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COMPARING THE IN-STORE USE OF SMARTPHONES BETWEEN SHOPPERS OF GENERATIONS X-Y-Z

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Abstract

This research aims to contribute to digital shopper marketing and omnichannel themes, by analyzing if the generations X (also called "13th generation"), Generation Y (also called "Millennials") and Generation Z (also called "Centennials") have different behaviors on the use of smartphones during their shopping journeys in bricks-and-mortar retail stores. For that purpose, an empirical quantitative study was conducted, via an online questionnaire. The questionnaire was applied to a sample of 913 individuals, corresponding to 27% of generation X, 44% from generation Y, and 29% from generation Z. There were found some differences between those generations regarding the actions made with the help of smartphones during the visit to the physical store. The main differences were found on the actions: checking for prices online on competitor websites; checking for prices online on the physical store own website; asking for advice with the help of the smartphone, showing pictures of products to store employees and on the use of smartphones to search online for coupons or discounts.

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Keywords: Omnichannel, Mobile marketing, Shopper marketing, Generation Z, Generation Y, Generation Z.

1. Introduction

Mobile devices are becoming ubiquitous (Shankar, Venkatesh, Hofacker, & Naik, 2010) and the digital world will be based on mobility (Papakonstantinidis, 2017), making mobile marketing increasingly important and potentially different from PC internet and traditional marketing (Faulds, Mangold, Raju, & Valsalan, 2018; Lamberton & Stephen, 2016; Ström, Vendel, & Bredican, 2014). Shankar and Balasubramanian (2009) present mobile marketing specificities by defining the concept as two-way or multi-way of communication and promotion of an offer between a firm and its customers using a mobile medium, device, or technology and includes advertising, promotion, customer support, and other relationship-building activities.

In complement, due to the exponential growth of mobile technologies as well, multichannel shopping has been taking place and needs to be understood by managers and researchers (Verhoef, Kannan, & Inman, 2015; Wolny & Charoensuksai, 2014; Piotrowicz & Cuthbertson, 2014). Mobile shopping can play a role on multichannel shopping, however is a broader concept (Groß, 2015). In this context, when shopper marketing intersects with mobile marketing, mobile shopper marketing emerges (Shankar, 2016). So, mobile shopper marketing is (Shankar et al., 2016) the planning and execution of all mobile-based marketing activities that influence a shopper along and beyond the path-to-purchase. Themes on mobile marketing are increasing on academic literature (Varnali & Toker, 2010), but not much is scientifically known on mobile shopper marketing (Shankar et al., 2016).

With the use of mobile devices during the customers' shopping journeys, many online retailers have left several bricks and mortar stores bearing the costs associated with being used as physical showrooms without the benefits of achieving the final sale (Rapp, Baker, Bachrach, Ogilvie, & Beitelspacher, 2015). But this is just one side of the situation, because the use of smartphones during in-store shopping can as well open-up several opportunities to physical retailers (Fulgoni & Lipsman, 2016; Groß, 2015; Quint, Rogers, & Ferguson, 2013). However, since not all shoppers are equal, it is important to understand how different segments of shoppers use their smartphones in physical retail stores. Generation cohorts have been proved to be a determinant of purchasing behavior associated to digital technologies (Dhanapal, Vashu, & Subramaniam, 2015). So, it is important to understand how recent generations use smartphones on physical stores, to provide insights on how those stores can uncover opportunities to be leveraged.

The paper begins with a brief conceptualization of mobile marketing and review of previous studies. Then, cohort generational theory is introduced, to present the specificities of generations X, Y and Z, focusing on the evolution of digital technologies. By relating generations X, Y and Z and mobile marketing, the hypothesis will be presented, followed by the methods and results of the empirical study. The paper concludes with implications for management and future research.

2. Problem Statement

2.1. Mobile shopper marketing previous studies

Shopping habits are changing and, consequently, retailers need to understand what a modern shopper is and how behaves in-store (Nesar & Sabir, 2016). So, shopper marketing and customer experience management are one of the most important topics for practitioners and researchers on retailing (Homburg,

Jozić, & Kuehnl, 2017; Lemon & Verhoef, 2016). Mobile devices might have an increasing power to influence the shopper on shopping journeys (Groß, 2015; Shankar et al., 2016), making mobile marketing an exciting area for researchers and retailers.

Despite being recent, Varnali's and Toker's (2010) literature review of mobile marketing was the oldest one found. The authors conclude that, although there is substantial progress in the general field of mobile marketing, academic research is still in that beginning. Specifically regarding the studies on consumer, Varnali and Toker (2010) found that research in the domain of mobile acceptance is abundant, yet discrepancies regarding relative importance of adoption determinants still exist. Persaud and Azhar (2012) have as well made a comprehensive literature review on general mobile marketing, and identified that prior empirical research has focused on mobile phone usage, behaviors and motivations; differences in users' responsiveness to mobile and other media; perceptions of mobile phone marketing; attitudes towards mobile advertising, entertainment, discount coupons, and shopping; consumers' trust and experience; mobile SMS/MMS advertising acceptance; consumer acceptance of mobile marketing; permission-based mobile marketing; cultural influences on the adoption of SMS advertising; success factors and development of mobile marketing strategies. In a more recent comprehensive literature review on general mobile marketing, Ström et al. (2014) defend that the still few existing empirical mobile marketing studies can be categorized in the groups: studies addressing the mobile device shoppers; studies of consumer perceived value, benefits (utilitarian, emotional and social) and sacrifices of mobile marketing; studies on the improved value of mobile marketing for retailers; and the ones addressing the theme of realizing the potential value for retailers. Regarding the mobile device shoppers, those authors call for further studies addressing: what kind of mobile device behavior consumer use while shopping, why they use a mobile device, which devices they use, in what context they use mobile devices, the levels of mobile usage, what media is consumed, the level of channel switching and what drives this behavior, and more detailed consumer information. Moreover, Ström et al. (2014) clearly mention that differences between existing and potential mobile device shoppers were not identified in the reviewed literature, however they could represent substantial value for retailers. This fact calls for a closer look at the influence of smartphones on shopper marketing activities. We have expanded Ström's et al. (2014) literature review methodology to present years (Table 1), and the overall conclusion remains the same.

Analyzing the reviews of Varnali and Toker (2010), Persaud and Azhar (2012), and Ström et al. (2014), is possible to conclude that research has mostly devoted attention to marketing communications and much less to the shopping experience. Also Grewal, Ahlbom, Beitelspacher, Noble and Nordfält, (2018) recently refer "no studies that investigate the influence of consumers' general in-store mobile phone use on sales, such that the pertinent effects throughout the store (not just on impulse purchases near checkout) remain uncertain" (p. 102). So, mobile shopper marketing empirical studies are far from abundant. Besides that, assuming that the device type has influence on mobile shopping intentions (Natarajan, Balasubramanian, & Kasilingam, 2018), it is noticeable as well recent mobile devices (smartphones) have been understudied. However, smartphones have several other functionalities which are changing the face of mobile commerce (Cliquet, Gonzalez, Huré, & Picot-Coupey, 2015). So, based on those assumptions, the present study will be focused on mobile/smartphone shopper marketing.

Table 01. Summary of previous empirical studies related to mobile shopper marketing

Authors	Device	Subject	Study Focus
Mahatanankoon et al. (2005)	Mobile phones	Retailing	Identification of valuable m-commerce operation modes and potential consumer-based applications
Okazaki (2007)	Mobile phones	Marketing communication	Factors influencing attitudes towards and intention to access wireless banner advertising
Okazaki (2007)	Mobile phones	Marketing communication	Factors influencing attitudes towards and intention to access wireless banner advertising
Okazaki & Romero (2010)	Mobile phones	Marketing communication	Identification of segments of different usage levels of mobile pull advertising users
Gao et al. (2010)	Mobile phones	Marketing communication	Factors that influence consumers' acceptance of mobile marketing
Watson et al. (2013)	Smartphones	Marketing communication	Attitudes towards mobile marketing communications
Quint et al. (2013)	Smartphones	Shopping	Uses of mobile devices on assisting the shopper
Kang et al. (2015)	Smartphones	Shopping	Usage intention of mobile location-based services retail apps
Wang et al. (2015)	Smartphones and tablets	Shopping	Impact of mobile shopping on customers' purchase behavior
Voropanova (2015)	Smartphones	Omnichannel	Implications of the use of smartphones in omnichannel shopping for consumer shopping productivity and shopping value
Santos (2015)	Smartphones	Retailing	Acceptance intention towards QR code
Gensler et al. (2017)	Not identified	Omnichannel	Factors affecting the decision to showroom and its benefits
Dacko (2017)	Smartphones	In-store retailing	Contribute of augmented reality to retail setting
Fuentes et al. (2017)	Smartphones	In-store retailing	Explains how mobile phones reconfigure shopping practice
Rippé et al. (2017)	Smartphones	In-store retailing	Explore the relation between consumer mobile shopping behavior and the retail salesperson's ability to sell
Riaz (2017)	Smartphones	In-store retailing	Attractiveness and effectiveness of information triggers that help the shopping in a physical store
Mosquera et al. (2018)	Smartphones	Omnichannel	Factors that influence customers' intentions to use smartphones instore and actual behavior
Grewal et al. (2018)	Smartphones	In-store retailing	Examines consumers' general instore mobile phone use and shopping behavior

Source: adapted from Ström's et al. (2014) and Persaud and Azhar (2012)

2.2. Generations X, Y and Z

Acar (2014) states that a social generation is defined as "people that are grouped within a certain range of ages, location they live, and significant life events they experienced at critical developmental stages" (p. 11). Ingelhart (1997) proposed the Generational Cohort Theory as a way to divide the population

into groups called generational cohorts (Lissitsa & Kol, 2016). A generational cohort lasts about the length of one phase of life (childhood, young adulthood, midlife, and old age), in eras that tend to last about two decades (Lissitsa & Kol, 2016) and are usually associated to key historical events and social trends that will significantly shape the phase of life of in which that group of individuals are in. A generation cohort is shaped by events or circumstances according to which phase of life its members occupy at the time and, as each generation ages into the next phase (from youth to young adulthood to midlife to elderhood) its attitudes and behaviors mature, producing new currents in the public mood (Howe & Strauss, 2007). Therefore, generations tend to share the same attitudes, ideas, values and beliefs based on living common macro-level significant events and experiences during the same phase of life (Lissitsa & Kol, 2016).

In that context, several authors (e.g. Howe & Strauss, 1991, 1997; Acar, 2014; Lissitsa & Kol, 2016) identified the most recent generations as: Generation X (also called "13th generation"), Generation Y (also called "Millennials", "Generation Me" or "Global generation") and Generation Z (also called "Centennials", "Generation Me", "Homeland Generation" or "iGeneration"). Opinions on the birth period and designation for those more recent generations differ among authors (Acar, 2014). Regardless of the names and specific cohort birth years, in general terms, generation X is adaptable to new technology, focused on self-career, aim for work-life balance, is self-reliance and individualistic, value prompt recognition and reward, skeptic and prefer instant feedback (Yusoff & Kian, 2013). Generation Y is technology savvy, focused on self-career, optimistic, pro-diversity, team player, casual, fun loving, aim for work-life balance and value prompt recognition and reward (Yusoff & Kian, 2013). Generation Z is "mobile-native" and even more technologically savvier than Generation Y (Housand, 2016). They also have a focus on innovation, insistence on convenience, underlying desire for security, and a tendency toward escapism (Wood, 2013). It is noticeable that computers and internet played an important and different role on each of those generations. Generation X was the first generation of children to have widespread access to personal computers. As an evolution, Generation Y has always known computers throughout all their childhood and youth and is considered the first high-tech generation (Martin, 2005; Bolton et al., 2013). Generation Z was the first generation to be born and grow with the widespread access to internet, also with a shift on the respective devices used, from computers to mobile devices. Generation Z individuals are hyper digitally connected (Jacobsen & Forste, 2011) and have grown up using with smartphones (Villanti et al., 2017). For them, technology is not merely a tool, it is the medium for several purposes (knowledge, collaborating, exchanging and sharing).

In the context of consumers' use of technology, one of the factors that moderates the impact of hedonic motivation on behavioral intention is age (Venkatesh, Thong, & Xu, 2012), but generation cohorts are frequently mentioned as a more effective way to segment markets than just by age (Schewe, Meredith, & Noble, 2000). So, it might be expected that different generations make different uses of digital technologies, representing different market segments for retailing companies.

3. Research Questions

According to the literature review exposed on the problem statement, in a global manner we expect that Generations X, Y and Z do not use smartphones on the same manner during their shopping process on physical stores.

So, the main research question addressed in the present study is: are there differences on the use of smartphones by generations X, Y and Z during their shopping processes in physical retail stores?

4. Purpose of the Study

This study aims to contribute to digital shopper marketing and omnichannel subjects, by analyzing if generations X, Y and Z have different behaviors on the use of smartphones during their shopping journeys in physical retail stores. Due to that, the research question established was specified in the following statistically testable hypothesis:

- H1: there is no difference between generations X, Y and Z on the penetration of smartphone usage on a shopping process in a physical retail store.

- H2: there is no difference between generations X, Y and Z on the behaviors and activities done with smartphone on a shopping process in a physical retail store.

- H3: there is no difference between generations X, Y and Z on the perceived effects of using a smartphone on a shopping process in a physical retail store.

5. Research Methods

An empirical quantitative study was conducted, via an online survey to a target population of individuals that possess a smartphone. Considering that the use of smartphones is not homogenous in developed countries, this research is focused in Brazil and Portugal, since they share the same language have similar smartphones penetration - 67% in 2017, according to Google/TNS (2017). Respondents were recruited via email messages, WhatsApp messages, and posts on social media (Facebook, Twitter and LinkedIn). A snowball sampling was also used, by requesting respondents to disseminate the questionnaire.

The variables studied on the behaviors and activities performed with a smartphone on a shopping trip were adapted from Quint et al. (2013), Gfk (2015) and Shankar et al. (2010). The variables used were: "check for prices online on competitor websites"; "check for prices online on the store own website"; "ask for advice", "search for product information on the store website"; "search for product information on other websites"; "take photos of products"; "show pictures of products to store employees"; "search online for coupons or discounts"; "use the store app or loyalty program"; "pay with an app"; "use of a shopping list".

The perceived effects of using a smartphone during a shopping process in a physical store were decomposed into five outcomes: "propelled the purchase, during the physical shopping visit"; "propelled the purchase, but in a competitor store"; "propelled the purchase, but on the online store of the physical store"; "postponed the purchase" and "made giving up the purchase". These items were measured with a five-point Likert scale, from "totally disagree" (1) to "totally agree" (5).

The generational cutoff points used were based on Dimock (2018) - G birth 1965-1980; Y birth 1981-1996 and Z birth from 1997 -, leading to 913 valid respondents, 27% from generation X, 44% from generation Y and 29% from generation Z.

6. Findings

To test H1, the recall of having already used a smartphone during a shopping visit in a physical store was analyzed (table 2). It was found that such perception and recall is statically different among the generations considered ($\chi2(4)=13.571$; p=.009; n=889), leading to rejection of the null hypothesis of no differences between generations. Deepening the study with the analysis of the standardized residuals (Table 1), a stronger affinity of generation X and the certainty to not have used the smartphone in a shopping visit in the last twelve months was found, as well as an affinity of generation Z with probably have used the smartphone on that type of journey.

Table 02. Recall of using the smartphone in shopping on a physical store in the last twelve months

	Generation		
	X	Y	Z
Have not used the smartphone (std.residual)	16%a (.9)	10%b (-1.8)	17%a (1.3)
Probably have used the smartphone (std.residual)	26%a (-.8)	28%a (-.5)	34%a (1.5)
Sureley have used the smartphone (std.residual)	58%a (.2)	62%b (1.2)	49%a,b (-1.7)
n	237	397	255

Source: survey output. Each subscript letter denotes a subset of generations whose proportions do not differ significantly from each other at the .05 level

Considering the shoppers who have already used the smartphone during the visit to a retail store, the more frequent behaviors and activities performed verified were: check for prices online on competitor websites (42%); take photos of products (39%); show pictures of products to store employees (36%); check for prices on the store own website (28%); ask for advice (28%); and search for product information on the store website (27%). By these results it is possible to notice that smartphones also pose opportunities to offline retailers, and not only are a threat related to showrooming and price checking on competitor stores. In fact, the acts of visiting the store website (for more information and prices) and the interaction with store employees represent marketing opportunities for the visited retailer. So, the present results support Quint et al. (2013) study in the way that shoppers use smartphones in bricks and mortar stores as a tool to navigate on their shopping experience, and it has potential to help them commit to purchase in a store as it does to send them away to an online competitor. In complement, regarding H2, Table 3 shows differences between generations on some of those actions. Such statistical differences were found on the variables: checking for prices online on competitor websites (generation Y shows differences to the group formed by generations X and Z); checking for prices online on the physical store own website (generation X shows differences to the group formed by generations Y and Z); asking for advice with the help of the smartphone (differences between all the three generations), showing pictures of products to store employees (generation X shows differences to generations Y) and on the use of smartphones to search online for coupons or discounts (generation X shows differences to the group formed by generations Y and Z).

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Table 03. Behaviors and activities with the help of smartphone during the visit to the store

Behaviors and activities	Generation			
	X	Y	Z	χ2(2)
Check for prices online on competitor websites (std.residual)	36%a (-1.6)	48%b (2.2)	38%a (-1.0)	χ2=13.806; p=.001*; n=863
Check for prices online on the store own website (std.residual)	20%b (-2.4)	32%a (1.8)	28%a (.2)	χ2=12.131; p=.002*; n=927
Ask for advice (eg whatsapp) (std.residual)	18%c (-3.3)	29%b (.4)	37%a (2.7)	χ2=25.108; p=.000*; n=927
Search for product information on the store website (std.residual)	22%b (-1.8)	31%a (1.7)	26%a,b (.3)	χ2=8.559; p=.014; n=927
Search for product information on other websites (std.residual)	15%a (-.6)	17%a (.6)	16%a (-.1)	χ2=761.; p=.684; n=927
Take photos of products (std.residual)	40%a (-.2)	39%a (.0)	40%a (.2)	χ2=.169; p=.919; n=927
Show pictures of products to store employees (std.residual)	29%a (-2.0)	40%b (1.7)	35%a,b (-.2)	χ2=10.349; p=.006*; n=927
Search online for coupons or discounts (std.residual)	32%b (2.4)	21%a (-1.0)	20%a (-1.2)	χ2=10.730; p=.005*; n=927
Use the store app or loyalty program (std.residual)	17%a (.4)	16%a (.7)	12%a (-1.1)	χ2=2.088; p=.352; n=927
Pay with an app (std.residual)	10%a (-.4)	13%a (1.0)	9%a (-1.0)	χ2=2.326; p=.312; n=719
Use of a shopping list (std.residual)	25% (1.1)	21% (.2)	18% (-1.3)	χ2=3.742; p=.154; n=927

Source: survey output. Each subscript letter denotes a subset of generations whose proportions do not differ significantly from each other at the .05 level * Significant differences at .05 level

As already mentioned, the use of smartphones on a physical store has the potential to help shoppers commit to purchase in that same store, as can be seen by this study's results in Table 4.

That table also shows that some differences were found between generations in what concerns the perceived effects of using the smartphone during the visit to the store (H3). The differences were found on the item "Propelled the purchase, during the physical shopping visit". In fact, according to the pos-hoc HSD Tukey test, the statistically differences for this factor occurred between generations X and Z (95% C.I] -.48; -.003 [; p=.021) and X and Y (95% C.I] -.47; -.006 [; p=.006). If a significance level of 90% is considered, there can also be found differences on the factor "Propelled the purchase, but on the online store of the physical store". In such analysis, the pos-hoc HSD Tukey test reveals differences only between generations X and Y (95% C.I] -.65; .00[; p=.053).

Table 04. Perceived effects of using the smartphone during the visit to the store

	Total	Generation			ANOVA	
Effect		**X**	**Y**	**Z**	**F(2)**	**Sig.**
Propelled the purchase, during the physical shopping visit	$\bar{x}$=3,57 s=1,011	$\bar{x}$=3,38 s=1,015	$\bar{x}$=3,64 s=1,00	$\bar{x}$=3,63 s=1,007	5.344	.005*
Propelled the purchase, but in a competitor store	$\bar{x}$=3,20 s=1,096	$\bar{x}$=3,22 s=1,079	$\bar{x}$=3,20 s=1,095	$\bar{x}$=3,17 s=1,119	.106	.899
Propelled the purchase, but on the online store of the physical store	$\bar{x}$=2,97 s=1,278	$\bar{x}$=2,78 s=1,314	$\bar{x}$=3,10 s=1,216	$\bar{x}$=2,91 s=1,325	2.961	.053**
Postponed the purchase	$\bar{x}$=2,90 s=1,138	$\bar{x}$=2,87 s=1,212	$\bar{x}$=2,85 s=1,086	$\bar{x}$=2,99 s=1,142	.926	.397
Made giving up the purchase	$\bar{x}$=2,68 s=1,170	$\bar{x}$=2,69 s=1,229	$\bar{x}$=2,68 s=1,136	$\bar{x}$=2,65 s=1,173	.080	.923
n	812	210	378	224		

Source: survey output. * Significant differences at .05 level ** Significant differences at .01 level.

7. Conclusion

This study contributes to existing body of knowledge by analyzing if different generations make different uses of smartphones during in-store shopping experiences in physical retail stores. As a general conclusion, it can be stated that smartphones should be faced by those retailers as tools that can leverage opportunities, instead of devices that simply drive showrooming practices that defect customers to other competitors. It was also found that the generations studied (X, Y and Z) do, in fact, use smartphones in different manners. In terms of managerial implications, the most obvious one is that physical stores managers should understand their target shoppers, to find out if they belong to a certain generation. If so, the in-store shopper marketing activities should take in account how that generation uses the smartphone inside the store. So, there are shopper marketing actions that can be recommended for each generation. Considering generation Y, it is possible to assume they are price-sensitive, since they use their smartphones for price comparisons in competitor websites, perhaps sometimes as a bargaining strategy. So, price-matching policy is an option for bricks and mortar retailers to deal with generation Y but is a policy difficult to sustain in the long run for all products. Therefore, selling exclusive and unique products, not possible to find in competitor stores, is also a possibility to take advantage of generation Y shoppers while they are inside the store. For generation X, these shoppers seem to like deals, hence they search more than other generations for online for discounts or coupons. So, retailers can offer special discounts and deals that might influence in-store purchase decision for these shoppers while they are using smartphones inside the store. For this generation, loyalty programs and rewards might also be used in conjunction with smartphone-assisted shoppers, for example taking advantage of gaming concepts, to drive a funnier and more emotional bond to the in-store experience. For shoppers less interested in low prices, delivering unique in-store experiences supported by smartphones might also be a way to reinforce the store differentiation and retain

customers. Generation Z seems to be the more interested in using smartphones inside stores for added knowledge about products. Such added knowledge can be covered by three information areas: reviews, advice and product information. So, bricks and mortar retailers should aim to help these shoppers to get easy access to online reviews and information (perhaps from third parties or media websites), in order to enrich and ease the shopping experience and drive purchase action at the physical store. It might as well be accomplished by inviting shoppers to share their opinions and feedback on the store digital platforms', to raise engagement with the store and leverage the online database knowledge of reviews for other shoppers. Regarding implications for researchers, this study has limitations posed by the sample used. So, it is suggested to replicate the study in different samples, to validate if the results found are generalizable. Given the rapid evolution of smartphones, apps and technologies, this study is also conditioned by the time frame. Therefore, it might useful to continuously revisit and update the list of behaviors and activities that can be performed with the help of smartphones during the visits to physical stores. This study aimed to obtain a global overview and did not focus on a particular type of store. This means that it might be tested if shoppers exhibit different behaviors and perceptions in different retail sectors. Assuming the time span of two decades for the raise of a new generation, a last research avenue is that it might be relevant to understand how the next generation (generation "Alpha") will use mobile devices inside physical stores.

Acknowledgments

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