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**Master of Education Research on Teaching and Learning.**

**Master Thesis**

**Parents Attitudes Towards Early Exposure of Young Children to  
Smartphones and Tablets in Nigeria.**

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**Declaration**

According to § 12 section 8 ADPO (General examination regulations) of Technical University of Munich, I herewith confirm that I wrote this thesis entirely by my own and that I did not use any other sources, means of support and aid than those mentioned within the text.

Munich, 10th day of December 2018.

**Charles Nnamdi Ohanyelu.**

### **Dedication**

This piece of work is specifically dedicated to my late father, Chief Cornelius Duru Ohanyelu. 'Papa, the seed you planted and nurtured has metamorphosed into a gigantic tree'. May your soul rest in the Lord.

Amen!!

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**Acronym**

ISCED	International Standard Classification of Education .....	24
MRAT	Mean Rating .....	38
PDD.	Portable digital device.....	13
PVQ.	Portrait value questionnaire.....	38
PISA	Programme for International Students Assessment.....	26
SES	Social and Economic Status.....	24
SPSS.	Statistical Package for the Social Science .....	36
TIMSS	Trends in International Mathematics and Science Study.....	26



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### Abstract

Smart phones and tablets are becoming increasingly popular and interesting among children at early ages across board. This study investigated the attitudes of parents in Nigeria towards early exposure of children to smartphones and tablets. The major objective of the study was to find the relations between parental values and parental attitudes on child cognitive development towards early exposure of young children to smart phones and tablets. It further aimed to find the difference in parental attitudes on child cognitive development in relation to urban or rural context in Nigeria. This quantitative study used items on Childs' cognitive development to measure parents' attitudes while the values of power, tradition and conformity adapted Schwartz value theory was used to measure parental values. A survey questionnaire administered via online and paper was used as instrument for data collection, while parents whose children were between 0-3 years of age formed the participants. A total sample size of N=80, (55%, males and 45%, females) participated in the survey. The Pearson correlation result showed a positive relation between parental values and parental attitudes of child cognition, while the independent sample t-test showed a positive difference between attitudes of parents on child's cognitive development in the urban and rural areas of Nigeria. The results from the Pearson's correlation analysis further answered the third research question of this study by revealing that parents' attitudes on child cognitive development and parents' level of education are significantly and positively correlated. The study therefore concluded that in Nigeria, parental values, parents' higher level of education and the cultural contexts of parents in terms of urban/rural habitation can influence parental attitudes on child cognitive development regarding young children's early exposure to smart phones and tablets.

## 1.1 Introduction

In the era of modern technology, young children are exposed to the advanced technology with smart phones and tablets even at an early age as observed by many educators and parents. Toddlers are gradually exposed to fixed screens, like televisions and computers as well as modern mobile screen media devices like smartphones and electronic tablets. Portable digital devices (PDDs), such as tablets, smart phones, or other small mobile computers, are widely used in today's world and have gained popularity among children (Sergi, Gatewood, Elder, & Xu, 2017). Smart phone has become an important component of modern society and a treasured communication device that represents dynamic part of daily life for lots of people around the world. Further, the smart phone as an advanced form of mobile phones has undergone a series of technological innovations designed and configured to meet the needs of modern society (Osazee-Odia, 2015).

With the improvement in the mobile technology, effectiveness and efficiency of communication has greatly changed. For example, in Sweden, as observed by the Swedish Media Council report (2015), every year more and more children use modern digital media technology, today it is clear that some forms of mobile technology usage begin at child's early developmental age. The usage of tablets in the world has increased twice in 2014, as compared to 2012-2013 (The Swedish media council, 2015). As Cingel and Krcmar (2013) pointed out that the typical one-year-old now has access to videos, websites, computer games, electronic story books and videogames, all designed specifically for them. A recent study by Rideout and Hamel (2006) found that 70% of those younger than one year and 91% of those age two to three years consume screen media at least several times per week. Overall, then, babies, toddlers, and preschoolers are now spending more time in front of a screen than ever before (Anderson & Pempek, 2005).

To understand the nature of the experience of children between the ages of 0-3 years, it is imperative to take cognizance of the attitudes and value system of the parent toward smart phones and tablet use (Vittrup, Snider, Rose, & Rippy, 2016). Parents are highly significant in the growth and development of young children which makes it possible for children to rely on them, as well as other caregivers acting on parent's capacity, to protect and care for them (National Academies of Sciences, Engineering, and Medicine, 2016). Since Vittrup, Snider, Rose and Rippy (2016) opined that research should understand the extent to which parents are aware of and actively engaged with the usage of emerging forms of portable device that are increasingly available to preschool-age children. Parental functions should be comprehended as a set of notions such as their planning and decision to children birth, their care and contribution towards rising and development of their children' and finally, the parents' activities towards the overall parental achievement of a prior set goals (Ceka & Murati, 2016). It is very imperative that parents should be accountable to their children's activities including media usage as the importance of parents for children's media practices, which determines their media induced learning, play, and social development, has been addressed in numerous studies on parental guidance (Nikken & Schols,2015). However, some researchers in this field have highlighted how the device provides the child with a type of cautious independence or autonomy vis-à-vis their parents (Castells, Ardevol, Qiu & Sey,2004). For their part, parents may be active in using the mobile telephone as a control device, checking up on their children's activities remotely, but they may also use it to push their children on the road towards independence (Ling & Haddon,2008).

Parents' perception and attitudes play vital role in young children's life in virtually all they do including media usage and activities. The cross-continental study conducted by the GSMA in 2012, International comparison of children use of mobile phones, reveals that over 70% of parents

have concerns about children's mobile phone use, with viewing inappropriate mobile usage and overuse sharing the highest percentage at around 82% (GSMA,2013).

In Nigeria, parental attitudes might differ on the perception about activities of children due the value system. As Miller (1995) pointed out, parenting attributions consist of a variety of judgments that parents make as they attempt to explain, evaluate, and predict their children's behaviors (Miller,1995). Divers factors like traditional values shape parents' perception regarding activities of the children, however, parents with different demographic and cultural characteristics have different expectations for the smart phone and tablet usage of their children. As values are defined as a conception, explicit or implicit, distinctive of an individual or characteristic of a group (Kluckhohn,1951). Parental motives play a primary role in these action selection processes of an individual, a value reflects parents' general preference for a situation or an action, independent of its current beliefs or goals, that is, independent of the current environmental situation and of the agent's current intentions (Antunes & Coelho,1999). Values are often combined into a utility function that is used to evaluate options. As suggested by Wang, Bianchi and Raley (2005) that parental awareness of and involvement in their children's smartphone use is increasing.

## **1.2 Definition of Variables and Relations**

### **Values**

Regardless of a substantial body of research where values are at the core of the investigation. There is no consensus in the literature about what a 'value' is, or what constitutes a valid definition of values across disciplines (Thompson & Troester, 2002; Weeks & Kahle, 1990). According to Ishii and Klopff (1987, p. 1), "values are the evaluative and judgmental facet of a culture's 'personal orientation system,' helping its members determine what is right or wrong,

good or bad, important or unimportant'. Several decades of research (see e.g., Kluckhohn, 1951; Rokeach, 1973); Schwartz, 1999) suggests that 'values' can be comprehensively defined as conceptions of the desirable that guide the way social actors, select actions, evaluate people and events, and explain their actions and evaluations. Values are a critical motivator of behaviors and attitudes (Schwartz, 1992). Value is also used to describe the 'morals, principles, or ideas that serve as guides to action Mason (2002:7), where value reflects the meaning and importance of cultural activity (Miles & Sullivan, 2010; Reeves, 2002:35), rather than the economic conception of value. Values can as well be used to characterize cultural groups, societies, and individuals, to trace change over time, and to explain the motivational bases of attitudes and behavior (Schwartz, 1992). Value is simply summarized as what is important to us in life (Schwartz, 2012).

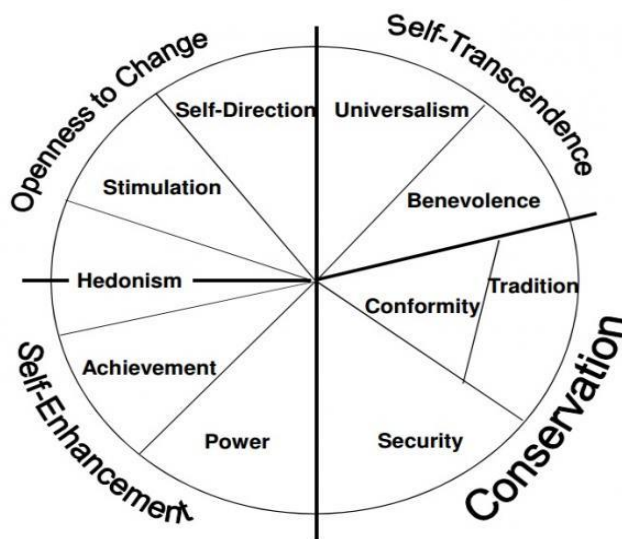
However, Omoje and Eyo (2008) are of the view that value is a philosophical concept, diverse in nature and controversial in content. Diverse schools of thought vary on issues like meaning of value, forms and or classification of value, etc. Consequently, their study summarized that despite its contentious nature, value is still broadly recognized as an influential factor in the affairs of human being (Omoje & Eyo,2008). In relation to parental attitudes, value can fit into any of the two sides of human perception depending on the angle one is viewing it from. Value may be positive or negative. This is however a function of the society; as what is considered a positive value in one society may be a negative value in another society (Omoje & Eyo,2008). The parents' attitudes in Nigeria can as well be attributed to the kind of cultural context in which the person per say finds himself. As pointed out that this position of positive and negative value being a function of the society is with no prejudice to the fact that there are some values that are positive or negative across the different biases-across religious, social, cultural, geographical boundaries



etc (Omoje & Eyo,2008). Example of such value is the sanctity of human life which is a positive value across different biases (Omoje & Eyo,2008).

### Schwartz Theory of Basic Values

The important element that distinguishes values is the type of motivational goal they portray (Schwartz,2012). In the value theory model, Schwartz (1992), derived ten motivational basic values and stipulates the inter relations among them as they are recognized across cultures. Some values as he pointed out conflict with one another (e.g., benevolence and power) while in the same vein, others are compatible e.g., conformity and security to (Bammer, 2017). The theory



*Fig. 1.* Schwartz's Taxonomy of Motivational Value Domains. Adapted from (Schwartz et al., 2001)

states that basic values are organized into an articulate system to explain individual decision making, attitudes and behavior structure arises from the social and psychological conflict between

values that people experience when they make everyday decisions (Schwartz, 1992,2006). According to Bammer (2017), the ten values were grouped into four major classes which are conservation, self-transcendences, enhancement and openness to change. However, each class being driven by a motivational value depending on the beliefs and values of the individual which invariably determines his/her attitude. The result of the correlation analysis between parents' attitudes on child cognition and Schwartz 10 motivational values, shows that only three out of the ten are positively correlated. This implies therefore that the trio (values) will have an influence over parents' attitudes on child cognition. On that ground, the three values were used to compute parental values for this study. They include:

1. **Tradition:** Respect, commitment, and acceptance of the customs and ideas that one's culture or religion provides.
2. **Power:** Social status and prestige, control or dominance over people and resources.  
(Authority, wealth and social power.)
3. **Conformity:** (Obedient, Self-discipline and politeness)

### **Values of Tradition**

Tradition according to Schwartz (2012) is simply put as respect, commitment and acceptance of the customs, values and ideas that one's culture or religion offers. Traditions in African societies are orally handed down from one generation to another (Green, 1997). Tradition is the major key that distinguishes one particular people from another where each has customs that are unique to them (Green, 1997). Tradition according to Shils (1971) is that which is handed down – includes material objects, beliefs about all sorts of things, images of persons and events, practices and institutions. In his study, Alexander (2016) is of the view that tradition includes buildings,

monuments, landscapes, sculptures etc and all that a society of a given time holds, which had already been existing before its present possessions came upon it. The most unique ingredient of tradition is its progression ability in form of continuity. It is assumed therefore that all traditions have continuity potential, if a tradition has only continuity and not canon or core, then it exists only in the form of present ritual (Alexander,2016). Tradition as such connotes indefinite series of repetitions of an action, which on each occasion is performed on the assumption that it has been performed before, each performance presupposes a previous performance, in indefinite regress (Pocock,2009).

For continuity of the lineage to be maintained, parents attach importance to values that holds them together. That values are but tradition. They are open to tradition more than modern innovations. It has been suggested that the choice facing developing countries (e.g. Nigeria) is between retaining traditional cultural practices and the discontinuous jump to a modern technological society (Urevbu,1997).

### **Values of power**

The functioning of social institutions seemingly entails some levels of status differentiation (Parsons,1951). To justify this fact of social life and to motivate group members to accept it, groups must treat power as a value (Schwartz, 2012). Power values may also be transformations of individual needs for dominance and control (Schwartz, 2012). Value analysts have mentioned power values as well (e.g., Allport, (1961), (authority, wealth, social power) preserving my public image, social recognition (Schwartz, 2012). Power is the identification of the physiological, personality, affective, cognitive and behavioral correlates of individuals occupying elevated power positions (Markus & Bourhis, 2016). Powerful individuals are assumed to experience positive affect (such as good mood, desire, and pride), to be more attentive to social rewards, to construe

others in terms of how they satisfy their own goals and needs, and to process information about their social environment in more automatic, simplistic ways (Markus & Bourhis,2016).

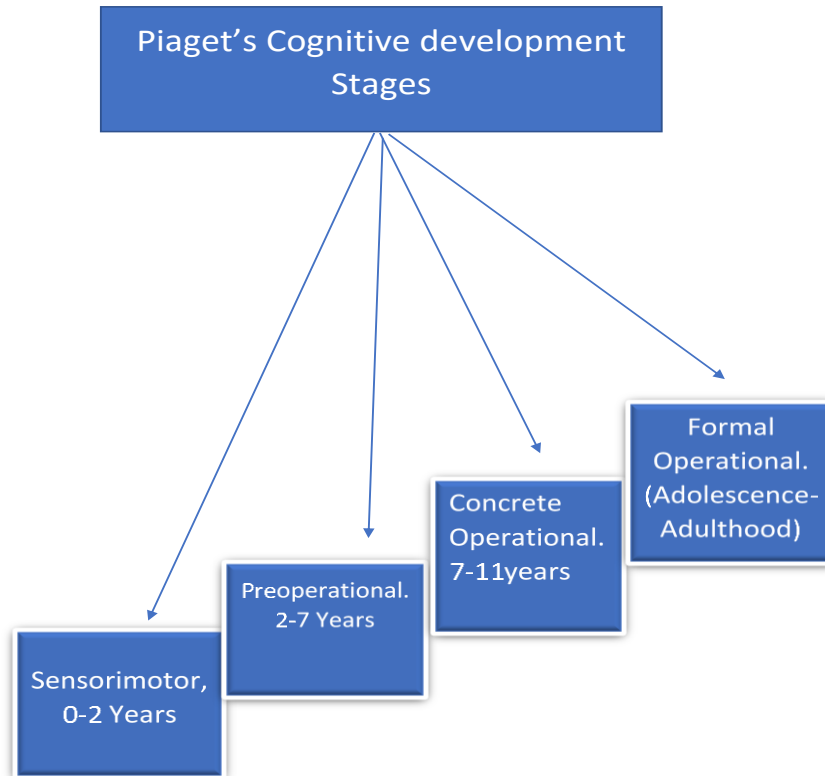
### **Values of conformity**

Conformity values derive from the requirement that individuals inhibit inclinations that might disrupt and undermine smooth interaction and group functioning (Schwartz,2012). It is a type of social influence involving a change in opinion or behavior just to fit in with a group (Tang, Wu & Sun, 2013). According to Chartrand and Bergh (1999), conformity takes place when people adjust their behaviour or thinking to coincide with a 'group standard. Precisely, conformity manifests itself as a direct result of an individual's willingness to accept others' opinions about reality (Steed,2016). According to Castano and Lino (2013), conformity is the restraint of actions and impulses that may upset or hurt the group or society and that violate the social rules and social expectations. In their work, Castano and Lino (2013), further reveal that values such as obedience and self-discipline are linked to conformity. They believe that self-restriction demands are engraved in the social structure and moral systems of each society and are therefore absorbed by each person as a part conscience or superego (Castano & Lino,2013).

There are numerous reasons why parents conform, it might be because of normative social influence, or informative social influence or generally as mindless conformity (Steed,2016). There are some situations where people adapt to some values without any clue as per why such a shift in their behaviour, rightly or wrongly, contemporary adolescents are often accused of behaving in such a manner when they engage with social media, hairstyles and fashion and so on (Steed, 2016).

### **1.3 Parental attitudes and child cognitive development**

Throughout human history, babies were often thought of as simple, passive beings (Kendra, 2018). Although activities of babies as generally seen as abstract, it was however after psychologists like Jean Piaget proposed that children actually think differently than adults do that people began to view childhood and adolescence as a unique period of growth and development (Kendra, 2018). In her study, Kendra (2018) observed that adults frequently overlook the amazing intellectual skills of young children, but contemporary thinkers and scholars have discovered that young children always learn, think, and explore the world around them (Kendra, 2018). To further understand cognitive stages of children, McLeod (2018) identified Jean Piaget's four stages of cognitive development. This study is particularly concerned with the first two stages, the first stage largely centered on the child's use of motor activity. According to Zhou and Brown (2014), knowledge is limited in this stage, because it is of motor based on physical interactions and experiences. Infants cannot predict reaction, and therefore must constantly experiment and learn through trial and error. The second stage is characterized by the child beginning to use language; memory and imagination also develop (Zhou & Brown, 2014).



*Figure 2.* Shows the Piaget's four cognitive development stages; sensorimotor (birth-2 years), preoperational (2 -7 years), concrete operational (7 -11 years), and formal operational (adolescence -adulthood).

As Walz (2008) observed that by six months of age the child also showed some evidence of conceptual knowledge like elementary realization that two objects can't occupy the same place and be able to distinguish between items. Walz (2008) further observed that there are also some level of development in terms of cognitive abilities that occurs after infancy, pre-school years and during the elementary school ages through adolescence. According to the National Academies of Sciences, Engineering and Medicine (2016), children's cognitive competence is defined by skills in language and communication, as well as reading, writing, mathematics, and problem solving.

To be more precise, children benefit from stimulating, challenging, and supportive environments in which to develop these skills, which serve as a foundation for healthy self-regulatory practices and modes of persistence required for academic success (Gottfried, 2013).

The proper development of children requires the formation of two strategies: raising children and governing their behavior according to their age and development opportunities. Control strategies are important for the protection of children from adapting the wrong way of social functioning (Giers,2016). The nature of emotional relationship of parents to the child defines parental attitude, this includes a tendency to act towards him in a specific manner, and to express an opinion about it, which can be summarized that parental attitudes has a profound influence on the child (Giers,2016). In this same vein, Giers (2016) pointed that parental attitude, like any other attitude, comprises of three aspects namely, cognitive, emotional motivational and behavioral. He therefore concluded in the study that the attitude of parents consists of what parents know and think about the child (Giers,2016).

In their studies, Erbaş, Güçlü and Zorba (2013) pointed that attitudes establish communication with many things inside a social structure. While occupying a significant space in this structure, parents are also important in terms of the concept of attitude. Consequently, numerous studies were conducted for investigating parental attitudes (Dietrich & Salmela-Aro,2013; Özdemir et al., 2013; Paczkowski & Baker, 2008; Yang & Shin,2008; Dwairy & Menshar, 2006). In view of these studies, it was evidenced that parental attitudes are influential on a wide range of issues, ranging from education to motivation, from the sense of discipline to nutrition, from self-control to daily life, from development to academic success (Erbaş, Güçlü & Zorba,2013).

As cognition refers to the area of psychology that has to do with all aspects of thinking Walz (2008), the use of smartphone and tablets benefits include improvements in knowledge, language capabilities, problem-solving skills, and eye–hand coordination (Ernest et al.,2014). As Sergi et al. (2017) cited that researchers have reported that children engage in creative activities like colouring or signing when using iPads (Given et al.,2014). During the early years of a child's life, parents are important in supporting the progress and development of key cognitive outcomes, like attention, distinguishing between objects, executive functioning skills, and language development (Vygotsky,1978). Parents for instance, pass their mobile devices back to their young children at home or when waiting at shopping malls or on the subway (Chiong & Shuler,2010). Some parents even go further to provide their young children with their own media sets for reasons of relaxation or other practical gains (Nikken & Schols, 2015). Parents can then watch their own shows, keep the child occupied so the parent can have their private time or to help the child to fall asleep (Haines et al.,2013; Takeuchi, 2011; Vaala & Hornik, 2014).

#### **1.4 Relation between parental level of Education and attitudes**

The educational background of the parents simply means the types of educational level which the parents have attained from primary to tertiary level. Parents' educational attainment is indicated by three highest levels of schooling, which the child's parents completed; primary, secondary and tertiary (ISCED, 2011). These categories specified in the last sentence are defined based on the International Standard Classification of Education (ISCED). Parents are one of the direct holders of educational work (Emerllahu & Dali,1998). Parental education is of perhaps just one striking feature of SES that influences children's consequent accomplishments in the future. It therefore connotes that the level of education of parents can as well be considered when



investigating parents' attitudes towards children's early exposure to smartphones and tablets. Past research has indicated a relationship between parent education and their children's media consumption habits (Cingel & Kremer, 2013).

According to Bourdieu (1986) as cited by Steinmayr et al. (2010), parents' education is suggested to be of a special importance for the success of their children. This is described by a long-lasting transformation process of parents' cultural capital into their children's development (Steinmayr et al., 2010). Thus, parental education is of special importance for parent-child interaction and for the development of children's personality (Steinmayr et al., 2010). Parents' education is considered to play key role in the child future and development. It has been shown that the children of educated parents are more confident, resourceful and experienced than the children whose parents are with no formal education (Khan, Iqbal & Tasneem, 2015). As Eccles (2005) states that the relationship between parent's education and their children's success is on the notion that the parents gain knowledge of parenting and this influence their interaction at home. Furthermore, highly educated and wealthier parents have children with more access to computers and the internet (Calvert, Rideout, Woolard, Barr & Strouse, 2005).

The attitude of parents towards young children early exposure to smart phone and tablet could however be dependent on their level of education. In most cases, educated parents have interacted with people of other social classes and thus will easily see the importance of introducing their children to PDD's. In this vein, it is assumed that they will show a positive attitude. Wamala, Kizito and Jemba (2013) asserts that the active participation of the parents improves discipline in schools and promotes child's achievement. This finding reveal that children of educated parents have a higher level of life satisfaction and fewer problems and are relatively more confident, self-reliant, and free from anxieties and other psychological problems (Wamala, Kizito & Jemba,

2013). While it has been observed also that non or low level educated parents cannot provide the support or often do not appreciate the benefits of digital device usage (Pryor & Ampiah,2003).

Steinmayr et al. (2010) observed that parental education is of special importance for parent–child interaction and, thus, in turn for the development of children's personality. This view is supported by studies that shows that parents' education is associated with children's personality strategies (Laosa,1978). Even in international placement tests, parents background has proved to support children achievement. International large-scale scholastic achievement assessments, such as PISA or TIMSS, show that children's attainment is strongly related to their families' background (Steinmayr et al., 2010). It could also be established that level of education of parents can as well affect their attitude as mobile phone usage may be low due to little or no education. Therefore, the inability of rural dwellers to read and write may affect their adoption and use of mobile phones (Rogers,2003). However, smartphones usage in the rural areas in Nigeria is still very remote. Rural tele-density in Nigeria is quite low (Coyle, 2005). This might be because of scarcity of communication infrastructure in most rural Nigeria, leading to the creation of digital divide between the urban and rural areas in Nigeria. (Coyle, 2005).

As attitude is seen as the way one expresses him/herself in thoughts, words and actions because of ones 'values and belief. In other words, values and beliefs guide attitudes. Parental attitudes towards children early exposure to smart phones and tablet is important because parents stay closely with their children at home (Sergi et al., 2017). Attitudes are evaluations of objects as good or bad, desirable or undesirable, it can evaluate people, behaviors, events, or any object Schwartz (2012), while parenting is a methodical step of generating children's health and safety while instilling in them to become productive adults by transmitting cultural values and beliefs. PDDs seem to improve cognitive and social skills in children (Sergi et al.,2017).

### **1.5 Nigeria in Retrospect**

Nigeria, according to World Bank (2017) review, states that she is a key regional player in West Africa, with approximately 184 million inhabitants. This shows that Nigeria accounts for about 47 percent of West Africa's population, with one of the largest populations of youth in the world. Nigeria is a federated country consisting of 36 states and about 774 local Government areas across board. Nigeria is a multi-ethnic, multi lingua and culturally diverse society. With an abundance of natural resources, it is Africa's biggest oil exporter, and has the largest natural gas reserves on the continent (World Bank,2017). In a further review, the World Bank in 2017 reports that inequality in Nigeria in terms of income and opportunities has been growing rapidly and has adversely affected poverty reduction. The economic and political situation in Nigeria is as well not stable, several Nigerians are poor while larger proportion migrate to urban areas in search of greener pastures and opportunities because they are without adequate access to basic services in the rural communities (World Bank,2017). According to the review, the lack of job opportunities is at the core of the high poverty levels, of regional inequality, and of social and political unrest in the country (World Bank,2017).

Parents lives in different cultural contexts in Nigeria because of place of their birth, however many educated, wealthy and youths live in the urban areas for education, employment and business purposes while the less educated, poor and aged ones settle in the rural areas, some also for agricultural purposes. Nigeria population has been on the rise since independence in 1960 (Hakeem, Chisom & Ikenna, 2016). However, the provision of basic amenities and technological infrastructure like the mobile communication does not grow at the same pace with the population, therefore, the minority and less privileged (aged, illiterates and poor) are left in the rural areas.

This set of people might not, in most cases be able to afford the luxury of smartphones, tablets and internet. Furthermore, since electricity supply in the rural areas is epileptic, the tendency that the minority few that have phones would not be able to charge same at most times. Finally, internet services and subscription fees might always be too expensive for most rural inhabitants to afford.

## **1.6 Cultural values in Nigeria**

### **Values and Culture**

Surprisingly there is no one definition of cultural value within existing literature on the subject. Just as with 'culture' and 'value' there are a range of perspectives and uses of the term, some of which complement each other, whilst some are seemingly contradictory (Bennett & Belfiore, 2008). People who grows up in a society is likely to imbibe the culture of that society, whether knowingly or unknowingly during the process of social interaction (Idang,2014). Culture has been defined as a socially transmitted customs, knowledge, material objects and behaviour which includes the ideas, value, customs and artefacts of a group of people (Schaefer, 2002). This then follows that parental attitude towards concepts has to do with their cultural heritage. In the case of Nigeria, the environment in which you are brought up (urban or rural) motivates your perception and judgment. Looking at culture from the African concept, which Nigeria is inclusive "Culture means the total of shared attitudinal inclinations and capabilities, art, beliefs, moral codes and practices that characterize Africans, it could be a continuous, cumulative reservoir containing elements that are socially transmitted from one generation to another. African culture can as well be referred to as to the whole lot of African heritage" (Ezedike 2009:455).

According to Nwauzor, (2014), cultural values are standards of behavior within a social environment which has been observed that certain events in the Nigerian society had adapted the cultural behavior and values of the people. Colonialism, urbanization and modernization stand out (Nwauzor,2014). People's commitment to certain values have some bearing on what they eat, believe, do, wear and their perception of a desirable behavior (Nwauzor,2014). As Antia (2005:17) writes, "what a people hold to be true, right or proper with regard to those things explains much of the cultural traits by which they become identified". Idang (2014), referring to Antia (2005) above, states that 'traits' here can as well be called values. On the other hand, Etuk (2002:22) writes that "no group of people can survive without a set of parental values which holds them together and guarantees their continued existence". As cited in their work, Livingstone et al. (2015) reports that Qualitative research (based on interviews and observations) with 70 families with children younger than the age of eight conducted in seven European countries has already reported that parents are guided by their already-established styles of parenting and values, extending these to digital media uses at home as soon as their young children first pick up a tablet or smartphone (Chaudron et al,2015).

### **1.7 Urban and Rural Nigeria in relation to values**

Nigeria in the development context is basically divided into two major groups in terms of geographical locations, the rural, and urban settlements. Present-day urban Nigeria is a mere conversion of the colonial conception. In her study on analyzing urbanization and cultural values, Nwauzor (2017) pointed out that urban environment offered residents opportunities to acquire western education and access to social amenities. Local needs and consumption patterns of most Nigerians were influenced to conform to those products which the industries produced.

Urbanization greatly impacted on the orientation and outlook of the urban dwellers (Nwauzor, 2017). The urban place is differentiated from the rural area as an inhabited central place differentiated from a town or village by its greater size, and by the range of activities practiced within its boundaries, usually religious, military, political, economic, educational and culturally (Nwauzor, 2017). Collectively these activities involve the exercise of power over the surrounding countryside (Jary & Jary, 1999). Calabrese (2016) validates this view by noting that the rural areas have continued to be “vaults of tradition” and urban centers as sites of modernization.

Oyebade (2007) acknowledges the eroding influence of urbanization and western culture on certain cultural practices such as dressing style, music and dance. Consequently, there is the existence of cultural differences between the rural and urban dweller as Oyebade (2007) expansively analyses these cultural differences with reference to the emerging stereotype and discrimination against the rural dweller by the urban elites. However, Njoku (2013) also reveals the pervasive influence of urbanization on the cultural values and lifestyle of the urban Igbo youth especially in colonial Nigeria. In explaining the nature of rural environment in the Nigeria context, Olayide et al. (1981) pointed out that most Nigerian rural areas have the under-following characteristics.

1. Low income – Income accruals are low.
2. Low savings – This is derived from low savings.
3. Low investment – This is derived from low savings.
4. Low capital formation – Low investment brings about low capital formation.
5. Poor infrastructural facilities – e.g. Health, road, electricity, etc., either absent or in a poor state.

- 6.High population density –There is no family planning hence population explosion.
- 7.Gross illiteracy –low educational background which affects decision making process.
- 8.Low social interaction –Some people live far from others.
- 9.Local politics –There is no assessment of who is qualified, rather, greed overrides.
- 10.Disguise or under employment –This is a manifestation of labour intensiveness.
- 11.Informal groups, e.g. Age grade, Social Club, etc., are involved in development projects.
- 12.High rural-urban migration –They migrate to obtain executive jobs.
- 13.Low technological base–There is low rate of transformation and abundant untapped resources resulting from the lack of skilled manpower (Olayide et al.,1981).

As observed by McCloskey et al. (2017), several nationally representative studies showed that access to and use of mobile devices among young children are rising. Despite this overall increase in the use of mobile devices, there were also reports of a persistent digital divide in which lower-income and ethnic minority children had more limited access to technology (McCloskey et al., 2017).

## **1.8 Smartphone and tablet usage in Nigeria**

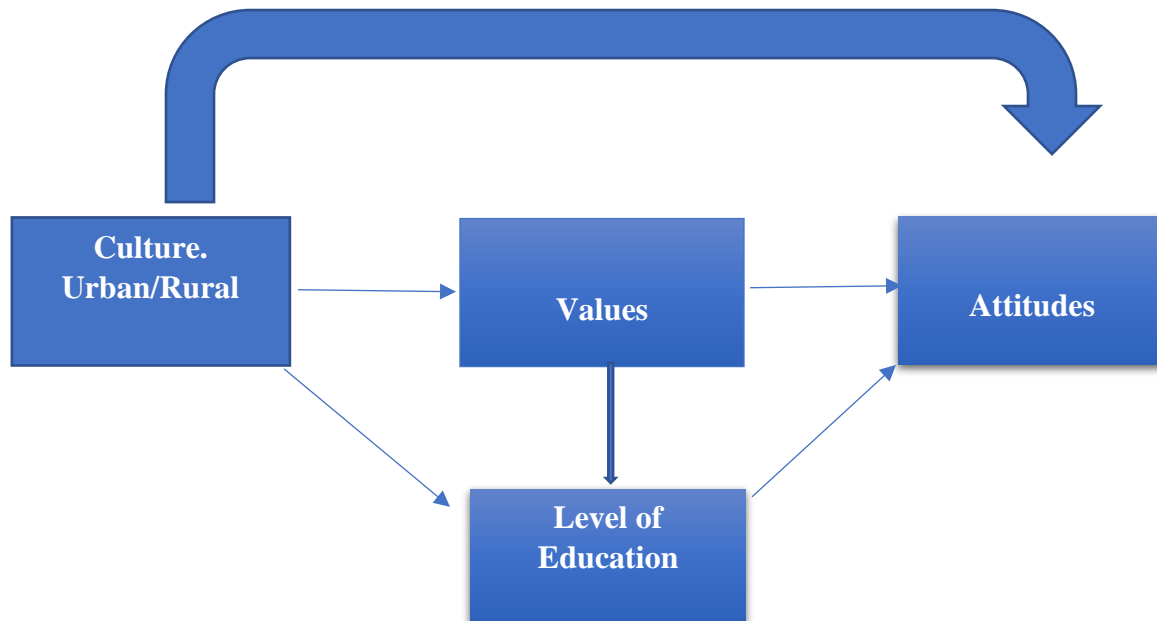
In Nigeria, as in most other developing countries, the mobile phone has been a major player to the speedy growth in communications sector. Before digital mobile telephony was introduced in Nigeria in 2001 during Olusegun Obasanjo regime, the country had less than 500 thousand telephone lines, today, the story is changed as the number of telephone lines in Nigeria are over 30 million (Omeruo, 2009). The rate at which smartphones gained popularity in Nigeria is

alarming. As Osazee-Odia (2016) noted that Africa including Nigeria is experiencing the growth of smartphone adoption. According to Pew Research Center (2015), smartphones has become the most attractive technological device of the moment. Specifically, the Pew Research Center (2015) points out that younger, educated and English-speaking Africans citing South Africa and Nigeria with young people smartphone adoption. Today, Nigeria's smartphone adoption is put at 23.1 million adopters in 2015 and further projection to 34 million in 2018 (Adepetun, 2016).

As Osazee-Odia (2016) pointed, smartphone adopters in Nigeria has inspired much interest from the wider society enticing generations of adopters and users, from young to older generation. The motivation for the growth of smartphone adoption is linked to the inaccessibility of landline telephone to which less than 500,000 lines were accessible to Nigerians in 2001 (Iwuangwu, 2014; Okafor, 2016; Popoola, Megbowon & Adeloje, (2009) and to the exclusive preserve of the well to do and the well-connected in the Nigerian society (Ndukwe,2011).

However, as cited by Afolayan et al. (2015) rural communities as often classified as "information poor", that is they lack access to information vital to their lives and livelihood. The rural poor depends primarily on agriculture and auxiliary activities for their livelihood since agriculture provides the bulk of their income and nutrition (IFAD,2001). On the bases of this assumption, parents therefore are likely to have a negative attitude towards smartphone usage by their young children since it is not their priority. It has been observed that despite wide acceptance of mobile telephony in urban areas, there is still a wide disparity in rural areas due to demographic, infrastructural and cultural challenges as identified in the literature and which is also applicable to Nigeria (Afolayan et al.,2015).





*Figure 3.* Conceptual model of factors which may impact parents' attitudes regarding cognitive development towards young children exposure to smart phones and tablets.

### 1.9 Aims of the study

This study investigated the attitudes of parents in Nigeria towards early exposure of young children to smartphone and tablet regarding child cognitive development. Parents play important roles in the Childs 'development and general conduct including device usage. This study aims to investigate how parental values are related to parental attitudes on child cognitive development towards children's early exposure to smartphone and tablet. The study also aimed at finding the differences in parents' attitudes on child cognitive development in relation to urban or rural context in Nigeria. Furthermore, it is the aim of this study to find if differences in parents' level of education are related to parental attitudes on child cognitive development towards early exposure of young children to portable digital device (PDD).

### **1.10 Research Questions**

The study aims to answer the following research questions:

RQ1. Are parental values related to parents' attitudes on cognitive development towards children's early use of smart phones and tablets?

RQ2. Do parental attitudes on child cognitive development differ in rural and urban areas of Nigeria?

RQ3. Is there a relation between parents' level of education and parents' attitude on child cognitive development towards early exposure of children to smartphone and tablet?

## **Method**

### **2.1 Research Design**

The design of the study is quantitative research method. As quantitative research methods deal with numbers and anything that is measurable in a systematic way of investigation of phenomena and their relationships. This study tries to find how parental values relates to their attitudes on child cognitive development towards young children's exposure to smartphone and tablet.

### **2.2 Participants**

A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Webster, 1985; Fridah, 2002). The sample size is also the required number of people selected to answer the survey/interview questions. Since this study is investigating the attitudes of parents in Nigeria towards early exposure of young children to smart

phone and tablets, participants in the survey were drawn from parents of young children aged between 0-3 years, who were born as well as and lives in Nigeria. Parent here include either the father or the mother or both, but each being an independent participant. The participants were drawn from the urban or rural areas of Nigeria as this distinction will help to assess the parental values depending on the cultural context. Out of the 87 participants who responded to the questionnaire, the age of children of 7 participants were far above 36 months required for this study. Therefore 7 participants were excluded from the data on ground of age of the child as an exclusion criterion. Finally, a total sample size ( $N=80$ ) participated in the survey, which includes 44 males and 36 females representing 55% and 45% respectively.  $N$  (urban)=41, and  $N$  (rural)=39; lives in urban and rural areas respectively. All the participants provided a written informed consent before taking part in the survey.

The mean age of participants is ( $M=36.50$ ) and ( $SD=7.24$ ). For the highest education attained by mothers  $N=2$  (2.5%) had Doctorate degree,  $N=27$  (33.8%) had between bachelor's and master's degrees.  $N=7$  (8.8%) had post-secondary education.  $N=7$  (8.8%) completed secondary education.  $N=28$  (35%) completed primary education while  $N=9$  (11.3%) did not have any school certificate. For the highest education attained by fathers,  $N=3$  (3.8%) had Doctorate degree,  $N=29$  (36.3%) had between bachelor's and master's degrees.  $N=4$  (5%) had post-secondary education.  $N=1$  (1.3%) had post-secondary education second stage while  $N=6$  (7.5%) completed secondary education.  $N=33$  (41.3%) completed primary education while  $N=4$  (5%) did not have any school certificate. A total of 41 and 39 participants representing 51.2% and 48.8% came from urban and rural Nigeria respectively. 92.5% of the total participants are married. 53% of males have full time employment while 24% are on part time employment. 32.5% of the female participants are on full time employment, 43.8% are on part time employment while 23.8% are unemployed.

### **2.3 Procedure**

Due to complexity of the target population, the study applied both paper base and online questionnaire. The online questionnaire was created and administered through the EvaSys software to parents in Nigeria who have both the time to take the survey, interest to participate and access to smart phones and internet. The participants are parents whose children falls within the age frame of 0-3 years. 15 participants completed their survey through the online medium while 65 completed the survey through face to face /paper base. The online questionnaire was sent to participants through WhatsApp and email while the paper base was administered via face to face. The questionnaire was read and interpreted for the participants who could not read, while the instructions were clearly explained to ensure confidentiality. The participants also gave their consent before participating. Both the online and the paper questionnaire were collected, merged together and finally analyzed using the SPSS software 23 version.

### **2.4 Measures**

The instrument for data collection was the questionnaire designed and administered through online and paper base platform. The questionnaire was originally designed in online version but was later converted to paper base because of the peculiarity of the participants in Nigeria. This questionnaire is part of a larger international project coordinated by Dr. Mirjam Weis (the International Centre for Student Assessment (ZIB), TUM School of Education) in Germany, Dr. Mostafa Zera (Iran), Dr. Maurircio Lopez (Chile), Dr. Alexander English (China), Dr. Mariano Rosabal (Costa Rica), and Charles Ohanyelu (Nigeria). This indicates that prior to this study in Nigeria, the questionnaire has been tested already through a pilot study to ascertain its validity.

The questionnaire comprised of variables like general and specific attitudes about smart phones and tablet use, parental motivation on the use of smart phones and tablet, sources of information on media use, parental goals, parental values and socio-demographics. Based on the research questions and tested hypothesis, this study will only be confined to three of the variables.

### **Attitudes of parents towards child's cognitive development**

The first variable measures parents' attitudes towards tablet and smart phone use in children. The scale contains items that measure other aspects of development like emotions, social, cognitive, motor etc, however, the researcher chooses to select items that measure child cognitive development because it can answer the research questions better, compared to the other aspects of child development contained in the questionnaire. The scale contains 20 items asking parents to indicate to what extent they think smart phone and tablet use is good for child's cognitive development and competencies. From the 20 items on the whole scale, eight items (see appendix A) which focused on Childs' cognitive development were used to measure parental attitudes on towards children's early exposure to smart phones and tablets regarding cognitive development. Examples of such items are: 'I think using smart phones and /tablets is good for developing reasoning skills, is good for learning to remember, etc. Each item is placed on a 7-point Likert scale, where 1 = strongly disagree, 2 = disagree, 3 = disagree somewhat, 4 = neither agree nor disagree, 5 = agree somewhat, 6 = agree, and 7 = strongly agree. Cingel and Krcmar (2013) developed the items which were used in their study. A reliability test of the 8 items measuring child cognitive development used in this study revealed a high Cronbach's alpha  $\alpha = .98$ . This shows a high internal consistency of the items.

### **Parental Values**

The Portraits Values Questionnaire (PVQ) IV value scale was used to find how parents describes some people in relation to how much like him/her is the person. The scale was developed by Schwartz et al (2001) on their study 'Extending the Cross-Cultural Validity of the Theory of Basic Human Values with a different method of measurement '. The PVQ includes short verbal portraits each which describes a person's goals, aspirations, or wishes that point implicitly to the importance of a value. For example, "Thinking up new ideas and being creative is important to him. He likes to do things in his own original way" (Schwartz, 2005b; Schwartz, et al., 2001). A correlation test between the ten basics values developed by Schwartz et (2001) and parental attitudes on child cognition towards childrens early exposure to smart phone and tablet reveals that power, tradition and conformity have higher relations. This study thus used the three values namely; values of power (Self Enhancement), vales of tradition (Conservation) and values of conformity (conservation) to measure parental values. The scale contains 21 items on a 6-point Likert scale, where 1= very much like me, 2 =like me, 3=somewhat like me,4=a little like me,5=not like me and 6=not like me at all. The scale has the male and female version, where parents were asked how much like him/her is this person when he/she thinks of new ideas and being creative is important to him/her.

Values were correlated for possible differences in scale use according to Schwartz et al. (2001). For this purpose, the mean scores of individuals were computed across all twenty-one items of the whole questionnaire (MRATs) and centered (MRATs were subtracted from each of the value scores of the individuals). This standardized score was used in the analysis. Reliability analyses revealed a Cronbach's  $\alpha=.50$  for power, Cronbach's  $\alpha=.51$  for conformity and a Cronbach's  $\alpha=.46$  for tradition.).

### **Socio-Demographics**

The last scale is the socio-demographic which contains 20 items, thus seeking a background information about the participants which includes their age, gender, country of birth, city of residence among others (see appendix E). To find if there is a relation between parents' level of education and their attitudes towards exposure of young children to smart phone and tablet, the questionnaire further asked about parents' level of education. Using the ISCED scale, we combined the education and degree levels of each parent and created one education variable per parent. In this international scale; 1= No schooling or certificate, 2= completed primary education, 3= completed secondary education, 4 = secondary education second stage, 5= postsecondary education, 6 = Bachelor and Master while 7 was coded for PhD. Lastly, we created a new by variables by combining these two variables to account for both parents' education.

### **2.7 Data Analysis**

In analyzing the questionnaire results, a parametric test to examine the relation and strength of an association between two continuous variables, in this case, a Pearson correlation ( $r$ ) is used. To answer research question 1, a Pearson correlation tests was computed to determine the relations between parental values and parental attitudes on child cognitive development towards children's early exposure to smart phones and tablet. As mentioned in measures above, the values of power, traditions and conformity were correlated independently against parents' attitudes on child cognitive development to determine the direction and magnitude of the relations that exists between them. To analyse research question 2, the researcher computed an independent sample t-test (a parametric test) to compare the means of the two independent groups, in this case, the rural

and urban parents in Nigeria to determine whether there is statistical evidence that the means are significantly different. Furthermore, to answer the research question 3, a Pearson 's correlation was used to measure the relation that exists between parents' attitudes on cognitive development towards early exposure of children to smart phones and parents' level of education.

### **3.1 Results**

The purpose of this quantitative study was to investigate the attitudes of parents in Nigeria towards early exposure of young children to smart phone and tablet. This section provides the results of a correlation analysis between parental values and parental attitudes of child cognitive development; it further presented the result of an independent sample t-test computed for parental attitudes of child cognitive development and parents in urban /rural Nigeria. Finally, a correlation between parents' level of education and their attitudes on child cognitive development. Descriptive statistics for each of the variables including mean, standard deviation and finally an inferential result are presented for each of the research questions.



**Descriptive Analysis**

Table 1

*Descriptive Statistics.*

Variables	<i>N</i>	<i>M</i>	<i>SD</i>
Mothers' Level of Education: What is the highest educational degree of the mother of the child?	80	3.71	2.03
Fathers' Level of Education: What is the highest education degree of the father of the child?	80	3.83	2.01
Parental Attitudes (Urban)	41	5.56	1.72
Parental Attitudes (Rural)	39	2.21	.51
Attitudes on child cognitive development	80	3.92	2.11
Power values	80	.29	.74
Conformity values	80	.08	.61
Tradition values	80	.11	.60

*Note.* Scale 1-2. (Urban=1, rural =2, Scale of parents' level of education (1-7); 1= No schooling or certificate, 2= completed primary education, 3= completed secondary education, 4 = secondary education second stage, 5= postsecondary education, 6 = Bachelor and Master and 7=PhD. Scale of attitudes on child cognitive development 1-7 (1=strongly disagree, 7=strongly agree); Scales for tradition, conformity and power 1=6, (1=very much like me, 6= Not like me all). Standardized scores.

### 3.2 Relations of parental values and parental attitudes on child cognitive development towards children exposure to smart phones and tablets.

Table 2.

*Correlation coefficients between parental attitudes on child cognitive development and parental values. (N=80)*

Variables	1	2	3	4
Parental attitudes on child cognitive development	-			
Power values	.25*	-		
Conformity values	.14	.01	-	
Tradition values	-.04	-.24*	-.14	-

*Note.* \* Correlation is significant at the 0.05 level (2-tailed). Standardized scores

A Pearson's correlation coefficient was computed to analyse the relations between parental values of tradition, conformity, power and parental attitudes on child's cognitive development. The correlation between value of power and parental attitudes revealed a significant positive correlation ( $r = .25, p < .05$ ). Secondly, parental value on conformity when correlated with parental attitudes on child cognitive development, showed a weak positive correlation ( $r = .14, p < .05$ ). Finally, the parental value on tradition was correlated with parents' attitude on children's cognitive development, the Pearson's r data analysis revealed a weak negative correlation ( $r = -.04, p > .05$ ).

### 3.3 Parental attitudes on child cognitive development in rural and urban Nigeria

Table 3.

*Results of t-test and descriptive statistics for parental attitudes on child cognitive development and parents in urban/Rural Nigeria.*

	Urban			Rural			95% CI for Mean Difference	t	df
	M	SD	n	M	SD	n			
Parental Attitudes	5.56	1.72	41	2.21	.51	39	2.77, 3.91	11.8	47

*Note:* N=80, Scale 1-2. (Urban=1, rural =2); Scale of attitudes 1-7 (1=strongly disagree, 7=strongly agree. \*  $p < .05$ ).

An independent sample t- test was computed to compare the parental attitudes on child cognitive development towards early exposure of children to smart phones and tablets in urban and rural areas of Nigeria. The Levene's test of equality of variance has shown to be significant  $F(47) = 28.75, p < 0.05$ . Therefore, Equal variances is not assumed, and the result showed a significant difference between the urban (M=5.6, SD=1.7) and rural (M=2.2, SD=.5) in terms of attitudes towards early exposure of children to smart phones and tablets with  $(t(78) = 11.85, p < .05)$ .

### 3.4 Relations of parents' attitudes on child cognitive development and parents' level of Education.

Table 4

*Correlation coefficients between parental attitudes on child cognitive development and parents' level of Education.*

Variables	1	2	3
Attitudes on child cognitive development	-		
Mothers' Level of Education: What is the highest educational degree of the mother of the child?	.82**	-	
Fathers' Level of Education: What is the highest education degree of the father of the child?	.81**	.96**	-

*Note.* \*\*Correlation is significant at 0.01 level (2-tailed)

A Pearson's correlation coefficient was computed to analyse the relations between parental level of education and parents' attitudes towards early exposure of young children to smart phones and tablet. The result revealed that parents' attitudes on child cognitive development and mothers' education level are significantly and positively correlated ( $r=.82$ ,  $p<.01$ ). In the same vein, the education level of the father was significant and positively correlated with parental attitudes on child cognitive development ( $r=.81$ ,  $p<.01$ ). The result further revealed that mothers' level of Education correlated positively and significantly with fathers' level of Education at ( $r=.96$ ,  $p<.01$ ).

## Discussion

This study investigated the attitudes of parents in Nigeria towards early exposure of young children to smartphones and tablets. The main findings were that: (a) There is a significant relation between parental values of power and parental attitudes; (b) parental attitudes towards early exposure of young children to smart phones and tablets differ between rural and Urban Nigeria parents; (c) The higher level of education of parents can as well positively influence their attitudes towards smartphones and tablets usage by young children.

Based on these finding, this study found that in the Nigerian context, parental values and attitudes on child cognitive development are important variables to consider when investigating child cognitive process and behaviour. According to Schwartz (2012), values underlie attitudes; they are the basis for evaluations. We evaluate people, behaviors, events, etc. positively if they promote or protect attainment of the goals **we** value. As power values is however very important because they help to motivate individuals to work for group interests. They also justify the hierarchical social arrangements in all societies (Schwartz,2012). As the study considers the cognitive aspects of child development as a parameter to measure parental attitudes since cognition refers to all aspects of child's thinking and reasoning (Walz, 2008). The result showed the mean of two of the items (is good for learning to remember and is good for development reasoning skills) are 4.11 and 4.01 respectively.

The correlation test (table 2) answered research question 1 as value of power and parental attitudes on child cognitive development are significant and positively correlated at ( $r = .25, p < 0.5$ ). This implies that the higher the parental values are the higher the more likely they will be positive in their attitudes towards exposure of children to smart phones and tablets. Human beings are a

representation of social animals, caring most often about their personal societal standing and what people thinks about them. Power values according to Torelli and Shavitt (2010) are measured through ratings of the importance of “authority” and “wealth” as guiding principles in people’s lives. E.g. words such as “It is important to me to be rich. I want to have a lot of money and expensive things” and “It is important to me to get respect from others. I want people to do as I say” (Davidov, Schmidt & Schwartz, 2008). In further development, power values are demonstrated in such behaviors as “pressing others to go along with one’s preferences and opinions” or “choosing friends based on how much money they have” (Bardi & Schwartz, 2003).

This study also confirmed the research question 2 where it established that there is a significant difference between Nigerian parents in rural and urban areas towards early exposure of young children to smartphones and tablets. Parents in the urban areas are more positive than those in the rural areas. Majority of the parents from the rural areas felt that smartphones or tablets does not contribute to the cognitive development of the child. For example, 32 of the 39 participants from the rural area disagree that smartphone or tablet is good for the development of attention skills. 23 out of 39 of them disagree that it is good for learning to remember, at the same vein, 23 of them also disagree that smart phone and tablet is good for reasoning skills. Many them (25) also disagree that it is good for mathematic skills, while 26 out of 39 of them disagree that smartphone and tablet is good for language skills e.g. learning new word. The same trend continues when it comes to learning to read and learning to talk, 26 and 24 participants disagreed respectively. Comparatively, higher percentage of those in the urban areas agreed differently in respective items as above.

Parents in the rural areas disagree with the assumption that smart phones and tablets plays role in child language development, instead is traditional values like culture that does. Culture also

plays a very large role in the development of language. Babies just four days old can distinguish one language from another (Cowley, 1997). These cultural ways can influence a parent's beliefs about proper ways that children are supposed to act (Flavell, Miller & Miller, 1993). These same parents also take on the task of a guide, and provide models of, "to-be-acquired" behavior, and arrange and structure the child's participation in activities (Flavell, Miller & Miller, 1993). It is to be discussed at this juncture that parents living in urban areas are positive towards the subject matter because of their better social interaction with people of other cultures, higher income level, accessibility to mobile technologies and electricity, higher level of education and Health, employment, and development facilities.

The research question 3 was answered by the results obtained in this correlational analysis which established that the higher the level of education of parents, the more positive their attitudes towards early exposure of young children to smart phones and tablets would be. As Bronfenbrenner (1979) pointed out that better education may provide parents with important cognitive resources that will enable them create a positive behaviour towards their childrens 'use of learning devices. Davis-Kean (2003) mentioned that parental education facilitates parents' ability and willingness to seek out expert advice about activities concerning their children. Education increases parents' ability to synthesize information, leading to better decision-making and greater efficiency in meeting goals (Davis-Kean, 2003). However, Davis-Kean (2005) concluded that low levels of education are linked to anxiety, hostility and depression, which in turn affect parents' attitudes towards their children use of gadgets. From the study, it was established that parents with higher level of education are mostly located in the urban areas than the rural areas, which manifested through the confirmation of the result. However, it could be seen that the positive stand of parents towards early exposure of young children to smart phone and

tablet is an endorsement that level of education of parents is an essential factor when measuring parental attitudes towards the children early use of smartphone and tablet. The above analysis as indicated in this study further reveals that parents' level of Education significantly and positively correlated with parents' attitudes on child cognitive development.

#### **4.2 Limitations**

Regarding the measurement of variables, some limitations should be mentioned. First, this study only used cognitive development of the child to measure parents' attitudes, there are some other aspects of the child development that are contained in the instruments used for the study, e.g. child emotions development, child social development that could also be used. Further limitation includes the use of three values only (power, tradition and conformity) out of the 10 Schwartz motivational theory of values to measure parental values. The researcher is also of the view that the sample size (N=80) is small compared to the general population (180,000,000) of Nigeria. As one major limitation of small studies is that they can produce false-positive results, or they over-estimate the magnitude of an association (Hackshaw,2008).

#### **4.3 Further Research**

Nigeria is among the first few countries to collect results on parent's attitudes on child cognitive development regarding smart phone and tablet use in young children between age 0-3 years using this instrument. In the future, a larger international study coordinated by Weis et al. will compare the results of several countries to see how parents' attitudes differ since this is part of a larger project. The researcher is interested to see a strong correlation between parental attitudes



and parental values in other countries that this project will cover including China, Costa Rica, Germany, Iran, Chile and so on. The researcher further feel that such research as specified above should include the age of children of older age e.g. 0-7 years to see if the attitudes of parents towards exposure of young children to smart phone and table would differ across cultures. Although parents in the rural areas of Nigeria seems not to rely on smart phone and tablet apps for cognitive development benefits, (though not the case in urban, Nigeria). But in a more general terms, perhaps in other countries parents will view them more as an educational supplement and therefore allow their young children to use them more. Additionally, a larger sample size would allow to see larger relationships between parental values and attitudes. Finally, the rest of the motivational values and should be included to see if the result can change.

## **5.0 Conclusion**

The present study adds to the general discussion regarding relations between parental values and parental attitudes towards young children use of smart phones and tablets. Results have revealed that there is a relation between parental value of power and parental attitudes on child cognitive development regarding early exposure of young children to smart phone and tablet. The result further shows that values of tradition are stronger in the rural areas than urban areas as such parents have fewer positive attitudes towards the exposure of young children to smart phones compared to their counterparts in the urban areas of Nigeria. However, the level of education of parents is a strong enhancing factor towards their attitudes. This generally suggests that due to the high esteem which the parents specifically those in the rural areas of Nigeria holds to their values of power, tradition and conformity, they negatively react to the idea of allowing young children of

0-3 years use smart phone and tablet. Those parents in the urban areas due to their higher level of education on the other hand sees given same device to children of same age range as a way of developing their cognitive skills, thus they are positive.

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## Appendix A

Table 1.

*Specific items that constitutes parental attitudes on child cognition.*

Variables	N	M	SD
I think using tablet and /or smart phones ...			
...is good for developing attention skills (e.g. attention span	80	3.84	2.19
...is good for learning to remember	80	4.11	2.24
...is good for developing reasoning skills	80	4.01	2.22
...is good for developing mathematics skills	80	3.90	2.22
...is good for learning to resolve problems when solution is not immediately obvious	80	3.81	2.31
...is good for developing language skills (e.g. Learning new words)	80	3.96	2.68
...is good for learning to read	80	4.04	2.30
...is good for learning to talk	80	3.67	2.19

*Scale 1-7. (1= strongly disagree- 7= strongly agree).*

## Appendix B

Table 2  
*Specific items of each of the three values*

Variables	Items	Mean	SD
Power	It is important to her to be rich. She wants to have a lot of money and expensive things.	2.15	1.13
	It is important to her to get respect from others. She wants people to do what she says.	2.16	1.36
Tradition	It is important to her to be humble and modest. She tries not to draw attention to herself.	1.80	.75
	Tradition is important to her. She tries to follow the customs handed down by her religion or her family	1.73	.99
Conformity	She believes that people should do what they're told. She thinks people should follow rules at all times, even when no-one is watching.	1.80	.85
	It is important to her always to behave properly. She wants to avoid doing anything people would say is wrong.	1.76	.94

*Scale 1-6. (1=very much like me, 6= Not like me all). standardized score*

## Appendix C

Table 3

*Frequency distribution of participants in gender and cultural context.*

Variables	Freq.	%
Male	44	55
Female	36	45
Urban	41	52.2
Rural	39	48.2

*Note: N=80; Scale for gender; 1-2, (1=male, 2=female); 1 Scale for cultural context; (1=urban,2=rural).*

## Appendix D

Table 4.

*Frequency distribution of parents' levels of Education*

Variables	Freq.	%
No schooling	4	5.0
Completed primary Education	33	41.3
Completed Sec. school Education	6	7.5
Secondary Education 2 <sup>nd</sup> stage	1	1.3
Post-Secondary Education	4	5.0
Bachelors and master's degree	29	36.3
PhD	3	3.8

*Note: N=80, Scale 1-7, (1=No school, 2=completed primary education, 3=completed secondary education, 4=Secondary education 2<sup>nd</sup> stage, 5=post-secondary education, 6=Bachelors and masters, 7=PhD.*

## Appendix E

Table 5.

*Sample of Demographic section of the Questionnaire*

1. Your Gender: (a) Male b) Female
2. Your Age: ..... Years .....
3. Where do you live? Country: .....
4. City: .....
5. Where were you born? Country: .....
6. City: .....
7. Have you ever lived abroad? 1) Yes 2) No
8. If yes, which country? ..... For how long?
9. Your native language: .....
10. What language do you speak at home with your child? .....
11. Age of your child in months: .....
12. Where was your child born? .....
13. Your child's gender: 1) Boy 2) Girl
14. Mother's Level of Education:
15. What is the highest educational degree of the mother of the child?
0 No schooling/no certificate. 1 Completed primary education. O 2 Completed secondary. Education. O 3 Secondary education second stage. O 4 Postsecondary education O 5 Bachelor and Master. O 6 PhD
15. Father's Level of Education:



What is the highest educational degree of the father of the child? O 0 No schooling/no certificate O 1 Completed primary education O 2 Completed secondary education O 3 Secondary education second stage O 4 Postsecondary education O 5 Bachelor and Master
16. Occupation of the mother of the child: .....
1) Full Time 2) Part Time 3) Not Employed
17. Occupation of the father of the child: .....
1) Full Time 2) Part Time 3) Not Employed
18. Your civil status: 1. Married 2. Divorced 3. Single
4. In a relationship 5. Widowed 6. Other
19. Number of children: .....
20. Would you like to share any additional thoughts or comments with us? _____

## Appendix F

Table 6.

*Sample of value sections of the questionnaire. (males' version)*

	How much like you is this person?	1	2	3	4	5	6
11.1	Thinking up new ideas and being creative is important to him. He likes to do things in his own original way						
11.2	It is important to him to be rich. He wants to have a lot of money and expensive things.						
11.3	He thinks it is important that every person in the world be treated equally. He believes everyone should have equal opportunities in life						
11.4	It's very important to him to show his abilities. He wants people to admire what he does.						
11.5	It is important to him to live in secure surroundings. He avoids anything that might endanger his safety.						
11.6	He likes surprises and is always looking for new things to do. He thinks it is important to do lots of different things in life.						
11.7	He believes that people should do what they're told. He thinks people should follow rules at all times, even when no-one is watching						
11.8	It is important to him to listen to people who are different from him. Even when he disagrees with them, he still wants to understand them						
11.9	It is important to him to be humble and modest. He modest. He tries not to draw attention to himself.						
11.10	Having a good time is important to him. He likes to 'spoil' himself.						
11.11	It is important to him to make his own decision about what he does. He likes to be free and not depend on others.						
11.12	It's very important to him to help the people around him. He wants to care for their well-being.						
11.13	Being very successful is important to him. He hopes people will recognize his achievement.						
11.14	It is important to him that the government ensures his safety against all threats. He wants the state to be strong, so it can defend its citizens.						

11.15	He looks for adventures and likes to take risks. He wants to have an exciting life.						
11.16	It is important to him always to behave properly. He wants to avoid doing anything people would say is wrong.						
11.17	It is important to him to get respect from others. He wants people to do what he says.						
11.18	It is important to him to be loyal to his friends. He wants to devote herself to people close to him.						
11.19	He strongly believes that people should care for nature. Looking after the environment is important to him.						
11.21	He seeks every chance he can to have fun. It is important to her to do things that give him please.						