

Relationship Between the Socio-Demographic Characteristics of Mall Users in Lagos and Smartphone Use during Face-to-Face Interactions

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Abstract

Smartphone use during face-to-face interactions has become very popular among people of different socio-demographic characteristics. This multitasking behaviour has undermined face-to-face interactions. However, adequate attention has not been given to the relationship between the socio-demographic characteristics of users and their smartphone use during face-to-face interactions in public social settings like malls that exhibit social heterogeneity. Using unobtrusive observations, in-depth interviews, and survey, the relationship between the socio-demographic characteristics of users and their smartphone use during in-person interactions was investigated. Two malls, Novare and Ikeja City Malls in Lagos were purposively selected. Forty groups of mall users were observed, 758 copies of a questionnaire were administered and 20 mall users were interviewed. Findings reveal a significant relationship (< 0.05) between the socio-demographic characteristics of mall users and their smartphone use during face-to-face interactions. Results show that females were 0.45 times more likely to take pictures during face-to-face interactions than males. Mall users with higher degrees were 0.15 times more likely to use smartphones for social media than those who were students and unemployed. Adults mainly used the device for work-related activities while youths used it for entertainment. Socio-demographic characteristics are strongly related to motivations for smartphone use during face-to-face interactions which impacts the quality of face-to-face interactions.

Keywords: Socio-Demographic, Smartphone Use, Face-to-Face Interactions, Public Social Settings, Mall Users, Lagos

Introduction

Smartphones have become part of the social interactions in emerging settings of urban cities in Nigeria. In this regard, smartphone use during face-to-face interactions has changed the manner in which people in public social settings communicate (Onochie and Obono, 2019). This multitasking behaviour is enhanced by the advancements and accessibility of smartphone devices visible in their built-in applications and Internet access which provides access to digital and voice services, text messaging and web browsing (Krouse, 2012). Due to these technological improvements, smartphones have become important devices for engaging in numerous important life activities, seeking information, communication and research as well as accessing educational resources (Smith, 2015). These gratifications that come from smartphone use make the device endearing to users especially youths. However, adults have deeply embedded smartphones into aspects of their daily lives and smartphone ownership has increased in most countries (Smith, 2015; Onochie and Obono, 2019).

As at 2016, China led the table on smartphone ownership, with 574.2 million of the world's 1,914.6 billion smartphones in its population. The United States of America (USA) followed with 184.2 million smartphones while Argentina, with 12.6 million smartphones, was the least on the table (Adepetun, 2016). The estimated number of smartphone users in Nigeria in 2016 was 15.5 million, and 23.3 million by 2019, according to a National Bureau of Statistics report. At the end of the first quarter of 2016, Lagos State had the highest active telephone and Internet subscribers in the world. Lagos was also found to be the dominant market for all the operating Nigerian telecommunications companies (National Bureau of Statistics, 2016). These statistics indicate a steady increase in the ownership of smartphones around the world and users' likelihood to incorporate the device in to all aspects of their lives.

The manner in which smartphones are used presently makes it difficult to imagine a period without smartphones. In the pre-smartphone era, communication was largely done face-to-face, through letter writing or talking via static phone lines. Communication evolved from talking through static telephone lines to simple text messaging. Not many improvements are found between the pre-smartphone era's telephone call system and today's telephone calling hence the emphasis on text message. In 1992, Neil Papworth, a former entrepreneur at Sema Group Telecoms, sent Richard Jarvis at Vodafone the first text message "Merry Christmas" (Erickson, 2012). This led to the use of mobile phones, with numerous tap buttons that made it popular to speak on the phone and text.

Nonetheless, Diab (2016) states that while it was laudable that the phone text feature removed the need to talk to people, the fact that it needed a lot of buttons to generate simple words and phrases was a disadvantage. Following this multi-tap texting process, Cliff Kushler invented the "Text on 9 keys" (T9) that allowed a predictive text display of words from a single key press (Erickson, 2012). This added some simplicity to texting; but these text messages were not as visually appealing as

we have today with instant messaging, smileys and fun emoticons (Onochie and Obono, 2020).

In the pre-smartphone era, several devices and tools were needed to perform different functions, basic phones for calls, cameras for pictures and videos, maps for navigation, mp3 players for music among others. Presently, with several technological improvements all these functions can be performed on a single device, the smartphone. Other distinctive characteristics of the pre-smartphone devices include their small size, no Internet connectivity, and little or no software. Some of the popular phones in the pre-smartphone era were Nokia 3310, Nokia 1100 and the Motorola Razor. These were basic phones that primarily gave users access to phone calls, basic text messaging, simple alarm systems, calendars without the sophistication of present-day smartphone devices. Eventually, technology was combined and the idea of the smartphone was born.

It is said that the very first design of a smartphone was envisaged back in the mid-1970s, but the idea did not come to fruition until nearly twenty years later when IBM's Simon Personal Communicator first revealed its face in 1992. Simon was the first real attempt to incorporate voice and data services into one package but was never technically called a smartphone (Reed, 2010; Martin, 2014). With Nokia joining in the smartphone evolution in 1996, it released the Nokia 9000 Communicator which was capable of email, fax, Web browsing (a feature Simon lacked), word processing, and even spreadsheets and an Intel 24MHz i386 CPU, and it came with just 8MB of memory (Martin, 2014).

Despite these features, the Nokia Communicator was also not officially called a smartphone. It was not until 2000 that the first real smartphone, the Ericsson R380 was released, it was not larger than a regular phone and in the early 2000s, many others followed suit, with phones like the Palm and BlackBerry achieving big success. In 2007, Apple released the iPhone, which eschewed hardware buttons for full touch screen control and has been the template for smartphones ever since (Telstra, 2013). Presently, there are many models of smartphones made by major phone manufacturers: Apple, Samsung, LG, HTC, Nokia, Sony Ericsson, Motorola, RIM, Palm and others.

These advancements in smartphones and users' incorporation of the device into nearly all aspects of their daily lives has led to its use during face-to-face interactions in public social settings like malls. This behaviour leads to reduced attention to face-to-face interactions and impacts negatively on mall user's situation awareness, attention to body movements and recall of details (Onochie and Obono, 2019). The mall users in public social settings possess different socio-demographic features; these features play certain roles in their communication behaviours. The combination of the sociological and demographic features of a group is referred to as its socio-demographic characteristics. Features such as age, death rate, gender orientation, medical history, employment, birth-rate, ethnicity, marital status, occupation are considered in exploring the socio-demographic characteristics of individuals (Stone, 2016). These factors are instrumental to investigating how the characteristics of people

influence the variables in a study. Consequently, the study investigated the relationship between mall users' sex, age, marital status, occupation, monthly income, educational level and their smartphone use during face-to-face interactions in Lagos malls.

Statement of the Problem

The use of smartphones during face-to-face interactions affects the way people act, react and interact in public social settings that exhibit social heterogeneity. Studies have established that smartphones draw people away from face-to-face social contact into the digital space. This is said to have reduced conversation quality and reduced situation awareness. This has also led to distracted attention, unsafe behaviours and a general lack of understanding of nonverbal cues (Nasar and Troyer, 2013; and Nicholas, 2016). However, adequate attention has not been given to the relationship between the socio-demographic characteristics of users and their smartphone use during face-to-face interactions. The study, therefore, investigated the relationship between gender, age, marital status, monthly income, occupation and educational level of mall users and their smartphone use during face-to-face interactions in malls in Lagos. This was to explore whether and how these socio-demographic characteristics influence their smartphone use during face-to-face interactions.

Research Questions

1. How frequently do Lagos mall users use smartphones during face-to-face interactions?
2. What is the relationship between the socio-demographic characteristics of Lagos mall users and smartphone use during face-to-face interactions?

Literature Review

Socio-Demographic Characteristics and Technological Differences

Socio-demographics look at the life around individuals and characteristics such as age, gender orientations, race, religion, income, marital status, birth rate, death rate, the average size of a family, heritage, education and medical history (Stone, 2016). What these factors have in common is that they are all concrete characteristics that help narrow down where each person fits in the general population (Survey monkey, 2019).

Young age is a factor that can affect technological use. Describing this situation, Kurian (2017) opines that millennials grew up during the millennium period, a time of rapid change. Naturally, events that took place during this period have shaped them and given them a unique set of priorities and expectations that differ from that of previous generations. Younger people perceive media, especially the Internet as a personal opportunity, they are excellent at using new technologies, in communicating and interacting in the digital world but their judgment is less developed in comparison to older people. Older people on the other hand approach innovations with a greater dilemma which is reflected in their oversized components of judgment (Arsenijevic

and Andevski, 2016). This oversized judgment among older technology users could affect how they use technology and how its use affects their communication behaviours. In this regard, older people may be less open to smartphone use during face-to-face interactions.

On the other hand, young people may be more inclined to using smartphones during face-to-face interactions and less judgmental when interaction partners do so. For this reason, age as a sociodemographic factor could lead to differences in smartphone use during face-to-face interactions. Not all researchers support these views, Smith (2015) notes that although the frequent use of smartphones is commonly associated with youths around the world, adults have deeply embedded mobile devices into aspects of their daily lives. It is, therefore, no longer about interest in technology, the busy lives of adults have contributed to their use of smartphones during face-to-face interactions. Das (2016) opines that being an adult is characterised by the need to have money, cook, do laundry, clean, buy things, pay bills, run errands, transport, stay healthy, and pay taxes among others. In other words, adulthood is characterized by several activities that can be performed using smartphones and other digital devices.

Educational level is another socio-demographic characteristic that brings about differences in opinions and behaviours. People's attitudes and opinions vary according to their educational level and there are clear differences in opinions between mall users with different levels of education (Bernnan, Chanfreau, Finnegan, Griggs, Kiss, Park, 2015; Dobronte, 2016). In this regard, having the highly educated, semi-educated and non-educated respond to a survey could bring about different responses. However, Watson (2013) raises an important question. Is higher education likely to make people better, to improve their capacity to make sound moral as well as technical judgments? There may be more positive responses to this question because the purpose of acquiring an education is simply to improve people's lives generally. Whether or not this purpose is achieved in every person who acquires education becomes a different issue entirely. However, it is expected that higher education in relation to an individual's life, will improve their behaviour, make them able to function effectively and become better members of the society (Watson, 2013). If this is the case, with regards to the detrimental aspects of using smartphones during face-to-face interactions, the more educated mall users should be more inclined to avoiding this multitasking behaviour.

The material conditions in which people grow up and live have a lasting impact on their personal and social identities and these influence both the way they think and feel about their social environments and key aspects of their social behaviour (Manstead, 2018). More directly, people's income could have significant impacts on their smartphone use, an issue that has become popular in studies on digital divide. With regard to the Internet, Zickuhr and Smith (2012) found that household income is also a strong predictor of Internet use as people living in higher-income households use the Internet more than people living in lower-income households. Since this difference in Internet use is largely due to income, other kinds of digital divide

between high and low-income earners can be easily deciphered. In the case of smartphone ownership and use, high-income earners definitely, are more financially capable of acquiring different high-priced smartphone devices than lower-income earners. This may have direct impacts on smartphone use during face-to-face interactions among these two groups.

Research shows that the tendency to use mobile phones during face-to-face interactions is significantly higher for females (Finkel, et al. 2012; Geerdink, 2014). Gender acts as an influencing factor in technology adoption as men are found to be more technologically adept than women (Goswami and Dutta, 2016). While this appears to be a patriarchal ideology, Cai, Fan, and Du, (2017) note that males still hold more favourable attitudes towards technology use than females. If this is the case, men should also hold more favourable attitudes towards smartphone use during face-to-face interactions. These differences between the genders have been found in relation to access and usage of different digital technologies which could be due to a number of interrelated factors that include the masculine image of games and technology, access to and the gendering of space and time limitations (Presscott, 2013).

With respect to occupation and technological differences, much of what can be said is in regard to how the student, entrepreneurs, employed and unemployed acquire and use technology. For students and technology use, much focus is on the classroom as students benefit from using digital devices like the computer, projectors and even smartphones to facilitate their learning process. Every day, many students spend countless hours immersed in popular technologies used for social networking, digital gaming, and simulations. Although these activities may appear to be a waste of the students' time, they deserve to be thoroughly investigated (Klopfer, Osterweil, Groff, Haas, 2009). While the unemployed may focus mainly on using technology to find jobs, the employed and entrepreneurs may focus mainly on using technology to carry out work-related tasks. With respect to religion, Muslims have openly embraced technology including the use of smartphones and the Internet just as the rest of the world. The Muslims text, chat, download applications, and play games, use social media as well as make online purchases (Zahran, 2019). This applies to Christians as well. Smartphones and tablets are presently being used to access bibles, devotionals and propagate the gospel through social networking, Short Message Service (SMS), Emails among other technological tools.

Smartphones

Smartphones are crucial to the daily activities of a lot of people because of advancements in the device. Smartphones are used for interactive purposes, simply helping users creatively reach out to people not immediately present with them and so they are quickly becoming the most popular and widespread form of communication (Penwarden, 2014). The ease and simplicity of using smartphones have therefore reduced costs and the time frame of communication (Pridmore, Falk and Sprenkels, 2013). This means faster communication and dissemination of information with more

ease and speed. Smartphones have, therefore, created new prospects for individuals by enhancing different patterns of interactions and communication speed. Tools like advanced text messaging and email give speed when having conversations, a significant benefit for the increasingly busy lives of most people (McGrath, 2012; Lander, 2017). This suggests that the time previously taken for news or messages to be disseminated is reduced, a benefit mostly achieved with Internet access. However, the communication speed that smartphone provides is dependent on a number of factors such as stable Internet services and a fully operational device.

As a result of the Internet, the exchange of information has been made possible on several digital devices like smartphones that enhance rapid communication and information sharing (Herzog, 2014). These applications are easily accessible to users on different smartphone stores on the devices. Social media have also greatly contributed to the speed in communication that smartphones bring. Some of the social media communication applications today are Whatsapp, Facebook messenger, Instagram direct messages, Twitter messaging, and Telegram among others. Phone calls, short message service (SMS), emails are among the other channels of communication using smartphones. The device, therefore, gives users a choice to communicate via voice or text along with the ability to access information and services while on the go (Iiyas and Ahson, 2006). Except for phone calls and SMS, the communication benefits of smartphones are mainly aided by Internet access. This, however, means communication could be impaired in the event of poor network connectivity.

Furthermore, smartphones provide easy and quick access to information through social networking sites which comprise a large segment of online news services in which users share, bookmark and reproduce news content (Shim, You, Lee, and Go, 2015). As a result of the interactive nature of these social media applications, users are able to comment on the information they receive and are likely going to choose them over other news and information sources. Mobile digital devices thus create opportunities for easy dissemination of information and cause consumers to move their intentions to actions (Obono, 2016). Blogging is also a fast-rising means of information dissemination, with dozens of major and minor blog communities emerging in a rapidly changing landscape (Herzog, 2014). These bloggers have become the latest bearers of breaking news, further reducing the traditional media's access to consumers.

In addition, smartphones reduce the effort required to perform specific tasks, business and, work-related activities. In doing so, leisure time is increased allowing individuals more flexibility on how their free time is spent (McGrath, 2012). Smartphones not only lead to faster communication, but instantaneity across other areas of human life has also been achieved using smartphones. Therefore, the expectation to do things quickly is accelerating as mobile devices allow users to carry out everyday tasks from buying a plane ticket to purchasing groceries from virtually anywhere, and often very quickly (Herzog, 2014). Other business transactions that

smartphones facilitate include bill payments, funds transfer, signing of business documents and closing deals.

With the advanced nature of smartphones, various sectors of the society have succeeded in creating applications running on smartphones to bring about seamless execution of specific tasks. These applications are used in healthcare, businesses, churches, governance among other walks of life and most of them are enabled through access to the Internet. Smartphones are also known to greatly enhance multitasking. The device can be used for multiple related and non-related activities carried out concurrently, aided by an operating system that enables users to open, minimise and use several tabs and applications at the same time. In addition, smartphones offer certain entertainment gratifications received through access to multimedia presentation and smart tools. These multimedia contents have made it possible for users to produce, receive, and disseminate audio-visual contents that are highly entertaining. Some of the entertainment activities enabled by smartphones include: listening to music, playing games, taking pictures, making videos among others.

So far, it can be seen that Internet access is crucial to achieving most of the aforementioned smartphone gratifications. The device gains access to the Internet by seamlessly blending both telephone and computer capabilities. Through WI-FI and broadband connections, people are using smartphones to access the Internet at an increasing rate (Penwarden, 2014). Connected to the Internet, smartphones grant access to instant messaging, access to sending and receiving emails, access to information among others. These gratifications of smartphones have greatly contributed to their use during face-to-face interactions. Ictech II (2014) notes that members of the millennial generation, who are extremely proficient users of technology, can aim to receive these gratifications while simultaneously engaged in face-to-face interactions.

Face-to-face interactions

Despite the gratifications of smartphones that may have led to their use during in-person interactions, scholars have emphasised the importance of face-to-face communication in human interactions. In face - to - face interaction, participants are immediately present with one another and share a common spatial-temporal framework (Thompson, 2005). Certain factors distinguish face-to-face interaction from other forms of communication and make it important in human communication. These factors include nonverbal cues, turn-taking, increased creativity, trust-building, deeper understanding, and empathy.

Face-to-face interaction is usually viewed as a reliable means of human communication since it allows for the combination of both verbal and nonverbal cues. Understanding these nonverbal cues such as posture, facial expressions, gestures, and eye contact is important to social interactions because of the need to modify one's behaviour in response to the reactions of others (Uhls et al., 2016). In addition, nonverbal communication is said to be a very useful tool for understanding people, it

complements verbal communication thereby enhancing the overall message, and it expresses emotions and interpersonal attitudes (Eunson, 2012). It also enhances relationships especially in the family (Ngunan and Ogaba-Egba, 2016).

In face-to-face interactions, therefore, messages are sent and received through the five senses using visual, auditory, tactile, olfactory and situational means to convey both verbal and nonverbal messages (Gamble and Gamble, 2013). Face - to - face interaction, therefore, brings together all of the senses - smell, sight, sound and most especially touch. Although digital media devices with social media platforms such as Skype, Facebook and Whatsapp have enabled video calling and thus come close to connecting people in the way that face - to - face interaction does, human communication using the sense of touch is still impossible via these platforms.

Face-to-face interaction also involves more continuous turn-taking behaviours between partners, a feature that plays a significant role in social interactions and shows the level of involvement between partners (Jiang, Dai, Peng, Zhu, Liu, Li, Lu, and Chunming, 2012). Essentially, turn-taking during in-person interactions demonstrates that participants have some interest and involvement in the communication process. Increased creativity is said to be an important element that face-to-face interactions bring to human communication. Gloor, Grippa, Putzke, Lassenius, Fuehres, Fischbach, Schoder (2012) explain that this creativity is seen as people interacting come up with more ideas and become more capable as a group. Meeting face-to-face thus builds trust and encourages those interacting to confide in each other (Gloor, et al., 2012). When interacting face-to-face, people have eye contact, reassuring facial expressions and gestures that could make participants more comfortable with sharing vital personal issues and thus create meaningful connections. Kumar and Meenakshi (2009) note that it is easy to be misunderstood when communication is not done face-to-face. People's feelings can get hurt and wrong information can be picked up. By seeing how others are responding to a verbal message even before it is complete, the speaker can alter it midstream and provide necessary clarification (Laufer, 2012). Face-to-face interactions thus deepen communication through nonverbal cues such as gestures, body movements, and the tone of voice among others. These non-verbal cues help people interacting better explain the message being communicated.

In addition, face-to-face interaction creates a closeness that increases the chances for empathy to occur (Morrell, 2010). This allows those interacting to put themselves in each other's place and try to understand how the other person is feeling as regards the issues being discussed. Research has focused on the often unempathetic behaviours seen online because people cannot see each other and read each other's signals empathically and thus are unable to regulate their emotional responses accordingly (McLaren, 2013). Face-to-face interaction is also considered the best option for inspiring people and building a positive emotional climate and it is the only option for celebration and recognition of rituals (McEuen and Duffy, 2010; Arndt, 2011). Despite its importance, face - to - face communication can be demanding in terms of time

management and space (Arndt, 2011) and also the reality of having to move from one place to the other.

In the quest for speed and the need to avoid the drawbacks of face -to- face communication, in-person interactions are being replaced by the latest high-tech solutions. This prioritisation of speed over face time grossly underestimates the importance of face - to - face interaction in human communication because human communication is not just about passing information, it is about building relationships and creating personal connections (Chang, 2015). Face-to-face interactions are thus important for trust and relationship building. However, the advancement in smartphones and new media devices has led to different degrees of changes in present-day face-to-face interactions. Ngunan and Ogaba-Egbe (2016) explain that this improvement in digital technology is blurring the lines between interpersonal skills and creating habits capable of eroding the quality of relationships between people who are increasingly expected to be accessible at all times (Pinchot, Paullet and Rota, 2010). Consequently, when people decide to meet and interact in public social settings, it becomes inevitable for them to be there with their phones to leverage the gratifications that smartphones provide.

Method

The study adopted a cross-sectional, descriptive design because it was intended to obtain information on smartphone use during face-to-face interactions among Lagos mall users at a particular point in time. Survey, unobtrusive observations, and in-depth interviews served as research methods. Consequently, questionnaire, observation record sheet and interview guide served as research instruments. The population of visitors at Novare Mall (NM) and Ikeja City Mall (ICM) per day was estimated at 19,354 and 25,000 respectively (HowAfrica, 2015; Knightfrank, 2016). These malls were purposively selected because they had the highest number of monthly visitors. Using the purposive and available sampling techniques, from the population, 40 groups of Mall users (ICM 20, NM 20) were observed. In addition, 758 copies of a questionnaire (ICM 380, NM 378) were administered to mall users while 10 mall users from each mall were interviewed. Qualitative data were analysed using the thematic approach, while quantitative data were analysed using descriptive statistics and logistic regression.

Data Presentation and Analysis

Frequency of smartphone use during face-to-face interactions among mall users in Lagos

A significant finding from the study is the frequent use of smartphones during face -to- face interactions among Mall Users in Lagos. As many as (64%) of the mall users used their smartphones more frequently during face-to-face interactions as shown in figure 1.

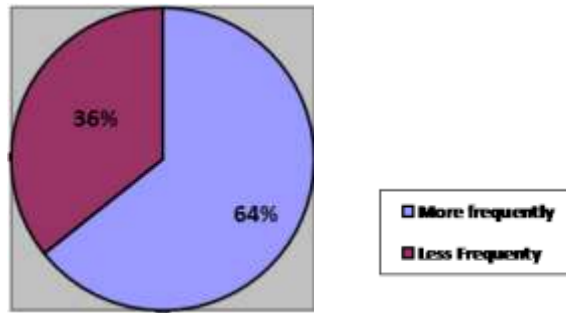


Figure 1: Frequency of smartphone use during face-to-face interactions

Findings further revealed that mall users used their smartphones during face-to-face interactions for entertainment, social media communication, information access, work-related tasks, and other individual activities. This multitasking behaviour reduced mall users' attention to both verbal and non-verbal messages. However, it enhanced their interactions when used for purposes related to ongoing conversations.

Sociodemographic Characteristics of Mall users

Several socio-demographic factors have been linked to how and why people use their smartphones during face-to-face interactions. Table 1 shows that more male (53.5%) than female (46.5%) mall users responded to the survey. This was because some female mall users were not willing to participate in the survey. Most respondents (73.4 %) were also youths. This can be attributed to the fun activities observed in the malls which mostly youths were drawn to. It is also connected to the fact that young people have more time for leisure. Malls apparently are suitable places for single people to meet with others. This could be the reason for the high number of unmarried persons (81.6 %) in the malls. Only 15.1 % of the mall users who responded to the survey were married. It was observed that most of them were spending time with their families.

Table 1: Sociodemographic characteristics of mall users

VARIABLES	DESCRIPTION	FREQ	%
Sex	Male	373	53.5
	Female	324	46.5
	Total	697	100
Age	10-19	164	23.6
	20-29	383	54.9
	30-39	129	18.5
	40 -49	18	2.6
	50 and above	3	.4
	Total	697	100
Marital Status	Single	569	81.6
	Married	105	15.1

	Separated	10	1.4
	Divorced	2	.4
	Widowed	3	.4
	Any Other	8	1.1
	Total	697	100.0
Income	None	212	30.4
	Below 50,000	157	22.3
	50,000 - 100,999	168	24.1
	101,000 - 150,999	62	8.9
	151,000 - 200,999	18	2.6
	201,000 and above	80	11.5
	Total	697	100.0
	Total	697	100.0
Education	None & no formal	42	6.1
	Primary	15	2.2
	Secondary	125	17.9
	Diploma	79	11.3
	first degree	329	47.2
	Postgraduate	97	13.9
	Others	10	1.4
	Total	697	100.0
Occupation	Student	275	39.5
	Employed	217	31.1
	Entrepreneur	155	22.2
	Unemployed	26	3.7
	Any other	24	3.4
	Total	697	100.0

Table 1 further reveals that other mall users were either separated (1.4 %), divorced (.4%) or widowed (.4%) and majority of the mall users had little (22.3%) or no income (30.4%). This could be linked to the fact that most of them are youths and students (39.5%) who would normally have no income aside from the pocket money they receive. Except in rare cases, most students are catered for and have little or no responsibilities or dependants. This leaves them with more money for fun activities and leisure and explains why they are the highest group (73.4%) of mall users in the study. On the educational level of mall users, Table 1 shows that majority (47.2%) of the mall users had first degrees, with a few (13.9%) post-graduate degrees. This could be as a result of limited financial resources.

Relationship between the socio-demographic characteristics of mall users and smartphone use during face-to-face interactions

The study investigated the relationship between mall users' sex, age, marital status, monthly income, educational level and their smartphone use during face-to-face interactions. Logistic regression was used to examine if the independent variables (sex, age, marital status, monthly income, and educational level) can be used to predict the dependent variable (smartphone use during face-to-face interactions). All socio-demographic characteristics of mall users except marital status showed a statistically significant relationship with their smartphone use during face-to-face interactions.

The relationship between mall users' sex and smartphone use during face-to-face interactions

The sex of mall users when compared with their smartphone use during face-to-face interactions, with the options male and female, showed a significant relationship with two entertainment smartphone uses, smartphone use to take pictures and make videos during face-to-face interactions. Logistic regression showed that female mall users were 0.45 times more likely to use their smartphones to take pictures and 0.54 times more likely to make videos than the male mall users during face-to-face interactions as shown in Table 2.

Table 2: Relationship between sex and smartphone use during face-to-face interactions

Smartphone Uses	Gender	B	S.E	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
To take pictures	Female	-.800	.273	8.552	1	.003	.450	.263	.768
To make videos	Female	-.625	.194	10.382	1	.001	.535	.366	.783

Qualitative data also supports the finding that females were more likely than males to use their smartphones to take pictures during face-to-face interactions. During the unobtrusive observations, more females (25) than males (10) were seen using smartphones to take pictures during face-to-face interactions. In addition, three of the male mall users interviewed expressed their lack of interest in picture-taking, while there were more females who affirmed that they use smartphones to take pictures during face-to-face interactions. Although no environmental factor was found in Lagos malls that could have triggered female use of smartphones during face-to-face interactions, it was observed that in female-only groups and groups with more females than males, there was a higher frequency of smartphone use. So far, data show that not only were the females more likely than the males to use their smartphones during face-to-face interactions, the females were also more concerned with smartphone use for entertainment.

Relationship between age of mall users and smartphone use during face-to-face interactions

To examine how age as a socio-demographic factor influences mall users’ smartphone use during face-to-face interactions, all age groups were included. The study made the following age classifications, adolescents within the age range of 10 -19 years, younger youths classified as being within the early working age of 20 to 29 years, older youths between the age range of 30 to 39 years, adults between the age range of 40-49 and the elderly or seniors are 50 years and above. Among the smartphone uses examined, it was found that smartphone use for e-commerce, to track business activities, for office tasks and when interactions become boring had a statistically significant relationship with the age of mall users.

Table 3 shows that smartphone use during face-to-face interactions for e-commerce activities was commonly associated with older youths, adults and the elderly as mall users, aged 30 years and above were .42 times more likely to use their smartphones for e-commerce activities than mall users of other age groups. Also, mall users aged 20-29 years were .55 times more likely to use smartphones to attend to busy schedules than mall users of other age classifications. People in this age bracket are known to undertake lots of activities, schooling and working, for instance, hence their busy schedules. Results in Table 3 also revealed that younger youths have more tendencies of using their smartphones to track business activities while having face-to-face interactions and adolescents were the least likely set to engage in this behaviour. This is evident in the finding that mall users between the ages of 20-29 years and those who were 30 years and above were 0.28 and 0.22 times (respectively), more likely to use smartphones during face-to-face interactions to track business activities than those below 20 years old. In attending to office tasks, a similar trend was observed. Mall users between the ages of 20-29 years and those 30 years and above were .32 times and .36 times more likely to use their smartphones during face-to-face interactions for office tasks than those below 20 years old.

Table 3: Relationship between Age and smartphone use during face-to-face interactions

Smartphone Uses	Age	B	S.E	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
E commerce	30 years &above	-.875	.348	6.323	1	.012	.417	.211	.825
Busy schedule	20-29 years	-.605	.274	4.879	1	.027	.546	.319	.934
Track business	20-29 years	1.27	.272	21.845	1	.000	.281	.165	.478
	30years & above	-1.53	.410	13.889	1	.000	.217	.097	.485
Office Tasks	20-29	-	.261	19.910	1	.000	.313	.188	.521

	years	1.16							
	30years & above	1.02	.354	8.249	1	.004	.362	.181	.724
Boring Interactions	30years & above	.991	.411	5.807	1	.016	2.694	1.203	6.034

From the data so far, it is evident that older mall users used smartphones during face-to-face interactions more frequently to carry out work-related activities than mall users who were younger. Evidence in the interviews supports this finding on older mall users’ interest in work-related activities during face-to-face interactions. While 10 out of 13 youths used their smartphones for entertainment, six out of seven adult mall users used their smartphones during face-to-face interactions for work-related activities. An adult male mall user from Novare mall who works in the oil and gas sector noted that his smartphone is like a virtual office that allows him surf the Internet, make conference calls with colleagues even while having face-to-face interactions. He stated,

I work in the oil and gas sector, and my phone is my office, it is more like a virtual office when I am not at work, say I am out here chit-chatting with friends, I just quickly check my outlook, respond to emails, pick files, send files, receive files you know it is like my world. If I don’t have it with me, I don’t know what I will do (Excerpt 1).

The opinion in excerpt 1 portrays the level of attachment that this mall user has with his smartphone. Attending to office tasks is clearly a major focus for him and he heavily utilizes his smartphones to perform these official tasks while engaging in face-to-face interactions. Another adult male from Novare mall also shared similar views on smartphone use to attend to work-related activities during face-to-face interactions. He said,

I work virtually with mails and I have to reply immediately. My clients won’t understand that at the point when they are sending emails to me I am attending to face-to-face interactions, they expect an immediate reply and they will not call you to say ...oh I just sent you an email, they expect you to be up to date. So, I check my phone at regular intervals during face-to-face interactions (Excerpt 2).

A trend is noticed from excerpts 1 and 2, both adults using smartphones for work-related activities are males. This is an indication that unlike the females who are more interested in smartphone use for entertainment during face-to-face interactions, the males are interested in work activities. In the event of boring interactions, mall users above 30 years old were 2.7 times more likely to use smartphones during boring interactions than those who were below 20 years old.

Relationship between monthly income of mall users and smartphone use during face-to-face interactions

The monthly income of mall users showed a statistically significant relationship with their smartphone use during face-to-face interactions. The logistic regression model correctly classified 76.6% of cases. As shown in Table 4, mall users earning above NGN 100,000 were 0.49 times more likely to use smartphones to attend to business during face-to-face interactions than those with no income. Similarly, they were 0.3 times more likely to use smartphones to attend to office tasks than those who had no income.

Table 4: Relationship between monthly income and smartphone use during face-to-face interactions

Smartphone Uses	Income	B	S.E	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
To attend to busy schedule	Above N100,000	-.714	.362	3.894	1	.048	.490	.241	.995
To attend to tasks	Office	-1.19	.347	11.805	1	.001	.304	.154	.600

The data on table 4 shows that higher-income earning mall users were more interested in using smartphones for work-related activities, an interest that could be related to their desire to remain financially buoyant.

The relationship between the educational level of mall users and smartphone use during face-to-face interactions

To determine the relationship between the educational level of mall users and their smartphone use during face-to-face interactions, the study examined the influence of mall users’ educational level on the likelihood that they will use smartphones to perform a series of functions during face-to-face interactions. The logistic regression model was statistically significant; the model correctly classified 95.2% of cases. Table 5 shows that respondents with first degrees and other higher degrees were 0.15 times more likely to use smartphones for social media than those with lower degrees.

Table 5: Relationship between educational level and smartphone use during face-to-face interactions

Smartphone Uses	Edu. Level	B	S.E	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
For social media	1st degree & above	-.169	.593	8.101	1	.004	.185	.058	.591

Given that accessing social media is highly financially demanding considering the high cost of data, results in table 4 is an indication that the students and

unemployed may have avoided the use of their smartphones for social media because of the cost implication as they have no steady income.

Relationship between occupation and smartphone use during face-to-face interactions

The occupation of mall users had a statistically significant relationship with smartphone use to listen to music, track business activities and to play games. Logistic regression showed in table 6 that those who had other forms of employment were 3.3 times more likely to use smartphones to listen to music than those who were students and unemployed. In addition, mall users in the employed/entrepreneurs' category were 0.4 times more likely to use smartphones to keep track of business than those who are students and unemployed.

Table 6: Relationship between occupation and smartphone use during face-to-face interactions

Smartphone Uses	Income	B	S.E	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
To listen to music	Other income	1.194	.506	5.572	1	.018	.3301	.1225	.8897
To track business	Employed/entrepreneurs	-.930	.294	10.036	1	.002	.395	.222	.701
For games	Employed/entrepreneurs	.707	.250	8.013	1	.005	2.027	1.243	3.307

These results clearly show that irrespective of social setting, people of different occupations used their smartphones for activities that enhance their various occupations. Mall users in the employed/entrepreneurs' category would be able to perform several business transactions on smartphones giving the advancements in the device that enable different forms of financial and business transactions.

Discussion of Findings

The data presented so far led to some significant findings on the relationship between the socio-demographic characteristics of Lagos mall users and their smartphone use during face-to-face interactions. These findings are discussed in relation to relevant literature reviewed. First, the finding that female mall users were more likely to use smartphones for entertainment during face-to-face interactions than the male mall users is consistent with the findings of Finkel *et al.* (2012) and Geerdink (2014) whose results showed that the tendency to use mobile phones during face-to-face interactions is significantly higher for females. According to Geerdink (2014) different environmental and social factors

stimulate mobile phone behaviours and it can be suggested that females are more sensitive to these signals.

Although no environmental factor was found in Lagos malls that may have triggered female use of smartphones during face-to-face interactions, applications like Snapchat, Instagram and Facebook, for instance, are designed with lots of feminine filters such as hair bands, lipsticks, carved eyebrows, flowers, pointed nose, longer eyelashes among others. These features generally make smartphone applications endearing to females and explain why they are more attracted to such entertaining applications.

Findings also show some differences in the way adults and youths use smartphones during face-to-face interactions. While the younger mall users were more interested in smartphone use for entertainment during face-to-face interactions, the older mall users used smartphones during face-to-face interactions more frequently to carry out work-related activities. Describing millennials, Kurian (2017) makes sense of youth's interest in smartphone entertainment. Millennials grew up during the millennium period, a time of rapid change. Naturally, events that took place during this period have shaped them, giving them a unique set of priorities and expectations that differ from previous generations.

The relationship between the age of mall users and their smartphone use during face-to-face interactions showed that adults, like youths, have become more connected to smartphones during face-to-face interactions. It is, thus, old-fashioned to say that this multitasking behaviour is only associated with the youths. It is better to say that both adults and youths use smartphones during face-to-face interactions at varying degrees and for different purposes. This finding is highly consistent with the finding of Smith (2015) that although the frequent use of smartphones is commonly associated with youths around the world, adults have deeply embedded mobile devices into aspects of their daily lives.

The results from examining the relationship between the income of mall users and smartphone use during face-to-face interactions showed that higher income earning mall users were more likely to use their smartphones to attend to business and work-related activities while having face-to-face interactions. This very much explains why they are the higher income earners. The goal for them could be to remain financially independent and this no doubt is a driving force for their need to constantly engage in work-related activities. Das (2016) notes that making this money requires a primary use of time. In this case, time spent interacting face-to-face with family and friends is also diverted to achieving financial independence. Smartphones thus become tools for achieving financial stability with inbuilt applications and access to smart tools that enable different business and financial transactions.

Examining the findings on the relationship between the educational level of mall users and their smartphone use during face-to-face interactions raises a lot of questions. One of such question is whether “higher education is likely to make people better, to improve their capacity to make sound moral as well as technical judgments?” (Watson, 2013). Research (Nasar and Troyer, 2013; and Nicholas, 2016) suggests that smartphone

use during face-to-face interactions is detrimental to interaction quality. Therefore, a sound moral judgment, in this case, would be to avoid this multitasking behaviour in order to maintain the quality of face-to-face interactions. However, findings show that mall users with first degrees and other higher degrees were more likely to use smartphones for social media than those who were students and unemployed. This clearly indicates that being highly educated does not automatically guarantee that a person would make sound moral judgments concerning their communication behaviours. Maintaining the right behaviours while communicating requires an understanding and appreciation of essential communication etiquette.

Conclusions and Recommendations

Smartphones are increasingly being used during face-to-face interactions and sociodemographic characteristics not only determine the frequency of use, but they also shape usage patterns. The study, therefore, makes the following conclusions. Adults, like youths, have become more connected to smartphones during face-to-face interactions. Females have a higher tendency of using smartphones for entertainment during face-to-face interactions than males. Higher education is not necessarily a panacea for poor moral judgments. People's income can have significant impacts on their technology use, an issue that has become popular in studies on digital divide.

It is recommended that as technology and social interactions intertwine in public social settings, irrespective of users' socio-demographic characteristics, conscious efforts must be made to ensure that technological devices are kept away during face-to-face interactions. If they must be used, they should be used in a manner that enhances communication. This includes using technology in a manner that adds humour to the conversations, provides information relevant to ongoing interactions and enhances the overall interaction quality. To enhance interactions among people who use smartphones in emergency situations and for the improvement of in-person interactions there is the need for future studies to discover less invasive ways in which people of different socio-demographic characteristics can use their smartphones during face-to-face interactions. This can be in form of improvements in the device and alertness of users.

The study was conducted during a festive period. The busy nature of this period impacted some mall users' ability to adequately respond to the questionnaire. Mall users were surrounded by distractions from food, children to take care of, events, music, dance and lots of side attractions. Thus, handling these distractions could be responsible for them leaving some of the questions on the questionnaire unanswered and going away with already completed questionnaire copies. To reduce this incidence, the study recommends that future studies can be conducted at a less busy period.

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