# Conceptual Study of the Factors Motivating the Adoption and Use of an Information and Communication Technology System in Institutions.

Frank Amoani Arthur, Angela Aba Otchere, Louisa Sheeta Arthur

Abstract - The adoption and use of Information and Communication Technology Systems (ICTS) is increasingly gaining currency in organizations as well as educational institutions. The purpose of this paper is to find out the factors that motivate the CEOs of institutions to adopt and use an ICTS. In order to achieve this goal, one hundred (100) staff was randomly sampled from management, teaching and non-teaching departments of Takoradi Technical Universityto complete both open and close-ended questionnaires designed to ascertain the researcher's objective. The variables of Technology Acceptance Model (TAM) were used as the base theory for the study. The result of this study revealed that a CEO's intentions to adopt and use an ICTS is motivated by his behavioral intention to satisfy both internal and external consumers of information from his institution and the capabilities of the ICTS to be user friendly, useful and contributes to staff efficiency and effectiveness in the work environment. The paper concludes that the factors that motivate adoption and use of ICTS are the CEO's behavioral intention to satisfy his consumers, the perceived ease of use and perceived usefulness of the ICTS.

**Keywords:**Information and Communication Technology Systems (ICTS),Adopted and Used,Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude towards use, formality and reach.

#### 1 INTRODUCTION

Information and Communication Technology (ICT) is **⊥**driving every economy by creating unprecedented opportunities for countries, companies, institutions and individuals around the world. Today CEOs worldwide recognize the strategic role that ICT plays in their companies' ability to survive and compete in the future [17]. Indeed, businesses and institutions are learning all around the world that ICT is not an option to consider but a requirement to compete and survive in this information age. Managers and other users of organizations are becoming aware of this dependency and are trying to understand the various types of information system in organization. In this vein, businesses and institutions have adopted various digital technologies that intend to facilitate transactions, business processes and many other activities that would help them to effectively combine these technologies to process the information available to them.

Takoradi Technical University has been one of such Institutions that have employed diverse technologies to manage information available to them. The adoption and use of Information and Communication Technology System (ICTS) by Takoradi Technical University gained a foothold in 2011 when the CEO in his quest to compete globally, sought the consent of management to contract an Application Service Provider (APS) to provide an ICTS which could manage the institution's routine activities such as Admissions, Web Contents and Student Information. This is in line with[16]view that, institutions

that are likely to adopt new IT System will usually have a CEO with a positive attitude, and who is innovative and knowledgeable about IT. In the past, organizations build and manage their own software and computer facilities. Today, many organizations are turning to external vendors to provide these services and are using their Information Technology (IT) Department to manage these services hence the birth of cloud systems.

# 1.1 Categorization of ICT Systems in Organizations

ICT systems adopted in organizations can be classified into four criteria: *formality, functionality, organizational level and reach* [12]. These classifications should not however be taken as definitive but rather a relative way of understanding the ICT systems found in most organizations.

Formality refers to the degree of structure presented in information system and use of IT to reinforce such structure. While computer-based information systems are predominant in other parts of a society, other organic and paper-based technologies are widely used. On the base of formality, ICT systems range from an *informal human based* to *paper-based* to highly *computerized and structured systems*. The human body can be considered as an information processing system. Human beings accept signals from the environment, process it and make various decisions. Organizational decision makers on the other hand observe their internal environment and the external contextual environment and use such information to make decisions in similar situations.

Paper-based information systemdominates in the developing countries and other transitional economies[12]. It is quiet easy to implement and easy to understand. It is mostly used by organizations in Sub Saharan Africa. Conventionally, information or ICT systems refer to the systems that are designed around electronic technologies or ICT to collect, process, store data and transmit information output. Organizations adopt computer-based systems for sessions that human has been less efficient and therefore combine these formalities for maximum efficiency.

Information systems perform very useful functions in organizations. Although there are various planned services that inform these functions, the most common ones are operational (Transaction Processing Systems), monitoring, decision support, knowledge (expert) and communication[12]. Operational information systems deal with the fundamental formal operation of organization. It captures processes and stores repetitive operational transaction organization. Monitoring information systemsis process of observing and keeping track of the progress, quality, cost, time and other relevant parameters. Such systems provide reports that assist with the managerial monitoring and control of organizational functions, resources or other responsibilities. DecisionSupport Systems (DSS) provide analytical modeling capabilities to assist with managerial planning and making of decisions in ill-structured situations. For example, a software thatassistsa manufacturer to decide on the most cost-effective and profitable product produce. Knowledge Systems also known as Executive Support Systems (ESS) addresses nonroutine decisions requiring judgment, evaluation, and insight because there is no agreed-on procedure for arriving at a solution [10].

Communication Systems are systems that focus mainly on the process of communication. The most common communication systems are the Electronic mail and the World Wide Web. E-mail is the fastest and cheapest means of exchanging personal and business information. It provides the ability to send and receive information, ability to mark message as high, medium and low priority, manage distribution list and the ability to notify the sender once the recipient receives the mail. World Wide Web is the second major internet application after electronic mail. It has two main capabilities: Hypertext and Multimedia. While Hypertext refers to the linking up of documents, multimedia reflects that documents on the web could incorporate not only different styles of text but also drawings, photographs, sound and video clips. In the nutshell, the Web can be used for informational, transactional and or support and services purposes [7]. Electronic Data Interchange (EDI) is another example of a communication-based system. EDI can be defined as "the electronic transmission of standard business documents between organizations." EDI is basically electronic messaging service with a set of standards and software. The *standards* ensure that electronic business documents such as orders, invoices, shipments notices and customs declarations, adhere to a particular format that both sender and receiver can understand. The *software* encodes the standard documents for electronic transmission and decodes them at the recipient's end.

Most Technical Universityin Ghana are mostly using paper-based technologies in their routine duties - staff employment data records, students' admissions and data records, inventory, etc. Although the paper-based technology has not been ruled out entirely from educational institutions in the sub region, it has been undoubtly inefficient and has caused institutions to create huge cabinets and rooms to store these paper documents. The paper based technology makes it quite uneasy to trace old records and has even caused most old vital records difficult to be read or has even been misplaced. In the recent past, some Information and Communication Technology Systems (ICTS) has been used in minor routine services in the area of finance which was provided by governmental financial institutions that dealt directly with these educational institutions.ICTS such as Decision Support Systems (DSS) and Executive Support Systems (ESS) which would enhance managerial decision in ill-structured situations are not used in the Technical Universities.

In recent times, the Communication Systems and Transaction Process Systems (TPS) are partially used. The email systems are mostly used to send and receive information both internally and externally but only a few of the Technical Universities have domain email names that indicate their originated institutions. The Transaction ProcessSystems are used for students' admission process, registration and academic record. There are several ICTS that can be used but the widely used among the Technical Universities are Mak Educational System (MAKES) and Oasis. It is the researchers' interest to find out what informed the adoption and use of this ICTS and the efficiency it has brought to the work environment of the institution.

#### 2 METHODOLOGY

Technology Acceptance Model (TAM) proposed by Fred Davis was used as the base theory for the research. In his proposal, [5] suggested that user's motivation to adopt and use a technology system can be explained by three factors: *Perceived Ease of Use,Perceived Usefulness* and *Attitude Toward Using* the System. He hypothesized that the attitude of a user toward a system was a major

determinant of whether the user will actually use or reject the system. The attitude of the user, in turn was considered to be influenced by two major beliefs: *Perceived Ease of Use* and *Perceived Usefulness*. These beliefs are influenced by external factors such as the system design characteristics, CEO's attitude towards technology and intension to satisfy customers [15]. [5] furtherproposed that system use is a response that can be explained or predicted by user motivation, which, in turn is directly influenced by an external stimulus consisting of the actual system's features and capabilities.

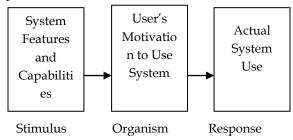


Figure 1: Conceptual model for technology acceptance (Davis, 1989)

The researcher adopted this base theory to find out the respondents' perception about the system capabilities, its usefulness and the motivating factor that a CEO would probably consider in adopting and using an ICT System. The Attitude Towards Using a system variable was used to ascertain CEO's intention to adopt and use a system, Perceived Usefulness (PU) variable was used to find out the usefulness and the functionality of the ICTS and Perceived Ease of Use (PEOU) variable was used to access the ability of the end users to use the adopted and used ICTS.

## 2.1 Data Collection Process

Ouestionnaires were used in this research. The factors in the TAM theory were used to ascertain management's motivation for adopting the ICTS. Another set of questionnaire were used to access the usefulness, user friendliness and the ability of the Information and Communication Technology Systems (ICTS) to increase efficiency and effectiveness of the staff in the work environment. The researcher used Google forms to design the questionnaire and the link to the questionnaire was shared and emailed to the sampled staff. They were humbly guided to click on the link to complete them. Sampled staff that had issues with their emails were given hardcopies of the questionnaire to complete and later approached to collect them. The one hundred sampled staff was randomly selected from Management, Teaching and Non-Teaching staff and SPSS version 17 was used to analyze the responses from the sampled staff.

#### 3 RESULTS

Higher economic and social communities are more likely to adopt and use an innovation[13]. In view of this the employment background of the respondents were accessed under gender, work experience and staff category.

On gender, the study showed that 69% of the respondents were males while 31% were females. This attests to the research findings that males are more likely to adopt and use technology than females [12]. The study also revealed that 49% of the respondents have worked in the Takoradi Technical University for 6 - 10 years, 19% have served the institution between 11and 15 years, 15% of them have worked with the institution for 1-5 years while 10% have worked with the institution for at least 16 years. This is an indication that majority of the respondents have worked quite long with the institution and might be aware of the ICTS used by the institution. The staff category was also accessed and the study showed that 52% were Non-Teaching staff, 37% were teaching while 11% were employees in managerial positions. This is an indication that majority of the respondents are potential end-users of an adopted ICTS.

The result of the survey was presented in the tables below;

TABLE 1: A VICE CHANCELLOR'S POSITIVE ATTITUDE TOWARDS ADOPTION AND USE OF AN ICTS

Response	Frequency	Percentage
Yes	72	72.0
No	6	6.0
No Idea	22	22.0
Total	100	100.0

Source: Fieldwork, (2016).

Out of the 100 respondents, 72% of them responded that a Vice Chancellor's positive attitude towards ICTS can inform the adoption and use of an ICTS. Twenty-two (22) percent of the respondents showed that they had no idea about the correlation between a Vice Chancellor's attitude and adoption and use of an ICTS. Only 6% said there was no relationship between a Vice Chancellor's attitude and the adoption of an ICTS.

TABLE 2: THE BELIEF THAT THE ERA (INFORMATION AGE) CAN INFORM THE ADOPTION AND USE OF AN

1015.		
Response	Frequency	Percentage
Yes	83	83.0
No	3	3.0
No Idea	14	14.0

	Total	100	100.0	
--	-------	-----	-------	--

Source: Fieldwork, (2016).

In Table 2, 83% of the respondents affirmed that the era (Information Age) can inform the adoption and use of an ICTS while 14% of them indicated that they had no idea. A few, 3% said they don't believe that the era can inform the adoption of an ICTS.

TABLE 3: A VICE CHANCELLOR'S INTENTION TO SATISFY CUSTOMERS (STUDENTS, SUPPLIERS AND EXTERNAL BODIES)

2, (1214 (112 2 0 2 120)		
Response	Frequency	Percentage
Yes	83	83.0
No	3	3.0
No Idea	14	14.0
Total	100	100.0

Source: Fieldwork, (2016).

The Vice Chancellor's intention to use ICTS to meet the expectations of his clients was also investigated and shown in Table 3 above. It revealed that 83% of the respondents affirmed that a Vice Chancellor's intention to use ICTS could inform the decision of ICTS Adoption. Fourteen percent (14%) of the respondents said they had no idea while 3% disbelieved that a Vice Chancellor's intention to meet the expectations of his client through the use of ICTS could inform its adoption.

TABLE 4:
THE FUNCTIONALITY OF THE INFORMATION AND COMMUNICATION TECHNOLOGY SYSTEMS

Response	Frequency	Percent
Yes	78	78.0
No	3	3.0
No Idea	19	19.0
Total	100	100.0

Source: Fieldwork, (2016).

A system is likely to be adopted if its functionality meets the needs of the client and the end user. In this vein, the functionality and its likelihood to be adopted was considered as displayed in the Table 4 above. Seventy-eight percent (78%) of the respondents affirmed that the functionality of an ICTS could inform its adoption while 3% disagreed that the functionality would not have any effect on its adoption. Nineteen percent (19%) said they have no idea on the relationship between the functionality of an ICTS and its adoption.

TABLE 5:

EASE OF USE OF INFORMATION AND COMMUNICATION TECHNOLOGY SYSTEMS

Response	Frequency	Percent
Not Sure	12	12.0
Agree	38	38.0
Strongly Agree	50	50.0
Total	100	100.0

Source: Fieldwork, (2016).

The respondents were asked to express their opinions on the relationship between Ease of Use of Information and Communication Technology Systems and the rate of adoption. Table 5 which shows their responses indicated that half (50%) of the respondents agreed that the ease of use of an ICTS could positively affect its adoption. A little above a third (38%) affirmed the motion while 12% of the respondents were not sure that Ease of Use of ICTS could affect a system's chance of being adopted.

TABLE 6:
INFORMATION AND COMMUNICATION
TECHNOLOGY SYSTEMS MUST BE SIMPLE AND
LISER FRIENDLY

Response	Frequency	Percent
Not Sure	3	3.0
Agree	31	31.0
Strongly Agree	66	66.0
Total	100	100.0

Source: Fieldwork, (2016).

Table 6 shows the responses of respondents on the perceived simplicity and user friendliness of an ICT System. It indicates that 66% of the respondents strongly agreed that the simplicity and user friendliness of a system could inform its adoption positively. Thirty-one percent (31%)supports the motion while 3% were not sure that simplicity and user friendliness of ICT System would affect its rate of adoption.

TABLE 7:
INFORMATION AND COMMUNICATION
TECHNOLOGY SYSTEMS MUST BE EXTENDED TO
ALL USER OFFICES.

Response	Frequency	Percent
Strongly Disagree	2	2.0
Not Sure	21	21.0
Agree	22	22.0
Strongly Agree	55	55.0

Total	100	100.0

## Source: Fieldwork, (2016).

In Table 7 above, 77% agreed that an adopted Information and Communication Technology System should be used by all offices. Twenty-one percent (21%) of the respondents were not sure that all the user offices may need it while 2% of the respondents totally disagreed that an ICT system should be extended to all user offices.

TABLE 8:
INFORMATION AND COMMUNICATION
TECHNOLOGY SYSTEMS SHOULD PROVIDE
SPECIFIC DESIRED STUDENTS' REPORT.

Response	Frequency	Percent
Not Sure	2	2.0
Agree	44	44.0
Strongly Agree	54	54.0
Total	100	100.0

Source: Fieldwork, (2016).

One of the primary aims of an educational institution in adopting an ICT System is to manage their growing student data. In this view, the opinion of the respondents were sought on the ability of an ICT System to provide desired students results and its rate of adoption and the response was show in Table 8. It revealed that almost all the respondents (98%) agreed that an ICT System should provide the desired specific student results while 2% were not sure that an ICT System should provide the desired specific student results.

TABLE 9: INFORMATION AND COMMUNICATION TECHNOLOGY SYSTEMS MUST PROVIDE REQUIRED NAB AND NABPTEX REPORT.

Response	Frequency	Percent
Disagree	9	9.0
Not Sure	12	12.0
Agree	33	33.0
Strongly Agree	46	46.0
Total	100	100.0

Source: Fieldwork, (2016).

National Accreditation Board (NAB) and National Board for Professional and Technical Examinations(NABPTEX) are inspectorate bodies for HND programmes ran by the Technical University. In this vein, they request reports from the institutions for their work. The researcher thought its expedient to find out if the ICTS adopted and used are able to produce the required report for these bodies and this is shown in Table 9. It revealed that 79% of the respondents indicated that the ICTS must provide the requisite report for inspectorate bodies. Twelve percent (12%) of the respondents were indifferent about the motion while 9% of the respondents said that it doesn't necessarily means that ICTS adopted and used must provide required NAB and NABPTEX report.

TABLE 10:
INFORMATION AND COMMUNICATION
TECHNOLOGY SYSTEMS SHOULD REPLACE ALL
MANUALLY PREPARED REPORT.

Response	Frequency	Percent
Strongly Disagree	1	1.0
Disagree	6	6.0
Not Sure	2	2.0
Agree	53	53.0
Strongly Agree	38	38.0
Total	100	100.0

Source: Fieldwork, (2016).

The respondents' views were sought on whether an adopted system should replace all manual systems and the responses were shown in Table 10. A respondent strongly disagreed with the motion that the ICTS should replace manual systems, 6% of the respondents also disagreed while 2% of the respondents were indecisive. On the other hand, 53% of the respondents agreed and 38% strongly agreed that ICTS adopted and used should replace all manual systems.

TABLE 11: INFORMATION AND COMMUNICATION TECHNOLOGY SYSTEMS MAKE REPORT PREPARING EASIER.

Response	Frequency	Percent
Strongly Disagree	3	3.0
Not Sure	5	5.0
Agree	50	50.0
Strongly Agree	42	42.0
Total	100	100.0

Source: Fieldwork, (2016).

Table 11 illustrates the respondents' responses on the question that the ICTS makes report preparing easier. It shows that 3% of the respondents disagreed while 5% of the respondents were not sure. Half (50%) of the respondentsagreed and 42% of them strongly agreed that an adopted and used ICTS should make preparing of reports easier.

was also tested and the results were displayed in Table 13. In response, 72% of the respondents agreed that an ICTS adopted and used would increase the effectiveness of staff at work, 22% of the respondents also affirm their unflinching support that an ICTS would enhance the effectiveness of staff at work. Five percent (5%) of the respondents said that an ICTS adopted and used would not have any impact on staff's effectiveness at work while a respondent (1%) expressed his indecisiveness towards the question at stake.

TABLE 12: INFORMATION AND COMMUNICATION TECHNOLOGY SYSTEMS INCREASE STAFF EFFICIENCY.

Response	Frequenc	Percent
1	y	
Disagree	7	7.0
Not Sure	6	6.0
Agree	56	56.0
Strongly Agree	31	31.0
Total	100	100.0

Source: Fieldwork, (2016).

The researcher also sought respondents' opinion on whether an adopted and used ICTS would increase staff efficiency at work. In response, 56% of the respondents agreed, 31% strongly agreed, 7% of the respondents disagreed while 6% of the respondents were indecisive on the issue that an adopted and used ICTS would increase staff efficiency.

TABLE 13: INFORMATION AND COMMUNICATION TECHNOLOGY SYSTEMS INCREASE STAFF EFFECTIVENESS.

Response	Frequency	Percent
Disagree	5	5.0
Not Sure	1	1.0
Agree	72	72.0
Strongly Agree	22	22.0
Total	100	100.0

Source: Fieldwork, (2016).

Information and Communication Technology Systems' (ICTS) ability to increase the staff effectiveness at work

TABLE 14: THE ADOPTION AND USE INFORMATION AND COMMUNICATION TECHNOLOGY SYSTEMS IS NOT

Response	Frequency	Percent
Strongly Disagree	98	98.0
Not Sure	2	2.0
Total	100	100.0

Source: Fieldwork, (2016).

The researcher enquired the importance of adopting and using an ICTS. In response, almost all (98%) the respondents strongly disagreed that an ICTS is not important. Two percent (2%) of the respondents indicated their indecisiveness as not sure whether ICTS is not important or not.

# 4 DISCUSSIONS

The variables proposed in Technology Acceptance Model (TAM)thus Perceived Ease of Use, Perceived Usefulness and Attitude towards Using an adopted systems were used to fashion out the questionnaire for the study. The gender and the respective working experience of respondents were enquired and the results revealed that there were twice as more males workers than females. This affirms [12] view that males are more likely to adopt and use technology than females. The results of respondents' working experience revealed that majority of the staff have worked in the institution for at least five (5) years which confirms staff's appreciable knowledge of an ICTS which has been adopted and used in the past five (5) years.

With regards to the attitude towards the adoption and use of an ICTS, the question on the Vice Chancellor's attitude revealed that majority of respondents agreed that a Vice Chancellor's positive attitude towards an ICTS can inform its adoption and use. This is in line with[1] findings that attitudes have positive impact on intention to adopt and use a technology. The study also indicated that the era (Information age) and Vice Chancellor's intention to satisfy or meet customers' demands also has significant influence on the adoption and use. It has become the order of the day that most of our manual assignments or routine duties have either been automated or computerized to make users to be in tandem with technological growth.

According to [8], both attitude and perceived ease of use have positive effect on behavioral intention to adopt and use an innovation. The study did not show otherwise. The attitude of the Vice Chancellor to adopt and use the ICTS which was motivated by the Vice Chancellor's intention to satisfy and meet customers' needs were revealed in the variables which were used to test for perceived ease of use. Majority (88%) of the respondents agreed that an ICTS that must be adopted and used must be simple and user friendly. The functionality of the ICTS would positively influence the rate of adoption and use if it would meet the end users' satisfactions. This was revealed in the study through an affirmation of seventyeight percent (78%) majority. In addition, majority (77%) of the respondents supported the idea that the adopted and used ICTS should be extended to all offices to replace the manual routine duties in the organization. It therefore inferred that perceived accepted functionality would generate into a call to extend the adopted ICTS to all users in the organization to ease up the stress that comes with the use of the manual routine duties.

Perceived usefulness is the end users' view or opinion of how the ICTS adopted and used would impact positively on the routine activities in the work environment. The ability of the ICTS to provide the desired report was investigated and the results revealed that almost (94%) all the respondents indicated that an ICTS that is likely to be adopted and used should meet the requirement of providing reports that meet the end users' satisfaction. This is an indication that the stakeholders have high expectation that the ICTS they would be adopting is going to produce desired and satisfactory students' and other required reports. This confirms [4] findings that the wealth of technology's usefulness might foster positive impressions on the end users such that the simplification and demonstrated usefulness will combat the resistance to adopting and using the technology.

Even though few existing studies have found a positive relationship between self-efficacy and behavioral intention [4], we consider our findings of such a relationship an affirmation. A majority (92%) of the respondents agreed that an adopted and used ICTS should make preparing of reports easier among other positive characteristics. ICTS' ability to increase staff efficiency was laudable to the respondents. Majority (87%) of the respondents affirmed their support that an adopted and used ICTS should assist staff to increase the rate of delivering services in the work environment.

The result on the ability of an ICTS to increase the staff's effectiveness also revealed that majority (94%) of the respondents expect the ICTS to increase staff's effectiveness in the work environment. This indicates that end users are very conscious of their capabilities to use an adopted and used ICTS and would therefore advocate that managers / CEO's should importantly design training programs for an adopted and used ICTS or request as part of the agreement for an adopted and used ICTS in order to develop end users interest and positive attitude towards the adopted and used ICTS.

The perceived importance of adopting and using an ICTS was tested and the study revealed that almost all (98%) the respondents agreed that benefit that comes with the adoption and usage of an ICTS is immeasurable. Understandably, an institution in a competitive environment is more likely to invest in ICTS, as a way of strengthening its performance and ensuring its survival [9]. When institutions are faced with more intense competition, they are more eager to obtain immediate information to enhance their decisions and would therefore attach more value to ICT innovations which are seen nowadays as a requisite to compete in the marketplace[4].

# 5 CONCLUSION AND RECOMMENDATIONS

In conclusion, the study looked at what could motivate a CEO of an institution to adopt and use an ICTS under the factors proposed in the Technology Acceptance Model (TAM). That is Perceived Ease of Use, Perceived Usefulness and Attitude towards using a system. These factors were used in isolation without finding the cross relationship between them to develop questions that answered the researchers' quest to investigate a CEO's intention to adopt and use an ICTS.

The study found out that a CEO's intention to adopt and use an ICTS is influenced by a number of factors. Firstly, his behavioral intention to adopt and use an ICTS is motivated by his positive attitude towards the innovation and his intention to satisfy both his internal (Students and staff) and external (NAB, NABPTEX, General public) customers that may need accurate and timely information about or from his institution.

Secondly, the adopted and used ICTS is perceived to be easy to use. There were conceptual evidences from the study that an adopted and used ICTS should be user friendly and should have the ability to replace all manual routine duties of the staff. The findings of the study also provide an important insight that an adopted and used ICTS that have such capabilities should be extended to cover all routine activities of the entire staff.

Thirdly, the conceptual study revealed that an adopted and used ICTS is perceived to be useful. Analyzing the variables of perceived usefulness in the study revealed that an adopted and used ICTS that produces the desired reports for both internal and external consumers is very useful. The findings of the study further revealed that an adopted and used ICTS should not only make report preparing easier but should also have the capabilities to increase staff efficiency and effectiveness at their work environment.

The findings of this paper provide an important insight into the conceptual study of the motivating factors for adopting and using an ICTS in institutions. Our results highlighted the convenience of investigating ICTS adoption using the variables of TAM. Even though these separate variables could allow a reliable comparison when it'scross tabulated, it was used separately to ascertain the motivating factors for adopting and using an ICTS in institutions.

Regarding the contributions this study brings to institutions and policy makers, there are several of them since the positive impact of ICTS adoption on productivity has been largely demonstrated [6]. One of the main considerations that institutions give to the adoption and use of an ICTS is the recommendation of successful implementation in analogous institutions. The outcomes of this paper offer suggestions of behavioral intentions of managers to satisfy their information consumers, the staff perception of the ICTS'user friendliness and the capabilities of the ICTS to increase efficiency and effectiveness in the work environment as important considerations in the adoption and use of an ICTS. The researcher therefore concludes that the factors that motivate a CEO to adopt and use an ICTS are his behavioral intentions to satisfy consumers, the perceived ease of use and the perceived usefulness of the ICTS. The outcomes of this conceptual study are recommended to managers who want to make informed decisions on the adoption and use of an Information and Communication Technology Systems (ICTS).

## **REFERENCES**

[1] R.Agarwal and E. Karahanna, "Time flies when you're having fun: cognitive absorption and beliefs about information

- technology usage", MIS Quarterly, vol. 24, pp. 665–695, April, 2000.
- [2] M.Beckinsale, and M.Levy, "SMEs And Internet Adoption Strategy: Who Do SMEs ListenTo?", http://csrc.lse.ac.uk/asp/aspecis/20040016.pdf, 2004.
- [3] J. Beekhuyzen, L.von Hellens, and M.Siedle, "Cultural barriers in the adoption of emerging technologies",//www.ucd.smartinternet.com.a u/Documents/Cultural\_Barriers.pdf,2005.
- [4] J.V. Chen, D.C.Yen, and K. Chen, "The acceptance and diffusion of the innovative smart phone use: A case study of a delivery service company in logistics", J.V. Chen et al. / *Information & Management*, vol. 46, pp. 241–248, 2009.
- [5] Davis, F."User acceptance of computer technology: system characteristics of information technology". MIS Quaterly, vol. 13 vol. pp. 319-340, March, 1989.
- [6] J. Dedrick, V. Gurbaxani, and K.L.Kraemer, "Information technology and economic performance: a critical review of the empirical evidence". *ACM Computing Surveys* Vol. 35 pp.1–28, January, 2003.
- [7] R.B.Heeks, "Information systems and developing countries: failure, success and local Improvisations", *The Information Society*, Vol. 18. pp. 101-112, February, 2002.
- [8] H.S. Hwang, C.Y. Ku, D.C. Yen, and C.C. Cheng, "Critical factors influencing the adoption of data warehouse technology: a study of the banking industry in Taiwan". Decision Support Systems, Vol. 37, pp.1–21, January, 2004.
- [9] N.R. Kowtha, and T.W.Choon, "Determinants of website development: a study of electronic commerce in Singapore". *Information and Management*vol. 39, pp. 227–242, March, 2001.
- [10] K.C.Laudon, and J.P.Laudon, "Management Information Systems" (10th edition.). PrenticeHall, Upper Saddle River, New Jersey, 2006.
- [11] J. Mehrtens, P.B.Cragg, and A.M.Mills, "A model of Internet adoption by SMEs", *Information & Management*, Vol. 39, pp. 165-76,
  2001.

- [12] Molla, A. Heeks, R. and Boateng, R.(2009) "Information Systems in Organizations: Categories Trends and Demonstration", ICITD, Southern University and University of Ghana Business School, Adapted for UGBS-MIS (2009) class.
- [13] E.M.Rogers, and F.F.Shoemaker, "Communication of innovation: A crosscultural approach." 2nd ed., New York: Free Press, 1971.
- [14] A.Southern, and F.Tilley, "Small firms and information and communication technologies (ICTS): toward a typology of ICTs usage", New Technology, Work and Employment, Vol. 15 No. 2, pp. 138-54, 2000.

- [15] Y.E. Spanos, G.P.Prastacos, and A. Poulymenakou, "The relationship between information and communication technologies adoption and management", *Information & Management.*, Vol. 39, pp. 659-75, 2002.
- [16] J.Y.Thong, and C.S. Yap, "CEO characteristics, organizational characteristics and information technology adoption in small business", Omega International Journal of Management Science, Vol. 23 No. 4, pp. 429-42, 1995.
- [17] Yigiteanlar, T. "Bridging the Gap between Citizens and Local Authorities via E-government", <a href="www.yigitcanlar.com">www.yigitcanlar.com</a>, 2009.

#### **About Authors**

Frank Amoani Arthur is a Lecturer at Department of Information and Communication Technology in Takoradi Technical University. He received his Master of Business Administration in Management Information System Degree from University of Ghana Business School in 2011. In addition, he holds B. Ed. Mathematics Degree and professional certification in Networking and Information Systems Security. His research interests includeinformation systems, information Security and Computer Networking.

Angela Aba Otchere is a lecturer at the Department of Information and Communication Technology at Takoradi Technical University. She holds a Master of Business Administration degree with specialization in Management Information Systems. This was preceded with an Award of Bachelor of Education in Information Technology. Research Interest areas are information systems and ICT in Education.

Louisa Sheeta Arthur is a Lecturer at Department of Information and Communication Technology in Takoradi Technical University. She received her Executive Master in Business Administration from Kwame Nkrumah University of Science and Technology and is currently pursuing Master of Science in Management Information Systems. In addition, she holds a BSc Degree in Computer Science. Research interest is in Information Systems.