

Business travellers' use of mobile travel applications: A generational analysis

Anneli Douglas¹, Berendien Lubbe¹ and Adrene van Rooyen¹

¹Division of Tourism Management, University of Pretoria, Private bag X20, Hatfield, Pretoria 0028, South Africa

Correspondence to: anneli.douglas@up.ac.za

Abstract

Generational differences in the workplace, particularly in the area of technology usage, have become an area of increasing interest, both for academia and industry. Mobile travel applications have found a distinct role in business travel and support the business traveller at any stage of the travel cycle. The dynamic nature of the business environment, business travel and mobile technology requires research to ascertain the nature of the use of mobile travel applications by business travellers, how this usage differs between generations, and how these applications should be developed in future to meet the needs of the changing workforce. An internet based survey was completed by 232 business travellers with the results showing that mobile travel applications are currently more frequently being used by older generations than younger generations, but that younger generations are more likely to use certain applications in the future than older generations. This study answers the call by previous researchers for future research to focus on emergent transaction channels and communication platforms (such as mobile computing) that could affect different generations by providing a generational analysis of business travellers' use of mobile travel applications. It should also assist managers in better understanding their travellers, especially in terms of their technology usage, enabling them to manage the company's travel programme more effectively.

Keywords: business travellers, business travel, business travel management, generational analysis, mobile travel applications.

This is an extended version of a conference paper entitled “**Managing business travellers' use of mobile travel applications**” previously published in the proceedings of Information and Communication Technologies in Tourism 2017 Conference (ENTER 2017) held in Rome, Italy, January 24-26, 2017.

1 Introduction

Business travel management has received little attention among social scientists interested in travel and tourism management (Gustafson, 2012). Even less focus has been placed on information and communication technologies in the business travel environment although the rapid advances in technology have seen an increasing recognition of the importance of technology for the business traveller segment (Brey, So, Kim & Morrison, 2007). Information and communication technologies (ICTs) such as mobile technology have become indispensable and play an important role in managing the business travel programme as well as supporting business travellers

(Schuitmaker & Thomas, 2016) at any stage of the travel cycle. According to Power (2013) three out of four business travellers possess a smartphone and will typically use two travel applications during the travel experience on behalf of the company (CWT Travel Management Institute, 2014). Mobile applications, specifically those designed for the business travel environment, allow business travellers to effectively use time that would otherwise have been spent in transit with limited capability to do job related functions. In order to manage the company's travel programme effectively, the use of mobile technology should be understood, since it may affect traveller behaviour, expenditure and travel policy compliance to name a few (CWT Travel Management Institute 2013; West, McDonough, Magliaro & Reid, 2011). To date, research studies investigating the use of mobile travel applications in a business travel context have remained scarce (Budd & Vorley, 2013; Bretschneider, 2016). This lack of research is surprising especially given the fact that business users are more prone to embrace new technologies at a faster rate than the rest of the population (Verma, Stock & McCarthy, 2012). Lirio (2014) calls for more research into the use of mobile technology in the global work environment given the new ways in which work can be done due to this technology, also whilst travelling. The overall aim of this research is to investigate how the use of mobile travel applications by business travellers differ across generations, and how these applications should be developed in future to meet the needs of the changing workforce. More specifically, the research will identify the different functions of mobile travel applications that business travellers use, how likely business travellers are to use mobile applications in future, and how these applications should be developed in future to continue playing a supporting role to business travellers of different ages and belonging to different generations.

Gardiner, Grace and King (2014) noted the popularity of grouping people based on generational cohort membership as a way of describing consumers' past, present and future behaviour. In a travel context, Pennington-Gray and Blair (2010) state that more research is required to explain different generations' travel attitudes and behaviour. Kim, Xiang and Fesenmaier (2015) go further and argue for the importance of understanding how different generations react and make use of technology while planning a trip. They also suggest future research to focus on emergent transaction channels and communication platforms (such as mobile computing) that could affect different generations, to develop a better understanding of the marketing environment in travel and tourism. Even in the workplace, Lyons and Kuron (2014) identified a need for managers to take note of generational differences, since they have a temporal element, are dynamic and a long-term approach is needed to understand and respond to them, confirming the need for research to investigate how the use of mobile travel applications by business travellers differ across the different generations in the workplace.

The organisation of this paper is as follows. First, we review the literature pertaining to the differences between generations in terms of their behaviour and technology use. We then discuss the use of mobile travel applications by business travellers. Next, we explain the methodology followed and discuss the results. Lastly, this paper

culminates with a discussion of the results and concludes with directions for future research.

2 Literature review

2.1 Differences between generations - their definition, behaviour, and technology use

While authors do not agree on the precise calendar years constituting each generation, they agree on four main generations namely the “Silent Generation”, “Baby Boomers”, “Generation X” and “Generation Y” (Pendergast, 2010; TIA, 2007). These generations are also evident in today’s workforce, and Lyons and Kuron (2014) found that they differ in the workplace in 6 major areas: personality, work-value, attitudes, career expectations and experience, teamwork and leadership. The Baby Boomers and Generation X employees in the workplace are now being replaced by Generation Y. An extremely influential, culturally diverse, individualistic and anti-corporate generation that have different characteristics, work ethics and needs than the generations before them (Benckendorff, Moscardo & Pendergast, 2010). The major trend is that younger generations (Generation Y) are more individualistic than the generations before them. They are more concerned about material rewards and leisure activities, whereas their work ethic is decreasing compared to older generations. Lyons and Kuron (2014) further found that younger generations are less satisfied with their work, have less organisational commitment than the generations before them, tend to have intentions to quit and are more mobile in the workplace (Lyons & Kuron, 2014). They desire direction, structure and on-going supervision (Yohe, 2007; Sullivan; 2004), while having high expectations of their companies (Hira in Patalano, 2008), including earning substantial salaries (Irvine in Patalano, 2008). Generation X want immediate fulfilment, and to be compensated swiftly for good work instead of waiting in line for promotion. They prefer their work hours to be flexible, their work environment to be fun and like to function independently. According to Kapoor and Solomon (2011) they tend to be more self-reliant and independent and question authority. Generation X is less likely to sacrifice their personal life for their company and does not like bureaucracy and rules. According to Gursoy, Maier and Chi (2008) Baby Boomers find purpose in their work and value hierarchy and authority in the workplace, but are less keen to learn new things. Lyons and Kuron (2014:139), highlight the importance of managers understanding the different generations sharing a working environment, as it will lead to improved “recruitment, retention, succession management, communication, employee engagement and conflict resolution”.

McMullin, Comeau and Jovic (2007) are of the opinion that generations build unity through cultural symbols that they share for example music and fashion. They added computing technology as an indication of culture through which generations may be formed. In terms of technology, Kumar and Lim (2008) suggest that mature consumers display active and open minds toward new technologies and are eager to

use it, but even so, their accessibility to and acceptance of these technologies are still rather low in comparison to those of Generation Y consumers (Hur, Lee & Choo, 2017). According to Hamid (in Chuah, Marimuthu & Ramayah, 2014) one of the characteristics that distinguishes Generation Y from other generations, is the fact that they are the most technically literate and technologically savvy generation. Generation Y wants technology to be integrated into all parts of their lives and expects it to be central in their leisure, work and study experiences (Leask, Fyall & Barron, 2014). Generation Y embrace technology as they grew up with it (Kapoor & Solomon, 2011). They communicate via social networks and text messaging, expecting quick feedback and acknowledgement and, as a result, are sometimes blamed for having weak communication and problem-solving skills (Kapoor & Solomon, 2011). Recent studies show that Generation Y have a preference for work environments where technology is mostly used (Boughzala, 2012; Sox, Kline & Crews, 2014), and they tend to take technology for granted (Parry & Urwin, 2011). Baby Boomers, on the other hand, are hesitant to make use of technology in the workplace (Gursoy et al., 2008). Reisenwitz and Iyer (2009) found that Generation X prefer business communication via the web and email and are recognized to be technologically savvy. They engage in technology usage for both practical and functional purposes while at the same time using technology as a chance for fun (Smith & Clurman in Sox, Crews & Kline, 2014).

When travelling, Generation Y use a range of information and communication devices and varied Internet channels, they make reservations online more frequently and show higher use of online travel agencies (OTAs); they watch videos, utilise live chat, and listen to podcasts; and, they are more exposed to and quick to respond to online advertising (Xiang, Magnini & Fesenmaier, 2015). Li, Li and Hudson (2013) were surprised to find that Baby Boomers and Generation X view online travel information sources as more important than what Generation Y do, while the Silent Generation was less reliant on online sources than all the other generations. From the above discussion we see that there is a difference between generations' use of technology, but a question that remains unanswered is whether the use of mobile travel applications also differs between business travellers from various generations.

2.2 Business travel and mobile travel applications

According to Murphy, Chen and Cossutta (2016) the perceived advantages of mobile technology usage in a travel context have been investigated by a number of researchers (Kim, Park & Morrison, 2008; Okazaki, Campo, Andreu & Romero, 2015). These advantages include its ubiquity, convenience, immediacy, personalization, information access, pragmatism, money savings, innovation, planning capacity and entertainment. The perceived obstacles to mobile technology usage during a trip have also been widely studied with high entry costs, usage costs, security issues, poor technology capability and lack of relevant services being mentioned (Eriksson, 2014). Travel planning behaviour itself is radically changing as a result of the pervasive access to the Internet through mobile devices (e.g., tablet computers and smartphones) with travellers now delaying choices they used to make

before departing such as finding a restaurant at the destination (Xiang et al. 2015). According to Lu, Mao, Wang and Hu (2015) travel applications are mobile applications that target travellers specifically, for example Airbnb, Tripadvisor and Skyscanner, and also those that are utilised in the context of travel such as Google Maps, Imoney and Instagram. Even though a number of researchers have investigated the use of mobile technology and more specifically mobile travel applications in a leisure travel context, to date, research studies examining the use of mobile applications in a business travel context have remained scarce (Budd & Vorley, 2013; Bretschneider, 2016).

Business travel can be described as a trip that is conducted with the aim of conducting commercial or formal transactions, or activities that are linked to the traveller's job for example visiting a client, signing deals or negotiating a contract. Whilst business travel is undertaken for the benefit of the company, it does mean that the traveller has less time for productive work (Gustafson, 2012b). According to Sherry (2015) the efficiency with which employee travel is undertaken is crucial to the productivity of the organisation. Mobile technology, specifically mobile applications, allow business travellers to effectively use time that would otherwise have been spent in transit with little capability to complete job related functions. Roby (2014) adds that mobile technology provides flexibility and improves productivity, while enabling travellers to work anytime and anywhere, providing greater worker empowerment. Ngai and Gunasekaran (2007) describe the two main functions of smartphones as mobility and broad reach. These permit travellers to do business and be accessible via smartphones anytime and anywhere. Lirio (2017) mentions that mobile technology is vital in keeping travellers connected to work while travelling and an essential tool to monitor emergency issues related to work. Gebauer (2008) states that the ability of mobile technology to keep employees informed when they are away from the office or up to date during office and non-office hours, has given it very high value. It is thus not surprising that the average business traveller carries three mobile devices with him/her during travel, the most common of which are smartphones, with 95% of business travellers owning one, followed by tablets and laptops (PC Housing, 2012). When considering mobile travel applications specifically, Qin, Tang, Jang and Lehto (2017) mention that business travellers are heavily reliant on these applications for their travel needs. They quote a recent survey by Amadeus, where 70% of business travellers have travel applications on their smartphones, with 82% of them using at least one travel app in the course of their last business trip.

Smartphones (and mobile travel applications) are used by business travellers to locate attractions, get navigation support, have contact with online travel agents and supplier sites, read user reviews and use social networking sites. Travellers can check their e-mail, browse the web, play games, and utilize organizer-type applications (e.g. diaries, contacts, and notepads) (Charlesworth, 2009). Mobile travel applications, more specifically, assist business travellers to make travel related transactions (e.g. to book or amend flights) and/or keep up to date with their trip (e.g. boarding gate changes, flight cancellations) (Mahatanakoon, Wen & Lim, 2005; Travelport, 2013;

Qin et al., 2017). These applications also enable business travellers to react timely to unplanned situations. If the traveller’s trip itinerary is integrated with the online booking tool or travel management company’s systems, changes (albeit due to flight delays or per travellers request to change) could be delivered to the travellers’ smartphone/tablet, in real time (Campbell, 2013).

The mobile solution has gone from being “an amenity to a necessity of the travel process” and the functionality (as discussed in the previous paragraphs) that it provides is useful throughout the entire travel lifecycle (Langelund, 2007:284; Wang, Park and Fesenmaier, 2012). According to Amadeus (2011) in the *pre-trip* phase the traveller would use web, smartphones and tablets to plan and book their travel, *at the airport* they would use it to check-in and purchase ancillary services. *On board* the airplane they could use the Wi-Fi technology to further plan their journey or for entertainment purposes. *At the destination* the traveller would use his smartphone or tablet to connect with friends and family, they could share their experience or further explore their destination with the assistance of the device. *Post trip*, the traveller would use the devices to share his/her experience or to give feedback to suppliers. More specifically, CWT Travel Management Institute (2014) showed the value of mobile applications for business travellers during the entire travel life cycle (as per Table 1) and highlighted areas where the traveller specifically finds travel applications beneficial. CWT also identified several activities that need to be conducted during each stage of the business travel lifecycle. For example, in the pre-travel phase the following three activities have been identified: planning, booking and itinerary consolidation.

Table 1 Examples of possible mobile features at different stages of travel.

Pre-travel			During travel					Post travel	
Planning	Booking	Itinerary consolidation	Cancellation/modification	Continuous support	Fast check-in/check-out	Transportation/hotel comfort	Extra travel information	Expenses	Reviews

Corporate features	Door-to-door planning	Preferenceing	Trip itinerary /flight details	Alerts (delays/cancellations)	Flight/gate info	Paperless check-in	Extra bag	Local restaurants	Pictures of expenses	Events
	Peer reviews (colleagues)	Mobile payment	Flight requirements (visa etc.)	Search for alternate flights	Traffic info	Advanced check-in (hotel/flight)	Lounge	Discount possibilities	Upload invoicing	Suppliers
	Discussion platform	Virtual agent	Loyalty manager	Re-booking	Airport maps	Fast check-in/check out	Airport store		Expense approval	Overall information
	Professional social network	Loyalty manager	Loyalty manager	Refund possibilities	Parking		Seat choice			
			Calendar sync		Bag tracker		Car type			
					Timetables		Mobile room key			
					Meetings and events		Upgrades			
					Security and assistance		Hotel menu			
							Wake-up call			
Other features	Reviews/recommendations	Ability to book travel extensions for leisure	Trip sharing				Tracking on social media	Vouchers		Supplier reviews
	Local details/news		Social business travel				Safe arrival	Restaurant reviews		
							Weather	Events and ticket purchases		
							Cash point			

From: CWT Travel Management Institute (2014)

In the preceding discussion reference has been made to business travellers in general but business travellers are not a uniform concept. According to Twenge and Campbell (2007) employers face difficult changes when they hire new employees who are significantly younger than the generations who first came into the workforce, since these younger employees are different from those previously hired. The question is whether the use of mobile travel applications by business travellers, from different generations also differs to the extent that employers must consider these differences. Noting that “Generation Y” business travellers will make-up approximately 75% of the work force by 2025, it is important to understand their characteristics in the

context of mobile application offerings. Since they had been heavily exposed to mobile technology while growing up, Generation Y have been identified as early adopters of new connected devices and extensive users of mobile services (Kumar & Lim, 2008). Generation Y wants tailor-made services and the ability to personalise the application is important. In addition, using mobile and online tools for travel-related transactions comes easy to them and mobile applications should be kept up to date with the latest developments and trends as it would be easy for this generation of traveller to discard one application in favour of a more up to date version. Social media has played a very prominent role in the lives of Generation Y and mobile applications need to allow linkage to popular social media sites (e.g. Facebook) for the traveller to either share or rate the service/s used (CWT Travel Management Institute, 2013). According to Forbes (2015) Generation Y travellers have grown used to organising most aspects of their life via their smartphones or tablets. Corporate booking tools tend to hamper this generation and therefore, are rejected. Due to the fact that this generation is so technologically informed they expect an easy and convenient experience when booking their business trips. If they do not experience this, they will reject the corporate booking tools in favour of other more user friendly consumer applications, which they already have on their smartphones and tablets, and book their business trips outside of the corporate travel policy. Gillespie and Konwiser (2012) agree and add that a “command and control” mind-set has far less influence over younger workers, and they advise companies to influence and not punish their travellers, since policies mandating the use of certain applications have become obsolete. For this reason, Lirio (2014) also suggests an investigation into organisational policies and practices related to the emergence and use of new technologies, particularly for organisations with global sites and a workforce that is globally mobile.

The preceding discussion highlights the fact that today’s workplace consists of different generations, and that these generations use technology, for example mobile travel applications, differently. A better understanding of these differences can be achieved through a generational analysis of business travellers’ use of mobile travel applications since these differences might have an impact on business travel management in an organisation.

2.3 Generational analysis in tourism literature

Generational theory is seen as controversial by some academics and scholars who do not fully support it because of the supposition that, irrespective of the time in which a person is born, all people go through identical life stages: birth, education, finding work, finding partners, creating families, aging, retiring and eventually dying. Thus, all people approach these life stages in the same way (Lancaster & Stillman in Patalano, 2008). According to Hughes and O’Rand (in Patalano, 2008) the theory is criticised by some researchers and experts due to the fact that it does not take into consideration other group identities such as race, ethnicity, gender and social class which have a substantial impact on our perception of shared life experiences (Patalano,2008). Leask et al. (2013) opine that the study of generational cohorts is

obviously not an exact science with many assumptions and speculation in evidence. Nevertheless, in recent years, generational analysis has received increased interest in tourism literature (Beldona, Nusair & Demicco, 2009; Chang & Sung Hee, 2010; Pennington-Gray, Kerstetter, & Warnick, 2002), but even so, Pennington-Gray and Blair (2010) identified a need for more theory-based research to explain different generations' travel attitudes and behaviour. According to Li et al. (2013) previous research on different generations and their travel behavior has explored their information sources, online information search and booking behavior, travel interests, activities preferred and experiences sought. Huang and Petrick (2010) found that generations differ in terms of the types of information and different information sources (including the internet) that they use. They explained further that marketers need to recognize the differences and similarities in travellers' use of the internet, so that they can offer products and services that satisfy the distinctive needs of each generation. Kim et al. (2015) noted a lack of research on the differential use of the Internet for travel planning purposes by generations. They explained that the major development/evolution of information technology, such as mobile computing represented by the smartphone and its numerous travel related applications has had a significant influence on travel and tourism (Wang et al., 2012; Xiang & Gretzel, 2010). They then argued that the previous research studies do not sufficiently mirror the new technological environment for travel and tourism and thus, new studies need to be conducted to better understand how traveller generations are different in their use of technology (Kim et al. 2015).

This research answers the call by Kim et al. (2015) by performing a generational analysis of business travellers' use of mobile travel applications to better understand this segment. More specifically to identify the different functions of mobile applications that business travellers use, how likely business travellers are to use mobile travel applications in future, how the frequency and likelihood of use differ amongst the generations, and how these applications should be developed in future to continue playing a supporting role to business travellers of different ages and belonging to different generations.

3 Methodology

The target population for this study is South African business travellers that have travelled domestically or internationally, for employment related activities, including, but not limited to meetings, events, conferencing, sales, trading and training to name a few. The sample is drawn from the database of a large global travel management corporation with offices in South Africa with whom the travellers have booked travel during the period from 1 August 2013 to 31 July 2014. Non-probability convenience sampling is used to distribute the survey to the South African business travellers on the available database. Given the paucity of research on the topic and since the results of this study do not replicate previous studies and are not compared to other studies, a new survey is developed on the basis of the literature review. Some measurement scales used in previous industry surveys (such as CWT Travel Management Institute,

2014:52 [functions of mobile business travel applications]) and those developed by Goh et al. (2009:37) [mobile tourism services in a leisure context]; Kim et al. (2008:399) [type of traveller mobile devices]; Wang et al. (2014a:7) [smartphone use in everyday life]; Wang et al. (2014b:17) [categories of smartphone uses] are adapted for use in this study. The survey consists of different sections. The first section relates to the demographic profile of the traveller in terms of age, gender and level of education. The next section covers the general use of mobile applications by the business traveller. In this section respondents are asked about the type of mobile devices that they use and how frequent they use it. Respondents are also asked to rate the importance of mobile applications in the different stages of the business travel cycle. Importance is measured on a scale from 1-4 with 1=futile and 4=very important. In the final section, more than 100 functions (A full list of the functions is available in Van Rooyen, 2016) of mobile travel applications are tested in terms of their frequency of use by business travellers as well as their likelihood of future use by business travellers. Frequency of use is measured on a scale from 1-5 with 1=never and 5=very frequently. Likelihood to use in future is tested on a scale from 1-5 with 1=very unlikely and 5=very likely. The functions measured were sourced from previous studies such as: Wang et al. (2014b); CWT Travel Management Institute (2014) and Goh et al. (2009). In order to adequately meet the objectives of the study different data analysis techniques are used. The descriptive methods assist in describing the data in terms of gender representations, age groups and education levels while inferential methods allow us to draw certain conclusion about the larger population of business travellers who use mobile travel applications (Leedy & Ormond, 2013). In this study the Kruskal-Wallis test is utilised to test the differences between the age of the business traveller and their use of mobile applications (in terms of frequency of use and likelihood of future use). Two hundred and thirty two (232) responses were received. Even though every attempt was made to increase responses, research studies have shown that online surveys yield a significantly lower response rate when compared to traditional mail surveys (Crawford, Couper & Lamias, 2001).

Table 2 Demographic profile of respondents

Demographic profile		Percentage
Gender (n=221)	Male	68.3
	Female	31.7
Age (n=219)	Generation Y (19-38 years old)	30.6
	Generation X (39-48 years old)	33.3
	Baby Boomers (49-58 years old)	27.9
	Silent Generation (59 years old +)	8.2
Level of education (n=222)	Secondary School or equivalent	11.3
	Post Matric Certificate/Diploma	25.7
	Graduate	19.8
	Post Graduate	43.2

Table 2 shows that more males responded to the questionnaire than females. More than 30% of respondents belong to Generation Y, while another third of respondents

fell in the Generation X category. The remaining respondents were older than 48 years. The majority of respondents had a post-graduate qualification.

4 Results

Most (59.6%) respondents were in possession of both a smartphone and a tablet, while 29.6% possessed only a smartphone. Ten percent of respondents owned neither a smartphone nor a tablet. The majority of the respondents (68.5%) stated that they used their smartphones and/or tablet devices daily. From Table 3 it is evident that mobile travel applications are most important while *on* the business trip. Importance was measured on a scale from 1-4 with 1=futile and 4=very important. Interestingly, respondents deemed mobile travel applications more important in the booking phase than in the searching phase, which does indicate that mobiles are increasingly being used as a distribution channel, and not merely as an information channel. The Table also shows that the perceived importance of mobile travel applications in the various travel stages differ between generations. In the searching and booking phases mobile travel applications seem to be most important to Generation X. Whereas Generation Y found mobile travel applications to be most important in the travelling phase. In the post travel phase, the Baby Boomers viewed mobile applications as most important.

Table 3 Importance of mobile travel applications in the travel life cycle in terms of percentages and means

		Futile (%)	Not important (%)	Important (%)	Very important (%)	Mean**
The importance of mobile travel application during the travel life cycle	Searching (n=197)	3.0	18.3	46.2	32.5	3.07
	Gen Y	3.1	20.0	38.5	38.5	3.12
	Gen X	1.6	12.7	55.6	30.2	3.14
	B Boomers	4.1	24.5	44.9	26.5	2.94
	Silent Gen	6.3	18.8	50.0	25.0	2.94
	Booking (n=197)	2.5	13.2	45.2	39.1	3.19
	Gen Y	1.5	18.2	48.5	31.8	3.11
	Gen X	3.2	6.5	51.6	38.7	3.26
	B Boomers	2.0	16.3	36.7	44.9	3.24
	Silent Gen	6.3	12.5	43.8	37.5	3.13
	Travelling (n=199)	2.0	9.0	48.2	40.7	3.27
	Gen Y	0.0	9.1	45.5	45.5	3.36
	Gen X	3.1	4.7	54.7	37.5	3.27
	B Boomers	2.0	16.3	42.9	39.8	3.18
	Silent Gen	6.3	6.3	56.3	31.3	3.13
	Post Travel (n=198)	9.1	49.0	31.3	10.6	2.43
	Gen Y	10.6	47.0	33.3	9.1	2.41
	Gen X	7.9	50.8	31.7	9.5	2.43
	B Boomers	4.1	55.1	28.6	12.5	2.49
	Silent Gen	18.8	43.8	25.0	12.5	2.31

** Mean was calculated on a scale from 1-4 with 1=futile and 4=very important

More than 100 functions of mobile applications were tested in terms of the frequency with which they are being used and the likelihood of future use. Frequency of use was measured on a scale from 1-5 with 1=never and 5=very frequently. Likelihood to use in future was tested on a scale from 1-5 with 1=very unlikely and 5=very likely. The top functions most frequently used and most likely to be used in future are listed below in Table 4. The light grey shade signifies functions used before travel, and the medium grey, functions used during travel. Eight of the functions overlap, and was indicated as being frequently used currently, and likely to still be used in the future. Worthwhile to note is that the planning functions (destination applications, travel approval and travel requirements) currently being used by travellers, are not as likely to be used in the future. In their research Qin et al. (2017) listed common features of hotel and airline mobile applications and grouped them into four categories namely booking, stay management, stay enhancement and loyalty programme management. The booking feature allows travellers to reserve a room and to sort and filter hotel properties by distance, price or brand. The applications also offer comprehensive information and photos of the facilities and services. For airlines, this feature permits travellers to check the most updated flight status. Stay management features assist travellers to check in, check out, modify bookings, and view charges. Stay enhancement features comprise of mobile keys, booking a spa, ordering room service, making special requests and providing local tourism information. For airlines, this part provides opportunities for ancillary revenues from in-flight purchases. Some of the functions that were shown to be the most frequently used and most likely to be used in future overlap with Qin et al. (2017) research. They are: Seat/Room choice, advanced check in (flights/hotels); fast check in/check out and flight status notification. When comparing the mean scores of the most frequently used functions, with the mean scores of the most likely to be used in future functions, we observe that the mean scores for the future functions are higher than for the functions currently used. This might mean that business travellers are not yet using mobile travel applications to their full potential, but that they expect to be using it more in the future, emphasising the need to understand travellers' requirements of how these applications should be developed in future to continue playing a supporting role.

Table 4 Most frequently used and likely to be used in future functions

Most frequently used function	Mean	Most likely to be used in future	Mean
Work related supporting applications : Mobile e-mail	4.06	Work related supporting applications: Mobile e-mail	4.51
Work related supporting applications: Mobile instant messaging (E.g. WhatsApp, Facebook Messenger).	3.95	Transportation/Hotel comfort: Seat choice	4.47
Transportation/Hotel comfort :Seat choice	3.83	Check-in/Check-out: Advanced check-in (flight/hotel)	4.42
Check-in/Check-out : Advanced check-in (flight/hotel)	3.54	Work related supporting applications: Mobile instant messaging (E.g. Whatsapp, Facebook Messenger)	4.37
Planning: Destination applications (e.g. weather-, exchange rate applications, general destination information)	3.48	Check-in/Check-out:Fast check-in/check-out	4.34
Planning : Travel approval (Approval of travel requests by relevant person within the company)	3.47	Check-in/Check-out: Mobile boarding pass	4.34
Check-in/Check-out : Fast check-in/check-out	3.41	Itinerary consolidation: Flight details(e.g. boarding gate changes)	4.33
Itinerary consolidation : Flight details (e.g. boarding gate changes)	3.36	Continuous Support :Flight details (e.g. boarding gate changes)	4.22
Continuous Support : Flight details (e.g. boarding gate changes)	3.28	Transportation/Hotel comfort: Lounge access	4.20
Check-in/Check-out : Mobile boarding pass	3.25	Continuous Support :Flight status notification	4.09
Planning: Travel requirements (e.g. visa, vaccinations etc)	3.24	Itinerary consolidation: Consolidated itinerary information/Automated itinerary sync (where your travel schedule is synced with your business diary)	4.03

The Kruskal Wallis test was then used to establish whether differences exist between generations in terms of the mobile travel application functions they use. The mean ranks observed in Table 5 are the sum of the ranks, assigned in ascending order to all observations, for each specific subgroup, divided by the number of observations for each subgroup/category. A mean rank does not indicate a fixed point on a scale, but only shows a tendency to the left or right anchor points of a scale. As such, it can take on any positive value and are not restricted to the original scale values. In the case of this research, a higher mean rank of one group vs. the other groups thus indicates a tendency towards the higher points of the scale.

Table 5 The use of mobile travel applications where age shows significance

Breakdown of question description	The frequency of using air-booking functions	The frequency of using alerts on delays and cancellations	The likelihood of using preferencing	The likelihood of using travel profile management	The likelihood of using picture upload of expenses
Kruskal Wallis	8.778	7.866	8.996	8.109	8.619
Asymp. Sig.	.032	.049	.029	.044	.035

The mean ranks indicate that:

- The Silent Generation (59 years and older) (mean rank: 94.50) tend to use **air booking** functions more frequently than the Baby Boomers (between 49 and 58 years) (mean rank: 84.82).
- The Silent Generation (59 years and older) (mean rank: 96.86) tend to use **alerts on delays and cancellation** functions more frequently than Generation Y (between 19 and 38 years) (mean rank: 96.03).
- Generation Y (between 19 and 38 years) (mean rank: 106.76) indicated that they were more likely than the Baby Boomers (between 49 and 58 years) (mean rank: 94.11) to use **preferencing** functions in the future.
- Generation Y (between 19 and 38 years) (mean rank: 104.96) indicated that they were more likely than Baby Boomers (between 49 and 58 years) (mean rank: 95.87) to use **travel profile management** functions in the future.
- Generation Y (between 19 and 38 years) (mean rank: 106.42) indicated that they were more likely than Generation X (between the ages of 39 and 48 years) (mean rank: 104.37) to use **picture upload of expenses** functions in the future.

From the results it seems that currently, the older generations use some mobile application functions more often than the younger generations. From Table 5 it appears that in future, the younger generations would be more likely to use certain functions than the older generations, and all these functions fall in the post travel phase (dark grey shading). When considering that Generation Y's have been labelled as more individualistic than other generations, wanting tailor-made services and personalised mobile applications, it is interesting to note that the functions (preferencing and travel profile management) deemed likely to be used by this generation in the future, play exactly into these characteristics and permit them to keep their individuality. It is thus important to also identify how these applications should be developed in future to satisfy the needs of this younger generation.

An open-ended question asked respondents which other function they would like mobile travel applications to fulfil in future. By means of content analysis, responses were examined for underlying similarities. Many respondents (20) stated that they would like to be able to send and receive notifications. They also mentioned that they would appreciate receiving continuous feedback on their flight status and road traffic alerts at their destinations. Respondents wanted an application that would automatically notify selected friends and family of their safe arrival at their destinations. Nine respondents stated that they needed an application that would enable them to make bookings, cancel bookings and make changes to their reservations. The bookings they referred to included flight bookings, car rental,

arrangements for accommodation and restaurant reservations. Another eight respondents referred to synchronisation and modification functions, for example the ability to synchronise changes in bookings with delays in traffic or other connecting flights, and integration of itinerary with all travel plans and bookings including conference details. Other categories of functions mentioned by respondents included expense integration and management, all in one travel management function and digital and electronic visa and passport functions.

5 Discussion and conclusion

5.1 Theoretical discussion

The main purpose of managing the travel portfolio of an organisation is to take ownership of the organisation's traveller behaviour and travel expenditure. One way of taking ownership of traveller behaviour is by mandating the use of specific mobile travel applications. Bretschneider (2016) mentions that business travellers are often forced to make use of specific applications that their companies prescribe in their travel policies. These applications should enable travellers to make short-term decisions, to plan under challenging circumstances and to orientate in a flexible way (Vogl in Bretschneider, 2016). For these applications to serve its purposes, it is necessary to ascertain the nature of the use of mobile travel applications by business travellers, how this usage differs between generations, and how these applications should be developed in future to meet the needs of the changing workforce.

Despite the continued development and investment in mobile travel applications and the continued academic interest in the use of these applications in a leisure travel context, there is no academic research that examines the functionality and user assessment of mobile travel applications from the viewpoint of the business traveller. Previous research (Budd & Vorley, 2013; Bretschneider, 2016) has also not investigated how different generations within the workplace view the use of mobile travel applications, and if differences exist between the generations. In terms of the general use of mobile travel applications by business travellers, the findings suggest that mobile travel applications are most important while *on* the business trip. Interestingly, respondents deemed mobile applications more important in the booking phase than in the searching phase, which does indicate that mobiles are increasingly being used as a distribution channel, and not merely an information channel. This contradicts a previous research study which found that the key features and functions that travellers look for in their smartphones are nearby availability and planning tools with less interest in transactional capabilities (MCDPartners, 2014). It further contrasts Murphy, Chen and Cossutta's (2016) study which found that tablets and smartphones have greater usage in the search phase, but less when making the final reservation.

Tulgan (2013) predicts that the growing population of retirees from other generations will eventually be substituted by Generation Y employees; therefore organisational procedures need to integrate this generation's work expectations and behaviours since this will have a vital influence on the functioning of future organisations. Regarding generational differences, when asked about specific functions of mobile travel applications, our results showed that older travellers are in actual fact using specific mobile applications significantly more frequently but that the younger generations are significantly more likely to use certain mobile applications in the future than the older generations. This result supports the research of Lee and Lee (2014) who found that Generation X convention attendees are actually more likely to make use of mobile applications than Generation Y, but at the same time contradicting Verma, Stock and McCarthy (2012) who found that younger business travellers have a higher technology readiness index than older business travellers. Our results also refutes a 2016 investigation of 1557 internet users which revealed that while only 24% of the sample made reservations through mobile devices, the percentage grew to 41% for those between the ages of 25 and 34 (O'Donnell in Qin et al., 2017). In their research, Qin et al. (2017) predict the use of mobile channels to increase as younger generations grow older and become major markets (Qin et al., 2017). This might explain the result of the younger generations expecting to use mobile applications more in the future.

Our results show that the perceived importance of mobile travel applications in the various travel stages differs between generations – but that these differences were not statistically significant. In the searching and booking phases mobile applications seem to be most important to the Generation X. Whereas Generation Y found mobile travel applications to be most important in the travelling phase. In the post travel phase, the Baby Boomers viewed mobile applications as most important. In their research on the intention to use mobile applications during a convention Lee and Lee (2014) also found no significant difference in information seeking motivation among the three generation groups. The result is also in line with what Xiang et al. (2015) found. According to them, in general, the Internet has become the most influential tool for travel planning across all generations, and generational gaps in the acceptance of the Internet have become blurred. That is, the Internet has entered into the traveller population irrespective the age group. The same seems to be true in the context of business travel applications.

In terms of the future development of these mobile travel applications to meet the needs of the changing workforce, respondents mentioned that they would appreciate receiving continuous feedback on the flight status and road traffic alerts at their destinations. Respondents wanted an application that would automatically notify selected friends and family of their safe arrival at their destinations and stated the need for an application that would enable them to make bookings, cancel bookings and make changes to their reservations. This partly supports the work of Verma, Stock and McCarthy (2012) who examined which mobile device developments their respondents would like to see. Location-based information and applications were most preferred, including information about directions to and the capacity to make bookings at local restaurants and other attractions. Communication-based inventions

and hotel-services-based developments followed, comprising of text-messages or alerts from hotels, voice-mails, emails, and wake-up calls; and hotel services such as being able to utilise a mobile device to order or schedule housekeeping, room-service, or other hotel services.

The study makes a contribution by answering the call from previous researchers such as Kim et al. (2015) who argued that previous research does not sufficiently mirror the new technological environment for travel and tourism and thus, new studies need to be conducted to better understand how traveller generations are different in their use of technology (Kim et al. 2015). It also adds to the limited body of knowledge available on business travel and the use of technology by business travellers, which could have a significant impact on the management thereof.

5.2 Managerial implications

This study confirms the usage of mobile travel applications by business travellers and could aid companies in tailoring their mobile strategy more effectively to be applicable to travellers from various generations currently evident in the workplace. Companies are becoming more aware of the value of real-time information delivery (Travelport. 2012a) in order to reduce travel stress and increase productivity. Therefore, business travellers (especially the younger generations) should value a travel application that provides them with an infinite amount of information (Travelport. 2012b) while at the same time being customisable to their business itineraries (Travelport. 2012a). The results, which show that there is no significant difference between generations in terms of the perceived importance of mobile travel applications during different stages of the business travel cycle, but that the difference between generations lies in their frequency of use and likelihood to use in future, should act as a caution to TMCs (who are often the developers of mobile travel applications to be used by business travellers). We concur with Schuitmaker and Thomas (2016) who warn travel management companies (TMCs) against adjusting too much to the technology demands of clients, since they will be spending too much of their own time and resources in satisfying the client's fluctuating requirements. They advise TMCs to know how much technology to integrate into their offering by analysing their corporate audience and specific traveller profile, which would be influenced by the company's corporate culture.

5.3 Future research and limitations

Future research could focus on gender differences in the use of mobile travel applications, since research has shown that males and females exhibit different needs when they travel for business purposes, also in terms of technology. This could then aid companies to tailor their mobile strategies even further, not only to consider the needs of generations but also genders in the workplace. Like all research studies, this study is not without limitations. The findings of this study cannot be generalised to the global population of business travellers who use mobile applications as the sample

was non-random. The findings do nonetheless show some trends that may indeed be an indication of the global population of business travellers' mobile travel application usage.

References

- Amadeus (2011) The always connected traveller: How mobile will transform the future of air travel. <http://www.amadeus.com/airlineit/the-always-connected-traveller/index.html>. Accessed: 2013-04-06
- Beldona S, Nusair K & Demicco F (2009) Online travel purchase behavior of generational cohorts: a longitudinal study. *Journal of Hospitality Marketing & Management* 18(4): 406-420.
- Benckendorff P, Moscardo G & Pendergast D (2010) *Tourism and Generation Y*, CABI, London.
- Boughzala I (2012) *Collaboration engineering: a contribution to its foundations through the 2.0 era*. Lambert Academic Publishing, Saarbrücken, Germany.
- Brey E, So SI, Kim DY & Morrison A (2007) Web-based permission marketing: segmentation for the lodging industry. *Tourism Management* 28 (6): 1408-1416.
- Bretschneider RA (2016) Evaluation Approaches for HCI Related Aspects of Occupational Safety Regulations Exemplified by Mobile Hotel Booking Applications. *HCIBGO 2016, Part II, LNCS 9752: 395–402*. https://link.springer.com/chapter/10.1007/978-3-319-39399-5_37. Accessed: 2017-09-04.
- Budd L & Vorley T (2013) Airlines, apps and business travel: a critical examination. *Research in Transportation Business & Management* 9:41-49.
- Campbell J (2013) Concur and CWT buy early lead in mobile managed travel contest. *Business Travel News*, 30(6):22-23.
- Chang HUH & Sung Hee P (2010) Changes in patterns of trip planning horizon: a cohort analytical approach. *Journal of Hospitality Marketing & Management* 19(3): 260-279.
- Charlesworth A (2009) The ascent of smartphone. *Engineering & Technology* 3(4): 32-33.
- Chuah HW, Marimuthu T & Ramayah T (2014) The Effect of Perceived Value on the Loyalty of Generation Y Mobile Internet Subscribers: A Proposed Conceptual Framework. *Procedia - Social and Behavioral Sciences* 130: 532 – 541.
- Crawford SD, Couper MP & Lamias MI (2001) Web Surveys: Perception of Burden. *Social Science Computer Review* 19: 146-162.

- CWT Travel Management Institute (2013) Where now for managed travel. <http://www.carlsonwagonlit.com/en/global/insights/travel-management-institute/open-booking/> Accessed: 2013-07-25.
- CWT Travel Management Institute (2014) Tap into mobile service - Managed travel in the digital economy. <http://www.cwtinsights.com/> Accessed: 2014-08-09.
- Eriksson N (2014) User categories of mobile travel services. *Journal of Hospitality and Tourism Technology* 5(1): 17-30.
- Forbes D (2015) Generation Y: A new challenge for travel procurement. <https://www.procurementleaders.com/blog/guest/generation-y-new-challenge-for-travel-procurement-671879#.WaIT17IjHIU>. Accessed:2017-03-03.
- Gardiner S, Grace D & King C (2014) The Generation Effect: The Future of Domestic Tourism in Australia. *Journal of Travel Research* 53(6): 705– 720.
- Gebauer J (2008) User Requirements of Mobile Technology: A Summary of Research Results. *Information Knowledge Systems Management* 7:101-119.
- Gillespie S, Konwiser E (2012) The Key Tenets Of Managed Travel 2.0. *Business Travel News* 29 (3): 28-32.
- Goh DH, Lee CS, Ang RP & Lee CK (2009) Determining services for the mobile tourist. *Journal of Computer Information Systems* 51 (1): 31-40.
- Gursoy D, Maier T & Chi C (2008) Generational differences: an examination of the work values and generational gaps in the hospitality workforce. *International Journal of Hospitality Management* 27: 448–458.
- Gustafson P (2012) Managing business travel: Developments and dilemmas in corporate travel management. *Tourism Management* 33: 276-284.
- Gustafson P (2012b) Travel time and working time: What business travellers do when they travel, and why. *Time Society* 21(2):203-222.
- Huang YC & Petrick JF (2010) Generation Y's travel behaviours: a comparison with Baby Boomers and Generation X. In P. Benckendorff, (Ed.), *Tourism and generation Y* (pp. 27–37). Cambridge, MA: CAB International.
- Hur HJ, Lee HK & Choo HJ (2017) Understanding usage intention in innovative mobile app service: Comparison between millennial and mature consumers. *Computers in Human Behavior* 73: 353-361.
- Kapoor C & Solomon N (2011) Understanding and managing generational differences in the workplace. *Worldwide Hospitality and Tourism Themes* 3(4):308-318.
- Kim DY, Park J & Morrison AM (2008) A model of traveller acceptance of mobile technology. *International Journal of Tourism Research* 10(5): 393-407.
- Kim H, Xiang Z & Fesenmaier DR (2015) Use of The Internet for Trip Planning: A Generational Analysis. *Journal of Travel & Tourism Marketing* 32(3):276-289.

- Kumar A & Lim H (2008) Age differences in mobile service perceptions: Comparison of Generation Y and Baby Boomers. *Journal of Services Marketing* 22(7): 568-577.
- Langelund S (2007) Mobile travel. *Tourism and Hospitality Research* 7(3-4):284-286.
- Leask A, Fyall A & Barron P (2013) Generation Y: opportunity or challenge – strategies to engage Generation Y in the UK attractions’ sector. *Current Issues in Tourism* 16 (1): 17-46.
- Leask A, Fyall A & Barron P (2014) Generation Y: An Agenda for Future Visitor Attraction Research. *International Journal of Tourism Research* 16: 462–471.
- Lee S & Lee CH (2014) An Exploratory Study of Convention Specific Social Media Usage by Attendees: Motivations and Effect of Generations on Choice of Convention Information Source and Intention to Use Mobile Application. *Journal of Convention & Event Tourism* 15(2): 135-149.
- Leedy PD & Ormrod JE (2013) *Practical research: planning and design*. 11th ed. Harlow, England. Pearson
- Li X, Li XR & Hudson S (2013) The application of generational theory to tourism consumer behavior: An American perspective. *Tourism Management* 37: 147-164.
- Lirio P (2014) Taming travel for work-life balance in global careers. *Journal of Global Mobility* 2 (2): 160-182.
- Lirio P (2017) Global boundary work tactics: managing work and family transitions in a 24–7 global context. *Community, Work & Family* 20(1): 72-91.
- Lu J, Mao X, 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.
- Lyons S & Kuron L (2014) Generational differences in the workplace: A review of the evidence and directions for future research. *Journal of Organizational behaviour* 35(1):139-157.
- Mahatanankoon P, Wen HJ & Lim B (2005) Consumer-based m-commerce: exploring consumer perception of mobile applications. *Computer Standards & Interfaces* 27(4):347–357.
- MCDPartners (2014) Seeking returns: Building loyalty at hotels through digital customer experience. http://mcdpartners.com/wp-content/uploads/2014/03/Seeing_Returns.pdf. Accessed 29.06.15.
- McMullin J, Comeau T & Jovic E (2007) Generational affinities and discourses of difference: a case study of highly skilled information technology workers. *British Journal of Sociology* 58: 297–316.
- Murphy HC, Chen M & Cossutta M (2016) An investigation of multiple devices and information sources used in the hotel booking process. *Tourism Management* 52: 44-51.

- Ngai WTE & Gunasekaran A (2007) A review for mobile commerce research and applications. *Decision Support Systems* 43(1): 3-15.
- Okazaki S, Campo S, Andreu L & Romero J (2015) A latent class analysis of Spanish travelers' mobile internet usage in travel planning and execution. *Cornell Hospitality Quarterly* 56(2): 191–201.
- Parry E & Urwin P (2011) Generational Differences in Work Values: A Review of Theory and Evidence. *International Journal of Management Reviews* 13:79–96.
- Patalano C (2008) A Study of the Relationship Between Generational Group Identification and Organizational Commitment: Generation X vs. Generation Y. Unpublished DBA dissertation. <https://search.proquest.com/docview/304810041/fulltextPDF/752FD60EFD704ACFPQ/1?accountid=14717>. Accessed: 2017-08-25.
- PC Housing (2012) Mobile dependence: a growing trend in business travel. <http://www.pchousing.com/blog/968/pc-housing-infographic-mobile-dependence-a-growing-trend-in-business-travel#respond>. Accessed: 2013-07-25.
- Pendergast D (2010) Getting to know the Y generation. In P. Benckendorff (Ed.), *Tourism and generation Y* (pp. 1–15). Cambridge, MA: CAB International.
- Pennington-Gray L & Blair S (2010) Nature-based tourism in North America: Is generation Y the major cause of increased participation? In P. Benckendorff (Ed.), *Tourism and generation Y* (pp. 73–84). Cambridge, MA: CAB International.
- Pennington-Gray L, Kerstetter DL & Warnick R (2002) Forecasting travel patterns using Palmore's cohort analysis. *Journal of Travel & Tourism Marketing* 13(1-2): 125-143.
- Qin M Tang C Jang S & Lehto X (2017) Mobile app introduction and shareholder returns. *Journal of Hospitality and Tourism Management* 31: 173-180.
- Reisenwitz TH & Iyer R (2009) Differences in Generation X and Generation Y: Implications for the organization and marketers. *Marketing Management Journal* 19(2): 91–103.
- Roby H (2014) Understanding the development of business travel policies: Reducing business travel, motivations and barriers. *Transportation Research Part A* 69: 20–35.
- Schuitmaker C & Thomas P (2016) Managing the corporate traveller. *African Journal of Hospitality, Tourism and Leisure* 5 (4): 1-19.
- Sherry L (2015) A method for quantifying travel productivity for corporate travel Managers. *Journal of Air Transport Management* 42: 118-124.
- Sox CB, Kline SF & Crews TB (2014) Identifying best practices: opportunities and barriers in meeting planning for Generation Y. *International Journal of Hospitality Management* 36, 244–254.

- Sox CB, Crews TB & Kline SF (2014) Virtual and Hybrid Meetings for Generation X: Using the Delphi Method to Determine Best Practices, Opportunities, and Barriers. *Journal of Convention & Event Tourism* 15 (2): 150-169.
- Sullivan J (2004) Supervising and leading the Game Boy Generation. *Nation's Restaurant news* 38: 20- 21.
- TIA (2007) The ideal American vacation trip: An in-depth analysis of American leisure travelers' aspirations and motivations. Washington, DC: Travel Industry Association.
- Travelport (2012a) Perspectives on corporate travel trends and challenges. http://www.travelport.com/solutions/corporations/~/_/media/c3e839e17c8042cd8bfa8d1650da36c5.ashx. Accessed: 2014-03-24.
- Travelport (2012b) Servicing the digital leisure traveller. http://www.galileokuwait.com/Travel-rends/~/_/media/Corporate/Whitepapers/ServicingtheDigitalLeisureTraveler.pdf. Accessed: 2014-03-24.
- Travelport (2013) The real impact of mobile on the corporate travel program. http://www.travelport.com/Travel-Trends/~/_/media/Corporate/Trend-Articles/Real%20Impact%20of%20Mobile%20on%20the%20Corporate%20Travel%20Program.ashx. Accessed: 2014-03-24.
- Tulgan B (2013) Meet generation Z: the second generation within the giant Millennial cohort. Rainmaker Thinking Inc. <http://rainmakertesting.com/assets/uploads/2013/10/Gen-Z-Whitepaper.pdf>. Accessed 05.17.17.
- Twenge J, Campbell S (2007) Generational differences in psychological traits and their impact on the workplace. *Journal of Managerial Psychology* 23(8):862-877.
- Van Rooyen, A. 2016. The current use and future expectations of business travellers regarding mobile travel applications. Unpublished MCom dissertation: University of Pretoria. <http://bit.ly/2AhpSRS>
- Verma R, Stock D & McCarthy L (2012) Customer preferences for online, social media, and mobile innovations in the hospitality industry. *Cornell Hospitality Quarterly* 53 (3): 183-86.
- Wang D, Park S & Fesenmaier D (2012) The role of smartphones in mediating the touristic experience. *Journal of Travel Research* 51(4):371-387.
- Wang D, Zheng X & Fesenmaier D (2014a) Smartphone use in everyday life and travel. *Journal of Travel Research* 55(1): 52-63.
- Wang D Zheng X & Fesenmaier D (2014b) Adapting to the mobile world: A model of smartphone use. *Annals of Tourism Research* 48: 11-26.
- West E, McDonough A, Magliaro L & Reid T (2011) At the point of decision: Managing travel in real time. *Business Travel Media Group* April:1-8.

- Xiang Z & Gretzel U (2010) Role of social media in online travel information search. *Tourism Management* 31(2): 179–188.
- Xiang Z, Magnini VP, Fesenmaier DR (2015) Information technology and consumer behavior in travel and tourism: Insights from travel planning using the internet *Journal of Retailing and Consumer Services* 22: 244–249.
- Yohe G (2007) The Millennial mind-set. *Human Resources Executive* November: 56-61.