Disruptive Technology and Consumer Attitude of Wood Work Firms in Port Harcourt

Akahome, E. Joy\textsuperscript{a} & Ozuru, Henry N.\textsuperscript{b}

\textsuperscript{a}Federal University, Otuoke Bayelsa State. 
Department of Marketing, Faculty of Management Sciences  
akahomejj@fuotuoke.edu.ng

\textsuperscript{b}Department of Marketing, Faculty of Management Sciences  
University of Port Harcourt  
Choba, Port Harcourt.  
Henry.ozuru@uniport.edu.ng

This study examined the relationship between the multi-dimensionality of disruptive technology and consumer attitude of wood work firm in Port Harcourt. Three hypotheses were formulated. To test the hypotheses, a survey of 245 respondents selected from 1720 Lecturers in University of Port Harcourt was carried out. Results showed positive relationship that exists between the dimensions of disruptive technology and consumer attitude. The study, therefore, concludes that disruptive technology could be a means of gaining strong competitive advantage in a wood work firms.

**Key words:** Disruptive Technology, Consumer Attitude, Innovation, Belief, Motivation, Emotion, Wood Work, Port Harcourt, Nigeria

**INTRODUCTION**

Nigeria has a wide array of wood works ranging from basketry, mats, tables, chairs, doors, windows, toys, leather works among others. These items are produced in almost all the districts and regions of Nigeria (on which Port Harcourt is a part) using locally available raw materials, with limited product differentiation based on culture, history and traditions (Okonkwo, 2017). Wood carving in Nigeria is cultural, traditional and predominantly a cottage industry, engaged in by rural youth of both gender. The tradition has been to hand over craftsmanship and skills from generation to generation. This tradition has waned considerably over time. Even though master craftsmen can still be found, their numbers and consumer attitude towards wood works have diminished considerably as a result of ‘disruptive technology’. This has considerably influenced consumer attitude towards wood works end products (Tony, 2010).

Wood works are another Nigerian industrial cluster project. The benefit of Arts and Crafts is not quite derived from the present National Development Plan. Rather, emphasis on development is
geared more to the disruptive technologies, crude oil and other mineral resources. The folk of Nigeria has a long and rich tradition behind it. Its international popularity today can be seen from the enormous number of hobby and crafts departments, shops, and stores springing up everywhere (Irivwieri, 2009). Wood carving is one of the oldest arts of human kind, wooden spears from the middle Paleolithic show that people have engaged in utilitarian wood work for millennia. The beginning of craft can be traced far back at least to wherever there is the presence of timber; the use of wood exists as a universal phenomenon in human culture as both a means to create or enhance technology and as a medium for artistry. The history of wood is traceable from the ancient Egypt era to the ‘Gothic Period’, the renaissance period down to the 19th century to its present state.

Arts wood works are the results of man’s desire to improve upon the world by utilizing nature’s benevolence. Nature has made everything tangible and intangible available for man’s use and development (Irivwieri, 2009). The tangible things include: trees, grass, gravel, granite etc while the intangible is the idea.

Wood crafts is refers to a piece of handiwork which has some claim to beauty. It is also a craft governed by the will of the artist, a form of population in which the materials used is an essential point of departure for the whole of the creative process and in which practical function plays an important part.

Carving is an art or process of making an art work with either wood, stone or metal. Wood carving on the other hand, is a process of constructing an art with wood. It is the end product of a tree trunk or its branches. There is a popular belief in the traditional Southern part of Nigeria society that carving is a sacred profession because of its involvement in the production of religious object. Thus, it is considered an art, which has its origin in the remote part (Okezie, 2007). Today in Port Harcourt, consumers have turn attention to modern carving innovation, not patronizing much on wood works. This is as a result of disruptive technology (researcher’s observation).

The term ‘disruptive technology’ was coined by Clayton M. Christensen and introduced in his 1995 article. The concept of disruptive innovation was applied in its formulation by Christensen (1997), mainly to firms in the hard-disk drive business during the 1970s and 1980s. Disruptive innovation has also be trending in some sectors like telecommunications, personal computing, utilities, construction, medical related industries and offset printing according to Christensen (1997). The concept has now been widely applied to many of the modern industries such as airlines, transportation, consumer buying, and more recently, 3D printing (Hahn et al. 2014). Disruptive technology has been found of expanding emerging market niches, improving its importance with time and ultimately attacking already established products in their traditional markets like wood works (Utterback and Acee, 2003). It does not necessarily mean that disruptive technology displaces established products, rather, means for enlarging and broadening markets and providing new functionality. Montrey and Utterback (1990), examined innovation in the structural wood panels market leading to the introduction of wafer board and later oriented strand board as substitutes for plywood. After World War II, plywood which had been introduced over forty years earlier began to be used in light frame construction in increasing volume in North America. Disruptive technology refers to a new technology having lower cost
and performance measured by traditional criteria but having ancillary performance (Christensen, 1997).

RESEARCH PROBLEM

Wood as a raw material for making handicrafts in Nigeria has not been at same level with that of the Western world. Products in this category have remained very traditional with rationalized skills for example carving of wood to form man-made gods used for idle worship.

Wood work is gradually becoming slow and requires substantial skills, making the products more expensive, machine work has brought about the disappearance of individual artist as they have been elbowed out of the industry which has led to low demand and sales amongst these wood Carvers in Port Harcourt (Researcher’s observation). The digital tide has changed the aspirations and mindset of customers as they are more design and technology savvy and affluent; thus, they expect more out of the furniture they buy. However, in the zeal for wood carvers to earn quick money for a living the artisans produce in fragmented environment with no appreciation of market requires, quality, design, standards and systematic organization of markets. Disruptive innovations design and product adaptations are limited, given the low skills and capacity of Port Harcourt’s artisanal producers (David, 2010). Little has been said about disruptive technology, thus, the gap in literature that this study intends to fill. This study therefore, empirically examine disruptive technology and consumer attitude of wood work industries in Port Harcourt which other studies failed to explore and this therefore, is the clear knowledge of gap in this paper.

Research Objectives

The aim of this paper is to empirically investigate how disruptive technology affects consumer attitude of wood works industries in Port Harcourt. The general objectives of the study are as follows:

- To determines the extent to which innovation affects belief of wood work in Port Harcourt.
- To determines the extent to which innovation affects motivation of wood work in Port Harcourt.
- To determines the extent to which innovation affects emotion of wood work in Port Harcourt.

Study Variables and Model Specification

In this paper, disruptive technology is our predictor variable with its dimension as (innovation) while the criterion variable is consumer attitude with its measures as (belief, motivation and emotion).
**Functional Relationship**

This paper’s objective establishes the functional relationship amongst the measures of predictor and criterion variables. For the purpose of this study, a model specification is developed to guide the functional relationships as depicted herein:

\[
CA = f(DT) \quad \text{(i)}
\]
\[
DT = (I) \quad \text{(ii)}
\]
\[
CA = (B, M, E) \quad \text{(iii)}
\]

Where:
- CA = Consumer Attitude
- DT = Disruptive Technology
- I = Innovation
- B = Belief
- M = Motivation
- E = Emotion

![Operational Framework](image)

Fig. 1: operational framework on Disruptive Technology and Consumer Attitude of Word Work industries in Port Harcourt.
Source: Desk Research, 2019

**Research hypotheses**

- Ho$_1$ : There is no significant relationship between innovation and belief of wood work in Port Harcourt.
- Ho$_2$ : There is no significant relationship between innovation and motivation of wood work in Port Harcourt.
- Ho$_3$ : There is no significant relationship between innovation and emotion of wood work in Port Harcourt.
LITERATURE REVIEW

Theoretical foundation

This study is anchored on the Creative Destruction Theory postulated by Schumpeter in 1983. This theory attached the concept of innovation tightly to entrepreneurs who constantly introduce new ideas over old ones. Schumpeter developed the business cycle theory, which emphasizes a discontinuous process on innovating like a tidal wave moving forward and then receding; this is so because innovation requires time to have impact on the economy by lowering the costs of new products. This ultimately leads to a dynamic development of economy, which keeps competitive capitalism alive by allocating capital and labor in optimal ways.

Rogers, (1983) described innovation as ideas, practice, or object that is perceived as new by an individual or other unit of adoption. The perceived newness of the idea for the individual determines his or her reaction. If the idea seem new to the individual, it is an innovation. Resource-Based View (RBV) with competence and dynamic capabilities theories have stressed the importance of organization’s resources when responding to new threats (Wernerfelt, 1984), which have directly impacted the disruptive innovation theory.

Schumpeter is the best known for his creative destruction theory, which related to this process of revolutionizing economic structure by continuously destroying the old one and replacing it with new one (Schumpeter, 1962). Dannels (2002), recognizes Schumpeter’s work as a starting point for organizational innovation research, in which organizations try to withstand creative innovation; but also create them. Innovation research and especially technological innovation research together with Schumpeter’s creative destruction theory led to Christensen’s disruptive innovation theory (Yu and Hang, 2010), which was first labeled as disruptive technologies, highlighting the fact that at first disruptive technology mainly concerned products by their design and not the business model (Christensen, 1997). The application of the theory to this study is worthwhile as it explains that responding to innovations have been generally related to organizational capabilities (King and Tucci, 2002).

Consumer Attitude

An attitude in marketing is a general evaluation of a product or service formed over time (Solomon, 2008). An attitude satisfies a personal motive, affects the shopping and buying habit of consumers. Lars Permer (2010) opined that attitude is a composite of a consumer’s beliefs, feelings and behavioral intentions toward some object within the context of marketing. This further buttresses the fact that consumer can hold negative or positive beliefs or feeling toward a product service.

According to Oskamp and Schultz (2005), attitudes are relatively enduring; they are learned predisposition to proceed in favor of or opposed to a given object. In the light of wood works in Port Harcourt, changing a consumer’s attitude towards a wood work product is innovation. Changing consumer’s attitude towards a product is marketer’s Holy Grail; the three attitude change strategies are changing effect, changing behavior and changing beliefs (Perner, 2010).
Changing beliefs (though the most difficult of the three), is necessary when a product in its maturity stage is to be reintroduced into the market (Arora, 2007).

Fishbein’s multi-attribute model is used to measure attitude. This model is composed of three components of attitude; the first is the salient beliefs (a reference to the beliefs a person might gain during the evaluation of a product or service), second is the object-attribute linkages (an indicator of the probability of importance for a particular attribute associated with the attitude object) and the third which is evaluation; a measurement of importance for an attribute (Smith et al. 2008).

The functional theory of attitudes developed by Daniel Katz offers an explanation as to the functional motives of attitudes to consumers (Solomon, 2008). Katz theorizes four possible functions of attitudes namely utilitarian, value-expressive, and ego-defensive and knowledge functions; where each function attempts to explain the source and purpose a particular attitude might have to the consumer. Thus, a consumer attitude exists to satisfy these functions (Katz, 2007). However, the utilitarian function is the most recognized of Katz’s defined functions, it is based on the ethical theory of utilitarianism where an individual will make decisions based entirely on that which he derives the greatest happiness (Sidgwick, 1997).

The study of attitudes is critical to understanding the motivation and decision strategies employed by consumers; the combination of beliefs, attitudes and behaviors influence how a consumer reacts to a product or service. More so, innovation leads to unknown and experimental learning, this process lead to different levels of emotions. The ABC model of attitudes-consisting of affect, behavior and cognition accentuates the relationship between knowing, feeling and doing (Solomon, 2008). In this context, affect represents the emotion or opinion about a product or service, behavior is the responses of a consumer resulting from affect and cognition; cognition is an individual’s belief or knowledge about an attitude object (Solomon, 2008).

**Disruptive Technology/Innovation**

Christensen (1997) brought up the concept of disruptive technologies, which was later complemented with disruptive innovation theory (Christensen and Raynor, 2003). First, the concept relied on technologies but was later applied to business models as well. Markides (2006) argued that disruptive innovations should be studied as separate innovations in terms of competitive outcomes. Disruptive innovation is basically a market result (disruptive relative to markets) that evolves from a root innovation. Therefore, a disruptive innovation should not be treated as equal to other innovation types but rather it should be paired with root type innovation; that is an innovation which eventually becomes disruptive. So, there is a clear distinction between a type of innovation and market related disruption. To demonstrate the multidimensional disruptive innovation, both technology and business model innovation could end up being disruptive but in different ways and even at the same time.

The original theory of Christensen (1997), has got a wide public coverage with critics along. The theory has been challenged and complemented by many authors (e.g. Danneels, 2004; Markides, 2006; Schmidt and Druehl, 2008).
This paper studies disruptive innovation in the context of wood works that is rather untouched area in disruptive innovation studies over the years now and further brings more practical approach into disruptive innovation.

Christensen and Anthony and Roth, (2004) defined a disruptive innovation as: “An innovation that cannot be used by customers in mainstream markets. It defines a new performance trajectory by defining new dimensions of performance compared to existing innovations. Disruptive innovations either create new markets by bringing new features to non-consumers or offer more convenience or lower prices to customers at the low end of an existing market”.

Christensen et al. (2000) state that the key characteristics of a disruptive innovation are that it: “1) targets customers in new ways, 2) generally lowers gross margins, 3) generally does not improve performance along a trajectory traditionally valued by mainstream customers, and 4) introduces a new performance trajectory and improves performance along parameters different from those traditionally valued by mainstream customers”.

Christensen and Raynor (2003) and Christensen, Anthony and Roth (2004) contend that incumbent firms often fail to recognize the threat posed by a disruptive innovation. That is, when incumbents are “overthrown,” it is generally by disruptive innovation. Thus it is critically important that managers be able to recognize a disruptive innovation when they see one.

Christensen and Raynor (2003) and Christensen, Anthony and Roth (2004) go on to suggest that in order to succeed with a disruptive innovation, an incumbent should pursue it in a separate business unit. Again, this point to the need for clear recognition – a firm must be able to clearly delineate between what is a disruptive innovation and what Christensen and Raynor (2003) and Christensen, Anthony and Roth (2004) define as its converse, a sustaining innovation.

Lafferty and Edwards (2004) argued that disruptive technologies disrupt the market, change the industry paradigm and create a whole new market for a new product often driving out the incumbent organizations. The authors applied the theory to universities and the publishing industry, concluding that universities were disrupted by simulation and games technology, telepresence, and online teaching. In turn, the publishing industry was disrupted by electronic versions of scholarly journals supported by online submission of articles, electronic indexing, abstracting and searching, translation services, and the incorporation of multimedia components. This position was challenged by Peters et al. (2016), who argued that technological disruption has little connection to innovation if it concentrates on competition among publishing companies while downplaying the role of researchers in publishers’ innovations. The authors argued that the theory has too narrow a focus to be valuable to the objectives of publishing because ‘a scholarship of publishing should provide a critique of the theory....... through alternative theorizations of technology and innovation in publishing’ (Peters et al. 2016).

Weeks (2015) criticized the notion of disruptive innovation by highlighting specific anomalies including: the definition of disruptive innovation is too broad and loose and does not clearly distinguish between the meaning of disruption and sustaining behavior; the unit of analysis is not specific whether the reference point is the industry, the technology, the firm, or the firm leaders; and managerial behavior in dealing with disruption assumes rational action in avoiding the threat
of disruption. Weeks (2015) concluded that the theory of disruptive innovation does not fit all situations, so its application should be limited to “instance where the innovation is lower cost, lower performing (on at least one performance dimension), and appeal to a subset of the existing market or a new market”. However, the disruptive innovation framework was considered by Weeks (2015) as relevant to an understanding of the dynamics of innovation and the actions by firms in introducing lower-performing, lower-cost product that can gain market share. From this perspective, the framework may be applied to the open access journal publishing model.

Previous studies revealed that disruptive technology has occurred in the following areas: oriented Strand Board disrupts wafer board as it offers a lower cost when compared to plywood due primarily to the use of lower cost timber. Oriented Strand Board was commercially introduced in 1981, the development of new process technologies allowed structural panel manufacturers to produce a low cost plywood substitutes.

Digital cameras disrupt Silver Halide film; the easy transmission and showing of images creates endless possibilities for new enterprises. The advantages of digital imaging explain its rapid adoption in commercial applications; digital photography is innovative and has disrupted the way money is made in the photographic industry.

Fuel injectors disrupts carburetors; the early development of automobile in incorporating the internal combustion engine based on the Otto Cycle (4 cycle, spark ignition) and a carburetor to control fuel delivery became what Utterback and Abernathy (1975) a termed ‘dominant design’. Fuel injection was a disruptive technology in that it dramatically differed from the incumbent carburetor based technology. It represented an architectural change in the fuel delivery system as well as a change to the system components when compared to carburetion.

Fuel injectors disrupts carburetors; the early development of automobile in incorporating the internal combustion engine based on the Otto Cycle (4 cycle, spark ignition) and a carburetor to control fuel delivery became what Utterback and Abernathy (1975) a termed ‘dominant design’. Fuel injection was a disruptive technology in that it dramatically differed from the incumbent carburetor based technology. It represented an architectural change in the fuel delivery system as well as a change to the system components when compared to carburetion.

Fiber doors” disrupts “wood work doors”, the introduction of Fiber doors, while price significantly higher than the wood doors; displaced wood doors as a result of confiscated performance advantages that includes security alert, life-span etc.
The ancillary performance benefits of the wood door (fig. 3) over fiber door (fig. 2) includes ease-of-use (uses of manual handbook), requires no power supply, strong and accessible and can easily be re-fixed when defaulted etc. Consumers’ attitude towards wood door in Nigeria has been taken over by fiber doors due to disruptive technology. This does not mean that wood doors made in Nigeria are not of quality but consumers view about the products. Other wood work products that have been disrupted by the advent of disruptive innovation are shown below:

![Fig. 4: other wood works](image)

To explain this further, the works of Schmidt and Druehl (2008) will help us. Schmidt and Druehl (2008) used the terminology “encroachment” to clarify peoples’ view and connotation meaning of disruptive innovation.

Their term “encroachment” denotes that the new product takes sales away from the old product (as in the case of wood work industry). Encroachment was further categorized into two low-end and high-end encroachments. Low-end encroachment describes the scenario where the new product first displaces the old product in the low-end of the old product market, and thendiffuses upward (the new product may open up a new market before encroachment begins). We define the low end of a product’s market to consist of those customers with lowest willingness to pay for the product (they have the lowest “demand” for the product’s key performance attributes). Similarly, the high end of the market is comprised of customers with the highest willingness to
pay. As suggested by the above fiber and wood doors example, we map disruptive innovation to high and low-end encroachment.

Over time, however, the new competitive product is continually and incrementally upgraded, particularly with regard to that first performance dimension where it was initially woefully inferior to the old product. Gradually, because of this continual upgrading, the new product eventually becomes acceptable to the low-end customers of the old product (assuming it first sold only to a new market segment), who then switch from buying the old product in favor of the new. And with continual upgrading, the new product eventually becomes acceptable even to the high-end customers of the old product, who then also switch from buying the old product to buying the new. Note that we have just described a low-end encroachment process: the new product diffuses through the market from the low end upward toward the high end (possibly after first selling only to a new market segment).

This confirms the basic mapping of a disruptive innovation to low-end encroachment. If the new product opens up a new-market segment, these new customers may have only incrementally different preferences as compared to the old product’s low-end market (we call this new market a fringe market), or can have diverse preferences. In some cases the new product may sell immediately to existing low-end customers without opening up a new segment (this corresponds to the “immediate” type of low-end encroachment).

**Research Methodology**

This study aims to investigate the relationship between disruptive technology and customer attitude of wood work industry in Port Harcourt. The study employed quasi-experimental research design which helps to determine the extent to which disruptive technology can be used to explain or predict the variations in customer attitude. A cross sectional and field survey design of quasi experimental research design will be adopted, this is because a snap shot of event data are to be collected, same analyzed through statistical tools for inference purpose. It is also suitable since the study involved human behavior and is not subjected to laboratory strict control. Considering the unavailability of wood work industry’s and customers’ data, large population size of these firms consumption level and for sake of precision, accuracy, and truth, University of Port Harcourt was our accessible population. This led the study to adopted cluster probability sampling and Lecturers of the university was our working population. Cluster probability sampling is useful for reducing sampling costs and dealing with the lack of a satisfactory sampling frame. A few geographical areas are selected. There were one thousand seven hundred and twenty (1720) lecturers in University of Port Harcourt and Taro Yamen’s formula was used to get the sample size, therefore we have three hundred and twenty five (325) lecturers. Therefore, three hundred and twenty-five (325) was our sample size.

Well constructed questionnaires were used to administer to the respondents. The instrument adopted was a five-point scale which includes: SA=Strongly Agree (5), Agree=A (4), Undecided=U (3), D=Disagree (2), Strongly Disagree=SD (1). The reported Cronbach alphas are as follows: innovation 0.75, belief 0.78, motivation 0.71, and emotion 0.77. The coefficient values were all above 0.7, thus meeting Nunnally’s (1978) recommendations of greater than
0.70. Pearson product moment correlation significant was used to analyze and test the formulated hypotheses.

Table 4.1 Respondents Questionnaire and Demographics Distribution

<table>
<thead>
<tr>
<th>Details</th>
<th>Particulars</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaire</td>
<td>Distributed</td>
<td>325</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Retrieved</td>
<td>269</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Not retrieved</td>
<td>56</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Retrieved usable</td>
<td>245</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Retrieved not usable</td>
<td>24</td>
<td>9</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>210</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>35</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>245</td>
<td>100</td>
</tr>
<tr>
<td>Age group</td>
<td>25 - 35 years</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>36-45 years</td>
<td>75</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>46-55 years</td>
<td>83</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>56-65 years</td>
<td>54</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>66 years and above</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>245</td>
<td>100</td>
</tr>
<tr>
<td>Academic qualification</td>
<td>B.Sc</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>M.Sc/MBA</td>
<td>74</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Ph.D</td>
<td>156</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>245</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Survey data, 2018.

Table 4.1 shows the questionnaire and demographics distribution of the respondent; out of 325 questionnaire administered, 269 questionnaires were retrieved with a percentage of 83% of the total questionnaire distributed while 56 questionnaire with a percentage of 17% were not retrieved. Out of the 269 returned questionnaire 245 were usable representing 91% while 24 of the returned questionnaire with a percentage of 9% were not relevant for the study. For gender distribution; 210 of the respondents with a percentage of 86% were male respondents, 35 of the respondents with a percentage of 14% were females. For age group distribution; 9 respondents fall within the age grade of 25 - 35 years with a percentage of 4% of the total respondents, 31% corresponding to 75 respondents of the total respondents fall in the age group of 36-45 years, 83 respondents with a percentage of 34% fall in the age group of 46-55 years, 54 respondents with a percentage of 22% fall in the age group of 56-65 years, while 24 respondents with a percentage of 9% fall in the age group of 66 years and above.

**Hypotheses testing**

Decision rule: Reject null hypothesis if p<0.05

0.1 and above= Positive relationship {0.1-0.3=weak relationship; 0.4-0.6=moderate relationship; 0.7-0.9=strong relationship; 1=perfect relationship}

-0.1 and above= Negative relationship {-0.1-0.3=weak relationship; -0.4-0.6=moderate relationship; -0.7-0.9=strong relationship; -1=perfect relationship}.
Ho₁: There is no significant relationship between innovation and belief of wood work in Port Harcourt.

Table 4.2 Correlation showing the relationship between Innovation and Belief.

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Innovation</th>
<th>Belief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.929**</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>245</td>
</tr>
<tr>
<td>Belief</td>
<td>Pearson Correlation</td>
<td>.929**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>245</td>
</tr>
</tbody>
</table>

**: Correlation is significant at the 0.05 level (2-tailed).

Source: Field Survey Data, 2019, SPSS 23 Output

Decision: Table 4.2 above shows a Pearson Product Moment correlation coefficient of \( r = 0.929 \) and a probability value of 0.000. This result indicates that there is a strong and positive significant relationship between innovation and belief of wood work industry in Port Harcourt. The coefficient of determination \( r^2 = 0.86 \) indicated that 86% of belief of wood work is explained by disruptive technology. This implies that 86% of the respondents agreed that disruptive technology significantly determines the belief towards wood works in Port Harcourt. Therefore, as stated in the decision rule we reject the null hypothesis and accept the alternate hypothesis, because the PV (0.000) <0.05 level of significance.

Ho₂: There is no significant relationship between innovation and motivation of wood work in Port Harcourt.

Table 4.3 Correlation showing the relationship between Innovation and Motivation.

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Innovation</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.916**</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>245</td>
</tr>
<tr>
<td>Motivation</td>
<td>Pearson Correlation</td>
<td>.916**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>245</td>
</tr>
</tbody>
</table>

**: Correlation is significant at the 0.05 level (2-tailed).

Source: Field Survey Data, 2019, SPSS 23 Output
Decision: Table 4.3 above shows a Pearson Product Moment correlation coefficient of 0.916 and a probability value of 0.000. This result indicates that there is a strong and positive significant relationship between innovation and motivation of wood work industry in Port Harcourt. The coefficient of determination ($r^2 = 0.84$) indicated that 84% of motivation of wood work is explained by disruptive technology. This implies that 84% of the respondents agreed that disruptive technology significantly determines the motivation towards wood works in Port Harcourt. Therefore, as stated in the decision rule we reject the null hypothesis and accept the alternate hypothesis, because the PV (0.000) $<$0.05 level of significance.

$H_0$: There is no significant relationship between innovation and emotion of wood work in Port Harcourt.

Table 4.4 Correlation showing the relationship between of Innovation and Emotion.

<table>
<thead>
<tr>
<th></th>
<th>Innovation</th>
<th>Emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.922**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>245</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>245</td>
<td>245</td>
</tr>
<tr>
<td>Emotion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.922**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>245</td>
<td></td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.05 level (2-tailed).
Source: Field Survey Data, 2019, SPSS 23 Output

Decision: Table 4.4 above shows a Pearson Product Moment correlation coefficient of 0.922 and a probability value of 0.000. This result indicates that there is a strong and positive significant relationship between innovation and emotion of wood work industry in Port Harcourt. The coefficient of determination ($r^2 = 0.85$) indicated that 85% of emotion of wood work is explained by disruptive technology. This implies that 85% of the respondents agreed that disruptive technology significantly determines the emotion towards wood works in Port Harcourt. Therefore, as stated in the decision rule we reject the null hypothesis and accept the alternate hypothesis, because the PV (0.000) $<$0.05 level of significance.

**Discussion of Results**

The results supported all the three hypotheses formulated for the study. The test of hypothesis one shows that innovation was positive related to belief. This finding is consistent with previous studies that found that a good disruptive innovation boosts patronage by tantalizing customers to have positive attitude toward wood works (Christensen and Raynor, 2003; Christensen and Anthony and Roth, 2004).

The test of hypothesis two shows a positive and strong significant relationship between innovation and motivation. This finding is supported by previous studies which affirmed that
appropriate innovation is a premium to a wood work outlet (Christensen and Raynor, 2003; Christensen and Anthony and Roth, 2004).

The result of the test of hypothesis three shows that innovation has significant relationship with emotion (Schmidt and Druehl, 2008).

Conclusions

This study sought to establish a relationship between disruptive technology and consumer attitude of wood work industry in Port Harcourt. The concept of disruptive technology and consumer attitude, as used in this study, were discussed, and hypotheses formulated there from. The results of the test of the hypotheses show that disruptive technology has strong significant relationship with consumer attitude. Thus, providing good service and quality delivery could be a means of gaining strong competitive advantage in a wood work firms.

Recommendations

In order to keep the good performance of wood work firms, the management should always get important feedback from her customers as regard to comfortability of their services.

The management should as well maintain the quality service delivery and add values to her wood works which will contribute immensely to the growth of the firm as well as competitive advantage over fiber works.

Managers should realistically assess the degree to which encroachment is expected to progress and the speed at which it will do so.

By and large, wood crafts should be considered as another Nigeria's industrial cluster project, for her to join the first twenty economies of the world in the years ahead. From the above discourse, it is imperative for governments of Nigeria to embrace the ideals of the Millennium Development Goals (MDG), as part of the models to fast-track industrial growth in the country, by paying attention to the development of Wood Crafts (National Planning Commissions, 2004).

REFERENCES


