# Understanding Consumer Satisfaction in Emerging Markets: The case of Chinese Mobile Devices in Nigeria


## Abstract

**Purpose –** The purpose of this study is to use the consumer-based expectancy disconfirmation theory to examine consumers' behavioral motivations for using mobile devices and the factors that influence the rapid diffusion of Chinese mobile devices in Nigeria.

**Design/method/approach** – Data were collected using focus group interviews with samples cutting across users, technicians and experts from Port Harcourt, Nigeria's industrial capital. This study conducted a thematic analysis of the data with NVivo Pro 11.

**Findings -** We found that weak regulatory environment opened the Nigerian mobile market to the influx of mobile devices from Chinese local manufacturers. Though largely absent in developed markets, Chinese mobile devices are household names in Africa, particularly Nigeria. Having studied the Nigerian market, Chinese mobile device manufacturers have incorporated features and specifications in their mobile devices that are adapted specifically to this market. Our findings also show that these 'China phones and tablets' are significantly inferior to those manufactured by global brands.

**Research limitations/implications** – While the study could not look at the economic, environmental, and health implications of the high death rate of the mobile devices, it however provides useful insights on the application of the consumer-based discrepancy theory.

**Originality/Value**– Our study is the first to empirically examine the diffusion of Chinese mobile devices in one of the key emerging markets in Africa. Our study provides blue print for the local regulatory authorities on how to strengthen their regulatory oversight and also advances critical understanding on how Chinese mobile device manufacturers can improve their technologies and optimize market opportunity in Africa.

**Paper type** – Research paper

*Keywords: Consumer satisfaction, emerging markets, expectancy-disconfirmation theory, smartphones, Chinese mobile devices*

## INTRODUCTION

The liberalisation of the telecommunications sector has leapfrogged many African countries across the digital divide and provided widespread access to mobile phones. The huge population and increase in middle-income earners has created a sizeable market for mobile phone manufacturers. Consequently, Chinese phones manufacturers are producing mobile phones of different designs, specifications, and prices targeted at this market. Importantly, compared with globally established brands, Chinese phones are perceived to be cheaper and come with almost the same specifications as those of the global brands. This makes them a preferred option for many mobile phone users. Thus, ubiquitous access to the internet and social networks has become a common feature among Nigerian mobile device users (Awoleye et al., 2008).

The opening of the telecommunications sector in 2002 came with many opportunities and challenges (Asongu & Nwachukwu, 2016). The first licensed operator, MTN, offered its subscriber identity module (SIM) card for about $67, and mobile phones were sold for between $120-$230, depending on the brand (United States Embassy in Nigeria, 2012). Later, Globacom was licensed and crashed the price of a SIM to $7; this later became free. The challenge lay in the availability of SIM cards with concurrent limited access to mobile devices. Consequently, "Shanzhai handset" manufacturers identified this opportunity in Nigeria, and shipped these products, which ranged in price from $20-$150. Many Nigerians who could not afford mobiles previously could now own their mobile handset. Initially, Chinese mobile phone manufacturers were dominated by "Shanzhai handsets." These brands of handsets were perceived as a mimetic version of global brands in design, brand name, and appearance (Chen and Wen, 2016). They were also perceived as inferior, as those who used them were mainly the poor. However, the introduction of the Chinese own flagship Time Division-Synchronous

Code Division Multiple Access (TD-SCDMA) for 3G mobile phones revolutionized the Chinese mobile phone industry, leading to the emergence of Chinese genuine mobile phone manufacturers like Huawei and ZTE. Interestingly, the attractiveness of the Nigerian market has seen a massive diffusion of these mobile devices (see Table 2). Because these Chinese mobile phones are very cheap and the regulatory framework for the industry is relatively weak in Nigeria, they have saturated the mobile phone market in spite their glaring functional deficiencies in comparison with the global brands.

Although considerable research exist on the penetration of mobile devices in Africa, mostly focusing on their effect on poverty reduction, quality of education, entrepreneurship and environmental sustainability (Asongu, 2015; Asongu and Nwachukwu, 2018; Afutu-Kotey, Gough and Owusu, 2017; Asongu, Le Roux and Biekpe, 2018). Some few others have looked at the enhancing role of mobile devices on the diffusion of mobile financial services in Africa (Humbani and Wiese, 2018; Muthinja and Chipeta, 2018; Gosavi, 2018) and consumers' perception of telecommunication services (Olatokun and Ojo, 2016). Of particular note is an earlier study (Etzo and Collender, 2010, p.666), where it was highlight that "cost and usability problems restrict many from benefiting from the full functionality of mobiles" in Africa. After more than a decade, it is however surprising that critical questions relating to consumers' satisfaction/dissatisfaction with mobile devices and the underlying motivations, particularly the performance and functionalities of the hardware components of such devices remain unanswered. Therefore, the objectives of this study are, first, to understand the behavioural motivations for using smartphones and tablets in Nigeria; second, to understand the factors influencing the high rate of diffusion of Chinese mobile devices; third, to understand how Nigerian mobile phone users view the differences between Chinese mobile devices and those

of global brands; and finally, to understand the future of Chinese mobile devices in the Nigerian mobile phone industry.

Against this backdrop, our study advances knowledge on consumer satisfaction/dissatisfaction with mobile devices using the consumer-based discrepancy theory. By integrating system quality, information quality, service quality, price, uniqueness, and user knowledge in the theory, we identify the expectation from users and performance of Chinese mobile devices. Furthermore, our study provides evidence supporting the notion that in Africa's emerging markets, weak telecommunications policy and a lack of industry regulatory framework have led to the influx of substandard mobile devices that have dire consequences on economy (Gillwald, 2005). In this study, "mobile devices" refers to mobile phones and tablets, while "users" and "consumers" constitute the users of the mobile phones and tablets. The rest of the article is structured as follows: section two discusses the consumer-based discrepancy theory, section three outlines the methodology, and section four presents our data analysis and results. We conclude in section five with the discussion and conclusion.

## CONSUMER-BASED DISCREPANCY THEORY; EXPECTATION VS PERFORMANCE

Academic literature on consumer research identifies customer satisfaction as an important evaluation criterion for continuous usage of a technology (Yeon et al., 2006). Thus, customer satisfaction/dissatisfaction is modelled based on two experiential episodes: one, as evaluative judgement based on the perceived discrepancy between prior expectation and post-consumption assessment (Szymanski and Henard, 2001) and, two, as pre-existence of comparison standards and disconfirmation. Expectation has always been modelled either as anticipation or comparative referents (Szymanski and Henard, 2001). Expectation as

anticipation implies that consumer evaluation of a product's performance is not based on any assessment or comparison with a product; instead, the consumer determines performance levels and thus evaluates satisfaction based on performance level attainment. Furthermore, expectations developed through comparative referents incur the assessment of the product's performance based on certain standards. Positive disconfirmation arises when the performance is better than the expectation, and negative disconfirmation occurs when the expectation is better than the performance (Venkatesh and Goyal, 2010).

The literature is explicit on the role of performance in consumer satisfaction. Performance is the ability of a product to fulfil the expectation of the consumer (Jian et al., 2012). Consumer satisfaction, defined as a "post-choice evaluation which varies along a hedonic continuum from unfavorable to favorable, in terms of whether or not the experience of a specific purchase was at least as good as it was supposed to be" (Jun et al. 2001, p. 142), differs between contexts, products, services and individuals. When evaluating such differences, scholars have used many theories, including the consumer-based discrepancy theory, and as posited by Jian et al. (2012, p. 142), "satisfaction is often the effect of discrepancy theory." This theory has been used in management studies on job satisfaction, as well as marketing studies on consumer satisfaction and user satisfaction with information systems.

Consumers purchase goods and services with expectations regarding anticipated performance. As soon as those products or services are purchased and used, performance is compared against expectations. If the outcome matches anticipated expectations, confirmation occurs (Pizam and Milman, 1993). On the contrary, disconfirmations occur when there are significant differences between pre-purchase expectations and anticipated outcomes. In such cases, negative disconfirmation simply means that the product/service performance was less than expected,

while positive disconfirmation occurs when the received outcome exceeds the pre-purchase expectations.

The introduction of Expectancy Disconfirmation Theory (EDT) facilitated the measurement and prediction of customer satisfaction (Elkhani and Bakri, 2012) through various models, which provide further explanation of how satisfaction is formed (Lankton and McKnight, 2012). Despite the availability of numerous benefits, the spectrum of measurement tools is still not tested in all industries or product categories (Yuksel, 2001; Ryzin, 2006). It is possible to apply them independently or in combination with each other, according to Wang and Chang (2013). There is a well-established body of literature and several approaches to how the aforementioned gap between personal standards and actual experience is determined. These cognitive processes of comparison are known as discrepancy theory. Discrepancy is a perceived difference between an anchor and a personal understanding of accomplishment along the same dimension (Michalos, 1985; Oliver, 1981). Usually, people establish this anchor as a result of social pressure, recognized pre-fixed goals, personal expectations, or any existing bias. There are two different versions of discrepancy according to Michalos (1986): (1) a "goal-achievement gap," referring to discrepancies between the initial goals of individuals and their actual outcomes and (2) an "expectation-reality gap," focusing on the perceived gap between the actual performance of an experienced service and an individual's expectations. In simple management terms, expectations reflect expected service or product performance (Szymanski and Henard, 2001). Performance in consumer studies is the ability of the product or service to add value based on the promise made by the provider. Michalos (1986) reported that most studies that incorporate discrepancy theory reported finding a significant relationship between the satisfaction levels of individuals and some type of perceived "gap" between what they currently have and what they want to have. These findings provide strong support for the

importance of discrepancy theory in predicting customer behaviour and explaining service success or failure based on the difference between expectations and performance.

Consumer satisfaction with an information technology is critical for successful diffusion (Leonhardt and Chu (2017). To this end, empirical evidence suggests that integrating the EDT with the technology acceptance model (TAM) successfully predicts consumers' satisfaction with an information system (Bhattacherjee, 2001). TAM holds that technology adoption is predicted by two key factors: perceived usefulness (PU) and perceived ease of use (PEU) (Davis, 1989). While PU refers to the degree to which a person believes that using a particular system will enhance his or her job performance, PEU implies the degree to which a user believes that using the system will be free of effort. Accordingly, in a study of mobile learning among university students, Joo, Kim and Kim (2016) found that PU and expectation-confirmation were positively related to satisfaction. Thus, our conceptual model in Figure 1 draws from discrepancy theory and integrates system quality, information quality, service quality, price, uniqueness, and user knowledge to identify user expectations and the performance of Chinese mobile devices.

**System quality**

System quality is supposed to measure the desired characteristics of a system. Users of that system usually assess the quality of the system via its usability, availability, reliability, adaptability, and response time. System quality is also measured by other attributes like ease of use, functionality, data quality, flexibility, and integration (DeLone and McLean, 2003). System quality represents a measure of the extent to which the system is technically sound. Seddon (1997) suggests that ''system quality is concerned with whether there are bugs in the system, the consistency of user interface, ease of use, quality of documentation, and sometimes,

quality and maintainability of program code" (p. 246). Sedera and Gable (2004) introduced a sound measurement of system quality, which created nine attributes-ease of use, ease of learning, user requirements, system features, system accuracy, flexibility, sophistication, integration, integration, and customization.

**Information quality**

Information quality introduces the issue that any service-related content should be personalized, complete, relevant, easy to understand, and secure in order for users to initiate interaction with the service. Researchers have used a variety of attributes for information quality. Nelson et al. (2005) suggested accuracy, completeness, currency, and format for information quality. Doll and Torkzadeh (1988) introduced content, accuracy, format, ease of use, and timeliness to measure information quality with regards to end user computing satisfaction. Huh et al. (1990) defined four dimensions of information quality, namely accuracy, completeness, consistency, and currency.

**Service quality**

Service quality refers to the overall support offered by a service provider. Irrespective of who is providing this support, service quality's role is of paramount importance as indicated by most relevant studies in marketing and information systems or technology acceptance. Low service quality means poor user support and in turn unhappy customers and drops in sales. The construct of service quality has been defined as the degree of discrepancy between customers' normative expectations for service and their perceptions of service performance; its identification has led to the development of the SERVQUAL instrument (Zeithaml et al., 2002). Accordingly, Cronin and Taylor (1994) introduced the SERVPERF instrument, which measures only customer perception of quality.

**Price**

Zeithaml (1988) posits that price is what the customer gives in exchange for a product. Peng and Wang (2006) identify four dimensions of negative consumer perceptions of price: price consciousness, value consciousness, sales proneness, and coupon proneness. Price consciousness is the consumer's intent or focus on paying low prices. Value consciousness is the consumer's evaluation of the price paid in comparison with the quality delivered. Sales proneness is the consumer's sensitivity to price in relation to discounts from the regular price. Finally, coupon proneness is the consumer's desire for a reduction in price, which leads to a better evaluation of service compared to the product's regular price. Bansal et al. (2005) found that higher prices tend to push customers away just as these customers perceived price to have a higher impact on their decision to choose a service provider (Peng and Wang, 2006).

**Uniqueness**

Uniqueness distinguishes one product from another. Product uniqueness is defined "as the degree to which the product is designed/made to satisfy unique needs or to be used for unique purposes" (Cavusgil et al., 1993, p.487). Thus, aesthetics and ergonomics are important perceptual attributes of the uniqueness of a mobile device. Aesthetics comprise both the objective features and subjective reactions to the product features (Sonderegger and Sauer, 2010). Importantly, such subjective reactions are determined by the characteristics of the consumers such as age, gender, economic status, or cultural background (Sonderegger and Sauer, 2010). In the context of mobile devices, the objective features comprise the color, sleekness, weight, screen type, or camera pixels. Ergonomics as related to mobile phone, including likelihood of Cubital Tunnel Syndrome (CTS) and interface legibility, must be taken into consideration (Nathan-Roberts et al. 2009). CTS, also called "Tennis Elbow", is caused

by holding the phone, for instance, close to the ear for a long period of time. Such contact usually causes pain due to the emission of chemicals from such contacts. Furthermore, legibility interface is related to contact with the phone, especially when reading texts, chatting, or browsing for a long period of time. Poor legibility interface can cause eye strain, which forces the user to change position.

**User Knowledge**

Users' awareness, familiarity, and expertise in the operation of an information system is important for optimizing its use. Thus, user satisfaction is anchored in the ability of the user to co-produce and co-create the product or service (Sun et al., 2012). However, the user requires a sufficient amount of information on how to operate the piece of technology. In the context of mobile devices, the amount of information users receive can enhance device usage and optimize satisfaction. Producers need to orientate consumers through adequate publicity. This could be in the form of physical product demonstration on selected sites, through advertising, or through a number of other mediums used to educate consumers.

**Figure 1**

## METHODOLOGY AND TECHNIQUES

A focus group is "an in-depth, open-ended group discussion of 1-2 hours' duration that explores a specific set of issues on a predefined and limited topic. Such groups consist typically of between five to eight participants and are convened under the guidance of a facilitator" (Robinson, 1999, p.905). Consistent with earlier scholars, Kraaijvanger et al. (2016) used focus group interviews in their study and transformed the focus-group conversation to mind maps.

The focus group method was selected for the present study because it addressed an unexplored area, and thus an in-depth understanding of consumers' satisfaction/dissatisfaction with mobile technology devices was necessary. Our sample comprises 51 respondents as shown in Table 1, which depicts participants' demographic characteristics. The demographic profile of the respondents is presented in Table 1.

**Table 1**

The setting for the interview was the guest house of a higher education institution in Rivers State, Nigeria. The guest house is in a serene location and paved the way for a free flow of communication between the moderator interlocutor (moderator's assistant) and the participants (Bostan, 2015). To recruit the respondents, volunteers were solicited from their departments with a motivation of $2 per participant and all student informants were paid accordingly. Rivers State was chosen because it is considered the Niger Delta's capital, thus the "oil center" and industrial backbone of Nigeria. It also has a population representing every tribe, profession, class, and religion (Omubo-Pepple et al., 2010). Additionally, a higher educational institution was chosen because of access to different users from different backgrounds. Scholars have used such settings in consumer satisfaction/dissatisfaction literature previously (Zhou, 2011). Accordingly, the majority of respondents in such settings are students. For instance, in a study on mobile phone ergonomics, young adolescents (14-17 years) constituted the sample (Sonderegger and Sauer, 2010). Among the students in our focus group sessions, some were also mobile phone technicians and repairers in the technical departments of the higher education institution. We argue that a student sample is the most appropriate for our study because the leapfrogging of the African continent through mobile telephony has left the older generations outside the scope of this study. Thus, while many of the older generations possess

mobile devices, they only use them for calling. Moreover, those who explore the different uses of the mobile devices are mostly millennials (Woodman, 2015). They versatilely use mobile devices for social networks, gaming, browsing, and even downloading materials for their assignments, in addition to the primary function of making and receiving calls. Thus, they are best suited to identify the strengths and weaknesses of particular mobile devices.

Each focus group session comprised of 6-9 participants (Krueger and Casey, 2002). The questions were reviewed by an expert for relevance, coherence, and readability. In successfully adopting discrepancy theory, the state of nature and the anchor must be specified. As argued by Jiang et al. (2012), the anchor should be basic and maintain a consistent meaning across subjects in order to avoid ambiguity. Consequently, the anchor in this study consisted of basic user expectations for mobile devices such as call quality, fair price, speed, durability, ruggedness and browsing functionality. The state of nature represents the mobile device. These were clearly illustrated in the questions.

To help the participants discuss freely, the moderator introduced the study focus and encouraged participation without fear (Kraaijvanger et al., 2016). The moderator defined Chinese and other global smartphones and tablets in the context of the study and gave an overview of the content of the study, while also introducing themselves and sharing past experiences with and exposure to smartphones and tablets. The moderator's assistant ensured the safe recording after a pre-test at the onset of the interview. The group interview lasted for an average of one hour. The moderator and the moderator's assistant worked together to ensure the success of each focus group interview. At the end of the fifth session, all audio files were transferred from the recording device (iTel tablet) to a laptop for transcription and aggregation of the data. Transcription was completed by an experienced member of the research team, and

the hard copy of the transcript was returned to the participants to check for discrepancies and ensure the validity of the data.

## DATA ANALYSIS AND RESULTS

In order to enhance the robustness of the data analyses, we conducted a thematic analysis with NVivo Pro 11 for deductive coding (Fereday and Muir-Cochrane, 2006). The strength of thematic analysis lies in its flexibility; it is a versatile research tool that can enrich research analysis and glean detailed information from data (Braun and Clarke, 2006). The initial procedure of cleaning our data before coding occurred in three stages. First, we imported the five Word document transcripts into the internals folder of NVivo. In a second step, we ran a "word frequency query" to assess the word count. We examined the data pattern through three metrics, "word cloud," "tree map," and "word clustering." The results of the word clustering were examined by the research team members independently and then jointly discussed to enhance the validity of the results; thus, we had a data familiarization meeting as suggested by Parkinson et al. (2016). The results showed areas of emphasis by the participants regarding the discrepancy of Chinese and the global brands' smartphones and tablets. We probed into the reasons for close and distant clustering, which helped in coding efficiently. In the third step, we compared the "sources" and ran cluster analysis on them based on word similarity using the similarity metric of the Pearson correlation coefficient in NVivo. Figure 2 and Figure 3, respectively, show the thematic coding and word clustering as obtained from the NVivo analysis.

**Figure 2 & Figure 3**

### Hardware and system functionalities

System level performance, in terms of quality and functionality, determines smartphone and tablet users' satisfaction. Users want to enjoy the worth of what they paid for and to know if the degree of responsiveness of their device interface corresponds to the manufacturer's specification. They are interested in the speed of their smartphone and tablet from their input to the central process unit (CPU), memory, storage, and the output. When considering which smartphone or tablet to purchase, a user should consider the system quality of the device in terms of adaptability, availability, reliability, response time, and usability (DeLone and McLean, 2003). We asked the focus group respondents to compare Chinese and the global smartphone and tablet brands in terms of system quality. The excerpts below depict the views of the respondents:

> *I will use the comparison in the sense of Nokia phone. When you buy a Chinese phone, and it is written Nokia, basically it is not Nokia but Nokla; the "i" is changed to "l," and in the normal Nokia you will see the N coming together but in a Chinese Nokla the N does not come together; they are actually separated apart. Basically, it did not last long, it tends to wear out in less than 2 years, and the buttons get weak over time. The phone looks more of a lesser quality…it is better you get something that will last and meet your expectation than you buying a Chinese phone, which can disappoint you at an important point in time. So, phones like Nokia, Microsoft, iPhone, Sony I will want to go for. Chinese phones are not durable; it is useful between 1 to 2 years [Male, student, age 27, FG6]*.

> *If you will put the two together, nowadays it is very difficult to know the difference between the durability of both. They both tend to compete with one another when it comes to durability [Male, student, age 29, FG6]*.

The participants raised important issues regarding the system quality of both Chinese and other recognizable smartphone and tablet brands in Nigeria. They emphasized "durability," "imitation," "hardware and software quality," "accessibility to the internet," and "speed." They perceived differences between the hardware and software functionality of the Chinese smartphones and tablets and those of the established brands like Samsung, Nokia, iPhone, Sony. To some users, this is apparent in the quality of the camera, sound, and internet

accessibility and speed, while others are mindful of the lifespan of the smartphones and tablets in extremely hot weather (e.g., > 35ºC). For example, one interviewee stated, "…*generally speaking, when it comes to using it across different temperatures the functionality doesn't seem to waver so much [Male, student, age 29, FG6]*." Surprisingly, two years after Microsoft bought Nokia (mobile phones), this brand still has a significant impact in the African market, especially in Nigeria. A user commented on the ruggedness of Nokia smartphones and tablets: "*Nokia is well known for their very good and sophisticated hardware. However, considering the fact that Chinese smartphones are also getting better all the time in terms of the quality of the hardware… [Male, student, age 29, FG6]*."

Innovative design and performance can add value to smartphone and tablets, improving usability and smart accessibility. Consumers are interested in portability, aesthetics, ergonomics, battery efficiency, and multimedia features such as the camera, audio, and video capabilities of their mobile device. Smartphones and tablets are becoming sleeker, thinner, and smarter. Despite these developments in the mobile industry, there is still a lacuna when we compared consumers' perceptions of Chinese-branded smartphones and tablets and those of other brands. The following questions were asked to discuss these issues: As a Chinese mobile phone user, what do you like the most about the features of your smartphone or tablet? Why have you repeatedly bought Chinese smartphones or tablets? The following reflections were obtained:

> *My experience with the Chinese smartphones, especially nowadays…it tends to come with a lot more functions and durability. If you will put the Chinese and the brand like Samsung, iPhone, Sony together, nowadays it is very difficult to know the difference between the durability of both [Male, student, age 29, FG6]*.
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> *Samsung phones are better in design…most people want to go for the Chinese phone because of their phone battery life…the Blackberry battery lifespan cannot be compared with the Chinese phone battery…the Chinese phone battery is better. A Techno battery lasts longer than a*

> *Blackberry battery, but the Nokia battery is the best in lifespan. I remember when I started using a phone my mother bought me a Novo phone; when it was ringing, you will be angry because the volume was something else, and the camera quality was very poor unlike the Phone brands like Samsung, Blackberry and others. [Female, student, age 23, FG1]*.
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> *Chinese phones…are very much attractive and have different types of applications…and these apps are very attractive to the customers and when it comes to Nigeria, everybody wants to get them [Male student, age, 29, FG2]*.

Smartphone and tablet uniqueness mean different things to different users. To some users, it is the uniqueness of "battery," "sound," and "camera pictures," while others count uniqueness to be "sleekness" and the ability to use the device for "multitasks." In one passage, the users shared their experiences of battery life. The following users preferred the Chinese smartphone and tablet sound and recorder to those of other smartphone and tablet brands: "*I like the sound of the Chinese phone; it helps me as a musician to entertain my fans with my music*" *[Male student, age 26, FG5]* and "*…the Chinese phone is very good in recording*" *[Male student, age 22, FG3]*. Some participants were satisfied with the call quality, while a large screen was a priority for others. There are differences in how users assess the uniqueness of brands like Samsung, Apple, Nokia, Blackberry, Sony and the Chinese brands like Techno, Imose, Infinix, and Mbo.

For instance, information quality measures distinctive characteristics of the quality of information produced by smartphone and tablet devices; a user should be able to give a vote of confidence or no confidence regarding a device's quality (Eom et al., 2012). The quality of a user manual and mobile device settings has the potential to influence a user's satisfaction in terms of accuracy, relevance, completeness, and clarity (Noh and Lee, 2015). The detailed information that accompanies smartphones and tablets will create an avenue for learning that assists the user to get the phone running; this information should be supportive, relevant, and

intelligent. Specifically, we asked if the user manual was detailed enough to enable them operate their smartphone or tablet. Below is an excerpt from the responses.

> *The user manual I got was in Chinese, and I could not use it. I managed to operate the phone using my past experience [Male, student, age 27, FG6]*.
>
> *The manual comes with some phone and not with some. There are some manuals in the phone, and they were not written in English language. I read but not all [Male, student, age 24, FG2]*.
>
> *I only need my phone and the charger and not the manual. I read the manual before but not all the content [Male, student, age 26, FG5]*.

In these excerpts, the smartphone and tablet users undermine the manufacturers' intention when packaging the devices with a manual. Many users did not maximize the potential of the manual due to language barriers, content ambiguity, poor reading habits, and nonchalant attitudes. Some users relied on their past experience to operate their smartphones and tablets, thus ignoring the content of the manual. Most of the users did not see the relevance of the user manual to operate their mobile devices efficiently.

**User Knowledge, after sales service and warranty**

Expertise in how to use a part of an information system is important for optimizing its benefits (Katono (2011). For complex products, user awareness enhances the co-creation of the product. Chinese mobile devices are prototypically mimetic versions of the established brands with some of them obviously lacking some features available in the global brands' devices. However, some Chinese phones come with complete manuals on how to operate them to enhance customer satisfaction; as one respondent noted, "*There are instructions on how to manipulate the phone, and these instructions are on the manual*" *[Female student, age 24, FG1]*. Much of the complaints arising from the complexity of Chinese phones stem from users

failing to comply with the instructions. User knowledge about manipulating these devices will be enhanced if they read the manuals. Among the respondents, only two persons read the manual at least once. Some did not think the manual was important, others were careless about it, while others thought it was not necessary. When further probed on how they can develop their skills and knowledge on the manipulation of Chinese mobile devices, one individual responded, "*If they can transform text manual to video manual, it will encourage readability, but this should be subject to change from time to time*" *[Male student, age 21 FG1]*. Additionally, understanding is inhibited because most of the Chinese phones have manuals in the Chinese language. However, one of the technicians opined that "*user characteristics play a vital role in phone usage*" *[Female student, age 27 FG1]*. To this end, there are many who learn to use these devices and become proficient out of curiosity, but there are others who continuously complain about the complexity of the devices because they have not dedicated time to learn to use them. Sometimes, impatience results in poor handling of the devices. For instance, one focus group respondent quipped:

> *Nigerians don't like wasting time. I will recommend that the manufacturers should use the English language to write the phone manual. I only need my phone and the charger and not manual [Female student, age 27 FG5]*.

Meeting customers' expectations is a prerequisite of trust building, and service quality is a veritable tool for gaining competitive advantage and for effective differentiation (DeLone and McLean, 2003; Kim and Stoel, 2004; Ejdys, 2018). It is important for smartphone and tablet manufacturers to take their responsibility for providing support to their end users seriously, either directly or through a delegated authority. Users are increasingly seeking consistent service quality (Noh and Lee, 2015). Service quality was discussed with the informants through the following questions: When you have a problem with your Chinese smartphone or tablet, do you have anybody to talk to for help? Was there any warranty or insurance on your smartphone

or tablet when you bought it? How did you solve the problems you encountered while using your smartphone or tablet? Do you get any help from the manufacturer or seller of your smartphone or tablet? The excerpts below provide insight to these questions.

> *There was no insurance because it was a Chinese phone. The only people you can meet to solve problems for you are the phone technicians; these are not Chinese phone technicians. When I encountered a problem with my Chinese phone, I just threw it away because I did not have hope of making it right [Male, student, age 27, FG6]*.
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> *I have not had any problem with my Chinese smartphone while the warranty is still available, but one thing I know, for example, is that the manual tends to emphasize that this particular smartphone that I bought has a thirteen-month warranty. On the issue of warranty, the seller took extra money from me before they replaced it for me. Most of the sellers refuse to honor the promise of warranty if the user has tampered with the phone [Male, student, age 20, FG5]*.
>
> *Many people are not eligible for the warranty because of the self-condition attached to the warranty. I did not have additional insurance to my warranty…most products have their service center [Male, student, age 29, FG6]*.
>
> *We at […] just take the phones having issues back to the manufacturers if there are factory defaults [Dealer, Male, dealer, age 31, FG6]*.

The major concerns of smartphone and tablet users in relation to service quality are the following: "warranty," "insurance," "accessories," "repairs," and "customer service." The users decry the difficulty of getting smartphone and tablet accessories and the challenge its repairs pose to the telephone technicians. They said, "A *Chinese phone is not appealing to the phone repairers*" *[Female, student, age 24, FG2]* and "*…repairs of Chinese phones are difficult; the accessories are not readily available*" *[Male, student, age 18, FG3]*. A user commenting on the scarceness of accessories said, "*The Chinese phones' parts are scarce because of the huge number of customers that are using the phone*" *[Male, student, age 24, FG2]*. Concerning the responsiveness of customer service, some agreed that they responded to their call but without providing a solution for the user's problem. Some users asserted that they received reasonable after sales service, while others were ignorant of the existence of customer

service, as indicated by one respondent: "*I did not know about calling the manufacturer before. I have called the China phone manufacturers before but they were just instructing me to check the settings, but their instruction did not solve any problem for me*" *[Female, student, age 27, FG4]*. There were different opinions on the availability of warranty and insurance. However, users do not enforce them because of ignorance arising from government policy lacuna.

**Affordability**

The diffusion of Chinese phones is a huge relief from the financial burden of acquiring a new phone. Poverty and limited access to income results in most consumers selecting low-grade phones over those of global brands. In Table 2, the Chinese mobile devices come with the capabilities of making and receiving calls, playing games, listening to the radio, browsing the internet, chatting on social networks, and even downloading study material for university, many see the Chinese smartphone as a great benefit to their daily lives. The following excerpts relay why some individuals chose to buy Chinese phones:

> *Some of us bought Chinese phones because they are less expensive, and they are very much attractive and have different types of applications like, for instance, Samsung. The apps one downloads from the Chinese phones are very attractive to the customers, and when it comes to Nigeria, everybody wants to get them [Female student, age 24, FG2].*
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> *I actually bought the phone because I don't have much money to spend on the other global brands of smartphone and tablet. I bought the phone for browsing, and so far, the phone met my expectation [Male student, age 24, FG2].*

Many students who cannot afford a laptop for their studies resort to Chinese phones. These phones come in different sizes, and some are used as both phone and tablet because they have SIM card enabled functionalities. Though many are aware their quality is not as good as those of established brands, their multi-functionality and affordability make them an essential possession. According to one respondent:

> *The reason why I bought Chinese phone despite the Chinese phone is not functioning well–I was able to use it for my studies in doing my assignment, browsing, and chatting with my friends* (**socializing**). *Using Chinese phone is a substitute for laptop use [Female student, age 24, FG2]*.

**Table 2**

Despite their low price, some Nigerians are not still happy with the Chinese phones and do everything to avoid them. A frequent reason is relayed as follows: "*poverty in Nigeria is the genesis of fake and non-quality phones with cheaper prices*" *[Male and Female students, ages 21, 22, 27, 29, FG2, FG3, FG4, FG6]*. They question whether it makes sense to buy a very cheap phone if it is of poor quality. It is even more disturbing that these Chinese phones cannot last for a long time. For that reason, it would be better to save and go for the established brands, which one can use for a long time. Another reason for disliking Chinese phones is that once the phone develops a problem, it is very difficult to have it fixed. This relates to why they are so inexpensive. However, opinions seem to be divided on the lifespan of the Chinese phones. Some argue that because Chinese phones are very cheap, they are handled carelessly, leading to a higher frequency of complaints. Informants clarified that when some people buy expensive established brands, they are very conscious of how they handle them. However, opinions were still divided concerning the durability of Chinese phones. When asked how long the Chinese phones can be used, two students responded:

> *My sister bought an Infinix 2 for my brother. He did not use the phone after 2 months; he has problem with the screen, and they could not repair it [Female student, age 24, FG2]*.

> *I know someone who had a screen problem after using a Samsung phone for a long time, and they replaced it for him [Female student, age 18, FG5]*.

**DISCUSSION AND CONCLUSION**

The objective of the study was to understand consumer satisfaction/dissatisfaction with Chinese mobile devices in Nigeria. Across the focus groups, which relied on the perceptions and experiences of students, phone dealers, and mobile device technicians, the main findings of the study indicated that, first, the cost of global brands like Samsung, Sony Ericsson, LG, and iPhone are considered very expensive and to an extent unaffordable by most Nigerian mobile phone users. This is particularly important as many of the users live on less than $2 per day. Therefore, Chinese phones are considered a better alternative, despite their glaring quality deficiencies. These devices are sold for as little as $20. Interestingly, many mobile phone users reside in rural areas and are only interested in the devices' functional use of making and receiving calls. This makes additional specifications immaterial to them.

Second, there was a general consensus that the quality of the global brands are incomparably different from those of the Chinese brands. Thus, aspects such as ruggedness, screen size and quality, battery life, storage capacity, speed, and sleekness are considered important. Smartphone and tablet users are looking for a device screen that can resist exposure to water and extreme sunlight without any change to its function, compact hardware that can be sustained despite an accidental slip from the hand of the user, and secure mobile apps that can be used occasionally without risk of a virus or malware attack. The participants see quality as an inevitable factor in user satisfaction. Obviously, the global brands score higher on the above specifications.

Third, global brands are more rugged than Chinese mobile devices. The global brands' mobile phones were seen to last for at least three years. When the global brands' devices have faults, they can be fixed, and they also come with warranties. At present, warranties and insurance on Chinese smartphones and tablets is not as strong as those of other brands like Samsung, Apple,

Sony Ericsson, and Blackberry. Additionally, when a Chinese mobile device develops a fault, it is highly likely that it cannot be fixed and therefore can no longer be used.

Fourth, the sounds from the ringtone or caller tone is pleasant to the ear for the global brands. A user can reduce or adjust the sound to his or her liking. However, Chinese mobile devices score very low on this point. One important feature that ran throughout the interview sessions is the vulgarity of the sounds from Chinese phones. Either the ringtone or the caller tones were distasteful to our participants. This is an indication that the minimum volume of Chinese smartphones and tablets is higher than normal, standard volume and thus constitutes a major source of noise pollution.

Finally, user knowledge fosters product or service co-creation and is anchored in the amount of exposure to a product. For Chinese mobile devices, user knowledge of smartphone and tablet specifications and mode of operations are not clear. Consequently, users do not pay particular attention to manuals because due to a language barrier, as some of the manuals are written in Chinese. Sometimes, the manuals written in English are full of grammatical inaccuracies and thus discourage users from reading them thoroughly. Often, manuals are conspicuously missing from the device's package received from the seller. This further hinders exploration of the mobile device's capabilities.

Ironically, despite of the glaring defects of Chinese mobile devices, user demand for them is steadily increasing. Many factors are responsible for this paradox across respondents from all interview formats. First, it resonated that the manufacturers of these mobile devices are constantly updating and improving the features in order to align with the peculiarities of the African, and especially the Nigerian, market. For instance, poor telecommunications network

infrastructure regularly causes incomplete calls. Sometimes, network providers have service outages that last for several hours and even days. To avoid being out of communication, many users have three to four mobile phones they can switch between in case of service failure. To solve the problem of carrying many handsets, most Chinese devices come with two to three SIM card slots. Thus, users can easily switch service providers without changing mobile phones. This feature is glaringly absent in the global brands. Second, access to the internet through the global brands requires subscription with a service provider. However, most of the Chinese mobile devices come with internet-fitted facilities. This feature, incorporated in alliance with the service providers, enables users to access the internet without additional payment. To the service providers, such alliance influences patronage of their SIM cards. Importantly, across higher education institutions in Nigeria, where students are not provided with computer-fitted internet facilities to carry out their studies and those who provide it charge exorbitantly high (Sanni et al., 2009), Chinese mobile devices come to the rescue. Besides using these devices to download materials for assignments, students also use them to access social networks as they chat with friends and family. Third, most Chinese mobile devices are also fitted with radio and TV channels. This is based on the understanding that poor power infrastructure leads to frequent power outages, which results in difficulty accessing news on TV and radio. With the Chinese mobile devices, a user does not need to be concerned about restrictions to news channels due to power failure.

Fourth, psychologically, possession of iPad or a tablet from any of the global brands is seen as a status symbol among Nigerians due the cost of these devices. Capitalizing on this, Chinese manufacturers have redesigned their mobile devices. To this end, screen size has been enlarged to that of a tablet and other tablet specifications have been incorporated. Thus, mobile devices serve multifunctional purposes such as making and receiving calls, acting as personal digital

assistants, and providing a platform for internet access. Even with improvements in storage size and speed, these devices are still offered at prices that are extremely lower than the global brands with similar specifications.

## THEORETICAL IMPLICATION

The core theoretical contribution of the study is that it is the first to integrate additional constructs such as system quality, information quality, service quality, price, uniqueness, and user knowledge into discrepancy theory in a mobile device context, and also in an emerging market in Africa. Relying on Yüksel and Yüksel's (2001) criticism that the expectancy-disconfirmation theory cannot accommodate the dynamic nature of expectations, this study adds that the evident contemporary technological advances with its attendant sophistication in consumer needs, requires continuous extensions of the theory to accommodate emerging consumer expectations in different digital service ecosystems. To this end, the extension of the theory to highlight consumer expectations of mobile devices' functionalities is timely. Additionally, the study provides an empirical evidence suggesting that among the users of Chinese-made mobile phones, there is a negative disconfirmation between expectation and performance resulting to dissatisfaction. Accordingly, basic anchors in mobile device use such as call quality, fair price, speed, durability, ruggedness, and browsing functionality, which also constitute critical evaluation metrics for quality, fail short of consumers' expectation. Finally, customer's satisfaction/dissatisfaction with Chinese-made mobile devices is likely to have a ripple effect within the African countries, and other emerging markets. As argued by Fu, Pietrobelli and Soete (2011), technological diffusion in the emerging markets is not restricted to a given market but cuts across regions and even countries at a rapid rate especially when such technology has the support of indigenous stakeholders.

## MANAGERIAL IMPLICATION

The main policy implications of our study is that continuous improvements to battery life will increase market potential. This is important because poor power infrastructure makes access to electricity difficult. Thus, a mobile device with a battery that lasts longer has stronger market potential. Moreover, internet access without a separate subscription has been underscored as a strong determinant for the purchase of Chinese mobile devices, especially by students. More than half of the population are young and require internet access for social network capabilities and other uses. This is another important area in which Chinese mobile devices should continue to optimize to increase their market potential. Many countries in Africa are former British colonies; therefore, English is a pervasive official language. Chinese mobile device manufacturers should hire expert English writers for their manuals. They should also consider using video manuals that appeal to the market. This will increase the likelihood of user understanding of how the mobile devices are manipulated. Additionally, features such as multiple SIM card slots, large storage capacity, and warranties should be sustained and improved. With these, in addition to their low prices, the market growth potential is very strong both in Nigeria and throughout the African continent. Finally, the government should put in place a strong regulatory framework to oversee the influx of mimetic versions of brand-name devices in the Nigerian market. For instance, the Nigerian Communications Commission (NCC) and the Standard Organisation of Nigeria (SON) could jointly develop a framework to create customer complaint centers across Nigeria's states, which could become a condition for Chinese mobile devices entry into the Nigerian market. Likewise, despite the existence of strong and original genuine Chinese mobile devices, the existence of brand knockoffs, also produced in China, negatively affects public perception of Chinese mobile devices. Thus, the Chinese government should also play a role in establishing strong controls and monitoring mobile device shipments to Nigeria and the rest of Africa. The Chinese government can only

succeed in strengthening ties with Africa when, and only when, there is a positive perception of Chinese technologies. Future research should consider the implications of the unregulated disposal of e-waste in Nigeria. Another interesting study could focus on Chinese authorities' strategies for selling Chinese technologies, especially mobile phones and tablets in the African market.

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