generation Z.

Mobile applications	Transport		Booking/purchase						Information/location			
	BlaBlaCar	City	Skyscanner	Hotel Tonight	Booking.com	Airbnb	Kayak	Google Travel	Google Maps	Pogoda ICM	Circa	
Variables	Coefficient (SE)											
Purpose: sightseeing												
Purpose: leisure												
Duration: one day												
Duration: 2-3 days												
Duration: one week								Poland 1.199* (0.526)				
Transport: private car									Abroad 1.537* (0.557)			
Transport: carpooling, e.g. BlaBlaCar												
Transport: camper/motorhome										Poland 2.641** (0.632) Abroad 1.827* (0.847)		
Transport: tourist coach				Poland 1.457* (0.680)								
Transport: regular coach service												

Transport: train			Abroad 1.038* (0.495)								
Transport: plane	Poland 1.031* (0.529)				Poland 1.486* (0.788)			Poland 1.778** (0.593)			Poland 1.168* (0.537)
Transport: other									Poland 1.766* (0.823) Abroad 1.862* (0.827)		
Accommodation: hotel		Abroad 1.455* (0.768)	Poland 1.213* (0.510)				Poland 1.321* (0.527)				
Accommodation: motel											
Accommodation: guest house											Abroad 1.072* (0.545)
Accommodation: self-service hotel			Abroad 1.332* (0.673)	Abroad 1.684* (0.835)							
Accommodation: youth hostel		Abroad 2.408* * (0.766)									Abroad 1.700* * (0.601)
Accommodation: hostel											
Accommodation: lodge, apartment											
Accommodation: with friends or family		Poland 1.435* * (0.554)			Abroad 1.487* (0.772)						
Accommodation: camping/campsite											Abroad 1.590* (0.616)
Activities: sightseeing			Poland -1.218* (0.580)								Abroad -1.075* (0.511)
Activities: active tourism (cycling, swimming)				Abroad 1.531* (0.671)			Abroad 0.957* (0.468)	Abroad 1.176* (0.505)	Poland 1.572* * (0.592)		
Activities: walks	Abroad 1.187* (0.474)		Poland 1.124* (0.504)								Abroad 1.279* (0.532)
Activities: hiking	Abroad 1.094* (0.583)	Abroad 1.544* (0.606)		Abroad 2.006* * (0.675)				Poland 1.317* (0.530) Abroad 2.104** * (0.521)			
Activities: nature viewing											
Activities: events, concerts								Poland -1.632* (0.783)			Abroad 1.216* (0.503)
Activities: other											
Poland											
AIC		140.35		104.49		no model; variable Y takes only 0 values		137.66			172.86
BIC	187.519	0	165.442	8	57.800		169.535	5	157.795	9	
R ² Cox-Snell	196.530	149.36	183.465	118.01	66.811		178.546	169.489	151.18	166.807	181.88
R ² Nagelkerke	0.005	1	0.023	5	0.035		0.011	0.032	3	0.018	0
	0.020	0.011	0.100	0.008	0.321		0.047	0.150	0.018	0.080	0.006
		0.056		0.056				0.091	0.091		0.026

Abroad		134.81								137.64		169.14
AIC		2								8		7
BIC	183.646		170.988	96.666	78.534	no model;		172.805	145.517		155.236	
R ² Cox-Snell	0.013	152.83	184.505	114.68	87.545	variable Y		181.816	159.035	151.16	182.271	182.66
R ² Nagelkerke	0.055	5	0.012	9	0.005	takes		0.006	0.028	5	0.033	4
		0.025	0.051	0.023	0.044	only 0 values		0.026	0.132	0.018	0.150	0.014
		0.128		0.157						0.092		0.063

* alpha < 0.05 ** alpha < 0.01 *** alpha < 0.001

Table 5b. Mobile applications used AFTER a tourist trip by representatives of Generation Z, continued

Mobile applications	Communication/entertainment and social networking						Opinion-forming		Transaction-oriented		
	Facebook	Instagram	WhatsApp	Messenger	Skype	Google Translate	Dropbox	TripAdvisor	Holiday Check	Google Wallet	XE Currency
Variables	Coefficient (SE)										
Purpose: sightseeing											
Purpose: leisure		Poland -0.488* (0.227)	Poland -0.982** (0.357) Abroad -0.842* (0.370)								
Duration: one day											
Duration: 2-3 days											
Duration: one week											
Transport: private car		Poland 0.701* (0.282)	Poland 1.442** (0.471)	Poland 1.642*** (0.426)				Poland 1.644* (0.757)			
Transport: carpooling, e.g. BlaBlaCar			Abroad 1.327** (0.502)			Abroad 1.732** (0.567)					
Transport: camper/motorhome											
Transport: tourist coach			Poland 1.151** (0.443) Abroad 1.201** (0.393)	Poland 0.843* (0.398)		Poland 1.114* (0.519)					
Transport: regular coach service											
Transport: train		Abroad 1.004*** (0.253)	Poland 1.225*** (0.354) Abroad 0.960* (0.380)	Poland 1.462*** (0.306) Abroad 0.903** (0.315)				Poland 0.925* (0.455) Abroad 1.366** (0.458)			
Transport: plane			Abroad 0.827* (0.422)	Abroad 0.647* (0.329)				Abroad 1.439* (0.631)	Poland 1.873* * (0.600)	Poland 1.418** (0.446)	Poland 1.737** (0.585)
Transport: other											
Accommodation: hotel	Poland -1.241* (0.639)										
Accommodation: motel											
Accommodation: guest house										Abroad 1.095* (0.450)	

Accommodation: self-service hotel											
Accommodation: youth hostel									Abroad 1.202* (0.593)		
Accommodation: hostel											
Accommodation: lodge, apartment											
Accommodation: with friends or family											
Accommodation: camping/campsite				Abroad 1.139** (0.410)							
Activities: sightseeing	Poland -1.549* (0.758)										
Activities: active tourism (cycling, swimming)		Poland 0.561* (0.235)	Abroad 0.914* (0.363)	Poland 0.627* (0.285) Abroad 0.738* (0.301)				Abroad 1.397* (0.592)			
Activities: walks									Abroad 0.937* (0.409)		
Activities: hiking			Abroad 1.179* (0.469)			Abroad 1.439* (0.608)					
Activities: nature viewing		Poland 0.766** (0.235) Abroad 0.841** (0.233)	Abroad 1.134* (0.366)	Poland 0.645* (0.286) Abroad 1.212** (0.293)					Poland 0.925* (0.395)		
Activities: events, concerts	Poland 0.992* (0.469) Abroad 0.894* (0.466)	Poland 1.113** (0.234) Abroad 0.785** (0.253)									
Activities: other		Abroad 1.152* (0.574)									
Poland	168.89	535.155	289.39	369.906	no model;	158.39	no model;	183.40	116.23	225.588	124.970
AIC	2	535.155	9	396.940	variable Y	8	variable Y	9	3	239.106	133.982
BIC	186.91	562.189	311.92	0.073	takes	167.41	takes	196.92	125.24	0.019	0.011
R ² Cox-Snell	5	0.065	8	0.159	only 0 values	0	only 0 values	7	5	0.065	0.062
R ² Nagelkerke	0.028	0.113	0.042			0.006		0.014	0.012		
	0.118		0.115			0.029		0.057	0.073		
Abroad	180.40	536.090	272.59	372.183	no model;	153.53	no model;	177.28	118.72	224.645	no
AIC	1	536.090	7	399.218	variable Y	2	variable Y	1	2	242.668	model;
BIC	189.41	558.619	313.15	0.070	takes	167.04	takes	190.79	127.73	0.023	strongly
R ² Cox-Snell	2	0.060	0	0.152	only 0 values	9	only 0 values	8	3	0.080	unbalan-
R ² Nagelkerke	0.005	0.106	0.077			0.016		0.023	0.008		ced
	0.021		0.209			0.077		0.094	0.050		trials

* alpha < 0.05 ** alpha < 0.01 *** alpha < 0.001