

# A Qualitative Inquiry of Organizational Commitment on the Relationship between Technology Characteristics and Technology Adoption

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**Abstract**—A number of studies that have bearing on Technology Characteristics and Adoption have been conducted. However, very scanty ones relate these concepts to organizational variables. This paper set out to have an empirical look at the mediating effects of organizational commitment (OC) on the relationship between technology characteristics (complexity and perceived usefulness) and computer technology adoption (CTA). To achieve the objective of this study, a model was proposed and two propositions were formulated (1. OC mediates the relationship between complexity and CTA; 2. OC mediates the relationship between usefulness and CTA). In addition to the literature reviewed, relevant data were gathered by interviewing ten employees of different SMEs; and qualitative analysis was carried out using content analysis respectively. It was found that OC mediates the relationship between Technology characteristics and CTA. Among the implications of this paper are the extension of the frontier of the exiting literature and helping practitioners plan using the proposed framework.

**Index Terms**—Complexity, organizational commitment, technology adoption, usefulness.

## I. INTRODUCTION

Within the rapidly changing global picture, SMEs are compelled to keep track of six major factors: demographic, economic, social-cultural, natural, technological and political-legal environments. It takes real commitment for businesses to understand how these factors interact with one another [1] to produce satisfactory outcomes.

This study focuses on the technological concern of Nigerian SMEs. It is clear from the literature that much of the existing research focused on the technology adoption decision and other measures such as ‘intent to adopt’ and ‘adoption versus non-adoption’ [2]. This scenario motivates the present study to focus on the mediating role of Organizational Commitment (OC) on the relationship between Technology Characteristics and Computer Technology Adoption (CTA), especially within the context of the SMEs. In this, study Computer Technology entails hardware and software applications that support operations and decision making in the business [3]. Technology adoption as far as this study is concerned is the rate at which

users make the actual use of the technology in their operations.

Moreover, there are limited empirical evidence that enlighten the effects of organizational commitment on the relationship between technology characteristics and technology adoption of SMEs. Therefore, this study is aimed to fill this empirical gap.

### A. Objective

The objective of this paper is to examine the mediating effects of organizational commitment on the relationship between technology characteristics and technology adoption among SMEs.

### B. Research Propositions

Organizational Commitment mediates the relationship between complexity and CTA.

Organizational Commitment mediates the relationship between usefulness and CTA

This paper is divided into five sections. Section I is the introduction describing the overview of SMEs, Section II is on theories related to organizational commitment and related works concerning technology characteristic and technology adoption, Section III is on the research design, Section IV is on analysis and discussions, and Section V is the conclusion.

## II. LITERATURE REVIEW

Despite the strong effects of technology characteristics on adoption, not much attention has been given to the indirect or mediating relationship between organizational commitment and adoption as an accompanying platform that facilitates the actualization of innovators’ dreams [4]. When employees are dissatisfied at work, they become less committed and they would look for other opportunities to quit. If opportunities are unavailable, they may emotionally or mentally “withdraw” from the organization, and this could lead to low activities that slow down technology adoption. Thus, organizational commitment and job satisfaction are important attitudes in assessing employees’ intention to quit as well as the overall contribution of the employee to the organization [5]-[7].

Some studies have concluded that commitment has a great impact on the successful performance of an organisation [8]; with this performance, new technologies could seem simple and compatible with the existing norms, very useful and adopted with ease. Going by this, human resources are seen to be an organization’s greatest assets, retaining committed human resources should be a priority to organisations that

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want to have a smooth flow of technology adoption [9]. In their definition, [10], focus on the psychological bond that glues the employee to the organisation. This bond has three dimensions that all centered on the personnel-- compliance, identification and internalisation. In a separate research that consolidates the idea of proponents of “psychological bond,” OC was conceived as a force that binds an individual to a course of action” [11]. This could imply commitment to new technologies, notwithstanding their characteristics. These ideas have roots in some theories for example Dissonance theory, Role and group theory, Instrumentality and Utility, and Behavioral Intention that play a part in the various definitions of commitment ,

According to [12], instrumentals beliefs concerning organizational-related behavior leads to organizational commitment and instrumental motivation and respectively, the instrumental motivation and commitment behavior will leads to organization-related intention and behavior [13]. Thus, with high commitment as motivating factor, employee with high task oriented is expected to be more easily to adopt a complex innovation. This could imply that organizational commitment could mediate the relationship between complexity and technology adoption.

Ref. [14] who introduce the norm of reciprocity claimed that recipient of benefits is morally obligated to recompense the donor. At the same time helping other will incur obligations in which donor can be expected to help in the future. With this in mind, employees would be motivated to facilitate the effective implementation of innovation that is perceived to be useful and hoping that the benefits associated with usefulness would be celebrated together. In view of this explanation, it can be expected that organizational commitment could moderate the relationship between perceived usefulness and technology adoption.

### III. RESEARCH DESIGN

The data for this study was gathered through the reviewed of relevant literature and the interview of ten (R1 to R10) employees of some selected firms, using purposive sampling technique. For better representation, two (2) interviewees were chosen from each of the bakery, superstore, private school, pharmaceutical industries located in Nigeria.

Collected data was analyzed using Content analysis. A very important point to make here is that the technology characteristics were formed from the literature, finetuned by pilot study and authenticated in the main field study. The interview guide used in this study was pilot tested using two employees and three professionals. Their feedback suggested the need to paraphrase or delete some questions that did not really apply. Basically, the guide adapted complexity from [15], perceived usefulness and technology adoption from [16] and organizational commitment from [17].

### IV. ANALYSIS AND DISCUSSION OF FINDINGS

This section begins with the profile of the interviewees. Qualitative analysis of the data were gathered from the field interviews. It is followed by the actual proposed model

development based on the identified variables from the literature and the accompanying field study that unraveled some variables that were gathered from interview. Based on the available data, propositions were finally authenticated with a view to establishing or dispelling relationships.

#### A. Interviewees' Profiles

It was clearly demonstrated in the research design that the ten (R1 to R10) employees of some selected firms that participated in the survey had five years or above experience and had a minimum of first degree. Equally, they were chosen from five different industries located in Nigeria. Table I provide overview of the participants' demographic.

We are largely confident, that collecting data from all categories of industries and employees would reduce the bias associated with sampling. Besides, looking at the years of experience of the participants, the field study would most likely elicit reliable and useful responses.

TABLE I: PARTICIPANT DEMOGRAPHIC INFORMATION

Code	Industry	Level of qualification	Years of Experience
R1	Bakery	Degree	5 Years
R2	Bakery	Diploma	7 Years
R3	Superstore	Higher National Diploma	6 Years
R4	Superstore	Diploma	8 Years
R5	Private school	PhD	10 Years
R6	Private school	PhD	7 Years
R7	Pharmaceutical	Master	5 Years
R8	Pharmaceutical	Diploma	8 Years
R9	Furniture	Higher National Diploma	7 Years
R10	Furniture	Diploma	7 Years

#### B. Complexity Interview

Recall that two technology characteristics (complexity and usefulness) are the focus of this study. The responders were depicted by R1 to R10, meaning respondent one to ten. Based on the result of interview, it was obvious that participants R2, R3 R4, R9, and R10 are of the view that using computer technology is a task they always find difficult.

In fielding a question regarding the difficult nature of the computer technology they use in their organizations, respondent R2 related that “.....*though it makes work fast, but up till now am still trying to use one program, they call excel, for my workers' salaries, but still find some difficulties*”.

On the issue of whether computer behaves in an abnormal way occasionally, all the participants agreed; admitting that they are sometimes discouraged by that to even use it. This gives us a total positive response of 50% that concurred with the fact that some technologies could be complex and complexity could discouraged usage (adoption).

#### C. Usefulness Interview

The second predictor in this research is perceived usefulness. Some questions were fielded to elicit responses that would inform the researchers decision. When asked to comment if computer improves their work (that is usefulness), all the respondents responded in the affirmative. On this, R5

responded that "..... a good example is right now am a visiting lecturer in one of the universities; with computer, I was able to open a website that I use to interact with my students who are physically far away; what an improvement!.....". Another person said "I still use computer technology because I work faster. The interviewees responses regarding how they are encouraged to use technology in view of its usefulness is very impressive.

#### D. Organizational Commitment Interview

Eliciting interviewee's views on their organizational commitment, only R9 and R10 declined from owing a great deal to their organizations; they said they don't feel like part of the family in their organizations.

Still on commitment, respondents R2, R4, R9, and R10 indicated that their stay in their organizations is only a matter of necessity; one of them said, "..... once I get another place, I will leave here".

The participants were also asked to state their levels of loyalty; R1, R3, R4, R5, R6, R7, and R8 confirmed their loyalty to their organizations; maintaining that the organization is trying for their welfare.

#### E. Technology Adoption

The adoption of computer technology was tested by asking participants the number of times they use computer at work. This may either many times daily, five times weekly or at most once a week. On this, R1, R3, R5, R6, R7, and R8 accepted using computer many times daily and five times a week. However, R2, R4, R9, and R10 pledged they only use computer once a week. One noticeable trend in the variations of responses is that it could be associated with the nature of participants' schedules and their educational status

#### F. Proposed Model and Relationships

In this section, a model was proposed and relationships were established among the constructs. It could be recalled that the focus of this study is to determine if OC mediates the relationship between technology characteristics and technology adoption. According to [18] a variable functions as a mediator when it satisfies the following conditions:

- Change in levels of the independent variable significantly results in change in the presumed mediator;
- If change in the mediator significantly results in change in the dependent variable and
- If "a" and "b" are controlled, the relationship between the independent and dependent variables is no longer significant.

Predicating our submission on [18] conditions, we argue that the interview responses largely conform to the proposition that OC mediates the relationship between technology characteristics and technology adoption in this research. In this case, complexity and perceived usefulness are related to organizational commitment and OC is related to CTA. With the exception of R4, all the participants said that using computer is a complex task, have low commitment to their organization, indicating a negative relationship between OC and complexity. This is a contrary to what obtains in the literature. According to [8], commitment has a great impact on the successful performance of an organisation; this could imply that the complexity of a technology can ginger

organizational commitment of the users to strive and overcome it. Dedicated workers are challenged by difficult task. Goal-setting theory emphasizes the importance of useful challenging goals in accomplishing motivated behavior. In their seminal work, [19] published, A Theory of Goal Setting and Task Performance. They emphasized how complex tasks motivate employees to be committed to goal accomplishment.

Field study established the second condition of mediation in this research. High level of commitment was accompanied with enhanced usefulness. R1, R3, R4, R5, R6, R7, and R8 indicated high level of organizational commitment. They also agreed that computer is very useful to them in doing their work, improves productivity and hastens assignment accomplishment. A good authentication in the literature is where OC was conceived as a force that binds an individual to a course of action" [16]. The cause of action here could imply commitment to learning and using new technologies.

Additionally, there is significant relationship between complexity, perceived usefulness, organizational commitment, and computer technology adoption. R2, R9 and R10 viewed that using computer as complex, perceived it as less useful and showed low commitment. These same participants exhibited weak adoption rate by using computer only once a week. One of them (R10) was reported as saying ".....in fact I feel lazy using computer, it does not change my work and I don't want to have much to do with it....." A result from a conceptual research conducted by [20], is in solid conformity with the expressions of the interviewees regarding the existence of the mediation effect of OC in this study. With all this, one can argue that OC is a mediating factor in this research.

## V. CONCLUSION

In line with the literature reviewed and the field study conducted in this study, we draw the conclusion that significant mediating effect of OC exists on the relationship between technology characteristic and computer technology adoption. Relying on [18], there is sufficient evidence to support that OC is a mediator in this research. Looking at the chain of relationship in all the four mediation steps of Boron and Kenny, partial mediation could be suggested, hence, the research proposition are confirmed. Until such a time when a quantitative studies that will discuss commitment as Affective, Normative and Continuance to verify the very component that plays significant role, this result is upheld. It is expected that future research would examine unexplored aspects of this research.

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