



Four generational cohorts and hedonic m-shopping: association between personality traits and purchase intention

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Abstract

In retailing, it is recognized that prominent differences exist between generational cohorts. As such, analysis of varying patterns of personality traits and their effects between generations is essential for understanding consumer behaviors. This research focuses on the association between the Big Five personality traits and m-shopping intentions of hedonic products among four generational cohorts: baby boomers and Generations X, Y, and Z. Generational cohort theory, the Big Five Personality Model, and resistance to innovations theory are integrated in a theoretical framework. The research was conducted by online survey of 1241 Internet users aged 14–72. Different patterns of effects of personality traits between generations were found. For baby boomers and Generation X, a positive association between openness to experience and m-shopping intention was found. Moreover, in these generations, personality traits were more powerful in predicting m-shopping intention, compared to younger generations. Among Generation Y, extraversion was positively correlated with m-shopping intention. Among Generation Z, a negative correlation between agreeableness and m-shopping intention was found. Based on our findings, we propose a generational approach to marketing strategy and suggest specific practical implications.

Keywords Baby boomers · Generation X · Generation Y · Generation Z · Hedonic products · Personality traits

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1 Introduction

In modern societies, consumer choices are driven by aspiration for hedonic goods, i.e. products "whose consumption is primarily characterized by an affective and sensory experience of aesthetic or sensual pleasure" [1]. The consumption of hedonic products is typically motivated by the desire for fun and excitement and often involves products or services that are frivolous or luxurious [1]. As retail and technology evolve, consumers can choose to purchase hedonic products through an ever-greater variety of retail channels. These range from traditional retail outlets and direct marketing to online or mobile shopping formats [2, 3]. The multitude of smartphone and tablet users has led to the increased use of mobile shopping (m-shopping). Previous studies have found that m-shopping appears to be a new opportunity for increasing revenue through the use of mobile devices anytime and anywhere [4–6]. As such, it merits special attention from retailers.

It is self-evident that customers can be addressed more effectively if more is known about them. Since m-shopping is a relatively new way to purchase online, it will be important for retailers to understand how different consumer groups adopt mobile innovation and use it to purchase. Accordingly, numerous studies reported prominent between-generational differences in consumer use of new technology [7, 8] and in shopping behavior [9–13]. In contrast, research that did not detect differences between generational cohorts in these fields is limited [14, 15]. As for the personality traits, they have been shown to be a key factor in acceptance of shopping in new technology environments as individual differences affect customer decisions [4, 6, 16].

However, very little research has examined the association between personality traits and *m-shopping behavior*. Moreover, as far as we know, research focused on the m-shopping behavior of *four generational cohorts* has yet to be conducted. The different experiences and preferences of various generational cohorts, as well as the different patterns of personality traits, affect attitudes and behavior. They could thus be assumed to result in differences in purchase behavior. Considering the preferences and behavioral traits of different generational cohorts is essential when developing targeted marketing strategies to consumers who use a particular retail channel. Thus, retailers may draw substantial benefits from knowing more about generational psychological profiles in more applied contexts. Due to prominent differences between generational cohorts, it would be advantageous for retailers to focus on pattern variation in personality trait effects between generations. Our main purpose is to evaluate between-generational differences in the effects of personality traits on m-shopping intention to purchase hedonic products.

2 Literature review

2.1 M-shopping

Mobile commerce (m-shopping) have gradually evolved from e-commerce [17] and can be defined as consumer activity focused on purchasing products and services from retailers via mobile devices such as smartphones and tablets [18, 19]. Wong et al. [20] regard m-shopping as “any monetary transactions related to purchases of goods or services through internet-enabled mobile phones or over the wireless telecommunication network”. Faulds et al. [21] expand this definitional scope and determine that “the use of mobile technologies by shoppers has caused a paradigm shift in the consumer decision process”. Mobile shopping is a rapidly growing phenomenon [22] due to the wide popularity of mobile devices such as smartphones and tablets as well as continuous improvement and expansion of wireless networks. According to eMarketer, 39.6% of U.S. e-commerce sales were made on mobile devices in 2018, a rate that is expected to reach nearly 50% by 2020, representing 15% of total retail sales. Moreover, nearly two-thirds of internet users make purchases on mobile devices [23].

E-commerce using both desktop computer (online shopping) and m-shopping are changing the way consumers shop as new opportunities to gather information from multiple sources, check for product and service availability, compare prices, and localize products and stores are increasingly accessible and reliable due to new supportive ICT infrastructure [18, 24]. Compared to e-commerce using a desktop computer, m-shopping holds the unique advantages of mobile internet technology entailing greater convenience, localization, and immediacy—the anytime and anywhere factor [20–22, 25]. In fact, this mobility allows customers to use mobile shopping services in nearly any location even when in transit [21]. Generally, the customers who utilize mobile phone shopping value the speed, accessibility, comfort [26], convenience, simplicity and efficiency of the purchase experience [22]. However, there are also some limitations involving m-commerce such as low customer confidence in cell phone transactions, narrow bandwidth, network connectivity issues, limited display, power back-up, memory size and mobile Internet service fees [27]. In addition, a comparison of user preferences between online shopping and mobile commerce shows that respondents were well aware of the severe data entry and retrieval limitations of m-commerce and have a relatively negative opinion of the interface capabilities of m-commerce, which are extremely relevant for people with visual and motor limitations [28].

2.2 Big Five personality traits

Psychologists claim that personality strongly affects a broad range of cognitive responses, including intentions and behaviors [29]. Moreover, personality is a key factor in the acceptance of shopping in new technology environments as individual differences affect customer decisions [16, 19]. Accordingly, previous

research demonstrates that personality traits can function as strong predictors of online shopping motivations [30–32]. One of the leading theories of personality is the Five Factor Model (FFM) [33], which includes five constructs: extraversion, conscientiousness, openness to new experience, agreeableness, and neuroticism.

Extraversion represents the inclination to engage with the external world, to be active, sociable and enjoy interacting with other people. Extraverts like to talk and assert themselves and are often perceived as energetic and enthusiastic. They have confidence and optimism. On the other hand, introverts are reserved, reflective and serious.

Conscientiousness describes the extent to which an individual is dependable, concerned with details, and responsible [34]. Scoring high on a conscientiousness scale translates into a tendency to strive for efficiency, thoroughness and preference for planned rather than spontaneous behaviors. On the contrary, low conscientiousness scorers tend to be more careless and change their positions.

Openness to experience captures a person's aptitude to try new things, to appreciate unusual ideas and experiences. Those scoring high on openness usually have active imaginations, are curious and will often adopt new ideas spontaneously. They tend to think independently and do not rely on tradition or norms [35]. In comparison, those scoring low on openness are typically more conservative and prefer familiar things to new ones [35].

Agreeableness relates to the tendency to be cooperative, altruistic, sympathetic to others and eager to help them. Agreeable individuals tend to appreciate the values and beliefs of other people [34]. In contrast, those scoring low on this dimension tend not to consider other people's interests and welfare and tend not to be concerned with social norms.

Neuroticism is the propensity to experience distress and negative emotions, including fear, sadness, anger, anxiety, irritability, loneliness, worry, dissatisfaction and low self-esteem [36, 37]. Neurotic individuals are typically troubled by potential loss and risks, and they are not likely to open themselves to new experiences. Those scoring low on neuroticism tend to be calmer, are quicker to adapt, and demonstrate emotional responsiveness.

Previous studies demonstrated that personality traits can function as strong predictors of online shopping motivations [30–32]. Research found a positive association between online shopping and experience [31, 32], conscientiousness [30, 31], extraversion [31] and neuroticism [31, 32]. However, previous research on the effect of personality characteristics on m-shopping is very limited. Personality variables related to technological factors (e.g., innovativeness, compatibility, and affinity) have been found to have direct positive effects on intentions to adopt m-shopping [4]. Zhou and Lu [6] found a positive correlation between m-shopping adoption and extraversion, agreeableness and openness to experience. However, individuals with higher neuroticism and conscientiousness scores were less likely to adopt m-shopping.

2.3 Generational cohorts

Despite its importance and obviousness, several authors in the marketing field first questioned the relevance of chronological age as a segmentation criterion [38–40]. Ingelhart [41] first proposed Generational Cohort Theory as a way to divide a population into segments—generational cohorts. A generational cohort can be defined by the years of birth, extending 20–25 years in duration, or as long as it generally takes for one birth group to be born, age and have children of their own [42, 43]. These cohorts usually share the same attitudes, ideas, values and beliefs based on their birth during the same time period and living through common experiences, with macro-level social, political and economic events that occurred during their coming-of-age years (age 17–24) [44]. According to Meredith and Schewe [42], these experiences and events will be reflected in their core values concerning jobs, money, tolerance and sexual behavior. These values, beliefs, expectations and behaviors generally remain constant throughout a generation's lifetime and create generational identity [41, 43, 45–48]. In the consumer context, they may significantly influence purchase patterns and shopping behavior [11, 49]. This assumption is used as a general basis for consumer segmentation [40, 50, 51]. Therefore, understanding the values and motivations of a generation has become essential to targeting particular consumers, as each generation is driven by unique ideas about the type of lifestyle they aspire to reach.

The research literature defines the following generational cohorts: baby boomers, born between 1946 and 1965; Gen X, born between 1966 and 1980; Gen Y, born between 1981 and 1994; and Gen Z, born in 1995 and after [14, 40]. Researchers and historians have used different names and dates to define cohorts; however, the literature fundamentally agrees on the general attitudes and behaviors of these groups [52, 53].

Baby boomers now comprise a significant proportion of western society, contributing to an aging population. This generation is characterized by high average disposable income, thus attracting marketers [54]. They tend to be optimistic, idealistic, communicative, and value education and consumer goods [55]. Hence, this group values mobility. Baby boomers have travelled more than their older cohorts; they have seen more and have high aspirations for the future. In addition, they are often depicted as a narcissistic generation, greedy in their appropriation of resources and selfish in their pursuit of hedonistic individualism [56, 57]. However, baby boomers are often identified as the social group with the lowest level of participation in the information society [58]. Although information and mobile technology adoption rates in general and m-shopping rates in particular among this generation are steadily and rapidly increasing [59, 60], they are still well below that of younger generations [61–63]. Among adults aged 50–64, 41% reported feeling very confident when using electronic devices to accomplish their online needs in contrast to 74% of those ages 18–25 [64]. In their consumer behavior, baby boomers are more deal-prone than other generational cohorts, employ more cost-saving strategies, and report higher levels of smart shopping [65]. They are cautious in their buying behavior, and during the purchasing process look for information and process this information intensively [66].

Gen X grew up with both economic uncertainty (the recessions of the early 1980s and 1990s) and societal uncertainty (e.g., divorce, latchkey kids, AIDS) [51, 67]. Many came of age in a period when both parents were in the workforce or in a divorced household, and, as a result, became independent at a young age. This generation is commonly described as socially insecure and lacking in solid traditions [68]. Gen X tends to lack the social skills of their parents, but has strong technical ability [69, 70]. However, in contrast to younger generations of so-called 'digital natives', Gen X is considered by the literature to consist of 'digital immigrants' [71], who did not grow constantly surrounded by and immersed in IT. Thus, they were compelled to invest time and effort to acquire digital skills [72]. They are likely to find ways to get things done smartly, quickly, and effectively even if it means bending the rules [69, 73]. With Gen X, multiculturalism and thinking globally are the norm [74]. The main characteristics usually attributed to Gen X are individualism, self-reliance [75] and skepticism [76]. In terms of consumption aspects, they tend to care about the opinions of others, have an attitude of risk avoidance [77], and are looking for customer convenience, community relations, and branding.

Gen Y individuals came of age during a period of economic growth, strong emergence of social media and reality television, globalization, and powerful influences from popular culture [49]. Gen Y is considered a confident and optimistic generation that feels empowered to take positive action when things go wrong and has multi-tasking abilities due to their high speed and energy [78, 79]. Its members are generally technologically competent, casual, and fun loving [75, 80]. Their lives and daily activities are considerably mediated by digital technologies: social interactions, friendships, civic activities, and hobbies. They are digital natives who have never known any other way of life [81, 82]. The constant flow of information has become the rule for most this cohort, who are multi-taskers, constantly using their mobile phones for social networking, job finding, and grassroots-generated information-gathering about products, services, schools, employers, and travel destinations [11, 83]. In their consumption behavior, Gen Y are more driven to use status-seeking consumption as a means of displaying wealth and purchasing power [13, 83]. Due to their ability to easily access vast amounts of information, Gen Y are highly educated in many aspects, focus greatly on technical information, and usually make purchase decisions informed by prior research [12].

In 2017, Gen Z meant 22 years old or younger. This market segment includes the most educated, mobile, and connected consumers to date [40]. They are also socially conscious, tech-savvy, quite innovative, and permanently looking for change, with an innate comfort in the virtual world. For these consumers, the Internet has always existed [84, 85]. Most Gen Zers are continuously connected through smartphones and tablets, and have access to more information than any other generational cohort [85]. However, they still tend to live as economically dependent on their parents. Therefore, Gen Z are more selective in spending money and in choosing the products they will buy [86].

Until recently, information on how the generations differ psychologically was difficult to come by. The relationship between birth cohort and the Big Five personality traits has been addressed only in a handful of studies, which sometimes provide conflicting results, specifically regarding conscientiousness and agreeableness [87, 88].

Research has shown that younger generational cohorts are higher in extraversion [89, 90] and lower in openness to experience [91], while generational differences in neuroticism follow the curvilinear pattern [92]. Apart from the fact that studies on generational differences in personality traits are scarce and provide inconsistent results, they also fail to take into account Gen Z. The current study will contribute to this field, addressing differences between four generations in terms of personality traits.

3 Theoretical background and hypotheses

Innovation theory claims that innovations are, without exception, improvements over existing product or service substitutes [93]. Therefore, by definition they are good and should be adopted by everyone [94]. However, innovations mean change to consumers, and resistance to change is a normal consumer response that has to be overcome before adoption may begin [93, 95]. Ram and Sheth [96] explained the causes of resistance to innovation and proposed a classification of possible barriers to its adoption [96]. Most relevant to our case (m-shopping) are usage and risk barriers. A *usage barrier* consists of discrepancies between new technology and accepted habits and may generate consumer resistance. As result of uncertainty, which usually accompanies every innovation, *risk barriers* (mainly functional and financial) also may develop.

Assigning different weights to these barriers, individuals do not adopt innovation at the same time [97]. Gen X adopts new technology at a slower rate than Gen Y and Gen Z, but faster than baby boomers [7, 98]. Age is a significant factor in accepting new technology in general [8, 99] and engaging in m-commerce activities in particular. Furthermore, younger consumers are more excited to try new mobile options in order to search and buy from m-commerce vendors [100]. Therefore, we may assume that among “digital natives” (Gen Z and Gen Y) and “digital immigrants” (Gen X and baby boomers), we will find different patterns of association between personality traits and m-shopping intention. In general, among generations in which m-shopping adoption is close to the saturation point, the personality traits will be less powerful in predicting m-shopping intention, compared to generations in which adoption occurs mid-process. We assume that this will be reflected more significantly in hedonic products which are less goal oriented and more motivated by the desire for fun and excitement [1]. Therefore, the following general hypothesis may be formulated:

H1 The patterns of associations between personality traits and m-shopping intention toward hedonic products will be different between generations. The contribution of personality traits to m-shopping intention toward hedonic products will be higher among baby boomers and Gen X compared to Gen Y and Gen Z.

M-shopping integrates two types of innovations: online shopping and Smartphone usage. These combine in an activity with potential functional and financial

risk [101, 102]. As noted, when exposed to an innovation, people tend to prefer a tried, proven product [103, 104], which they own and repeatedly use over time [105]. This is because switching involves risk or even potential loss, which may seem to outweigh projected gains [106]. In contrast to proven and repeatedly used utilitarian products, whose consumption is “more cognitively driven, instrumental, and goal oriented and accomplishes a functional or practical task” [1], purchasing hedonic products is less likely to be a routine process, and, therefore, involves more stress, anxiety, and fear. Because neurotic personalities are more likely to be anxious, self-conscious, or paranoid and view technological advances as threatening and stressful [107], we assume that among generations with more usage and risk barriers, in which higher levels of anxiety in using a new technology is experienced [108], m-shopping intention toward hedonic products may be negatively correlated with neuroticism. Accordingly, we may posit H2a:

H2a Among baby boomers and Gen X, neuroticism will be negatively correlated with m-shopping intention toward hedonic products.

In contrast, many of the m-shopping characteristics that cause uncertainty or concern for baby boomers or Gen Xers (e.g., delivery charges, consumer monitoring, submitting credit card information) will not register the same way for younger generations [84, 109]. For Gens Y and Z, m-shopping is associated with far less risk and e-commerce, bar-codes, and other technologies related to online payment are considered simply part of the economic landscape of the Internet. Accordingly, among these generations we expect that association between neuroticism and m-shopping intention toward hedonic products is driven by different reasons. The literature reports that when there is no innovation risk, highly neurotic people are motivated by the need to avoid socializing [31]. In fact, they are likely to purchase online because this form of shopping allows for transactions that do not include others, with experienced online buyers enjoying more freedom and control over transactions. Thus, higher levels of suffering from emotional instability translate into greater willingness to buy products and services online [32]. Consequently, we may formulate the H2b:

H2b Among Gen Y and Gen Z, neuroticism will be positively correlated with m-shopping intention toward hedonic products.

People with a high degree of openness tend to shop online to experience adventure and ideas as they typically pursue new activities [31, 32]. Due to the higher tendency of open individuals to be curious, enjoy experientially richer lives, and experience both negative and positive emotions more keenly than those who are ranked lower in openness to experience, it can be assumed that they perceive and experience hedonic values informing products more strongly than individuals who score low on openness to experience [110]. Baby boomers and Gen X, who are both less technologically advanced, may be less interested in adopting m-shopping of hedonic products due to the usage barriers compared to younger generations. In addition, Gen X

suffers from insecurity, and therefore financial and privacy risks of m-shopping may be a sufficient deterrence for them as compared to other generations. Regarding baby boomers and Gen X, we may assume that people who scored higher in openness to experience will be more likely to overcome these risks and barriers. For digital natives, Gen Y and Gen Z, these barriers and risks are less pronounced or do not exist; therefore, openness to experience should not be an important predictor of their m-shopping intention. Accordingly, we may formulate the following hypothesis:

H3 Among baby boomers and Gen X, openness to experience will be positively correlated with m-shopping intention toward hedonic products, while among Gen Y and Gen Z, this correlation will be insignificant.

Agreeableness is reported to have a significant influence on impulsive buying behavior [111]. Young consumers, who have a tendency to be influenced by their surrounding environment, can be easily attracted by online marketing of and advertising from various retailers on social media (e.g. Facebook, Instagram). Moreover, as agreeable people are known for strong levels of trusting others [112], they tend to rank the impact of social media higher than people with low agreeableness [113]. As hedonic shopping is more linked to impulse buying [114] and agreeableness increases trust in social media retailers and advertisers [113], we may assume that agreeableness will be more influential for younger generations. Accordingly, we formulate the following hypothesis:

H4 Among Gen Y and Gen Z, agreeableness will be positively correlated with m-shopping intention toward hedonic products.

Generally, extraverted people shop online in response to social motivation since internet shoppers can share information and shopping experiences on virtual platforms [31, 115]. Extraverts are more likely to seek new opportunities and excitement as compared to introverts. Extraverted people are generally highly sociable [116], enjoy being the center of others' attention [117], and are more prone to exhibitionism and self-promotion [118]. Individuals who seek being the center of attention are more likely to communicate their consumption activities and talk about the products and services they use. They enjoy displaying their new, impressive-looking clothes or luxurious vacations to exotic destinations [119, 120]. They often feel compelled to permanently keep up the audience's interest in themselves by purchasing and posting more and more hedonic products. Such activities may seem like deviant exhibitionism and passive acceptance of intrusive surveillance to older and more traditional cohorts. It was also found that Gen Y is more prone to exhibitionism and are more nonchalant toward surveillance as a means of self-promotion through hedonic product and service enjoyment as compared to older generations [121]. We may assume that similar patterns will also be found among Gen Z, which, due to their young age, was less examined in this context. Therefore, based on the positive correlation between exhibitionism and extraversion [122], we may formulate the following hypothesis:

H5 Among Gen Y and Gen Z, extraversion will be positively correlated with m-shopping intention toward hedonic products.

Generally, conscientious people engage in internet shopping for convenience and to carry out purchase tasks efficiently [30, 31]. In contrast to older generations, Gen Z is often still economically dependent on their parents. Therefore, their online shopping may to a certain extent be a function of parental agreement. Such an agreement may depend on the personality trait of conscientiousness, which is reflected in caution, thoroughness, responsibility, organization and planning, strenuous work, perseverance, and self-policing. Conscientiousness in adolescents and young people, which may present itself as mental maturity and responsible decision-making, can lead to parental trust for Gen Z. This trust may then lead to parental willingness to allow their children make purchase decisions independently. Moreover, young people characterized by conscientiousness may be more involved in the labor market and, therefore, more financially independent. As a result, they can be autonomous in their purchase decisions and benefit themselves by m-shopping of hedonic products. Therefore, we may formulate the following hypothesis:

H6 Among Gen Z, conscientiousness will be positively correlated with m-shopping intention toward hedonic products.

4 Method

4.1 Procedure

This study is based on an online survey among Israeli Jews who belong to four generations: baby boomers, Gen X, Gen Y, and Gen Z. A post addressed to potential interviewees, including a survey link, was published on various online Israeli forums of general interest (e.g., politics, shopping, culture, family, health, sport, etc.) by research assistants. The survey invitation explained that the research involved a questionnaire on online shopping behavior. Each interviewee could complete the survey only once and anonymity was assured. Approximately 70% of users who opened the survey link completed the questionnaire.

To ensure the representativeness of the sample, a residential area quota was imposed according to distribution of this variable among internet users based on the social survey of the Israeli CBS (Central Bureau of Statistics).

The questionnaire included 30 questions on attitudes towards online shopping, purchase intention toward different types of products using mobile phone and computer, and 44 items on the Big Five personality traits (see Table 6)

This study was preceded by a pre-test and pilot study. During the pre-test, 40 in-depth interviews were conducted among respondents from four generations (10 respondents from each generation). One of the aims of the pre-test was to categorize different types of products and to select from a long list of products only those which may be purchased using mobile devices and which suit all four generations. The

pilot study among ten respondents was conducted through online survey in order to clarify whether the questions were clear enough for the interviewees, whether respondents could locate a proper answer for each closed question, and whether the question order produced biases.

4.2 Sample

The study was conducted among 1241 Israeli Jews aged 14–72, of whom 306 respondents (24.7%) belong to Gen Z, 508 (40.9%) to Gen Y, 277 (22.3%) to Gen X and 150 (12.1%) to the baby boomers. The mean age of respondents was 31.9 (SD=13.7). Of the sample, 40.0% were male. In addition, 12.1% reported less than secondary education, 28.6% had a secondary education, 10.3% some college education, and 49.0% had an academic degree. Lastly, 48.8% of the sample reported no level of religious observance, with the rest maintaining some traditions (24.8%) or were religious or ultra-orthodox (26.4%).

4.3 Measures

4.3.1 Dependent variables

M-Shopping intention toward hedonic products was measured by five items, representing diverse hedonic products both expensive and non-expensive, e.g., flight ticket, designer clothes, perfume, a ticket to a movie, and hotel room/zimmer/loft/. Each of these items was measured on scale of 1 (definitely do not intend to purchase using Smartphone) to 5 (definitely intend to purchase using Smartphone). The reliability index Cronbach's Alpha was 0.73.

4.3.2 Independent variables

Big Five personality traits were measured using the well-established and reliable 44-item Big Five Inventory (BFI) [123]. Respondents indicated their level of agreement with statements on a seven-point Likert scale, ranging from 1 = strongly disagree to 7 = strongly agree. Internal consistency was examined using Cronbach's alpha. The coefficient range was 0.75–0.81, displaying acceptable reliability of the measurements. Means were then calculated and examined for each factor.

4.3.3 Control variables

Numerous studies indicate that attitudes toward online shopping, barriers to online/mobile shopping, and socio-demographic variables (age, social class, gender) are important predictors of online/m-shopping behavior [27, 124–128]. Therefore, these variables were used as the control variables in our study. In addition, in the Israeli context, religiosity is a highly important aspect of Israeli social life, especially among the Jewish population [129]. In the Jewish world, ultra-religious groups tend to be deeply suspicious of all aspects of modern communication technologies. Israeli

studies indicate a rising rate of internet access and range of digital uses as level of religiosity declines [130, 131] and so in exploring differences in m-shopping, this variable should be controlled.

Shopping attitudes: Respondents indicated their level of agreement with 9 statements on a seven-point Likert scale, ranging from 1=strongly disagree to 7=strongly agree [126, 132]. Principal Component Factor Analysis was performed with Varimax rotation. Three factors were found in the analysis (for outer loadings, cross-loadings, and internal reliability coefficients see Table 5). The validity of shopping attitudes was justified using Confirmatory Factor Analysis (CFA). The fit indices of CFA were found to be acceptable, providing a high level of confidence for the model: Chi-square/ $df=3.261$, CFI=0.985, NFI=0.979, RFI=0.969, TLI=0.978, IFI=0.985, RMSEA=0.043. Thus, these constructs have shown good psychometric properties.

Demographic variables: gender, age, extent of religiosity, family income and locality were also included.

5 Findings

5.1 Descriptive findings

Table 1 presents the m-shopping intention toward different hedonic products in the total sample and between four generations.

The highest m-shopping intention was found regarding movie tickets ($M=4.23$), while the lowest was reported regarding perfume ($M=2.20$) and designer clothes

Table 1 Descriptive statistics

	Baby boomers		Gen X		Gen Y		Gen Z		Total sample		F (3;1240)
	M	SD	M	SD	M	SD	M	SD	M	SD	
Flight ticket	2.92	1.44	3.35	1.31	3.29	1.40	2.70	1.44	3.11	1.42	15.55**
Movie ticket	3.78	1.31	4.28	1.06	4.39	1.00	4.13	1.08	4.23	1.09	13.59**
Hotel room/zimmer/loft	3.33	1.36	3.89	1.09	3.81	1.24	3.06	1.46	3.59	1.33	29.53**
Designer clothes	1.80	1.08	2.20	1.17	2.23	1.26	2.16	1.24	2.15	1.22	5.09**
Perfume	2.05	1.22	2.43	1.33	2.20	1.27	2.07	1.20	2.20	1.26	4.82**
Index m-shopping intention-hedonic products	2.78	0.94	3.23	0.79	3.19	0.85	2.83	0.89	3.06	0.88	20.52**
Extraversion	4.86	0.91	4.86	1.00	4.84	0.97	4.66	1.04	4.80	0.99	2.77*
Agreeableness	5.41	0.94	5.36	0.89	5.36	0.84	5.15	0.91	5.31	0.89	4.74**
Conscientiousness	5.71	0.94	5.60	0.87	5.50	0.84	5.15	0.92	5.46	0.90	19.63**
Neuroticism	3.29	1.19	3.25	1.01	3.52	1.03	3.68	1.02	3.47	1.06	10.08**
Openness to experience	4.64	1.02	4.75	0.95	4.89	0.91	4.80	0.88	4.80	0.93	3.32*

* $p < .05$; ** $p < .001$

($M=2.15$). The findings show significant between-generation differences in m-shopping intention for all examined products. In general, Gen X and Gen Y reported higher m-shopping intention, compared to baby boomers and Gen Z. These differences were more pronounced in m-shopping intention regarding tourist products: flight tickets and hotel rooms. The lowest between-generation differences were found regarding perfume: Gen X reported higher m-shopping intention compared to other generations.

We also found significant between-generation differences in personality traits, which were more pronounced in conscientiousness and neuroticism (see Table 1). The highest conscientiousness was reported by baby boomers, while the highest neuroticism was found among Gen Z.

The correlations between m-shopping intention and personality traits among the total sample are presented in Table 2.

Our findings show the positive correlations between m-shopping intention and extraversion ($r=.135, p<.00$), openness to experience ($r=.135, p<.00$), and conscientiousness ($r=.099, p<.00$) as well as negative correlation between m-shopping intention and neuroticism ($r=-.67, p<.01$).

5.2 Multivariate analysis

In order to examine the research hypotheses, we conducted a linear regression analysis separately for four generations in two stages. In the first stage, only five personality traits were included. In the second stage, all control variables were added. The multivariate analysis findings are presented in Table 3 (for baby boomers and Gen X) and Table 4 (for Gen Y and Gen Z).

5.2.1 Baby boomers

Our findings show the positive effect of openness to experience on m-shopping, which remains significant also after controlling for online shopping attitudes and demographic variables (See Table 3, Model 2a). The effects of other personality

Table 2 Pearson correlations between purchase intention of hedonic products and personality traits—total sample

	Index m-shopping intention-hedonic products	Extraversion	Agreeableness	Openness to experience	Neuroticism
Extraversion	.135**				
Agreeableness	.024	.182**			
Openness to experience	.135**	.290**	.163**		
Neuroticism	-.067*	-.165**	-.402**	-.186**	
Conscientiousness	.099**	.310**	.407**	.286**	-.304**

* $p<.05$; ** $p<.001$

Table 3 Predicting m-shopping intention among baby boomers and Gen X—linear regression findings

	Baby boomers				Gen X			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	Beta	B	Beta	B	Beta	B	Beta
(Constant)	2.48**		5.98**		2.02**		2.47**	
Extraversion	0.15	0.16	0.11	0.11	-0.03	-0.04	-0.04	-0.05
Agreeableness	-0.13	-0.13	-0.13	-0.13	0.05	0.06	0.04	0.04
Openness to experience	0.24**	0.27	0.16**	0.18	0.22**	0.28	0.18**	0.22
Neuroticism	-0.04	-0.05	0.01	0.02	-0.01	-0.01	-0.02	-0.03
Conscientiousness	-0.13	-0.14	-0.11	-0.11	0.01	0.01	-0.01	-0.01
Online shopping attitude			0.10	0.17			0.13**	0.20
Barriers for online shopping			-0.15**	-0.23			-0.06	-0.11
Perceived benefits			0.01	0.02			0.00	0.01
Religiosity			0.03	0.02			-0.06	-0.06
Income			0.03	0.03			-0.03	-0.03
Gender (male = 1)			-0.27	-0.14			-0.05	-0.03
Locality (Center = 1)			0.15	0.07			-0.01	-0.01
Age			-0.06**	-0.21			0.00	-0.03
R ²	0.11		0.35		0.09		0.16	

* $p < .05$; ** $p < .001$

Table 4 Predicting m-shopping intention among Gen Y and Gen Z—linear regression findings

	Gen Y				Gen Z			
	Model 1c		Model 2c		Model 1d		Model 2d	
	B	Beta	B	Beta	B	Beta	B	Beta
(Constant)	1.96		2.03		3.71		3.19	
Extraversion	0.17**	0.21	0.17**	0.20	0.04	0.05	0.00	0.00
Agreeableness	0.05	0.05	0.05	0.05	-0.23**	-0.24	-0.29**	-0.31
Openness to experience	-0.04	-0.04	-0.04	-0.05	0.06	0.06	0.05	0.05
Neuroticism	0.00	0.00	0.02	0.02	-0.03	-0.04	-0.08	-0.09
Conscientiousness	0.05	0.06	0.03	0.03	0.01	0.01	-0.02	-0.03
Online shopping attitude			0.07*	0.11			0.11**	0.17
Barriers for online shopping			-0.07	-0.10			-0.05	-0.06
Perceived benefits			-0.03	-0.04			-0.03	-0.05
Religiosity			0.00	0.00			-0.15**	-0.16
Income			0.04	0.05			0.02	0.03
Gender (male = 1)			-0.06	-0.03			-0.35**	-0.19
Locality (Center = 1)			-0.01	0.00			0.12	0.06
Age			0.00	-0.01			0.08**	0.25
R ²	0.06		0.09		0.05		0.22	

* $p < .05$; ** $p < .001$

traits were insignificant. We found a negative correlation between barriers and m-shopping intention. Age was negatively correlated with m-shopping behavior. Personality traits explained 11% of variance in m-shopping intention, while total model fit was 0.35.

5.2.2 Gen X

Our findings show the positive effect of openness to experience on m-shopping, which remains significant also after controlling for online shopping attitudes and demographic variables (See Table 3, Model 2b). The effects of other personality traits were insignificant. We found a positive correlation between positive attitudes toward online shopping and m-shopping intention. Personality traits explained 9% of variance in m-shopping intention, while total model fit was 0.16.

5.2.3 Gen Y

We found that extraversion was positively correlated with m-shopping intention. This correlation remained significant also after controlling for online shopping attitudes and demographic variables (See Table 4, Model 2c). The effects of other personality traits were insignificant. We found positive correlation between positive attitudes toward online shopping and m-shopping intention. Personality traits explained 6% of variance in m-shopping intention, while total model fit was only 0.09.

5.2.4 Gen Z

The findings show negative correlation between agreeableness and m-shopping intention, which remained significant after controlling for online shopping attitudes and demographic variables (See Table 4, Model 2d). The effects of other personality traits were insignificant. Online shopping attitudes were positively correlated with m-shopping intention. M-shopping intention was negatively correlated with religiosity and positively correlated with age. Females were more likely to report m-shopping intention as compared to males. Personality traits explained 5% of variance in m-shopping intention, while total model fit was 0.22.

6 Summary

In line with H1, we found that among different generations different personality traits were significantly associated with m-shopping intention toward hedonic products. We also found that the contribution of personality traits to the explanation of m-shopping intention was higher among baby boomers and Gen X as compared to Gen Y and Gen Z. Therefore, our H1 was fully supported by the findings. The H2a on negative association between neuroticism and m-shopping intention among baby boomers and Gen X and H2b on positive correlation between these variables were not supported by the findings. In line with H3, we found that among baby

boomers and Gen X openness to experience was positively correlated with m-shopping behavior, while among Gen Y and Gen Z this correlation was insignificant. The H4 about positive association between agreeableness and m-shopping intention among Gen Y and Gen Z was not supported by the findings. Our H5 was only partially supported by the findings: we found significant positive correlation between extraversion and m-shopping intention among Gen Y, while among Gen Z this correlation was insignificant. The H6 on positive association between conscientiousness and m-shopping intention among Gen Z was not supported by the findings.

7 Discussion

To our knowledge, this research is a first attempt at investigating between-generation differences in effects of personality traits on m-shopping intention to purchase hedonic products. Our general H1 claimed that the patterns of associations between personality traits and m-shopping intention are different between generations. Our findings supported this hypothesis: We found that different personality traits were associated with m-shopping intention among the four generations. In line with resistance to innovation theory, we found that personality traits were important in predicting m-shopping intention, especially among Baby-Boomers. For Baby-Boomers, the generation that perceives m-shopping as a revolutionary innovation, only those with certain personality traits may already overcome the risk and usage barriers of m-shopping. Among Gen X, who are more technologically savvy than baby boomers, this pattern was found, but less pronounced. In contrast, for younger generations, especially the digital natives, Gen Y and Gen Z, these risk factors do not exist. For them, online shopping is a naturalized part of everyday life, so personality traits should be less important for m-shopping intention. Following this logic, and in line with our H3, we found that openness to experience was positively correlated with m-shopping intention among baby boomers and Gen X and was insignificant among younger generations. According to the literature, baby boomers are attracted to hedonic products and have the economic potential to consume them [53, 77], but only those who are open to new experiences will purchase these products through mobile interfaces. Although Gen X is more technologically advanced, they are characterized by various elements of insecurity [77], and, therefore, m-shopping, which includes financial and privacy risks, is suitable mainly for those who may overcome these risks due to openness to new experiences and positive attitudes toward online shopping. However, the H2a positing a negative association between neuroticism and m-shopping intention toward hedonic products among these generations was not supported by the findings. We may assume that when controlling for openness to experience the effect of neuroticism became negligible. The positive association between neuroticism and m-shopping intention among Gen Y and Gen Z, predicted by H2b, was also not found. We may assume that among younger respondents, the insignificant correlation between neuroticism and m-shopping intention toward hedonic products can be explained by the fact that neurotic people are less attracted to fun and enjoyment [133], so hedonic products are less relevant for them. We assume that if we examined the relationship between neuroticism and

the purchase intention toward utilitarian products, we would find a negative relationship, which stems from a desire to avoid social interactions at the time of purchasing [31].

The H4 on positive correlation between agreeableness and m-shopping intention toward hedonic products among younger generations was also not supported. Moreover, we found that m-shopping intention to purchase hedonic products among Gen Z was negatively correlated with agreeableness. A possible explanation may be related to the rebellion of youth: For those who score low on agreeableness and tend not to be concerned with social norms, m-shopping opens new opportunities to find non-conformist and more specialized hedonic products that can surprise or even shock others. Mobile devices allow them to order and buy products / services that express their special personality and the unique image they want to build and maintain. Our H5, which predicts the positive association between extraversion and m-shopping intention among Gen Y and Gen Z, was supported by the findings only among Gen Y. This may be attributed to Gen Y extraversion and exhibitionism as a chosen way of life. As a lifestyle choice, it is fundamentally individual—privacy can be jealously guarded or forfeited by each person. However, for Gen Z, *both* extroverts and introverts share their everyday life experiences on SNS, with only extrovert sharing being more extreme. The differences between Gen Y and Gen Z are reflected in the social networks on which both generations are active. Gen Y is mostly active on Facebook, where they share special or important experiences. In contrast, Gen Z is mostly active on Instagram, where they record what they are doing at any given moment. Therefore, the fact that both Gen Z extroverts and introverts share their life experiences may explain why there is no association between extraversion and m-shopping intention among Gen Z.

Our H6 that posited Gen Z conscientiousness would be positively correlated with m-shopping intentions was not supported by the findings. That is, our assumption that parents of conscientious adolescents will be more likely to give their children a credit card to use for m-shopping is not supported. The explanation may lie in the fact that this trait was examined among the children themselves and not among their parents, while the effect of this trait is among the parents and the way they perceived their child. There may be a gap between self-perception of children and how they are perceived by parents with regard to this trait.

7.1 Study limitations and recommendations for future study

It is important to mention the limitations of this study, which derive from the limitations of our database. It may be possible that the effects of personality traits on m-shopping among the generational cohorts will be different compared to the effects of these variables on m-shopping intention. A future study should address this issue.

This research examined the effect of personality traits on purchase intention toward hedonic products. It may be interesting to conduct research comparing the effects of personality traits between four generations on purchase intention toward utilitarian products and purchase intention toward hedonic products.

The research literature claims that Gen Z is not completely independent in their purchase decisions due to financial dependency on their parents. We found an interesting and unexpected effect of agreeableness on purchase intention and did not locate the expected effect of conscientiousness. We assumed that these findings may be explained by the discrepancy in Gen Z self-evaluation and parental perception of these personality traits, which may be involved in their purchase decision. Further qualitative research may clarify this point.

We should also be cautious of generalizing the results. Participants in this study do not represent the four generations of Israeli consumers with complete accuracy, because we did not use a probability sampling method.

8 Practical implications

Companies willing to take a generational approach to marketing strategy should identify distinctive generational cohorts and consider them as segments. By doing so, marketers can improve their business results while taking into account the specific personality traits influencing each generational cohort's m-shopping intentions. Marketers who want to increase mobile buying intention among baby boomers and Gen X should address reducing their risk perception of m-shopping. For instance, since mobile phones are fundamentally interactive devices, a support system (an app-based telephone representative or chat bot) to help consumers complete their purchases may increase m-shopping intentions of baby boomers and Gen X.

As the Gen Y mobile shopping intention is higher for extroverted consumers, it is recommended for marketers to create sharing options on social media and other network sharing platforms. A rich array of sharing options for Gen Y may increase their m-shopping intentions.

Lastly, as noted, Gen Z non-conformism is exhibited by greater willingness to buy through mobile interfaces, and this was confirmed by the negative association between agreeableness and intention to buy via mobile devices. It is, therefore, recommended that online sellers targeting Gen Z via m-shopping offer various special products, emphasizing their non-conformist appeal. They can amplify their marketing by incorporating opinion leaders perceived as free thinkers "going against the flow," thereby increasing the buying intention of Gen Z via mobile options.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Appendix 1

Table 5 Attitudes toward online shopping—outer loadings and cross-loadings (EFA) and internal reliability (Cronbach's Alpha)

	Factor 1 Online shopping attitude	Factor 2 Barriers for online shopping	Factor 3 Benefits of online shopping	Cronbach's alpha
Using the Internet to purchase products seems like a smart idea	0.888	-0.153	0.147	0.89
Using the Internet for shopping purposes is a good idea	0.871	-0.153	0.142	
My general attitude toward online purchasing is very positive	0.849	-0.243	0.158	
It is very annoying to wait a long time until the product is delivered when you purchase online	0.116	0.722	-0.036	0.70
It is important for me to be able to see the product and hold it before I buy	-0.242	0.701	-0.145	
Buying online is more complicated than buying in a conventional store	-0.317	0.681	0.108	
Buying online provides less pleasure than visiting a conventional store	-0.311	0.645	0.062	
An online purchase is usually cheaper than buying in a conventional store	0.127	0.042	0.835	0.65
An online purchase provides a greater variety of products compared to a conventional store	0.158	-0.053	0.825	

Appendix 2

Table 6 Questionnaire

Online shopping attitude

Please indicate to what extent you agree with the following statements regarding online shopping: Ranging from 1 = strongly disagree to 7 = strongly agree

1. Buying online provides less pleasure than visiting a regular store
2. Buying online is more complicated than buying in a regular store
3. An online purchase is usually cheaper than buying in a regular store
4. An online purchase provides a greater variety of products compared to a regular store
5. It is very annoying to wait a long time until the product is delivered when you purchase online
6. It is important for me to be able to see the product and feel it before I buy
7. Using the internet for shopping purposes is a good idea
8. My general attitude toward online purchasing is very positive
9. Using the internet to purchase products seems a smart idea

Purchase intention through mobile

To what extent do you think that in the coming year you will buy the following products on your mobile phone?

On a scale: Definitely not, Probably not, Maybe, Probably yes, Definitely yes

1. Flight ticket
2. Designer clothes
3. Perfume
4. Movie tickets
5. Hotel room/Zimmer/ Loft

Personality traits—self-description inventory

Below are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please mark a number next to each statement to indicate the extent to which you agree or disagree with that statement, ranging from 1 = strongly disagree to 7 = strongly agree

I see myself as someone who...

1. Is talkative
2. Tends to find fault with others
3. Does a thorough job
4. Is depressed, blue
5. Is original, comes up with new ideas
6. Is reserved
7. Is helpful and unselfish with others
8. Can be somewhat careless
9. Is relaxed, handles stress well
10. Is curious about many different things
11. Is full of energy
12. Starts quarrels with others
13. Is a reliable worker
14. Can be tense
15. Is ingenious, a deep thinker

Table 6 (continued)

-
16. Generates a lot of enthusiasm
 17. Has a forgiving nature
 18. Tends to be disorganized
 19. Worries a lot
 20. Has an active imagination
 21. Tends to be quiet
 22. Is generally trusting
 23. Tends to be lazy
 24. Is emotionally stable, not easily upset
 25. Is inventive
 26. Has an assertive personality
 27. Can be cold and aloof
 28. Perseveres until the task is finished
 29. Can be moody
 30. Values artistic, aesthetic experiences
 31. Is sometimes shy, inhibited
 32. Is considerate and kind to almost everyone
 33. Does things efficiently
 34. Remains calm in tense situations
 35. Prefers work that is routine
 36. Is outgoing, sociable
 37. Is sometimes rude to others
 38. Makes plans and follows through with them
 39. Gets nervous easily
 40. Likes to reflect, play with ideas
 41. Has few artistic interests
 42. Likes to cooperate with others
 43. Is easily distracted
 44. Is sophisticated in art, music or literature
-

References

1. Dhar, R., & Wertenbroch, K. (2000). Consumer choice between hedonic and utilitarian goods. *Journal of Marketing Research*, 37(1), 60–71.
2. Hansen, T., & Møller Jensen, J. (2009). Shopping orientation and online clothing purchases: The role of gender and purchase situation. *European Journal of Marketing*, 43(9/10), 1154–1170.
3. Strang, K. D. (2018). Consumer behavior in online risky purchase decisions: Exploring trustworthiness across culture. *International Journal of Online Marketing (IJOM)*, 8(2), 1–26.
4. Aldás-Manzano, J., Ruiz-Mafé, C., & Sanz-Blas, S. (2009). Exploring individual personality factors as drivers of M-shopping acceptance. *Industrial Management & Data Systems*, 109(6), 739–757.
5. Lee, S., & Park, S. (2006). Improving accessibility and security for mobile phone shopping. *Journal of Computer Information Systems*, 46(3), 124–133.

6. Zhou, T., & Lu, Y. (2011). The effects of personality traits on user acceptance of mobile commerce. *International Journal of Human-Computer Interaction*, 27(6), 545–561.
7. Taylor, P., & Gao, G. (2014). *Generation X: America's neglected 'middle child'*, pewResearch center. <http://www.pewresearch.org/facttank/2014/06/05/generation-x-americas-neglected-middle-child/>. Accessed 26 July 2017.
8. Taipale, S., Wilska, T.-A., & Gilleard, C. (2017). *Digital technologies and generational identity: ICT usage across the life course*. London: Routledge.
9. Colucci, M., & Scarpi, D. (2013). Generation Y: Evidences from the fast-fashion market and implications for targeting. *Journal of Business Theory and Practice*, 1(1), 1.
10. Lian, J.-W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, 37, 133–143.
11. Parment, A. (2013). Generation Y vs. baby boomers: Shopping behavior, buyer involvement and implications for retailing. *Journal of Retailing and Consumer Services*, 20(2), 189–199.
12. Rahulan, M., Troynikov, O., Watson, C., Janta, M., & Senner, V. (2015). Consumer behavior of generational cohorts for compression sportswear. *Journal of Fashion Marketing and Management*, 19(1), 87–104.
13. Eastman, J. K., & Liu, J. (2012). The impact of generational cohorts on status consumption: An exploratory look at generational cohort and demographics on status consumption. *Journal of Consumer Marketing*, 29(2), 93–102.
14. Brodsahl, D. J. C., & Carpenter, J. M. (2011). Shopping orientations of US males: A generational cohort comparison. *Journal of Retailing and Consumer Services*, 18(6), 548–554.
15. Jackson, V., Stoel, L., & Brantley, A. (2011). Mall attributes and shopping value: Differences by gender and generational cohort. *Journal of Retailing and Consumer Services*, 18(1), 1–9.
16. Wu, W.-Y., & Ke, C.-C. (2015). An online shopping behavior model integrating personality traits, perceived risk, and technology acceptance. *Social Behavior and Personality: An International Journal*, 43(1), 85–97.
17. Chen, Y., & Lan, Y. (2018). An empirical study of the factors affecting mobile shopping in Taiwan. *International Journal of Technology and Human Interaction*, 10(1), 19–30.
18. Groß, M. (2015). Mobile shopping: A classification framework and literature review. *International Journal of Retail & Distribution Management*, 43(3), 221–241.
19. Hung, M.-C., Yang, S.-T., & Hsieh, T.-C. (2012). An examination of the determinants of mobile shopping continuance. *International Journal of Electronic Business Management*, 10(1), 29.
20. Wong, C. H., Lee, H. S., Lim, Y. H., Chua, B. H., & Tan, G. W. H. (2012). Predicting the consumers' intention to adopt mobile shopping: An emerging market perspective. *International Journal of Network and Mobile Technologies*, 3(3), 24–39.
21. Faulds, D. J., Mangold, W. G., Raju, P. S., & Valsalan, S. (2018). The mobile shopping revolution: Redefining the consumer decision process. *Business Horizons*, 61(2), 323–338.
22. Kim, C., Li, W., & Kim, D. J. (2015). An empirical analysis of factors influencing M-shopping use. *International Journal of Human-Computer Interaction*, 31(12), 974–994.
23. Cakebread, C. (2018). *Exploring the Mobile Shopping Habits of US Consumers*. eMarketer. <https://www.emarketer.com/content/the-mobile-seriesmobile-commerce-infographic>. Accessed 15 April 2019.
24. Kourouthanassis, P. E., & Giaglis, G. M. (2012). Introduction to the special issue mobile commerce: The past, present, and future of mobile commerce research. *International Journal of Electronic Commerce*, 16(4), 5–18.
25. Yang, K., & Kim, H.-Y. (2012). Mobile shopping motivation: An application of multiple discriminant analysis. *International Journal of Retail & Distribution Management*, 40(10), 778–789.
26. Lustigová, L., & Šálková, D. (2018). Shopping via mobile phones in the Central European Czech Republic Market. *AGRIS On-line Papers in Economics and Informatics*, 10(665–2019–279), 49.
27. Madan, K., & Yadav, R. (2018). Understanding and predicting antecedents of mobile shopping adoption: A developing country perspective. *Asia Pacific Journal of Marketing and Logistics*, 30(1), 139–162.
28. Ozok, A. A., & Wei, J. (2010). An empirical comparison of consumer usability preferences in online shopping using stationary and mobile devices: Results from a college student population. *Electronic Commerce Research*, 10(2), 111–137.
29. Ajzen, I. (2005). *Attitudes, personality, and behavior*. New York: McGraw-Hill Education.
30. Chen, T. (2011). Personality traits hierarchy of online shoppers. *International Journal of Marketing Studies*, 3(4), 23.

31. Huang, J.-H., & Yang, Y.-C. (2010). The relationship between personality traits and online shopping motivations. *Social Behavior and Personality: An International Journal*, 38(5), 673–679.
32. Bosnjak, M., Galesic, M., & Tuten, T. (2007). Personality determinants of online shopping: Explaining online purchase intentions using a hierarchical approach. *Journal of Business Research*, 60(6), 597–605.
33. McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, 60(2), 175–215.
34. Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, 37(6), 504–528.
35. George, J. M., & Zhou, J. (2001). When openness to experience and conscientiousness are related to creative behavior: An interactional approach. *Journal of Applied Psychology*, 86(3), 513.
36. Jeronimus, B. F., Riese, H., Sanderman, R., & Ormel, J. (2014). Mutual reinforcement between neuroticism and life experiences: A five-wave, 16-year study to test reciprocal causation. *Journal of Personality and Social Psychology*, 107(4), 751.
37. John, O. P., Robins, R. W. & Pervin, L. A. (2008). *Handbook of personality: Theory and research* (3rd ed.). New York: Guilford.
38. Straughan, R. D., & Roberts, J. A. (1999). Environmental segmentation alternatives: A look at green consumer behavior in the new millennium. *Journal of Consumer Marketing*, 16(6), 558–575.
39. Fitzgerald Bone, P. (1991). Identifying mature segments. *Journal of Consumer Marketing*, 8(4), 19–32.
40. Chaney, D., Touzani, M., & Ben Slimane, K. (2017). *Marketing to the (new) generations: Summary and perspectives*. London: Taylor & Francis.
41. Inghelhart, R. (1977). *The silent revolution. Changing values and political style among western publics*. Princeton: Princeton University Press.
42. Meredith, G., & Schewe, C. (1994). The power of cohorts. *American Demographics*, 16(12), 22–28.
43. Strauss, W., & Howe, N. (1991). *Generations: The history of America's future, 1584–2069*. New York: William Morrow.
44. Strauss, W., Howe, N. (1997). *The fourth turning: What the cycles of history tell us about America's next rendezvous with destiny*. New York: Broadway Books.
45. Egri, C. P., & Ralston, D. A. (2004). Generation cohorts and personal values: A comparison of China and the United States. *Organization Science*, 15(2), 210–220.
46. Hung, K. H., Gu, F. F., & Yim, C. K. B. (2007). A social institutional approach to identifying generation cohorts in China with a comparison with American consumers. *Journal of International Business Studies*, 38(5), 836–853.
47. Pekerti, A. A., & Arli, D. (2017). Do cultural and generational cohorts matter to ideologies and consumer ethics? A comparative study of Australians, Indonesians, and Indonesian migrants in Australia. *Journal of Business Ethics*, 143(2), 387–404.
48. Arli, D., & Pekerti, A. (2016). Investigating the influence of religion, ethical ideologies and generational cohorts toward consumer ethics: Which one matters? *Social Responsibility Journal*, 12(4), 770–785.
49. Parment, A. (2011). *Generation Y in consumer and labour markets* (Vol. 15). London: Routledge.
50. Moore, M., & Carpenter, J. M. (2008). Intergenerational perceptions of market cues among US apparel consumers. *Journal of Fashion Marketing and Management: An International Journal*, 12(3), 323–337.
51. Schewe, C. D., & Noble, S. M. (2000). Market segmentation by cohorts: The value and validity of cohorts in America and abroad. *Journal of Marketing Management*, 16(1–3), 129–142.
52. Markert, J. (2004). Demographics of age: Generational and cohort confusion. *Journal of Current Issues & Research in Advertising*, 26(2), 11–25.
53. Norum, P. S. (2003). Examination of generational differences in household apparel expenditures. *Family and Consumer Sciences Research Journal*, 32(1), 52–75.
54. Kumar, V., Lahiri, A., & Dogan, O. B. (2018). A strategic framework for a profitable business model in the sharing economy. *Industrial Marketing Management*, 69, 147–160.
55. Rosen, L. D. (2011). Teaching the iGeneration. *Educational Leadership*, 68(5), 10–15.
56. Stewart, A. J. & Torges, C. M. (2006). Social, historical, and developmental influences on the psychology of the baby boom at midlife. The baby boomers grow up. *Contemporary Perspectives on Midlife*, 23, 44.

57. Willetts, D. (2011). *Pinch: How the baby boomers took their children's future-and why they should give it back*. London: Atlantic Books.
58. Guerrieri, P., & Bentivegna, S. (2011). *The economic impact of digital technologies: Measuring inclusion and diffusion in Europe*. Cheltenham: Edward Elgar Publishing.
59. Yusof, A. A., Mokhtar, N. F., & Set, K. (2019). Cost, security and features influencing baby boomers behavioral intention on adopting Whatsapp application. *International Journal of Accounting*, 4(18), 67–77.
60. Kuoppamäki, S.-M., Taipale, S., & Wilska, T.-A. (2017). The use of mobile technology for online shopping and entertainment among older adults in Finland. *Telematics and Informatics*, 34(4), 110–117.
61. Berraies, S., Ben Yahia, K., & Hannachi, M. (2017). Identifying the effects of perceived values of mobile banking applications on customers: Comparative study between baby boomers, generation X and generation Y. *International Journal of Bank Marketing*, 35(6), 1018–1038.
62. Keller, S. L., & Leslie, P. (2017). Aging in place: Baby boomers and what we can learn from Japan. *Perspectives of the ASHA Special Interest Groups*, 2(15), 53–59.
63. Dhanapal, S., Vashu, D., & Subramaniam, T. (2015). Perceptions on the challenges of online purchasing: A study from “baby boomers”, generation “X” and generation “Y” point of views. *Contaduría y Administración*, 60, 107–132.
64. Anderson, M., & Perrin, A. (2017). *Tech adoption climbs among older adults*. Washington, DC: Pew Research Center. <https://www.pewinternet.org/2017/05/17/tech-adoption-climbs-among-older-adults/>. Accessed 20 April 2018.
65. Atkins, K. G., & Hyun, S.-Y. J. (2016). Smart shoppers' purchasing experiences: Functions of product type, gender, and generation. *International Journal of Marketing Studies*, 8(2), 1.
66. Valkeneers, G., & Vanhooimissen, T. (2012). Generations living their own life: The differences in lifestyle and consumer behaviour between busters and baby boomers. *Journal of Customer Behaviour*, 11(1), 53–68.
67. Lyons, S. T., Duxbury, L., & Higgins, C. (2007). An empirical assessment of generational differences in basic human values. *Psychological Reports*, 101(2), 339–352.
68. Barford, I. N., & Hester, P. T. (2011). Analysis of generation Y workforce motivation using multi-attribute utility theory. *Defense Acquisition Univ FT Belvoir VA*.
69. Eisner, S. P. (2005). Managing generation Y. *SAM Advanced Management Journal*, 70(4), 4.
70. Shaw, S., & Fairhurst D. (2008). Engaging a new generation of graduates. *Education + Training*, 50(5), 366–378.
71. Bennett, S., Maton, K., & Kervin, L. (2008). The ‘digital natives’ debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775–786.
72. Ahn, J., & Jung, Y. (2016). The common sense of dependence on smartphone: A comparison between digital natives and digital immigrants. *New Media & Society*, 18(7), 1236–1256.
73. Acar, A. B. (2014). Do intrinsic and extrinsic motivation factors differ for Generation X and Generation Y. *International Journal of Business and Social Science*, 5(5), 12–20.
74. Williams, K. C., & Page, R. A. (2011). Marketing to the generations. *Journal of Behavioral Studies in Business*, 3, 1.
75. Gursoy, D., Maier, T. A., & Chi, C. G. (2008). Generational differences: An examination of work values and generational gaps in the hospitality workforce. *International Journal of Hospitality Management*, 27(3), 448–458.
76. Crumpacker, M., & Crumpacker, J. M. (2007). Succession planning and generational stereotypes: Should HR consider age-based values and attitudes a relevant factor or a passing fad? *Public Personnel Management*, 36(4), 349–369.
77. Reisenwitz, T. H., & Iyer, R. (2009). Differences in Generation X and Generation Y: Implications for the organization and marketers. *The Marketing Management Journal*, 19(2), 91–103.
78. Shi, Y., Guo, Y., Gong, Z., Yang, B., Zhou, L.: Experience design of social interaction for generation y based on tangible interaction. In: N. Streitz, P. Markopoulos (Eds.), *DAPI 2017. LNCS* (Vol. 10291, pp. 192–202). Cham: Springer (2017). https://doi.org/10.1007/978-3-319-58697-7_14.
79. Bencsik, A., Horváth-Csikós, G., & Juhász, T. (2016). Y and Z generations at workplaces. *Journal of Competitiveness*, 8(3), 90–106.
80. Bilgihan, A. (2016). Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding. *Computers in Human Behavior*, 61, 103–113.
81. Palfrey, J. G., & Gasser, U. (2011). *Born digital: Understanding the first generation of digital natives*. ReadHowYouWant.com.

82. Seounmi Y., & Seunghyun K. (2019). Newsfeed native advertising on Facebook: young millennials' knowledge, pet peeves, reactance and ad avoidance. *International Journal of Advertising*, 38(5), 651–683.
83. Liu, H., Wu, L., & Li, X. (2019). Social media envy: How experience sharing on social networking sites drives millennials' aspirational tourism consumption. *Journal of Travel Research*, 58(3), 355–369.
84. Wood, S. (2013). *Generation Z as consumers: Trends and innovation*. Institute for Emerging Issues: NC State University (pp. 1–3).
85. Smith, K. T. (2019). Mobile advertising to digital natives: Preferences on content, style, personalization, and functionality. *Journal of Strategic Marketing*, 27(1), 67–80.
86. Özkan, A. P. P. M. (2017). Generation Z—The global market's new consumers and their consumption habits: Generation Z consumption scale. *European Journal of Multidisciplinary Studies*, 5(1), 150–157.
87. Smits, I. A. M., Dolan, C. V., Vorst, H., Wicherts, J. M., & Timmerman, M. E. (2011). Cohort differences in Big Five personality factors over a period of 25 years. *Journal of Personality and Social Psychology*, 100(6), 1124.
88. Goldsmith, R. (2016). The Big Five, happiness, and shopping. *Journal of Retailing and Consumer Services*, 31, 52–61.
89. Mroczek, D. K., & Spiro Iii, A. (2003). Modeling intraindividual change in personality traits: Findings from the Normative Aging Study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(3), P153–P165.
90. Twenge, J. M. (2001). Birth cohort changes in extraversion: A cross-temporal meta-analysis, 1966–1993. *Personality and Individual Differences*, 30(5), 735–748.
91. Gentile, B., Campbell, W. K., & Twenge, J. M. (2013). Generational cultures. In Cohen A. B. (Ed.). *Culture reexamined: Broadening our understanding of social and evolutionary influences* (pp. 31–48). Washington, DC: American Psychological Association.
92. Twenge, J. M., & Campbell, S. M. (2011). Generational differences in psychological traits and their impact on the workplace. *IEEE Engineering Management Review*, 39(2), 72–84.
93. Ram, S. (1987). A model of innovation resistance. *Advances in Consumer Research*, 14(1), 208–212.
94. yRogers, E. (2003). *Diffusion of innovations* (5th Ed.). New York, NY: Free Press.
95. Laukkanen, T., Sinkkonen, S., Kivijärvi, M., & Laukkanen, P. (2007). Innovation resistance among mature consumers. *Journal of Consumer Marketing*, 24(7), 419–427.
96. Ram, S., & Sheth, J. N. (1989). Consumer resistance to innovations: The marketing problem and its solutions. *Journal of Consumer Marketing*, 6(2), 5–14.
97. Rogers, E. M. (2003). Elements of diffusion. *Diffusion of Innovations*, 5, 1–38.
98. Lissitsa, S., & Kol, O. (2016). Generation X vs. Generation Y—A decade of online shopping. *Journal of Retailing and Consumer Services*, 31, 304–312.
99. Quazi, A., & Talukder, M. (2011). Demographic determinants of adoption of technological innovation. *Journal of Computer Information Systems*, 52(1), 34–42.
100. Zhang, R., Chen, J. Q., & Lee, C. J. (2013). Mobile commerce and consumer privacy concerns. *Journal of Computer Information Systems*, 53(4), 31–38.
101. Mou, J., Shin, D.-H., & Cohen, J. F. (2017). Trust and risk in consumer acceptance of e-services. *Electronic Commerce Research*, 17(2), 255–288.
102. Cozzarin, B. P., & Dimitrov, S. (2016). Mobile commerce and device specific perceived risk. *Electronic Commerce Research*, 16(3), 335–354.
103. Hetts, J. J., Boninger, D. S., Armor, D. A., Gleicher, F., & Nathanson, A. (2000). The influence of anticipated counterfactual regret on behavior. *Psychology & Marketing*, 17(4), 345–368.
104. Heidenreich, S., & Handrich, M. (2015). What about passive innovation resistance? Investigating adoption-related behavior from a resistance perspective. *Journal of Product Innovation Management*, 32(6), 878–903.
105. Bagozzi, R. P. (1999). Consumer resistance to, and acceptance of, innovations. *Advances in Consumer Research*, 26, 218–225.
106. Adams, D., & Hess, M. (2010). *Social innovation and why it has policy significance*. London: SAGE Publications.
107. Devaraj, S., Easley, R. F., & Crant, J. M. (2008). Research note—How does personality matter? Relating the five-factor model to technology acceptance and use. *Information Systems Research*, 19(1), 93–105.
108. Badowska, S., Zamojska, A., & Rogala, A. (2015). Baby boomers' attitudes toward innovations: Empirical research in Poland. *Procedia-Social and Behavioral Sciences*, 213, 1050–1056.
109. Lau, U. H., Lee, L. E., Lew, D. K., Loo, L. S., & Ooi, S. X. (2018). The awakening frontier: Barriers repelling baby boomers from adopting mobile payment in Malaysia.

110. Olver, J. M., & Mooradian, T. A. (2003). Personality traits and personal values: A conceptual and empirical integration. *Personality and Individual Differences*, 35(1), 109–125.
111. Hendrawan, D., & Nugroho, D. A. (2018). Influence of personality on impulsive buying behaviour among Indonesian young consumers. *International Journal of Trade and Global Markets*, 11(1–2), 31–39.
112. Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44(1), 1–26.
113. Rautio, A.-M. (2018). *The role of personality traits and advertisement characteristics in social shopping. An experimental study of personality and Instagram marketing*. Finland: BA thesis, School of Business, Aalto University.
114. Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, 20(4), 644–656.
115. Mohamed, N., Hussein, R., Hidayah Ahmad Zamzuri, N., & Haghshenas, H. (2014). Insights into individual's online shopping continuance intention. *Industrial Management & Data Systems*, 114(9), 1453–1476.
116. McCrae, R. R., & Costa, P. T. (2003). *Personality in adulthood: A five-factor theory perspective*. New York: Guilford Press.
117. Ackerman, R. A., Witt, E. A., Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., & Kashy, D. A. (2011). What does the narcissistic personality inventory really measure? *Assessment*, 18(1), 67–87.
118. Sorokowska, A., Oleszkiewicz, A., Frackowiak, T., Pisanski, K., Chmiel, A., & Sorokowski, P. (2016). Selfies and personality: Who posts self-portrait photographs? *Personality and Individual Differences*, 90, 119–123. <https://doi.org/10.1016/j.paid.2015.10.037>.
119. Sedikides, C., Cisek, S., & Hart, C. M. (2011). Narcissism and brand name consumerism. *The handbook of narcissism and narcissistic personality disorder: Theoretical approaches, empirical findings, and treatments*, 382–392.
120. Cisek, S. Z., Sedikides, C., Hart, C. M., Godwin, H. J., Benson, V., & Liversedge, S. P. (2014). Narcissism and consumer behaviour: A review and preliminary findings. *Frontiers in Psychology*, 5, 232.
121. Westlake, E. J. (2008). Friend me if you Facebook: Generation Y and performative surveillance. *The Drama Review*, 52(4), 21–40.
122. Rothstein, M. G., Paunonen, S. V., Rush, J. C., & King, G. A. (1994). Personality and cognitive ability predictors of performance in graduate business school. *Journal of Educational Psychology*, 86(4), 516.
123. John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of Personality: Theory and Research*, 2(1999), 102–138.
124. Li, N., & Zhang, P. (2002). Consumer online shopping attitudes and behavior: An assessment of research. In *AMCIS 2002 proceedings* (Vol. 74).
125. Chiu, W., Kim, T., & Won, D. (2018). Predicting consumers' intention to purchase sporting goods online: an application of the model of goal-directed behavior. *Asia Pacific Journal of Marketing and Logistics*, 30(2), 333–351.
126. Hernández, B., Jiménez, J., & José Martín, M. (2011). Age, gender and income: Do they really moderate online shopping behaviour? *Online Information Review*, 35(1), 113–133.
127. Gupta, A., & Arora, N. (2017). Understanding determinants and barriers of mobile shopping adoption using behavioral reasoning theory. *Journal of Retailing and Consumer Services*, 36, 1–7.
128. Bigne, E., Ruiz, C., & Sanz, S. (2005). The impact of internet user shopping patterns and demographics on consumer mobile buying behaviour. *Journal of Electronic Commerce Research*, 6(3), 193.
129. Katz-Gerro, T., Raz, S., & Yaish, M. (2009). How do class, status, ethnicity, and religiosity shape cultural omnivorousness in Israel? *Journal of Cultural Economics*, 33(1), 1–17.
130. Lissitsa, S., & Lev-On, A. (2014). Gaps close, gaps open: A repeated cross-sectional study of the scope and determinants of the ethnic digital divide. *International Journal of Electronic Governance*, 7(1), 56–71.
131. Lissitsa, S., & Roth Cohen, O. (2018). The decade of online shopping in the Jewish ultra-orthodox community. *Journal of Media and Religion*, 17(2), 74–89.
132. Farag, S., Schwanen, T., Dijst, M., & Faber, J. (2007). Shopping online and/or in-store? A structural equation model of the relationships between e-shopping and in-store shopping. *Transportation Research Part A: Policy and Practice*, 41(2), 125–141.
133. McManus, I., & Furnham, A. (2010). “Fun, fun, fun”: Types of fun, attitudes to fun, and their relation to personality and biographical factors. *Psychology*, 1(03), 159.