



Theoretical Foundations for the Study of Media Multitasking among Lagos Mall Users

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ABSTRACT

This paper seeks to provide a theoretical approach to the study of media multitasking. The aim of the study is achieved by examining the Information Processing Theory (IPT) and the Niche Media Theory (NMT) to show how their propositions guide the study of media multitasking among Lagos mall users. Therefore, using unobtrusive observations, in-depth interviews, and survey, smartphone use during face-to-face interactions among Lagos mall users was examined based on the proposition of the IPT that humans have limited cognitive resources, and if more resources are directed towards one information processing task, another task will be performed badly. Some researchers believe that this may not always be the case as skills are capable of aiding multitasking. However, guided by the proposition of the NMT, this paper argues that even though skills aid multitasking, there are certain implications for not just the people involved but also the forms of communication used during media multitasking. Findings, to an extent, support IPT's proposition as there was a decline in interaction quality. However, there was an interesting twist to the NMT's proposition on overlap. Mall users who perceived face-to-face interactions to be more superior were more likely to replace face-to-face interactions with smartphone communication.

Keywords: media multitasking, smartphone use, face-to-face interactions, niche media theory, information processing theory, mall

BACKGROUND TO THE STUDY

Media multitasking describes a person's exposure to more than one form of communication at a time. The pressure of keeping up with information, busy schedules and frequent deadlines is assumed to be the reason for media multitasking and this has made smartphone use during face-to-face interactions very popular. The term multitasking originates from Computer Science as a description of a central processor performing two or more tasks simultaneously. In the context of the social sciences, however, the term multitasking most commonly refers to a situation in which people are engaged in two or more information processing tasks at the same time (Koolstra, Ritterfeld, & Vorderer, 2009). The concept of multitasking is not new. What is relatively new today is that a vast number of portable, versatile and powerful digital technologies

provide the opportunities to multitask more frequently, more easily, and across a greater array of activities (Wood & Zivcakova, 2015) which today include face-to-face interactions.

The use of smartphones during face-to-face interactions has changed the way people act, react and interact. Studies have established that new technologies draw people away from face-to-face social contact into the digital space. These studies hold that in public social settings, this multitasking behavior leads to reduced conversation quality, reduced situation awareness, distracted attention, unsafe behaviours and a general lack of understanding of nonverbal cues (Nasar & Troyer, 2013; Nicholas, 2016). While research attempts to address this situation among teenagers and youths in countries with high smartphone ownership such as China and the United States of America, there was the need to investigate smartphone use during face-to-face interactions among a wider segment of the population that includes adults. It was also crucial to examine this issue under study in specific emerging contexts like malls in Nigeria where smartphone use is rapidly growing (National Bureau of Statistics, 2016). In such contexts, it has become a regular site to see people sitting or standing together, having face-to-face interactions and using their smartphones. Studies have shown that this has certain implications for the quality of interactions. Misra, Cheng, Genevie, and Yuan (2016) found that even without active use, the mere presence of mobile technologies has the potential to divert individuals from face-to-face exchanges, thereby undermining the character and depth of their connections. More so, individuals are more likely to miss subtle cues, facial expressions, and changes in the tone of their conversation partner's voice, and have less eye contact when using their smartphones during face-to-face interactions. This lessens the quality of interpersonal conversations, thereby lowering the level of empathy that is exchanged between friends (Misra et al., 2016).

In investigating this situation, existing studies discuss ways in which smartphone use during face-to-face meetings can aid interactions, giving instances such as designing less invasive and demanding smartphones as well as using the smartphone for purposes tied to ongoing interactions (Porcheron, Fischer, & Sharples, 2016; Rainie & Zickuhr, 2015). Most scholars who have researched on media multitasking argue that people who engage in this behaviour are unable to effectively perform the tasks being combined (Drago, 2015; Misra et al., 2016; Przybylski & Weinstein, 2012). Other scholars believe that there may be an emergence of 'supertaskers,' people whose skills allow them to effectively use different forms of communication simultaneously. However, media multitasking also holds certain implications for the forms of communication being used simultaneously because of the likelihood that the medium used less frequently in a media multitasking situation could be displaced, excluded or replaced (Dimmick, Feaster, & Hoplamazian, 2010; Dimmick & Rothenbuhler, 1984; Gaskin & Jerit 2012; Ramirez, Dimmick, Feaster, & Lin, 2008). In view of this, guided by the Information Processing Theory and the Niche Media Theory, this study evaluates why mall users switch their attention from face-to-face interactions to smartphone use, determines the influence of smartphone use on face-to-face interactions among Lagos mall users and investigates how Lagos mall users perceive the gratifications of smartphones in relation to face-to-face interactions. The propositions of these theories and their relevance to understanding media multitasking among Lagos mall users is explored in this paper.

OBJECTIVES OF THE STUDY

The objectives of the study guided by the IPT and the NMT are to:

1. Evaluate why mall users switch their attention from face-to-face interactions to smartphone use.
2. Determine the influence of smartphone use on face-to-face interactions among Lagos mall users.
3. Investigate how Lagos mall users perceive the gratifications of smartphones in relation to face-to-face interactions.

METHODOLOGY

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 observation, and in-depth interview served as research methods using questionnaire, observation record sheet and interview guide 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. These malls were purposively selected because they had the highest number of monthly visitors. Through the purposive and available sampling techniques, from the population, 40 groups of Mall users (ICM 20, NM 20) were observed. The mall spaces where observations took place were selected based on the following characteristics: they were tastefully furnished, had tables and chairs or spaces for people to stand, a minimum of two groups of people interacting and they were well lighted. 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 thematic approach, while quantitative data were analysed using descriptive statistics.

INFORMATION PROCESSING THEORY (IPT)

Information processing theory originated from the cognitive revolution in the late 1950s. The cognitive revolution was an intellectual movement that was born out of the gaps discovered by a few psychologists such as Karl Lashley, George Miller, and Noam Chomsky. In their various critiques, they converged upon the importance of mental processes and the lacking ability to understand the human mind (Alvarado, 2012). The information processing theory, therefore examines what makes people attend to one thing rather than another (selective attention); Why people sometimes switch their attention to something that was previously unattended (divided attention) and how many things we can attend to at the same time (attentional capacity) (McLeod, 2008). Information processing theory sees the individual as a processor of information in the same way that a computer takes in information and follows a program to produce an output. The computer was used as a tool for thinking of how the human mind handles information. This information can be used by other parts of the brain relating to mental activities such as memory, perception, and attention (McLeod, 2008).

Information processing theory sees attention as the concentration and focusing on one or multiple tasks. Hemmelgarn (2011) explains that there are four different types of attention. Selective attention which deals with focusing on a specific aspect of a situation while ignoring others; divided attention is focusing on more than one activity at once; sustained attention is the ability to stay focused on a specific activity for a long period of time while executive attention includes planning, applying attention to specific goals,

detecting errors and making up for those errors, monitoring progress, and dealing with difficult situations. Divided attention is usually caused by multitasking which can be harmful and distracting but if people are able to multitask well, they can better process information. Information processing theory, therefore, conceptualises and explicates key psychological mechanisms underlying audience use and enjoyment of media content. It uses mechanistic analogies to describe and interpret how people take in and make sense of the flood of information their senses encounter every moment of each day (Baran & Davis, 2012).

A CRITIQUE OF THE INFORMATION PROCESSING THEORY (IPT)

Information processing theory is known to effectively illustrate the basic strengths and limitations of earlier effects theories. For instance, it focuses on the individual as a thinker and is not simplistic as the earlier behaviourist theory (Cambell, 2018). Recognising the human mind's capacity to think shows the theory's acknowledgment of an active rather than a passive audience. It also shows that the human mind serves as a tool for people to decide on how they are affected by the media. Secondly, the theory provides an objective perspective on learning as it suggests that mistakes are routine and natural. People are known to view learning subjectively, they blame themselves if they fail to learn something they believe they should have learned or that appears to be easy to learn and assume that with more conscious effort, they would have done better. But in all of these, IPT examines whether or not a little more attention would have really helped, going by the proposition of the theory that humans have limited cognitive resources and if more resources are directed towards one task another task would be performed badly (Baran & Davis, 2012). The theory clearly opines that a little more attention to one aspect of information processing often leads to a breakdown in some other aspect. Apparently, IPT does not blame the audience for making mistakes when they attend to media instead, it predicts these mistakes based on challenges posed by the content and normal limitations in people's information processing capacity (Baran & Davis, 2012). The present study draws from this strength of the IPT as it examines Lagos mall users' smartphone use during face-to-face interactions to see the extent to which they are able to combine these two information processing tasks.

Also, IPT sees the individual as a processor of information in the same way that a computer takes in information and follows a program to produce an output (McLeod, 2008). Therefore, the theory attempts to describe at a very high degree of precision the cognitive structures and processes that underlie cognitive performance (Demetriou & Raftopoulos, 2005). This is largely achieved through its analogy between the human brain and the computer, presenting the computer as a tool for thinking of how the human mind handles information. Since computers have become a crucial part of our daily lives and a lot of people are getting more familiar with operating them, this analogy between the human brain and the computer creates a clear picture that enables individuals to understand how the brain processes and utilizes information that it receives.

In addition, IPT provides specificity for what is generally considered routine, unimportant behaviour. Such regular, yet critical behaviours are part of the daily routines of human beings most of which are performed unconsciously and go unnoticed. For instance, in engaging in face-to-face interactions, interactants are faced with several facial expressions, eye and body movements which display sensory information. Baran and Davis, (2012) note that much of the cognitive processing capacity of the human brain is effectively devoted to taking in and unconsciously interpreting this sensory information

yet most people do not think about the information these cognitive processes produce. Our lives are full of sensory experience, we all respond to sensory information, we touch, move, see, hear, taste and smell and when we manage to interpret this sensory information with ease, they impact on our behavior at a subconscious level (Falkirk Council, 2016). Information Processing Theory, through its perspectives on attention therefore, provides a way for individuals to make sense of and attend to the sensory information that they experience. The theory thus is relevant to understanding how people deal with sensory information, how they screen out internal and external stimuli to focus their attention on a particular task.

Despite the strengths of IPT, it is not without its weaknesses. A major limitation of the information processing theory comes from its analogy between the human brain and the computer. The decision to compare the human brain to the computer is flawed because the computer is a complex machine, programmed to perform efficiently unlike the human brain that acts spontaneously in most cases. Information Processing Theory is also criticised for being too oriented towards the micro level as it overemphasises routine media consumption and focuses too much on cognition, ignoring such factors as emotions (Baran & Davis, 2012). This weakness of the IPT is also linked to its analogy between the computer and the human mind. Cambell (2018) notes that in looking at the human mind as a computer, IPT does not take emotion into context. This is clear because unlike the human mind, the computer is a machine, with absolutely no capacity to display emotions. But the human mind can experience fear, compassion, joy, sadness and lots of other emotions capable of affecting human actions. If this is the case, the mind stands no chance of performing as effectively as the computer and the computer-mind analogy may prove unrealistic. Information processing theory is also criticized for not explaining how deeper processing results in better memories in the sense that retrieving information from long term memory has more to do with connectors and associations (Cambell, 2018).

NICHE MEDIA THEORY

Niche media theory is a useful framework for examining the relationship between new and older forms of communication. The Niche media theory was first applied to media studies by Dimmick and Rothenbuhler (1984) to explain how new media forms keep up with and coexist with traditional (old) media forms for users attention (Dimmick, Feaster, & Hoplamazian, 2010; Gaskin & Jerit 2012; Ramirez et al., 2008). The theory originates from the ecological study of competing animal populations and it was propounded by Joseph Grinnell who examined the influence of the environment on the distribution of populations and their evolution (Pocheville, 2015).

This theory became useful in communication studies to explain how communication forms, like plants and animals in nature, depend on resources for survival and must compete to occupy a niche in a relevant resource domain. In order for this to happen from the perspective of an audience, a communication medium must differentiate itself from others with regard to the resources to which it provides access (e.g. news and entertainment) or with regards to the time and space locations to which it allows access (Dimmick et al., 2010). This is called competitive superiority a term which refers to a medium's capacity to outcompete other media with regard to one or more of those dimensions. If a medium cannot differentiate itself through some form of competitive superiority, it will not be able to survive or coexist with other media for serving an audience (Dimmick et al., 2010). This goes back to the gratifications people seek from their media use. If a media consumer is unable to get a widely sought gratification from using

a particular medium to communicate such user could be forced to leave that medium for another. These dimensions or notions of time and space refer to the time and location of the media user. A medium high in gratification opportunities has a higher probability that a user will be able to gratify a need in a particular time-space location. In this regard, portable or mobile media are particularly high in gratification opportunities and could have more people using them than would other less portable media like television and radio. So for media within a domain such as news and information to coexist, there must be differences in their niches (Dimmick et al., 2010).

In addition, the niche media theory predicts that a new medium will attempt to keep up with established media for limited resources. These resources are defined as media consumers (Haniff, 2012), which translates to consumer satisfaction and time. Consumers' time is a crucial resource for which all media compete and consumers' gratification results in consumers spending more time with certain media (Dimmick, Chen, & Li, 2004). If this competition exists, then the consequence for the older medium consists of exclusion, replacement, or displacement wherein the new medium takes over some of the roles played by the older medium (Dimmick et al. 2004). This prediction of the niche media theory centers on the basis that new media will replace traditional media if the former satisfies the same needs as the latter and does so more successfully (Gaskin & Jerit, 2012).

The niche theory also predicts that people who view new media as a superior method for satisfying particular gratifications vis-à-vis a traditional means of communication will report less time spent using that traditional outlet. Conversely, people who view new media and older forms as providing similar gratifications or those who view new media as inferior to older forms of communication should be less likely to replace traditional media with new media (Gaskin & Jerit, 2012). "People make rational choices that relate to a particular communication medium with specific tasks and degree of richness required. Cell phones are rich in meeting needs for instant feedback, multiple cue transmission, natural language, social interaction, and personal focus" (Obono, 2016: 109). Face-to-face interactions, on the other hand, are known to build trust, relationships and create personal connections. These gratification opportunities are defined as consumers' beliefs that a medium allows them to obtain greater opportunities for satisfaction; they are properties of a medium that amplify or attenuate the opportunities for deriving gratification from the medium.

There are three concepts within the niche media theory that determines the competition and coexistence between two mediums, they are niche breadth, niche overlap and niche superiority (Haniff, 2012). These three concepts explain the relationships between various forms of communication and user populations. Niche breadth from the perspective of a user population is the range of resources a medium provides. It pertains to the variety and magnitude of gratifications provided to a population through its use (Ha & Fang, 2012). Niche breadth describes a medium's use of resources: a specialist medium has narrow breadth using limited categories of consumers while a generalist medium has a wider breadth, employing the broad use of consumers (Haniff, 2012).

In the context of new media and older means of communication, niche breadth will measure the variety and magnitude of gratifications that new media provides consumers in relation to older communication forms to see which has a narrow breadth and which has a wider breadth. Niche overlap measures the extent to which two media are viewed by consumers to provide the same gratifications. In a situation of high competition or overlap, two media are attempting to fulfill the same role or niche for users (Ha & Fang,

2012). A high degree of overlap indicates that one medium's function can be replaced by the other, triggering competition if there are similarities in function between the competing media. A low degree of overlap indicates that the two media's diverse functions are able to complement each other and facilitate coexistence (Haniff, 2012). Thus a medium's ability to differentiate itself through the gratifications it provides consumers determines whether or not it will coexist with the other medium or be replaced by it. Niche superiority measures the degree to which a medium more greatly gratifies needs for a focal group than a competitor within a gratification dimension (Ha & Fang, 2012).

Niche superiority weighs competitive exclusion against displacement to determine a medium's superiority over another. Under niche superiority, the superior medium better fulfills consumer gratifications and is, therefore, able to extinguish the inferior medium's access to resources. In this regard, for more consumers to spend time on a new medium, it is suggested that such medium demonstrates superiority by providing competitive contents more easily and effectively, thereby creating a high overlap in function and excluding the older medium from the use of common resources which are the consumers (Haniff, 2012).

A CRITIQUE OF THE NICHE MEDIA THEORY

In 1981, the National Association of Broadcasters used "ecological niche" as a metaphor to predict the fluctuating categories of national cable network programs in the midst of new media forms (Dimmick & Rothenbuhler, 1984). The theory has been used to study advertising in television, radio, and newspapers and to examine online usage by factors of gender and functional displacement (Haniff, 2012). The theory of the niche is said to have taken care of some of the limitations of the uses and gratifications theory because it explains how media compete to provide gratifications and obtain limited resources (Ha & Fang, 2012). The uses and gratifications theory has been useful in explaining media use by individuals; however, it has been limited because of its consideration of the use of a medium independently from other media options available and from use trends occurring at the level of a population. The theory of the niche has been used to partially overcome some of the weaknesses of the uses and gratifications theories by examining uses and gratification concepts in the context of media competition (Feaster, 2009). It allowed gratifications and media use to be examined within the context of an intense inner medium competition (Ha & Fang, 2012). Rather than replace older theories such as the uses and gratification theory, niche media theory complements existing theories which can provide insight into competition within and between media industries (Dimmick, 2003).

Another major weakness of the niche media theory is its limited ability to describe relationships between populations. It is likely that the theory's usefulness extends in explaining the differences between past and present behaviours rather than providing long term predictions (Dimmick & Rothenbuhler, 1984). In this regard, the relationship that exists between new evolving means of communication and the implication of this relationship is given less attention.

RELEVANCE OF THE THEORIES TO THE STUDY

Information processing theory is relevant to the study of multitasking using smartphones during face-to-face interactions because of its assumptions on attention. The information processing theory's proposition on divided attention which evaluates why people sometimes switch their attention to something that was previously unattended

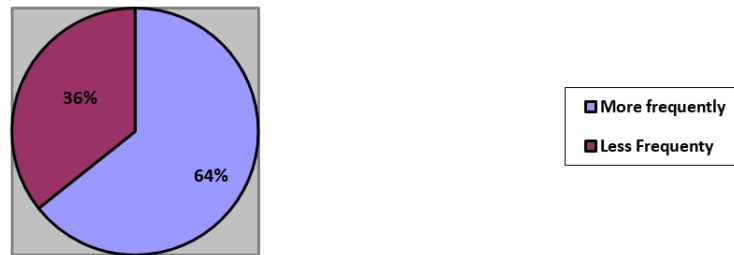


Figure 1. Frequency of smartphone use during face-to-face interactions

was useful in investigating why mall users switch their attention from face-to-face interactions to smartphone use. It was found that majority of the mall users switched their attention to their smartphones when they lacked interest in ongoing interactions or when the interactions become boring. Another reason why mall users switched their attention from face-to-face interactions to smartphone use was seeing others engage in this multitasking behaviour. This finding is in line with the observations of Finkel and Kruger (2012) and Geerdink (2014) on contagious cell phone use. Their results showed that when one person in a face-to-face interaction engages in using smartphones, the other person is excluded and pushed to using smartphones to promote feelings of social inclusion. This defeats the whole essence of communication because face-to-face interactions cannot take place when no one is talking or listening. Habitual smartphone use was also found to be a reason for switching from face-to-face interactions. In this case, smartphones were not necessarily used for fulfilling any particular function. Mall users who did this were just in the habit of fiddling with their phones while interacting.

Investigating the influence of smartphone use on face-to-face interactions among Lagos mall users was an objective guided by the proposition of the information processing theory that humans have limited cognitive resources and if more resources are directed towards one information processing task, another task will be performed badly (Baran & Davis, 2012). This proposition of the IPT suggests that when multiple tasks are performed, the task that receives less attention is performed badly. In the case of smartphone use during face-to-face interactions, literature establishes that people give more attention to smartphones than face-to-face interactions. In a study of over 200 students observed in the presence of others, 69% were texting or holding their phones, talking on the phone or wearing earbuds and only 26% were not using technology (Drago, 2015). Likewise, when smartphones are present during face-to-face interactions, “people have the constant urge to seek out information, check for communication, and direct their thoughts to other people” (Misra et al., 2016: 291).

Data from the study greatly affirms these findings on face-to-face interactions receiving less attention when smartphones are used as the study reports having a high number (64%) of mall users frequently using their smartphone during face-to-face interactions as shown in [Figure 1](#).

Although this multitasking behavior is said to impact negatively on the quality of face-to-face interactions, the study found that mall users did not do so badly when it came to using smartphones during face-to-face interactions and attending to ongoing interactions although they would have done better. The study found smartphone use to impact negatively on mall users’ situation awareness, attention to body movements, requesting conversation partners to restate what has been stated before and in the hours spent communicating. Qualitative data revealed that some of the mall users have developed skills that may have enabled them achieve some level of success while using their

smartphones during face-to-face interactions. However, the niche media theory suggests that there are still certain implications for the forms of communication used simultaneously.

The study investigated how Lagos mall users perceive the gratifications of smartphones in relation to face-to-face interactions based on the Niche media's proposition that people who perceive new media as a superior method for satisfying particular gratifications vis-à-vis a traditional outlet are more likely to replace the older form with newer ones. The study, however, found an interesting twist to this proposition of the Niche media theory. It was found that the decision on whether or not smartphones will replace face-to-face interactions is mainly a matter of preference which is determined by the gratifications users receive from a particular means of communication. People would not necessarily replace an older form of communication with newer ones simply because the newer one is perceived as being more superior. The study found that although more (22) mall users perceived face-to-face interactions as being more superior to smartphones, they were still more likely to replace face-to-face interactions with smartphone communication. Therefore, in contradiction to the proposition of the niche media theory, the study found that the older form of communication was perceived as being more superior than the newer form yet, the newer form was the medium of choice.

CONCLUSION

To examine the influence of smartphone use during face-to-face interactions among Lagos mall users, this study adopted theories that provided a way to investigate media multitasking. To an extent, the findings from the study support IPT's proposition that when multiple tasks are performed the task that receives less attention is performed badly. Although most of the mall users achieved quality interactions, in cases of situation awareness, duration of interactions, and recall there were lapses. In addition, the study found an interesting twist to the niche media theory's proposition on overlap, mall users who perceived face-to-face interactions to be more superior to smartphone communication were more likely to replace face-to-face interactions with smartphone communication.

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