EFFECTS OF TASK-TECHNOLOGY-FIT OF TURNITIN PLAGIARISM DETECTION TECHNOLOGY ON USER ACCEPTANCE AND SATISFACTION IN FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE.

BY

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MTech/SICT/2018/8016

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

FEDERAL UNIVERSITY OF TECHNOLOGY

MINNA

JANUARY, 2023

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A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGERIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF TECHNOLOGY IN SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION, DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

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ABSTRACT

The study investigated the effects of Task-Technology-Fit of Turnitin plagiarism detection technology on user acceptance and satisfaction in Federal University of Technology Minna, Niger State. The study was guided by seven objectives and research questions. The study adopted quasi-experimental research design. The population of the study was 42 Turnitin officers. Total enumeration sampling technique was used. The research instrument used was adapted questionnaire with 7 points scale. Frequency count and median were used to analyse the objectives. Inferential statistics of Kendal Tau b was used to test the hypotheses at 0.05 level of significance. The findings showed that plagiarism check is a major task done by Turnitin officers, Turnitin has high functionality, technology self-efficacy of Turnitin officers have effect on Task-Technology Fit of Turnitin. The result also showed that there is a degree of fit between task characteristics and technology characteristics of Turnitin plagiarism detection technology; there is perceived usefulness of Turnitin to plagiarism check, there is significant effect between perceived ease Task-Technology Fit of Turnitin, and there is significant effect between Task-Technology Fit and user satisfaction of Turnitin administrators. The study concluded that Task-Technology-Fit of Turnitin plagiarism detection technology affect user acceptance and satisfaction in Federal University of Technology. The study recommended that Turnitin officers should be train on regular basis; Turnitin should not only be used for plagiarism check but to provide feedback on the similarity index of the users.

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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The art of writing is one of the oldest forms of representing human knowledge. Writing is humankind's principal technology for collecting, manipulating, storing, retrieving, communicating, and disseminating information. Authors communicate ideas, knowledge, innovation, and creativity using different media, such as books, journals, newspapers, web pages, and diaries. Documented ideas are primary sources of information, secondary sources of information, and tertiary sources of information (Onuoha & Ikonne, 2013). When a source or sources of information are not properly acknowledged, it is referred to as plagiarism.

Plagiarism is the act of claiming the proprietary right of other people's ideas, innovation, and invention, which can be in the form of artistic or literary works (Jonsson, 2014). The word 'plagiarism' comes from the Latin word 'plagiare' that means, "to kidnap' (Adebayo, 2011). Plagiarism is also the type of cheating where students present the work of others as their own for academic credit (Tripathi, *et al.*, 2015). Stealing someone else's work is not only common among students but also very common among research members (Onuoha & Ikonne, 2013).

In the age of advanced Information and Communication Technologies (ICT), plagiarism has become a serious problem, and as such, many tools are developed for detecting similarities in files. These tools automate the detection process and allow the academic to carry out the investigation process manually. Plagiarism detection technologies will benefit academics, research scholars, and anyone interested in safeguarding their writing. By using plagiarism detection technology one can ensure that the text is unique.

Through plagiarism detection tools, the research community can benefit by having their research papers/theses, and dissertation checked for any plagiarism done unintentionally.

Turnitin plagiarism detection technology allows users to upload a text file, check originality reports, check references to sources cited, and grading of students' assignments. It is also a proprietary system that matches students' uploaded text files with information resources stored in its databases and other scholarly databases for the sole purpose of similarity check. Turnitin plagiarism detection system is subscribed to by over 15,0000 institutions across the globe (Patel, *et al.,* 2011). However, preliminary investigation by the researcher showed that the purpose of Turnitin is been defeated as some user uses article rewriters, changing of the letter "o" to "0", conversion of the textual file into image file, thereby boycotting the system.

Evaluation of information system is germane to ascertain a system meets the tasks of the users. Information systems are evaluated using task characteristics, technology characteristics, task-technology fit, user acceptance, and satisfaction (Al-Mamary, *et al.,* 2014). Task-technology Fit examines the degree to which technology characteristics, task characteristics, and technology self-efficacy affect user acceptance and satisfaction of plagiarism detection technology. Task-technology fit of Turnitin plagiarism detection technology will influence the likelihood of the system, vis-à-vis the performance of the instructors (Chen, *et al.,* 2015). Task-technology fit measures the locatability, quality, authorisation, compatibility, product ease of use, training, and relationship with users of Turnitin plagiarism detection system. In the same vein, Task-technology fit measures the degree to which Turnitin plagiarism detection technology meets the needs of the users, thereby facilitating user acceptance and satisfaction of the system

User acceptance is the degree of usefulness of the system to the users (Changchun, *et al.,* 2017). The acceptance of information system may be traced to the perceived usefulness of the system to the assigned task, which in turn increases the performance and productivity of the users, vis-à-vis the institutions. According to Hoehle and Huff (2012) a system is considered useful if it increases the performance and development of the users. Therefore, user acceptance of Turnitin plagiarism detection technology is derived from its perceived usefulness by the users. Perceived usefulness is also influenced by the perceived ease of use of the Turnitin plagiarism detection system. Perceived ease of use of Turnitin plagiarism detection technology is the ease of use of the system with little supervision and control. A system that is easy to learn, flexible, and understandable will promotes user acceptance. Therefore, perceived usefulness and perceived ease of use of Turnitin plagiarism detection technology will facilitate user acceptance and satisfaction.

User satisfaction is the extent to which users are willing to continuously use Turnitin plagiarism detection technology. Similarly, user satisfaction is measured from the success rate of the system, such as intention to use, system quality, service quality, and ease of use. System users are satisfied with a system when the system meets their needs and is easy to navigate. In the same vein, Turnitin plagiarism detection technology will enjoy user satisfaction, when it meets the user's needs.

Recently, user acceptance and satisfaction of systems have become major areas of study for developing international standards, directives, and theory, as well as empirical research (Issa & Isaias, 2015). Researches on system user acceptance and satisfaction have received extensive attention from researchers in Technology Acceptance Model (TAM), and Task-Technology Fit (TTF) community (Hawkins, *et al.*, 2012). These researchers have developed various measurement techniques to help establish results in

terms of user satisfaction with plagiarism detection technology. These techniques, standards, or frameworks are applicable in every stage of a System Development Life Cycle (SDLC), and its convert customer-oriented characteristics into measurable characteristics. Examples of other acceptance measurement methods are Diffusion of Innovation theory, and Information system success model (Changchun, *et al.*, 2017).

From the foregoing, the impact and benefits of Task Technology Fit, and Technology self-efficacy to Turnitin plagiarism detection technology cannot be overstretched, as the more, the system is robust to meet the individual task, the more the user acceptance and satisfaction. It is against this gap, that this research is geared towards evaluating Task-Technology Fit of Turnitin plagiarism detection technology on user acceptance and satisfaction in Federal University of Technology Minna, Niger State.

1.2 Statement of the Research Problem

The availability of proprietary plagiarism detection system should greatly increase the originality of research output by students, researchers, and authors. There are different types of plagiarism detection systems developed to help users improve their writing skills, such as Unichecker, Jplag, Ithenticate, and Turnitin. In plagiarism detection technology, the end-user directly interacts with the user interface. For a plagiarism detection system to have better user acceptance and satisfaction, the system must be able to handle the individual task of the user, and the technological functionalities must be user compliant and learnable.

However, preliminary investigation by the researcher showed that Turnitin plagiarism detection technology is under-utilised in the Federal University of Technology Minna, which might be as a result of low degree of fitness between technology characteristics

and task characteristics of the institutions, lack of technology self-efficacy of the users, and task-technology fit of Turnitin plagiarism.

It is against the aforementioned challenges, that this study is geared towards assessing Task-Technology Fit, of Turnitin plagiarism detection technology on user acceptance and satisfaction in Federal University of Technology Minna, Niger State.

1.3 Aim and Objectives of the Study

The study aimed to examine the effects of Turnitin plagiarism detection technology on user acceptance and satisfaction in Federal University of Technology Minna, Niger State.

The specific objectives of the study are to:

1. identify the task characteristics performed by Turnitin Administrators in Federal University of Technology Minna, Niger State
2. determine the technology characteristics of Turnitin plagiarism detection technology used by Turnitin Administrators in Federal University of Technology Minna, Niger State
3. ascertain the capacity and self-efficacy of Turnitin Administrators using Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State
4. determine the degree of fit between task performed and Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

5. obtain the opinion of Turnitin Administrators on the usefulness of Turnitin plagiarism detection technology in performing their duties in the Federal University of Technology of Minna, Niger State

6. obtain the opinion of Turnitin Administrators on the ease of use of Turnitin plagiarism detection technology in performing their duties in Federal University of Technology Minna, Niger State

7. obtain the opinion of Turnitin Administrators on satisfaction with the Turnitin plagiarism detection technology in performing their duties in Federal University of Technology Minna, Niger State

1.4 Research Questions

The study provided answers to the following research questions:

1. what are the task characteristics performed by Turnitin Administrators in Federal University of Technology Minna, Niger State?

2. what are the technology characteristics of Turnitin plagiarism detection technology used by Turnitin Administrators in Federal University of Technology Minna, Niger State?

3. what is the capacity and self-efficacy of Turnitin Administrators using Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State?

4. what is the degree of fit between task performed and Turnitin plagiarism detection technology in the Federal University of Technology Minna, Niger State?

5. what is the opinion of Turnitin Administrators on the usefulness of Turnitin plagiarism detection technology in performing their duties in the Federal University of Technology of Minna, Niger State?

6. what is the opinion of Turnitin Administrators on the ease of use of Turnitin plagiarism detection technology in performing their duties in Federal University of Technology Minna, Niger State?

7. what is the opinion of Turnitin Administrators on satisfaction with the Turnitin plagiarism detection technology in performing their duties in the Federal University of Technology Minna, Niger State?

1.5 Research Hypotheses

The following hypotheses are formulated and tested at a 0.05 level of significance:

H_1: Task characteristics of Turnitin Administrators has a significant impact on task-technology fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

H_2: Technology characteristics has a significant impact on task technology fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

H_3: Technology self-efficacy of Turnitin Administrators has a significant impact on task-technology fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

H_4: Task-technology fit has a significant impact on perceived usefulness of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

H_5: Task-technology fit has a significant impact on perceived ease of use of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

H_6: Task-technology fit has a significant impact on user satisfaction of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

1.6 Significance of the Study

The study will be of tremendous benefit to tertiary institutions, and faculty members.

This study will help tertiary institutions to identify the task Turnitin plagiarism detection technology can accomplish easily, in the sense that Turnitin administrators' perception on the usefulness of the technology would help in recommending Turnitin plagiarism detection technology to other institutions. The findings of this study will also be of immense value to faculty members, as the originality of submitted projects by students can be checked through the Turnitin plagiarism detection technology by the lecturer. This will assist the faculty member in the grading of the students' projects, thereby curbing the growth of plagiarism among students, and instilling the spirit of creativity in students. In other words, projects with a higher similarity index will be scored low, while projects with a low similarity index will be scored high. Ultimately, the creativity and reputation of graduates, faculty members, researchers, and authors will be improved with high-rank research productivity.

1.7 Scope of the Study

This study adopted Task-Technology Fit Theory to examine Turnitin plagiarism detection technology user acceptance and satisfaction. The study examined how task characteristics, technology characteristics, technology self-efficacy, task-technology fit

impact perceived usefulness, perceived ease of use, and user satisfaction of the Turnitin plagiarism detection system. The study covered all the departmental Turnitin administrators in the Federal University of Technology Minna, Niger State.

1.8 Operational Definitional of Terms

The following terms are defined as used in the study alone:

Detection: the act of identifying plagiarised work with the use of Turnitin detection system

Ease of use: the ease with which a user can use Turnitin to perform its duties

Perception: the opinion of Turnitin users about Turnitin plagiarism detection system

Plagiarism detection technology: a technology used to detect plagiarism

Plagiarism: claiming ownership of other peoples intellectual content

Satisfaction: the degree to which users feel comfortable and have a positive attitude towards the use of Turnitin plagiarism detection technology.

Task characteristics: the routines of the user performed

Task Technology Fit: the degree of Turnitin plagiarism detection technology is capable to match the task the users want to perform.

Technology characteristics: the capabilities of Turnitin plagiarism detection system

Technology self-efficacy: the ability of users to use Turnitin plagiarism detection system

Usefulness: deriving benefits from the use of Turnitin plagiarism detection technology

User: categories of people that make use of plagiarism detection system

User acceptance: being satisfied with the characteristics of Turnitin plagiarism detection Technology

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Framework

Figure 2.1 showed the relationship between the independent variables and dependent variables. The constructs were derived from the theories adopted for the study.

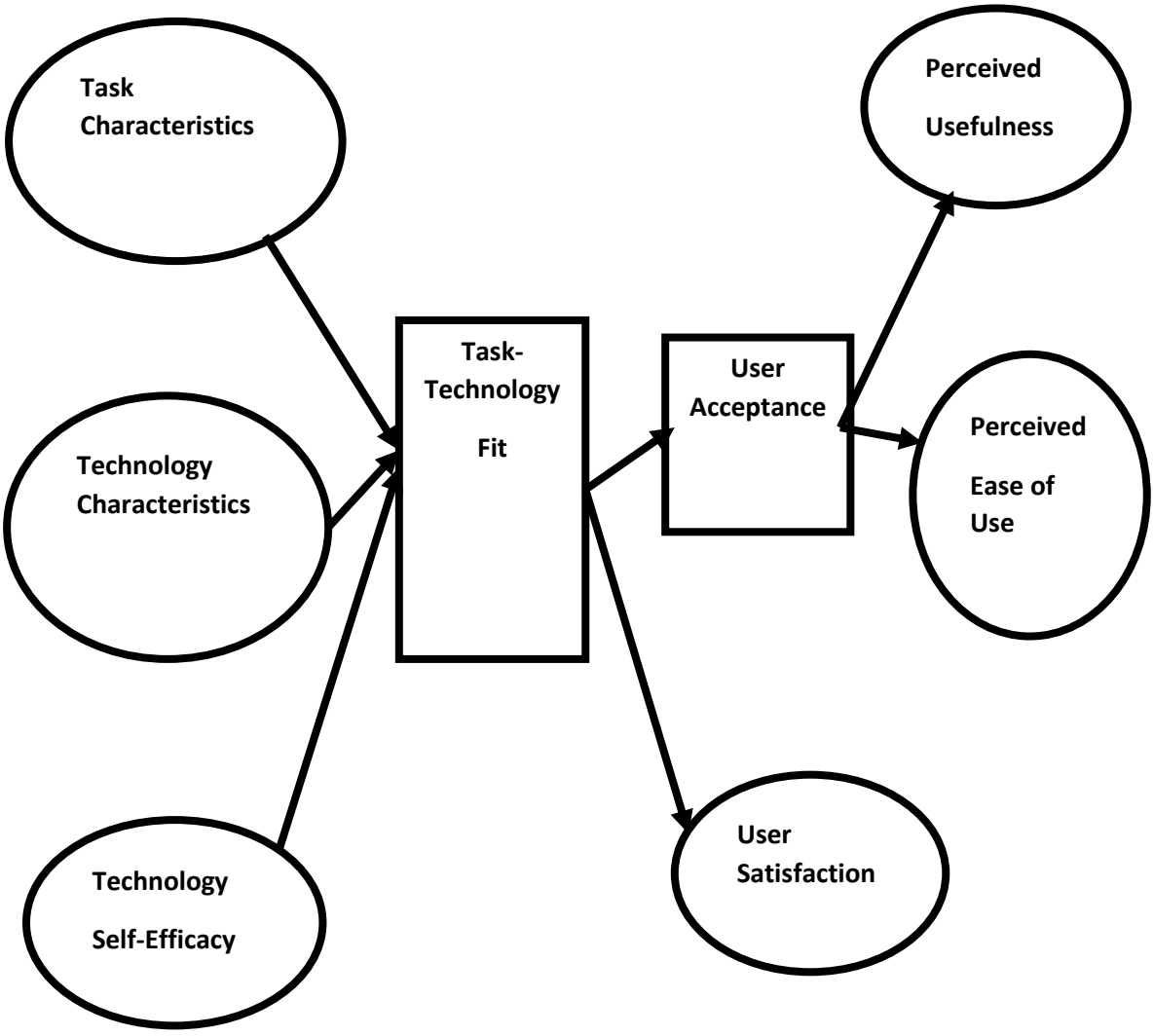

Fig 2.1: Conceptual Framework of the study (Author's original construct)

Figure 2.1 showed the relationships between the study constructs. The basic assumption is that user acceptance and satisfaction of Turnitin plagiarism detection technology are jointly determined by Task characteristics, Technology characteristics, Technology self-efficacy, Task-Technology Fit. First, technology characteristics, task characteristics, and

Technology self-efficacy have a direct relationship on the task-technology fit of Turnitin plagiarism detection technology.

In the same vein, the Task-technology fit of the Turnitin plagiarism detection system also has a direct relationship on the user acceptance and user satisfaction of Turnitin plagiarism detection technology. The model also showed that user acceptance has a direct relationship with perceived usefulness and perceived ease of use of Turnitin plagiarism detection technology.

2.1.1 **Task characteristics**

Task characteristics represent the requirements of the specific task that Turnitin administrators need to complete by using Turnitin plagiarism detection technology. They are features of the task that are attributed to the item of work, or alternatively called work packages. For this study, administrators' tasks include checking of students' projects, grading of students, acquiring knowledge, checking of originality project uploaded, among others. It is assumed that the nature of tasks that the Turnitin Administrators engage in, would determine the acceptance of the Turnitin plagiarism detection system or not. Studies, such as D'Ambra *et al*. (2013) and Koo *et al.* (2011) have found significant relationships between task characteristics and user acceptance of technologies. This study adopted the variable, task characteristic, as a factor that could influence the use of Turnitin plagiarism detection technology by the administrators. The current study adopted a measurement scale for task characteristics that was used by Al-Gharbawi (2016) and which was based on the dimensions specified by Goodhue and Thompson (1995) and it includes, variety, difficulty, interdependence, and hands-on tasks. The used measurement scale is included in the study questionnaire appended in Appendix A.

2.1.2 **Technology characteristics**

Technology characteristics are the attributes of the tools which users use in carrying out a particular task. Technology characteristics are considered appropriate surrogates for system quality (Goodhue and Thompson, 1995). In this study, technology characteristics represent the features of Turnitin plagiarism detection technology that are used to perform tasks. Studies have found that technology characteristics can determine the usefulness of a system, the ease of learning, accuracy, flexibility, and reliability of the system (Koo, *et al.,* 2011), and that combining technology characteristics with task characteristics can help achieve the best fit of the system or technology for the specified activity. Studies, such as D'Ambra *et al.* (2013), and Goodhue and Thompson (1995), have found significant relationships between technology characteristics and acceptance of technologies. In the current study, to measure the technology characteristics variable the researcher adopted a measurement scale that was used by Al-Gharbawi (2016) derived from the dimensions identified by Goodhue and Thompson (1995). The used measurement scale is included in the study questionnaire appended in Appendix A.

2.1.3 **Technology self-efficacy**

Self-efficacy is the judgment of one's ability to use technology to accomplish a particular job or task (Ma, *et al*., 2013). Technology self-efficacy represents an individual's perceptions of his or her ability to use technology in the accomplishment of a task. TSE has been a popular and important construct in information system research. It is based on the broader construct of self-efficacy and a key concept in social cognitive theory that has been found relevant in many IT research settings (Al-Gharbawi, 2016). Just like self-efficacy, TSE reflects individuals' beliefs in their abilities to organise and

execute the courses of action needed to complete specific tasks successfully in given context, such as in tasks involving technology (Akpan, 2018). TSE has been found to be related to users' attitudes toward technology (Akpan, 2018). The author further confirmed the influence of TSE on the acceptance and use of Turnitin plagiarism detection technology across a wide range of settings and technologies. The current study used a measurement scale for TSE which was derived from Al-Gharbawi (2016). The used measurement scale is included in the study questionnaire appended in Appendix A.

2.1.4 **Task-technology fit**

Task-technology fit (TTF) is the relationship between task requirements, individual abilities, and the functionality of technology (Goodhue & Thompson, 1995). More specifically in this study, TTF is the degree to which the Turnitin plagiarism detection system assists the Turnitin administrators in the performance of their tasks. It can also be explained to mean the degree to which the Turnitin plagiarism detection technology has a desirable set of characteristics, features, and applications to fit the administrators' tasks. Studies (Changchun, *et al.*, 2017; D'Ambra *et al*., 2013; Goodhue & Thompson, 1995) have found that the impact of TTF on technology acceptance was significant. While Nwabueze and Urhiewhu (2015) found that TTF influenced choices of whether or not to accept technology, and McGill *et al.* (2011) found that the better the fit of a learning management system to the skills of instructors and the tasks that the instructors must complete, the more the system will be accepted, and the more positive its effect on their performances. This study adopted this variable, task-technology fit as a factor that could influence the user acceptance and satisfaction of Turnitin plagiarism detection technology. The current study adopted a measurement scale for task-technology characteristics that were used by (Al-Gharbawi, 2016) and which was based on the

dimensions specified by (Goodhue & Thompson, 1995). The used measurement scale is included in the study questionnaire appended in Appendix A.

2.1.5 **User acceptance**

The implementation and user acceptance of the information system, definitely impact the success value of the system. Zaied (2012) aggregated the factors affecting the adoption or use of Information systems as perceived benefits which the end-user expects from using a particular system; the individual characteristics of the end-user, the information technology maturity of the institutions in which a particular information system is employed, and the characteristics of the organisation. This study adopted this variable, user acceptance to measure its relationship with task-technology fit of Turnitin plagiarism detection technology. The current study adopted a measurement scale for task-technology characteristics that were used by Al-Gharbawi, (2016) and which was based on the dimensions specified by (Davis, 1989). The used measurement scale is included in the study questionnaire appended in Appendix A.

2.1.6 **User satisfaction**

User satisfaction is considered one of the most important measures of Information Systems (IS) success. It is defined as the affective attitude towards a specific computer application by someone who interacts with the application directly (Shintani, *et al*., 2014). User satisfaction is one of six interrelated dimensions of IS success that were identified in the IS success model proposed by DeLone and McLean (1992). The authors further sought to define the dependent variable "IS success" by identifying six interrelated dimensions of IS success: System Quality, Information Quality, Use, User Satisfaction, Individual Impact and Organizational Impact.

The current study adopted the definition of DeLone and McLean (1992) for user satisfaction. DeLone and McLean (1992) defined user satisfaction as the recipient response to the use of the output of an information system. The researcher used the measurement scale derived from DeLone and McLean, (1992) to measure user satisfaction. The used measurement scale is included in the study questionnaire appended in Appendix A.

2.1.7 Plagiarism detection technology as information system

Plagiarism detection systems are developed to detect plagiarism in students, lecturers, and researcher's works, and the effectiveness of such systems depends on the types of technology functionalities. Such systems provide invaluable benefits about saving time and effort of academics in performing the detection process. Computerized plagiarism detection has drawn academic interest in the past two decades because the use of such tools reduces academic workload by automating the comparison process and quickly revealing groups of similar student works, which the academics need to scrutinize for suspicious similarity (Bloomfield, 2010).

Plagiarism detection technology can be divided into hermetic and web, and into general-purpose, natural language, and source code oriented (Kakkonen & Mozgovoy, 2010). Web detection systems try to find matches for the suspected document in online sources. Hermetic systems search for instances of plagiarism only within a local collection of documents. According to Gipp *et al*. (2011) such a system maintains a database of documents. The database may contain, for example, works submitted by other students and the lecture materials used in a particular course. Furthermore, Gipp *et al*. (2011) opined that web detection has a wide coverage of accessible online documents as well as high accuracy of the document comparison algorithm. Some of

the existing web detection systems, such as Turnitin maintain extensive internal collections of documents, including student essays, electronic journals, and conference proceedings (Harris, 2012). The author further posited that these systems are capable of both web and hermetic detection. Some of the existing detection systems are capable of processing text documents of any nature (whether a computer program source code or a text composed in a natural language), and the term generic detection system refers to these types of systems (Nakate, 2011).

2.1.8 Information systems

Ali and Younes (2013) defined an Information System (IS) to be a collection of people, procedures, a base of data, and hardware and software that collects, processes, stores and communicates data for transaction processing at the operational level, and information to support managerial decision making. That is the amalgamation of different components such as hardware, software, data, and information system users, which accept, process, store, and disseminate data for decision making. Similarly, D'Ambra, *et al.* (2013) opined that an information system is a system in which human participants perform business processes using data, hardware, and software to capture, transmit, store, retrieve, manipulate and/or display information for internal or external customers. Furthermore, Laudon and Laudon (2012) defined Information System as a computer-based system that provides its users with information on specified topics in a certain organizational context.

The hardware in the definitions mentioned above refers to the devices and other physical equipment involved in processing information, such as computers, workstations, physical networks, and data storage and transmission devices. On the other hand, software refers to the computer programs that interpret the participants'

inputs and that control the hardware. These computer programs include operating systems and end-user application software. Participants are the people who do the work; human participants in this system typically play essential roles such as entering, processing, or using the information in the system. The term 'user' refers to the internal or external customers who use the IS output (Hoehle & Huff, 2012).

In parallel with the rapid development of information technology (IT), the use of information systems (IS) in organisations to improve employees' performance is evolving. Organisations are introducing computer technology and developing their own IS to manage their work more efficiently. As a result of the growing utilization of IS, employees were encouraged to increasingly use IS to help them perform tasks and manage work (Al-Mamary & Shamsuddin, 2014). In addition, the rapid evolution of computer technology is expanding the desire to obtain computer assistance in solving more complex problems in organisations. The new information system is a solution for a problem or set of problems that an organisation expects to deal with (Laudon & Laudon, 2012). Therefore, new information systems are built as a product of organisational problem-solving process.

According to Ali, and Younes (2013) Information systems and organisations influence one another. Therefore, managers need to build information systems to serve the interests of the organization. On the other hand, the organisation must be aware of the influences of information systems to benefit from new technologies. However, the complex interaction between information technology and organisations is influenced by many mediating factors (Hoehle & Huff, 2012). These factors may include the organisation's structure, business processes, politics, culture, surrounding environment, and management decisions. It is very important for organisations to understand how

information systems can change social and work life in the firm. The managers need to understand their business organisations well to be able to understand the existing information systems or to design new systems (Laudon & Laudon, 2012).

Moreover, an information system requires two conditions to have a positive impact on individual performance: the technology must be utilised, and there must be a good fit with the tasks the technology supports (Al-Mamary & Shamsuddin, 2014). In other words, an information system has a positive impact when the system has a good fit for the task the system is developed for. Similarly, if either the task-technology fit of the technology or its utilisation is lacking, the technology will not improve performance (Lin, 2012).

2.1.9 Turnitin plagiarism detection technology

A plagiarism detection system matches text to other electronic text to determine how similar the texts are to each other. The most well-known of these systems is Turnitin, which is currently used in 15,000 institutions in more than 140 countries (Patel, *et al.*, 2011). The author further posited that Turnitin matches papers to other electronic texts in its database that includes over 600 million student papers submitted to its repository, online texts (journals, dissertations and theses, and books), and Web-based texts (blogs, websites) and provides a percentage of text that was matched in the form of an originality report. According to Buckley and Cowap, (2013) Turnitin helps to provide formative and summative feedback on students' early and final drafts, focusing on both the sentence and text levels using originality report and grademarks features.

2.1.9.1 Grademark for written and audio electronic feedback

Grademark is a feature in Turnitin that allows instructors to make comment student papers. Grademark offers unique features such as pre-written comments that some instructors may find useful. Using GradeMark can save instructors time, because comments can be dragged and dropped directly into students' papers, and saved for future use (Kostka, & Maliborska, 2016). The author further posited that the built-in comments are divided into several sets. The first set is called "Commonly Used", which includes frequently used punctuation and grammar comments determined by Turnitin:

1. composition comments include a variety of comments related to grammar, word use, sentence structure, and organization.
2. composition Marks include such comments as a new paragraph, insert a word, transpose, cite, among others.
3. the format includes commonly used formatting comments (lowercase, line spacing, font, and capitalization).
4. punctuation comments allow instructors to suggest such edits as a comma splice, missing comma, no period, and others.
5. usage refers to comments on word use errors, such as commonly confused words, can/may, its/it's, or dangling modifiers.

Only one set can be used at a time, but the comments can be added from one set to another using the "Actions" button on a selected comment. New sets and new comments can be added freely; however, built-in comments cannot be modified.

The advantage of Grademark in Turnitin is that error codes are accompanied by short explanations that can be seen either when the student places the mouse cursor over the Grademark or when all errors are viewed in the Comments List tab (Bitchener & Knoch, 2010). These types of comments comprise a form of metalinguistic feedback,

which has been researched in second language writing and mostly found effective when used over extended periods of time and provided for simple errors (Bitchener & Knoch, 2010; Saadi & Saadat, 2015). The purpose of metalinguistic feedback is to provide a clue that can help users identify the error, using error codes based on linguistic terms (Saadi & Saadat, 2015). The author further posited that such Grademarks are "Articles", ″comma splice", "Conjunction Missing", ″pronoun/antecedent", "Agreement", and ″subject/verb". Depending on the error and assignment goals, the Grademarks can be edited directly in the paper to provide additional feedback. This feature is also useful when a user is making the same error repeatedly, as the instructor can provide an explanation or add a link to an external site the student can consult.

2.1.9.2 Text comment

The "Text comment" in the "General comments" section in Turnitin can be used to provide a written comment about the overall assignment (Buckley & Cowap, 2013). For instance, if an assignment does not require further revision, this section provides an easy way for the instructor to tell the user that further revisions are not necessary. The "Text comment" can also be used to provide positive comments as corrective comments, especially when working with international users, who may feel vulnerable and insecure about their language skills and writing ability (Ene & Upton, 2014). Another use of the "Text comment box" is for leaving overall comments when significant revision is required. The same comment can be provided by creating a new drag-and-drop comment, so instructors can choose whichever comment tool they prefer.

2.1.9.3 Voice comments

In addition to tools for providing written feedback, Turnitin also offers a built-in option for providing audio feedback, which was added to the program in 2012. Audio feedback can be recorded in the "General Comments" tab using the "Voice comment" tool in addition to GradeMarks, General Comments, and the grading rubric (Hennessy & Forrester, 2014). The author further posited that an instructor could record audio comments without providing any additional written feedback. According to Ene and Upton, (2014) the main limitation of this tool is that it allows only a three-minute-long continuous recording, and no changes can be made once the recording is completed. In other words, if an instructor needed to re-record for any reason, the whole recording would need to be deleted and recorded again from the beginning.

2.1.9.4 Grading rubric

The Rubric/Form Manager in GradeMark allows instructors to create two different grading tools, both of which are similar in purpose and function. According to Buckley and Cowap, (2013) the grading rubric takes the form of a traditional analytic grading rubric that includes a detailed description for each score across a number of criteria used to evaluate the assignment. The grading form is simpler than the rubric; it takes the form of a condensed rubric, where each criterion is described only once, and the score is assigned during the grading process (Hennessy & Forrester, 2014). The grading rubric and the grading form in Turnitin have to be created and added through the assignment setup menu before they can be used to grade students' work. The rubrics are convenient and user-friendly, and the grading scales and their descriptions in the rubric can be modified as needed. An advantage to using the rubrics provided by Turnitin is that students can access all information regarding their assignments at once, such as the

written and/or audio feedback provided, the estimated or the assigned grade, and the originality report (Bitchener & Knoch, 2010).

Instructors can set up the rubric fairly quickly if it is available, in a Microsoft Word file. The grading criterion for each score can be simply copied and pasted into the rubric tool. When grading a paper, these descriptions become visible to the instructor when the cursor is placed over each score. Thus, a saved rubric can be easily added when another assignment in the same or a different course is created. The rubric can also be used to provide estimated scores on initial drafts, as the score transfers to the Blackboard grade book only when the "Apply rubric percentage to grade" feature is clicked (Buckley & Cowap, 2013).

2.1.9.5 Originality checker

The originality check feature of Turnitin matches students' submitted papers in its repository, publications, and online material produces an originality report that shows a percentage of overall matched text (Jonsson, 2014). The program highlights each instance of matched text in a different colour and provides a direct link to the original source. When creating an assignment in Turnitin, instructors can customize certain features within the originality checker. Ene and Upton (2014) opined that the following can be done:

1. opt to exclude directly quoted text, bibliographic material (i.e., References pages), and small matches (the word count can be established by the instructor)
2. overwrite previously submitted drafts (so students' subsequent drafts of a paper are not matched to previous drafts)
3. set deadlines for students to submit their work

4. choose whether students can see their own originality reports
5. Select which databases Turnitin searches for matches.

The originality checking feature of Turnitin can also be useful for drawing students' attention to the accuracy of their paraphrases. Saadi and Saadat, (2015) opined that students engage in patchwriting. According to the authors, patchwriting refers to copying from a source text and then deleting some words, altering grammatical structures, or plugging in one-for-one synonym substitutes.

2.2 Theoretical Frameworks

2.2.1 Task technology fit model

The theory as an established theoretical framework in information systems research that enables the investigation of issues of fit of technology to tasks, as well as performance. Thus, the model depicts a balanced expression of task-related aspects and technology support. The model provides for the capability of individuals to assess and explain information systems' success and impact on individual performance. The model posits that performance impacts will occur when technology meets the users' needs and provides features that support the fit of the requirements of the task. This means that if technology provides features that are useful to an end-user, then it will have a positive impact on their performances (Shintani, *et al.,* 2014).

The capability of the technology to support a task is represented by the construct "TTF" in the model, which refers to the matching of the capabilities of the technology to the demands of the task; that is, the ability of technology to support a task. The model theorises that the fit between task requirements and technology functionality, which influence technology utilisation and work performance. Gatara and Cohen (2014)

opined that technology would be used well if the functions of the technology can support the needs of the user. Hence, technology would only be used if the system's functionalities provide corresponding support (fit) to the tasks/activities of the user. Essentially, this concept is an expression of the phrase 'fitness for the purpose intended' which often, describes a warranty or guarantee, for instance, in business or commercial activities (Hollingsworth, 2015). This study, therefore, adapted the TTF model to investigate the fit between Turnitin administrators' tasks and Turnitin plagiarism detection technology. It is assumed that the Turnitin administrators would be more favourably disposed to using Turnitin plagiarism detection technology if it helps them accomplish their tasks with minimal effort, maximum efficiency, and effectiveness. The TTF model has four key constructs: task characteristics, technology characteristics, which together affect the third construct TTF, which in turn affects the outcome variable, either performance or utilisation. The TTF mediates the relationship between task characteristics and technology characteristics and utilisation leading to performance impacts.

Task characteristics measure non-routineness, mobility, ubiquity, identifiability, and interdependence of activities that turn inputs into outputs (Chen, *et al*., 2015). Goodhue and Thompson (1995) explain that task characteristics are certain features that are attributed to every particular item of work which can be alternatively called a work package. This study adopted task characteristics measurement scale to measure the task of Turnitin Administrators.

Technology includes the tools that are used to complete and assist with tasks. Technology characteristics, therefore, refer to the underlying features of an information system. They are the attributes of the technology which users use when carrying out

particular tasks, which include hardware, software, and support services. If the technology provides features corresponding to the task, then it is presumed to have an impact on its performance (Goodhue & Thompson, 1995). Technology characteristics measure real-time, system reliability, location-based service, relationship with the user, and ease of use (Chen, *et al*., 2015). This study adopted technology characteristics measurement scale to measure the characteristics of Turnitin plagiarism detection technology.

Task-technology fit is the "degree to which a technology assists an individual in performing his or her portfolio of tasks" (Goodhue & Thompson, 1995). Most specifically, TTF is the correspondence between task requirements, individual abilities, and the functionality of the technology. According to Goodhue and Thompson (1995) task-technology fit measures quality, locatability, authorisation, compatibility, ease of use, timeliness, system reliability, and relationship with users. This study adopted task-technology fit measurement scale to measure the fitness of Turnitin plagiarism detection technology.

Performance impact refers to the degree to which a user evaluates an information system against a task (Goodhue & Thompson, 1995). The author further posited that performance is a measure where a user assesses his or her performance when utilising technology to complete a task. Utilisation represents the action of the individual using the technology to complete his or her tasks. The various components and constructs of Goodhue and Thompson (1995) are depicted in Figure 2.2.

Figure 2.2 showed that task characteristics, and technology characteristics are requisite inputs to task-technology-fit of any system. The figure further showed that performance and utilisation of system is dependent on it task-technology-fit.

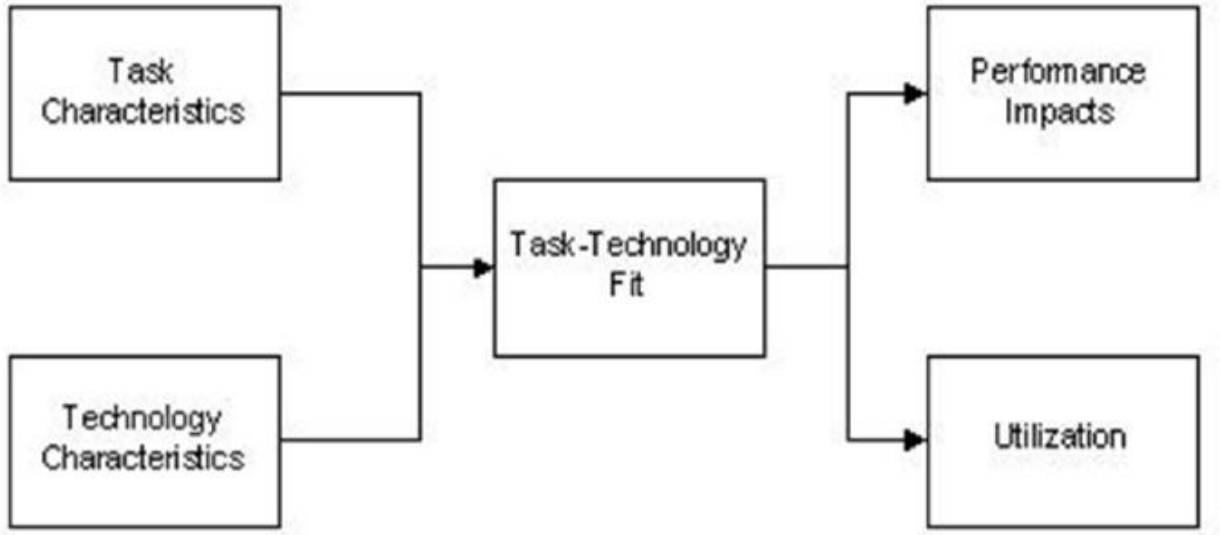

Figure 2.2: Task-technology fit (Goodhue & Thompson, 1995)

Goodhue and Thompson (1995) developed a measure for task-technology fit, which consists of the following factors:

1. quality: meaning right data and currency
2. locatability: ease of determining what data is available and where
3. authorization: obtaining authorization to access data necessary to my job
4. compatibility: data from different sources can be consolidated or compared without inconsistencies
5. ease of use/training: ease of doing what I want using the system
6. production timeliness: information system meets pre-defined production turn-round schedules
7. systems reliability: dependability and consistency of access and uptime of systems
8. relationship with users: how well the information system understands my unit mission and its relation to corporate objectives.

2.2.2 Technology Acceptance Model

The goal of Davis (1989) TAM is to explain the general determinants of computer acceptance that lead to explaining users' behaviour across a broad range of end-user computing technologies and user populations. The basic TAM model included and tested specific beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEU), actual use, and attitude to use.

The actual system use is the end-point where the user can use the system. The actual use of the system is connected with the behavioural intention (BI), which in turn is influenced by the attitude (A) which is the general impression of the technology (Davis, 1989). The model suggests that when users are presented with new technology, several factors influence their decision about how and when they will use it.

Perceived usefulness (PU) was defined by Davis (1989) as the degree to which a person believes that using a particular system would enhance his or her job performance. It means whether or not someone perceives that technology to be useful for what they want to do. Within an organizational context, people are generally reinforced for good performance by raises, promotions, bonuses, and other rewards (Chen, *et al*., 2015). A system high in perceived usefulness, in turn, is one for which a user believes in the existence of a positive use-performance relationship. The perceived usefulness measures quality of work, control work, effectiveness, make the job easier, and control over work of the system (Davis, 1989). The study adopted the measurement of perceived usefulness to measure the usefulness of Turnitin plagiarism detection technology.

Perceived ease-of-use (PEOU) – Davis (1989) defined this as the degree to which a person believes that using a particular system would be free from effort. If the technology is easy to use, then the barrier is conquered. If it's not easy to use and the

interface is complicated, no one has a positive attitude towards it. Perceive ease of use measures ease learning, cumbersome, flexibility, and ease to use (Davis, 1989). The study adopted the measurement of perceived usefulness to measure ease of use of Turnitin plagiarism detection technology. Since perceived usefulness and perceived ease of use determine the user acceptance of technology (Chen, *et al*., 2015). The study, therefore, adopted the measurement scales to measure user acceptance of Turnitin plagiarism detection technology.

External variables such as social influence are important factors to determine the attitude. When these things (TAM) are in place, people will have the attitude and intention to use the technology. However, the perception may change depending on age and gender because everyone is different.

Figure 2.3 showed that there is a relationship between external factors, perceived ease of use, perceived usefulness, attitude towards using, and actual use as described by Davis (1989).

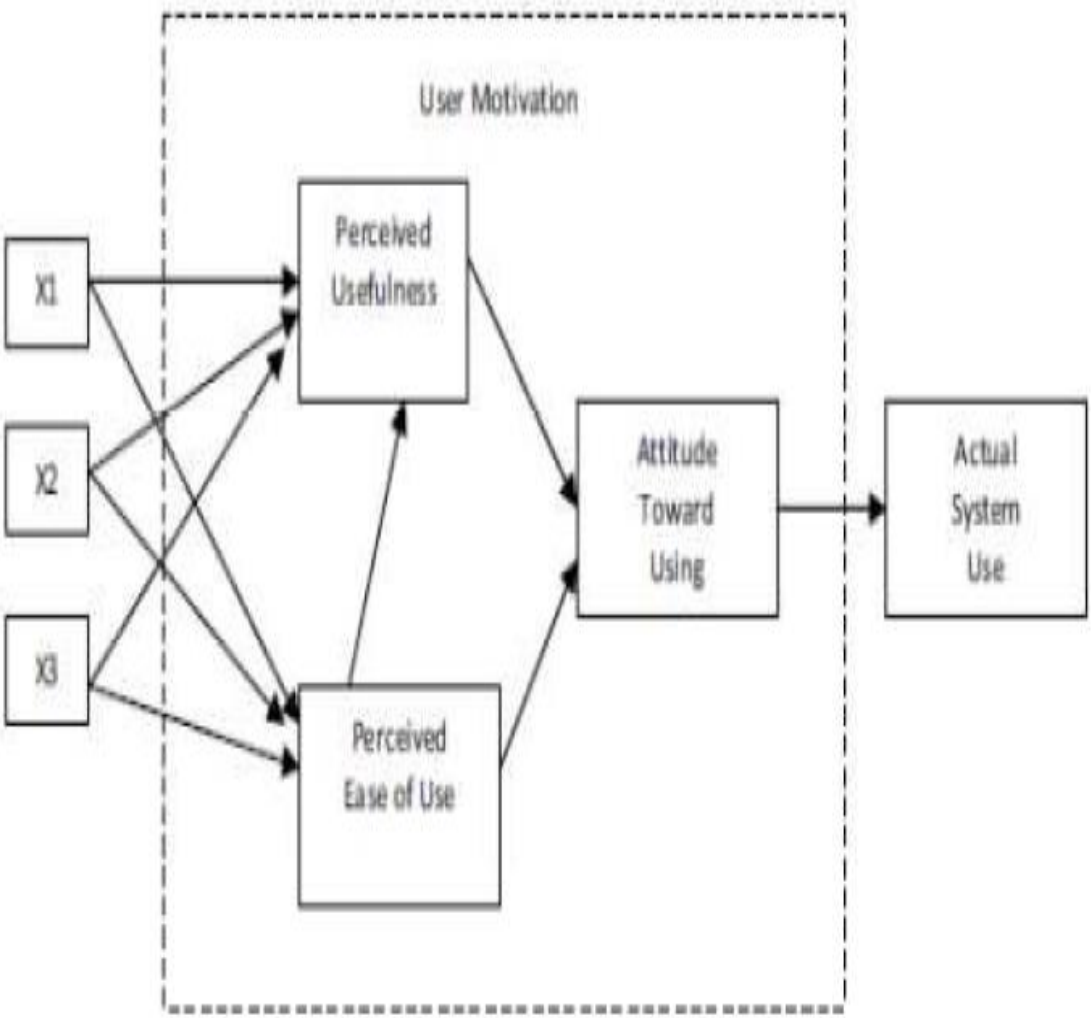

Figure 2.3: Technology Acceptance Model (TAM) (Davis, 1989)

2.2.3 Information systems success model

The information systems success model alternatively known as Delone and McLean IS success model. The theory that seeks to provide a comprehensive understanding of information system success by identifying, describing, and explaining the relationships among six of the most critical dimensions of success along, in which information systems are commonly evaluated (Delone & Mclean, 1992).

The model is depicted in figure 2.4. The figure showed that information quality, system quality, and service quality have influence on usage intentions or system use, and user satisfaction. In the same vein, net system benefit, system use, and user satisfaction have interwoven relationship.

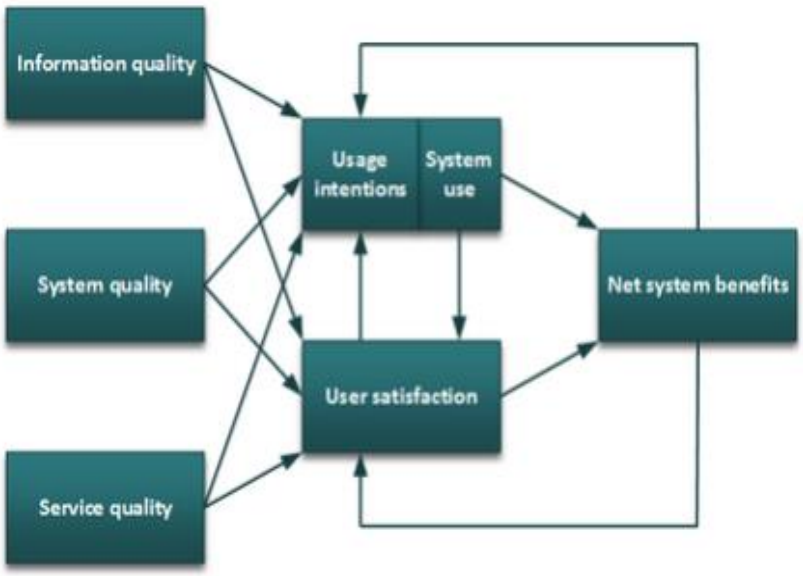

Figure 2.4: Information System Success Model (Delone & Mclean, 1992)

The Information System (IS) success model identifies and describes the relationships among six critical dimensions of IS success: information quality, system quality, service quality, system use/usage intentions, user satisfaction, and net system benefits.

Information quality refers to the quality of the information that the system can store, deliver, or produce, and is one of the most common dimensions along which information systems are evaluated. Information quality impacts both a user's satisfaction with the system and the user's intentions to use the system, which, in turn, impacts the extent to which the system can yield benefits for the user and organization.

As with information quality, the overall quality of a system is also one of the most common dimensions along which information systems are evaluated. System quality indirectly impacts the extent to which the system can deliver benefits using mediational relationships through the usage intentions and user satisfaction constructs. Along with information quality and system quality, information systems are also commonly evaluated according to the quality of service that they can deliver. Service quality directly impacts usage intentions and user satisfaction with the system, which, in turn, impacts the net benefits produced by the system. Intentions to use an information system and actual system use are well-established constructs in the information systems literature. In the IS success model, system use and usage intentions are influenced by information, system, and service quality. System use is posited to influence a user's satisfaction with the information system, which, in turn, influences usage intentions (Delone & McLean, 1992). In conjunction with user satisfaction, system use directly affects the net benefits that the system can provide.

Like actual system use, user satisfaction directly influences the net benefits provided by an information system. Satisfaction refers to the extent to which a user is pleased or contented with the information system, and is posited to be directly affected by system use (Delone & Mclean, 1992). User satisfaction measures the design of the system, user experience, efficiency, and continuous usage, as used by (Al-Gharbawi, 2016) and it is based on the dimensions specified by (Delone & McLean, 1992). The study adopted the measurement scale to measure the user satisfaction of Turnitin plagiarism detection technology.

The net benefit that an information system can deliver is an important facet of the overall value of the system to its users or the underlying organization. In the IS success model, net system benefits are affected by system use and by user satisfaction with the

system. According to Delone and Mclean (1992) system benefits are posited to influence both user satisfaction and a user's intentions to use the system.

2.3 Review of Empirical Studies

Omotayo and Haliru (2020) examined perception of task-technology fit of digital libraries among undergraduates in selected universities in Nigeria. The study investigated task-technology fit of digital libraries in three Nigerian universities and identified factors influencing the use by the students. Survey design was used for the study and a questionnaire was used to collect data from 402 students. The study found a high usage of digital library among the students. A moderate positive correlation and significant relationship was found between the independent variables (task characteristics, technology characteristics, attitude, computer self-efficacy and task-technology fit) and use of digital library. The study validates the TTF model, which posits that for an information system to be utilised, it must be a good fit for the tasks it supports.

The similarity of this study with the current study is that both studies used task-technology model to measure the fitness of fitness between task characteristics, technology characteristics, and technology self-efficacy, however there are some differences between this study and the current study, as this study used task-technology fit model on the use of digital library, while the current study used task-technology fit, technology acceptance model, and information success model to measure the user acceptance and satisfaction of Turnitin plagiarism detection technology.

Hsieh and Lin (2019) examined the performance impact of the epidemic prevention cloud: an integrative model of the task-technology fit and status quo bias. The epidemic prevention cloud allows infection control professionals to streamline many of their

reporting procedures, thereby improving patient safety in a cost-effective manner. Based on task-technology fit and status quo bias perspectives, the study developed an integrated model to explain individuals' health information technology usage behaviour. The authors conducted a field survey in 30 Taiwan hospitals to collect data from infection control professionals with using experience of the epidemic prevention cloud. A total of 167 copies of questionnaires were sent out, and 116 were returned from 18 hospitals. To test the proposed research hypothesis, the study employed a structural equation model by the partial least squares method. The results found that both task – ($p < .01$) and technology-related characteristics ($p < .001$) influence task-technology fit.

Task-technology fit has a positive effect on both utilisation ($p < .001$) and performance ($p < .001$), while it appears to have a negative effect on resistance to use ($p < .001$). The results showed that resistance to use was caused by uncertainty costs ($p < .01$) and perceived value ($p < .01$). The results indicated a significant effect of utilisation on performance ($p < .01$). Further, the results showed a significant negative effect of resistance to use on utilisation ($p < .05$). Both the current study and this study adopted task-technology fit mode, however, task-technology fit model was used to measure the degree of fitness of hospital integration system to task characteristics and technology characteristics, however, the current study is adopting task-technology fit on Turnitin plagiarism detection technology.

Isaac, *et al.* (2017) examined internet usage, user satisfaction, task-technology fit, and performance impact among public sector employees in Yemen. The purpose of the study was to integrate the DeLone and McLean IS success model with task-technology fit (TTF) to explain the performance impact of Yemeni Government employees. The study used questionnaire survey method to collect primary data from 530 internet users in 30-government ministries-institutions in Yemen. The four constructs in the proposed

model were measured using existing scales. The data analysis starts with initial exploratory factor analysis, then confirmatory factor analysis and lastly structural equation modelling via AMOS.

The results of the study showed that the proposed integrated model fits the data well. Findings of the multivariate analysis demonstrate four main results. First, actual usage has a strong positive impact on user satisfaction, TTF, and performance impact. Second, user satisfaction has a great influence on performance impact. Third, TTF has a strong positive impact on user satisfaction and performance impact. Fourth, both user satisfaction and TTF mediate the relationship between the actual usage and performance impact. The similarity between this study and the current study is that both study adopted task-technology fit and Delone and Mclean success model. However, this study focused on the performance impact of Yemeni Government employees and used survey research design, while the current study used task-technology fit, technology acceptance model, and Delone and Mclean model of Turnitin plagiarism detection technology. The current study also adopted quasi-experiment research design.

Wu and Chen (2017) examined continuance intention to use MOOCs: integrating the technology acceptance model (TAM) and task technology fit (TTF) model. The purpose of the study was to propose a unified model integrating the technology acceptance model (TAM), task fit technology (TTF) model, MOOCs features and social motivation to investigate continuance intention to use MOOCs. A sample of 252 participants in China that have already used MOOCs took part in this study. Structural equation modelling implemented via partial least squares (PLS) is conducted to test the research hypotheses. The results showed that research framework for integrating the TAM for the adoption and TTF model for utility provides a more comprehensive understanding of the behaviours related to this context: (1) perceived usefulness and attitude are

critical to the continuance intention to use MOOCs; (2) perceived usefulness is a significant mediator of the effects of perceived ease of use, task technology fit, reputation, social recognition and social influence on continuance intention; (3) perceived ease of use, task-technology fit, reputation, social recognition and social influence are found to play important roles in predicting continuance intention; (4) individual-technology fit, task-technology fit, and openness affect the perceived ease of use; (5) unexpectedly, perceived ease of use and social influence have no significant effect on attitude, and individual-technology and openness do not affect perceived usefulness. Similarly, this study and the current study adopted task-technology fit, technology acceptance model, however, this study focused on MOOC information system using partial least square to test the hypotheses while the current study focused on Turnitin plagiarism detection technology, and the hypotheses will be tested using Kendal Tau b.

In the same vein, Raza and Capretz (2010) observed that the number of users of open source software (OSS) is practically unlimited, and ultimately the software quality is determined by end user's experience, which in turn makes the usability more critical quality attribute than it is for proprietary software. With the sharp increase in use of open source projects by both individuals and organizations, the level of usability and related issues must be addressed more seriously. The research model of this empirical investigation studies established the relationship between the key usability factors from contributors' perspective and open source software usability. A data set of 78 Open Source Software contributors that includes architects, designers, developers, testers and users from 22 open source projects of varied size has been used to study the research model. Empirical results of this study strongly support the hypotheses that users' feedback, design techniques, usability assessment and documentation are positively

associated with the usability improvement of an open source software project. However, the study could not find any statistical significance for “user satisfaction at architectural level” on open source software usability improvement, in the phases of parametric, PLS and multiple regression analyses were used.

Gipp *et al.* (2011) examined Comparative Evaluation of Text-and Citation-based Plagiarism Detection Approaches using GuttenPlag. The paper used Citation-based Plagiarism Detection in evaluating doctoral thesis, in which a volunteer crowd-sourcing project called GuttenPlag identified substantial amounts of plagiarism through careful manual inspection. This new approach is able to identify similar and plagiarized documents based on the citations used in the text. It is shown that citation-based plagiarism detection performs significantly better than text-based procedures in identifying strong paraphrasing, translation and some idea plagiarism. The study concluded that detection rates could be improved by combining citation-based with text-based plagiarism detection. The similarity between this study and the current study is that both studies evaluated plagiarism detection technology, however the current study used task-technology fit model, technology acceptance model, and Deloan and McLean information success to evaluate Turnitin plagiarism detection technology.

Zaied, (2012) examined an integrated success model for evaluating information system in public sectors. The study aimed at generating an integrated model for evaluating Information System (IS) success factors, affecting information systems in public sector in Egypt, through modifying the dimensions of the TAM and D&M IS Success Models and adding additional two success dimensions (Management support and Training). The proposed model has been validated by an empirical study based on a questionnaire and interview. A sample of 500 participants belonging to ten large organizations in Egypt was selected randomly. Questionnaire distribution and returns were by Email. A total of

320 questionnaires were returned for participants who expressed their opinions regarding the proposed dimensions. Pearson correlation was used to examine the relation between the proposed model dimensions.

The research results indicated that information quality has a strong significant influence on IS success, behavioural intention, perceived usefulness, and user involvement. The findings also indicated that services quality can assist and enhance system usage and in turns IS success. In addition, the improvement of information quality; perceived usefulness; service quality and perceived ease of use will strengthen user involvement; behavioural intention and user satisfaction. The research recommended system designers to make full use of the completeness; understandability; security; availability; and accuracy of information to increase behavioural intention and user satisfaction to use IS. Also, system designers should actively seek methods of improving system security; system availability; system compatibility; system privacy; and system maintainability since these elements significantly affect IS success. The similarity between this study and the current study is that both studies adopted technology acceptance model, and Delone and McLean information success model, however, the current study focused on Turnitin plagiarism detection technology.

Misron *et al.* (2011) examined measurement of user's acceptance and perceptions towards campus management system (CMS) using technology acceptance model (TAM). The study used TAM and TTF Model in order to measure the degree to which an organization's information systems and services meet the information needs of its users. The study focused on the users' acceptance and perceptions of using campus management system (CMS) mainly for academic module which was specially developed for an educational institution which is International Education Centre (INTEC). The interview session had been running among Information Technology Unit

(IITU) staff who were responsible for the CMS execution. Also, data was gathered from the distribution of the questionnaire. The respondents are consisting of all lecturers, head of programs and executive officers. The analysis of the collected data has been done by using SPSS Version 17.0.

Based on study findings, TAM's factors Perceived Ease Of Use (PEOU), Perceived Usefulness (PU), Behavioral Intention (BI) and Actual Use (AU) did not have significant different with Gender. Also, working Status showed significant different towards satisfaction level on CMS. Teaching programme showed significant different towards satisfaction level on CMS. In addition, there is a significant relationship between TTF and PU with moderate positive correlation. Also, there is a significant relationship between TTF and PEOU with moderate positive correlation. Finally, there is also moderate positive significant correlation between PU and PEOU, and a positive moderate correlation between PU and BI. Based on research recommendations, rather just focusing on the academic module of the CMS, the future research is suggested to broad up the scope to the rest of the modules left in the system which are General, Administration, Finance, and Student Affair. Research on Business Process Reengineering (BPR) regarding to CMS also can be suggested as the scope for the future research.

Usoro *et al.* (2010) investigated Task-Technology Fit and Technology Acceptance Models Applicability to E-Tourism. The study aimed at the use of superior explanatory power of the combined TAM/TTF model to explore the user acceptance and utilization of the tourism e-commerce websites. Data collection for the study was done both online and physically. 159 valid responses were returned out of the 250 questionnaires distributed to different individuals, representing a response rate of 63.6%. In testing the hypotheses, Pearson bivariate correlations and multiple regression analysis in SPSS

were used for data analysis. The research concluded that perceived ease of use, and perceived usefulness were positively related to intention to use tourism websites. Also, perceived usefulness, and intention to use were positively related to actual use of tourism website. Task-technology fit was positively related to perceived usefulness of tourism web sites. Also, task-technology fit was positively related to perceived ease of use of tourism web sites. Task-technology fit was positively related to the intention to use tourism web sites.

The study also found support for a model that extends TAM with TTF in the prediction of user's utilization or adoption of tourism websites. The research recommended tourism operators and Web developers to note that making the tourism websites with functionalities that meet the tasks of the user, and that the user find useful means that the user will use the websites and that the businesses will acquire and maintain customers. To ensure task-technology fit, developers should try to uncover the needs and the tasks that their customers intend to realize with the use of the websites before embarking on the actual application development.

El-Said (2015) examined knowledge management system (KMS) impact: extending the task-technology fit model with intention to share knowledge construct. The study aimed to investigate KMS's performance impact on individuals in organizations, and to suggest a KMS utilization and performance impact model through integration of the individuals' knowledge sharing intention construct with the TTF constructs. The study started with exploratory study, where interviews were conducted with a sample of Knowledge Management **(**KM**)** users. To validate the model, a survey was then conducted with 95 administration and technical staff of different managerial levels, for two different Knowledge Management Systems in two organizations. The study

employed Structural Equation Modelling (SEM) technique to validate the TTF Model. Partial least square (PLS) was used for model analysis.

The research concluded that the task characteristics and technology characteristics significantly affect the user perception of Task-Technology Fit construct. Also, the effect of task and technology characteristics on utilization was supported through the qualitative analysis of the interviews; this was not the case in quantitative analysis of the survey. Also, it was concluded that a good fit between KMS characteristics and the tasks, they support, increases the impact of the system on users' performance. The research recommended that organizations establishing KMS, have to ensure the good fit between task and technology. Also, organizations have to institutionalize knowledge sharing culture within work contexts. Finally, future studies are recommended to extend the model suggested by this research to examine KMS usage and impact beyond the boundaries of single organizations and across different knowledge assets and cultures.

Godoe and Johansen, (2012) investigated understanding adoption of new technologies: Technology readiness and technology acceptance as an integrated concept. The study investigated the relationship between the personality dimensions of Technology Readiness Index (TRI) and the system specific dimensions of Technology Acceptance Model (TAM). Data was collected from 186 employees in various Norwegian organizations. Structural equation modelling (SEM) was conducted in Amos 6.0 to test the relationship between dimensions of TRI and TAM. The research results showed that optimism and innovativeness significantly influences perceived usefulness and perceived ease of use. Also, the analysis revealed that actual use was directly affected by perceived usefulness, but not by perceived ease of use. In addition, it was implied that both personality dimensions and system specific dimensions are of major importance when adopting new technology. The study recommended to apply research

results. Also, using a combination of the two models in TRAM (Technology Readiness and Acceptance Model) comprises a holistic view.

Ali and Younes, (2013) examined the impact of Information Systems on user performance. The study was developed to answer the question related to the impact of information systems on user performance in Tunisian companies. The study proposed a model combining the task-technology fit (TTF), the technology acceptance model (TAM) and Delone & McLean model to evaluate the performance of users in the Tunisian organizations. The model was tested using survey data collected from 314 users of the information system. AMOS structural equation was used to test the relationships between variables in the model. Also, the exploratory analysis was conducted in SPSS.

The research results showed that TTF, system quality and information quality directly influences the performance of users and indirectly through perceived usefulness and perceived ease of use. In addition, the TTF and the system quality play an important role in improving the performance quality and increase the volume of users work. This study provided further evidence of the appropriateness of extending the models of TTF, TAM and Delone & McLean as a useful means to provide an overview on the most important aspects of the IS impact on user performance. The research recommended researchers and practitioners in IS to maximize IS impacts by improving training and organizational support. Also, careful consideration of user needs and requirements of working in a particular industry will help IS designers to design and implement information systems in the light of the diversity of suppliers, designers, functionality of IS and industries. In addition, the study recommended the future research to improve some measurement scales of variables, including scales measuring perceived usefulness and perceived ease of use.

Ma *et al.* (2013) integrated technology acceptance model and task-technology fit into blended e-learning system. The study proposed a research framework to examine the determinants of nurse's learning satisfaction in a Blended E-Learning System (BELS) environment based on task-technology fit and the technology acceptance model. The study integrated task-technology fit (TTF), computer self-efficacy, the technology acceptance model (TAM) and user satisfaction to hypothesize a theoretical model to explain and predict user's behavioural intention to use a BELS. Questionnaire was distributed to local community hospitals, regional hospitals and medical centres in central Taiwan. From the 900 distributed questionnaires, 650 completed questionnaires were collected. Structural Equation Modelling (SEM) was used for PLS data analysis.

The research results showed that perceived usefulness is an important factor affecting the behavioural intention to use BELS. The findings provided support for the hypothesized positive effect of task characteristics and technology characteristics on TTF. In addition, the empirical results indicated that TTF and perceived ease of use have high prediction rates in explaining the perceived usefulness of BELS. Also, the results proved the hypothesized effect of perceived usefulness on user satisfaction. The research recommended researchers to include other types of hospitals as samples in future research to confirm and refine the study findings. Also, the futures studies are recommended to address the factors contributing to cultural differences.

Dishaw, *et al.* (2013) examined the factors impacting collaborative tool efficacy: the uncanny valley of collaborative tools. The study employed a combination of the Technology Acceptance Model (TAM) and the Task-Technology Fit (TTF) model to compare four different technologies (Ms. Word/email, Twiki, Google Docs and Office Live) that used to support the task of collaboratively creating and editing a report. Four variables from the research model (task-technology fit, perceived ease of use, perceived

usefulness, and perceived effort of collaboration) were measured and statistically analysed to understand the impact. Hypothesis testing was performed via one-way ANOVA to test for significant differences in the variable means. Based on research findings, task-technology fit was determined to be essentially the same for Word/email and Google Docs. Also, task-technology fit of Word/email and Google Docs was determined to be significantly higher than for either Twiki or Office Live.

In addition, the study suggested that Word/email and Google Docs outperform Twiki and Office Live due to tool experience and superior task-technology fit that may be due to the sophistication of the writing and editing tool, support for collaboration, and the clarity of the collaboration process. Based on research recommendations, adequate training on the use of unfamiliar tools is important for effective use by students because student experience and familiarity with the tool plays a significant role in their perception of the tool. The study recommended future studies to develop an ability to predict the choice of technology based on technology characteristics and user attributes. Also, research findings and others' experience are valuable resources and should be used in making the decision.

Lin, (2012) examined perceived fit and satisfaction on web learning performance: Information system continuance intention and task-technology fit perspectives. The study aimed to integrate information system (IS) continuance theory with task-technology fit (TTF) to extend the understandings of the precedents of the intention to continue virtual learning system (VLS), and their impacts on learning. Factors of technology-acceptance-to-performance, based on TAM and TTF, and post-technology-acceptance, based on expectation–confirmation theory. The participants of this study were students at a major university in the south of Taiwan. The perceptions of 165 respondents were collected and analysed using PLS technique. The research results

revealed that perceived fit and satisfaction were important precedents of the intention to continue VLS and individual performance. Also, the results revealed that perceived fit was related to perceived satisfaction.

The findings proved that VLS continuance intention was related to positive impacts perceived by learners. Finally, results revealed there were direct effects between Perceived Fit (PF) to impacts of learning, and Satisfaction (SA) to perceived impact of learning. Based on research recommendations, the results highlighted the importance of the perceived fit of and satisfaction with a VLS, in the case of the adoption of web-based learning system. For future research, an organized interview with more participants should be conducted to collect more insights. Also, caution must be taken when adapting the study findings and discussions to other cases of information systems.

Kakkonen and Mozgovoy (2010) performed a systematic evaluation of eight existing academic and commercial plagiarism detection systems for student texts. The systems evaluated in the study were AntiPlagiarist (ACNP Software, 2010), EVE2 (Canexus, 2010), Plagiarism-Finder (Mediaphor, 2010), SafeAssignment (Sciworth Inc, 2010), SeeSources.com (2010), Turnitin (iParadigms, 2010), and WCopyFind (Bloomfield, 2010). The main result that arose from their work was that currently available detection systems have several drawbacks, which can be divided into two main categories:

1. Shortcomings in the implementation of a particular detection system (for example, issues in the user-friendliness of the system), and
2. Problems caused by the limitations of the existing technologies for plagiarism detection.

The similarity between this study and the current study is that both studies evaluated plagiarism detection technology, however, the current study adopted task-technology

fit, technology acceptance model, and Delone and McLean information success model to evaluate Turnitin plagiarism detection technology.

2.4 Summary of Literature Review

The study has reviewed related information resources using journal articles, conference proceedings, and newspapers. The plagiarism detection system has been seen as an information system that helps in detecting plagiarism using the citation-reference approach, string matching, and matching of source code. Information system, task characteristics, technology characteristics, technology self-efficacy, task technology fit, user acceptance, and satisfaction were also reviewed. The schematic representation of the constructs was also depicted. In the same vein, the operations and functions of the Turnitin plagiarism detection system, such as grading, originality report, and audio comment was shown. Similarly, technology characteristics and task characteristics of plagiarism detection systems have been seen as crucial factors that made plagiarism detection systems usable.

In a quest to measure user acceptance and satisfaction of Turnitin plagiarism detection system, the study adopted Task Technology Fit (TTF) model, Technology Acceptance Model (TAM), and Information System Success Model, to determine user acceptance and satisfaction of Turnitin plagiarism detection system. The constructs used are task characteristics, technology characteristics, computer self-efficacy, task technology fit, perceived usefulness, perceived ease of use, and user satisfaction.

The empirical review of existing studies on user acceptance and satisfaction of Turnitin plagiarism detection system using Task Technology Fit (TTF) model was done to identify the gaps in the studies. From the reviewed literature, the following are the identified gaps in knowledge:

1. There is a need to research user acceptance of the Turnitin plagiarism detection system

2. There is a need to identify user satisfaction of Turnitin plagiarism detection system using Task Technology Fit (TTF) model, Technology Acceptance Model (TAM), and Information System Success Model.

This research will take into cognizance these gaps and will investigate user acceptance and satisfaction of Turnitin plagiarism detection system using Task Technology Fit (TTF) model, Technology Acceptance Model (TAM), and Information System Success Model.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The Quasi-experimental research design was used for the study. Gatara and Cohen (2014) asserted that quasi-experiment is a field experimentation that is conducted outside the laboratory. The quasi experiment defines experiment where subjects in experimental and groups are not randomly assigned. Quasi-experimental research design was considered relevant for the study because it would helped to identify technology characteristics, task characteristics, technology self-efficacy, task technology fit, perceived usefulness, and perceived ease of use of Turnitin plagiarism detection system in the statutory office of the administrators.

3.2 Population of the Study

The population of the study is 42 consisting of the departmental and school Turnitin administrators in Federal University of Technology Minna, Niger State. The total population of the study is 42 Turnitin administrators in Federal University of Technology Minna, Niger State who were subjected to the experiment. The breakdown is shown in Table 3.1.

Table 3.1: Population of the Study

S/N	SCHOOLS	TOTAL
1.	School Agriculture and Agriculture Technology (SAAT)	8
2.	School of Electrical and Engineering Technology (SEET)	3
3.	School of Entrepreneurship and Management Technology (SEMT)	3
4.	School of Environmental Technology (SET)	6
5.	School of Information and Communication Technology (SICT)	4
6.	School of Infrastructure, Processing Engineering and Technology (SIPET)	3
7.	School of Life Science (SLS)	5
8.	School of Physical Science (SPS)	6
9.	School of Science and Technology Education (SSTE)	4
	TOTAL	42

Source: field work (2018/2019) session

3.3 Sample and Sampling Technique

The study adopted total enumeration sampling techniques. According to Cohen *et al.* (2017) total enumeration sampling technique covers the entire population. Therefore there is no need for sample size.

3.4 Instruments for Data Collection

The research adopted a structured questionnaire. The purpose of using a questionnaire was to enable the respondents to express their opinions for the study. The questionnaire is the most appropriate instrument for this study because it is easy to administer, and data can be collected within a very short timeframe (Murnane & Willett, 2011). The structured questionnaire was titled **"Impact of Task Technology Fit of Turnitin Plagiarism Detection Technology on User Acceptance and Satisfaction (ITTFTPDSUAS)"**. The questionnaire was divided into six sections (A-E). Section (A)

deals with the demographic information of the respondents, Sections (B –H) deals with the research questions. The questionnaire for the study was adapted from previous research studies of (Kim *et al.*, 2010; Yu & Yu, 2010; Lu & Yang, 2014).

3.5 Validity of Research Instruments

Validity is a measure that ensures that constructs used in a research instrument are adequately measuring what they are meant to measure. It is a measure of relevance and adequacy of the content of the research instrument. Quantitative research instruments like questionnaire are often subjected to validity test. Therefore, the research instrument was validated by the researcher's supervisor and a lecturer from the Department of Computer Science, Federal University of Technology Minna, Niger state.

3.6 Reliability of Research Instruments

Reliability is the act of ensuring that research instruments measure what it is supposed to measure, as well as giving the same results over time. To ensure the reliability of the instrument, copies of questionnaires were administered to 15 Turnitin administrators in Ibrahim Badamasi Babangida University Lapai (IBBU) Niger State. The data collected were analysed using Cronbach Alpha Correlation co-efficient to establish reliability and consistency of the instrument. The analysis was carried out using the Statistical Package for Social Sciences. Table 3.2 showed the result of the reliability test according to the items with respective Cronbach Alpha value.

Table 3.2: Reliability Statistics

Field	Number of items	Cronbach's alpha
Task characteristics	7	0.797
Technology characteristics	5	0.829
Technology self-efficacy	6	0.818
Task-technology fit	20	0.725
Perceived usefulness	11	0.878
Perceived ease of use	12	0.881
User satisfaction	6	0.738
All items	67	0.957

Source: Field work (2020).

Table 3.2 showed that the calculated Cronbach's Alpha values of all fields range between 0.725 and 0.881. This range is considered satisfactory and ensures the reliability of each field of the questionnaire. Furthermore, the Cronbach's alpha value for the entire questionnaire equals 0.957, which reflects the reliability of the entire questionnaire. This agrees with Emaikwu (2010) who asserted that the reliability of 0.60 and above is considered adequate to use an instrument for field study.

3.7 Procedure for Data Collection

The researcher collected a letter of introduction from the Head of Department, Library and Information Technology, Federal University of Technology, Minna, Niger State, to the Turnitin plagiarism detection system departmental administrator in the Federal University of Technology Minna, Niger State. The letter was attached to the copies of

the questionnaire. The researcher personally administered the questionnaire. The administration of the questionnaire and supervision of the experiment took two months.

3.8 Method of Data Analysis

The collected data were analysed using a Statistical Package for Social Science (SPSS) version 23. The result was presented using a frequency table and median. The hypotheses were tested using Kendal Tau b.

3.9 Ethical Consideration

An informed consent form was collected to Turnitin administrators in the Federal University of Technology Minna, Niger State to assure them of strict confidentiality of responses and anonymity of respondents in reporting the findings. This is necessary to assure respondents that data gathered using a questionnaire will be used strictly for the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Response Rate

Table 4.1 showed the responses from the Turnitin administrators. The responses were analysed and presented using frequency counts and percentages. The result cut-across the nine (9) schools in Federal University of Technology Minna Niger State.

Table 4.1: Response Rate

S/N	SCHOOLS	RESPONSE RATE (%)
1.	School of Agriculture and Agricultural Technology (SAAT)	8(100%)
2.	School of Electrical and Engineering Technology (SEET)	3(100%)
3.	School of Entrepreneurship and Management Technology (SEMT)	3(100%)
4.	School of Environmental Technology (SET)	6(100%)
5.	School of Information and Communication Technology (SICT)	4(100%)
6.	School of Infrastructure, Processing Engineering and Technology (SIPET)	3(100%)
7.	School of Life Science (SLS)	5(100%)
8.	School of Physical Science (SPS)	6(100%)
9.	School of Science and Technology Education (SSTE)	4(100%)
	TOTAL	42(100%)

Source: Field work (2021)

Table 4.1 showed the response rate of the research. A total of 42 Turnitin officers were subjected to the experiment and were given questionnaire each to fill. The table showed that 6(100%) Turnitin officers were from School of Physical Science (SPS), 4(100%) turnitin officers were from School of Science and Technology Education (SSTE), 5(100%) Turnitin officers were from School of Life Science (SLS), 4(100%) Turnitin

officers were from School of Information and Communication Technology (SICT), 3(100) Turnitin officers were from School of Entrepreneurship and Management Technology (SEMT), 8(100%) Turnitin officers were from School of Agriculture and Agricultural Technology, 3(100%) Turnitin officers were from School of Electrical Engineering and Technology, 3(100%) were from School of Infrastructure, Processing Engineering and Technology, and 6(100%) Turnitin officers were from School of Environmental Technology.

Unranked Data Points

Table 4.2 showed unranked data points for 67 items presented in the research instrument. Similarly, the data points are unsorted.

TABLE 4.2: Unranked Data Points

S/N	UNRANKED DATAPOINT
1.	282
2.	285
3.	287
4.	285
5.	198
6.	181
7.	263
8.	243
9.	275
10.	235
11.	243
12.	232
13.	268
14.	253
15.	245
16.	248
17.	212
18.	238
19.	236
20.	198
21.	238
22.	254
23.	233
24.	108

25. 222
26. 238
27. 240
28. 232
29. 169
30. 192
31. 227
32. 236
33. 227
34. 222
35. 198
36. 198
37. 225
38. 225
39. 227
40. 211
41. 196
42. 209
43. 202
44. 226
45. 173
46. 188
47. 193
48. 191
49. 210
50. 78
51. 75
52. 84
53. 101
54. 140
55. 204
56. 200
57. 218
58. 220
59. 227
60. 217
61. 122
62. 259
63. 238
64. 232
65. 253
66. 235
67. 238

Source: Field work (2021)

The data points represented the cumulative response of the Turnitin officers in Federal University of Technology Minna, Niger State.

Ranked Data Points

Table 4.3 showed the ranked and sorted data points of all the response of the Turnitin officers in Federal University of Technology Minna, Niger State.

TABLE 4.3: Ranked Data Points

S/N	DATA POINTS	RANKED
6.	75	1
7.	78	2
8.	84	3
9.	101	4
10.	108	5
11.	122	6
12.	140	7
13.	169	8
14.	173	9
15.	181	10
16.	188	11
17.	191	12
18.	192	13
19.	193	14
20.	196	15
21.	198	17.5
22.	198	17.5
23.	198	17.5
24.	198	17.5
25.	200	20
26.	202	21
27.	204	22
28.	209	23
29.	210	24
30.	211	25
31.	212	26
32.	217	27
33.	218	28
34.	220	2
35.	222	30

36.	222	31
37.	225	32.5
38.	225	32.5
39.	**226**	**34**
40.	227	36.5
41.	227	36.5
42.	227	36.5
43.	227	36.5
44.	232	40
45.	232	40
46.	232	40
47.	233	42
48.	235	43.5
49.	235	43.5
50.	236	45.5
51.	236	45.5
52.	238	47
53.	238	49
54.	238	49
55.	238	49
56.	238	49
57.	240	52
58.	243	53.5
59.	243	53.5
60.	245	55
61.	248	56
62.	253	57.5
63.	253	57.5
64.	254	59
65.	259	60
66.	263	61
67.	268	62
68.	275	63
69.	282	64
70.	285	65
71.	285	66
72.	287	67

Source: Field work (2021)

The table showed that the median value of the total items is 226 with rank 34. The table also showed that the data point with the least rank is 75, while the data point with the highest rank is 287. The median value will be used for decision making on the

responses of the Turnitin officers in Federal University of Technology Minna, Niger State.

4.2 RESEARCH QUESTIONS

Research Question 1: What are the task characteristics performed by Turnitin Administrators in Federal University of Technology Minna, Niger State?

TABLE 4.4 Task Characteristics

Table 4.4 showed the task characteristics of Turnitin officers in Federal University of Technology Minna, Niger State. The table consisted of seven (7) items dealing with the tasks of Turnitin officers.

S/N	STATEMENT	SD(1)	MD(2)	SLD(3)	I(4)	SLA(5)	MA(6)	SA(7)	n	fx	x=226	DECISION
1	I can manage my Turnitin account anytime and anywhere.	0	0	0	0	1	10	31	42	282	fx>x	Agreed
2	I can create class for research upload	0	0	0	0	2	5	35	42	285	fx> x	Agreed
3	I can check uploaded work	0	0	0	0	1	5	36	42	287	fx> x	Agreed
4	I can check similarity index of the uploaded work	0	0	0	1	0	6	35	42	285	fx> x	Agreed
5	I can paraphrase my research work using Turnitin	8	0	4	3	6	11	10	42	198	fx< x	Disagreed
6	I can check for grammatical error on Turnitin	3	9	1	6	11	6	6	42	181	fx< x	Disagreed
7	I can check for sources of cited work in Turnitin	2	0	0	1	2	12	25	42	263	fx> x	Agreed

KEY: SD: Strongly Disagreed MD: Moderately Disagreed SLD: Slightly Disagreed I: Indifferent SLA: Slightly Agreed MA: Moderately Agreed SA: Strongly Agreed

The result showed that (31) Turnitin officers strongly agreed that they can manage their Turnitin account anytime and anywhere, while (10) and (1) Turnitin officers moderately and slightly agreed that they can manage their Turnitin account anytime and anywhere respectively. The total responses (282) of Turnitin officers showed that they can manage their Turnitin account anytime and anywhere. Similarly, Table 4.4 showed that (2) Turnitin officers slightly agreed that they can create class for research upload, while (5) and (35) turnitin officers moderately agreed and strongly agreed that they can create class for research upload respectively. The total responses (285) of Turnitin officers showed that they can create class for research upload.

The result also showed that (1) and (5) Turnitin officers slightly agreed, and moderately agreed that they can check uploaded work respectively, while (36) Turnitin officers strongly agreed that they check uploaded work. The total responses (287) of Turnitin officers showed that they can check uploaded work. The table showed that (6) and (35) Turnitin officers moderately agreed and strongly agreed that they can check the similarity index of the uploaded work respectively, while (1) Turnitin officer was indifferent on its ability to check the similarity index of the uploaded work. The total responses (285) of Turnitin officers show that they can check the similarity index of uploaded work. the table also showed that (8) (4), (3) Turnitin officers strongly disagreed, slightly disagreed and indifferent on paraphrasing research work using Turnitin respectively, while (6) (11) (10) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they paraphrase research work using Turnitin respectively.

The total responses (198) of Turnitin officers showed that they cannot paraphrase research work using Turnitin. The table revealed that (3) (9) (1)(6) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent on the task

of checking for grammatical error on Turnitin respectively, while (11) (6) (6) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they can check for grammatical errors on Turnitin respectively. The total responses (181) of Turnitin officers showed that they cannot check for grammatical errors on Turnitin. The table showed that (2) (1) (2) (12) (25) Turnitin officers strongly disagreed, indifferent, slightly agreed, moderately agreed, and strongly agreed that they can check for sources of cited work in Turnitin respectively. The total responses (263) of Turnitin officers showed that they can check for cited work in Turnitin.

Research Question 2: What are the technology characteristics of Turnitin plagiarism detection technology used by Turnitin Administrators in Federal University of Technology Minna, Niger State?

Table 4.5 showed the technology characteristics of Turnitin plagiarism detection technology. The table consisted of five (5) items dealing with the characteristics of Turnitin plagiarism detection technology.

Table 4.5: Technology Characteristics

S/N	STATEMENT	SD (1)	MD (2)	SLD (3)	I (4)	SLA (5)	MA (6)	SA (7)	n	fx	x=226	Decision
1	It is easy to understand which tool to use in Turnitin	0	0	2	6	5	15	14	42	243	fx>x	Agreed
2	Turnitin plagiarism detection is suitable for plagiarism check	0	0	0	1	0	16	25	42	275	fx>x	Agreed
3	The Turnitin plagiarism detection system provides numerous services	0	0	1	3	16	14	8	42	235	fx>x	Agreed
4	The Turnitin plagiarism detection system provides real-time services.	0	0	0	8	8	11	15	42	243	fx>x	Agreed
5	The Turnitin plagiarism detection system provides secure services.	0	0	2	7	9	15	9	42	232	fx>x	Agreed

KEY: SD: Strongly Disagreed MD: Moderately Disagreed SLD: Slightly Disagreed I: Indifferent SLA: Slightly Agreed MA: Moderately Agreed SA: Strongly Agreed

The result showed that (2), and (6) Turnitin officers slightly disagreed and indifferent that it is easy to understand the tool to use in Turnitin respectively, while (5), (15), and (14) slightly agreed, moderately agreed, and strongly agreed that it is easy to understand the tool to use in Turnitin respectively. The total responses (243) of Turnitin officers showed that they understand the tool to use in Turnitin. The result further showed that (1), (16), and (25) Turnitin officers were indifferent, moderately agreed, and strongly agreed that Turnitin plagiarism detection technology is suitable for plagiarism check respectively. The total responses (275) of Turnitin officers showed that plagiarism detection technology is suitable for plagiarism checks.

Also, the result showed that (1) and (3) Turnitin officers slightly disagreed and indifferent on the provision of numerous services by Turnitin plagiarism detection technology respectively, while (16), (14), and (8) slightly agreed, moderately agreed, and strongly agreed respectively that Turnitin plagiarism detection technology provided numerous services. The total responses (235) of Turnitin officers showed that Turnitin plagiarism detection technology provided numerous services. The table showed that (8), (8), (11), and (15) Turnitin officers were indifferent, slightly agreed, moderately agreed, and strongly agreed respectively that Turnitin plagiarism detection technology provided real-time services. The total responses (243) of Turnitin officers showed that Turnitin plagiarism detection technology provided real-time services. The table revealed that (2), (7), (9), (15), and (9) Turnitin officers slightly disagreed, indifferent, slightly agreed, moderately agreed, and strongly agreed respectively that Turnitin plagiarism detection technology provided secured services. The total responses (232) of Turnitin officers showed that Turnitin plagiarism detection technology provided secured services.

Research Question 3: **What is the capacity and self-efficacy of Turnitin Administrators using Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State?**

Table 4.6 showed the technology self-efficacy of Turnitin officers in Federal University of Technology Minna Niger State in using Turnitin plagiarism detection technology. The table consisted of six (6) items dealing with the technology self-efficacy of Turnitin officers.

TABLE 4.6: Technology Self-Efficacy

S/N	STATEMENT	SD (1)	MD (2)	SLD (3)	I (4)	SLA (5)	MA (6)	SA (7)	n	fx	x =226	DECISION
1	I understand terms/words used in Turnitin system	0	0	0	1	3	17	21	42	268	fx>x	Agreed
2	I can complete a task on Turnitin without wasting time	0	2	1	1	7	10	21	42	253	fx>x	Agreed
3	I can describe the functions of Turnitin plagiarism detection system	0	0	2	1	11	16	12	42	245	fx>x	Agreed
4	I can use Turnitin without calling for help	2	0	2	0	5	16	17	42	248	fx>x	Agreed
5	I can troubleshoot Turnitin plagiarism detection system	3	0	4	7	6	15	7	42	212	fx<x	Disagreed
6	I know how to use the user's guide when help is needed	1	0	6	1	3	17	14	42	238	fx>x	Agreed

KEY: SD: Strongly Disagreed MD: Moderately Disagreed SLD: Slightly Disagreed I: Indifferent SLA: Slightly Agreed MA: Moderately Agreed SA: Strongly Agreed

Table 4.6 showed that (1) (3) (17) and (21) of Turnitin officers were indifferent, slightly agreed, moderately agreed, and strongly agreed respectively that they understand the terms and words used in Turnitin plagiarism detection technology. The total responses (268) of Turnitin officers showed that they understand the terms and words used in Turnitin plagiarism detection technology. The result further showed that (2), (1), and (1) Turnitin officers moderately disagreed, slightly disagreed, and indifferent respectively that they can complete a task on Turnitin without wasting time, while (7), (10), and (21) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that they can complete a task on Turnitin without wasting time. The total responses (253) of Turnitin officers showed that they can complete a task on Turnitin without wasting time.

The result further showed that (2), and (1) Turnitin officers slightly disagreed, and indifferent respectively that they can describe the functions of Turnitin plagiarism detection technology, while (11), (16), (12) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that they can describe the functions of Turnitin plagiarism detection technology. The total responses (245) of Turnitin officers showed that they can describe the functions of Turnitin plagiarism detection technology. Also the result showed that (2), (2), (5), (16), and (17) Turnitin officers strongly disagreed, slightly disagreed, slightly agreed, moderately agreed, and strongly agreed respectively that they can use Turnitin without calling for help. The total responses (248) of Turnitin officers showed that they can use Turnitin without calling for help. Similarly, the result showed that (3), (4), and (7) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that they can troubleshoot Turnitin plagiarism detection technology, while (6), (15), and (7) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that they can troubleshoot Turnitin plagiarism

detection technology. The total responses (212) of Turnitin officers showed that they cannot troubleshoot Turnitin plagiarism detection technology.

Finally, Table 4.6 showed that (1), (6), and (1) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that they know how to use the user guide when help is needed, while (3), (17), and (14) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they can use the user guide when help is needed. The total responses (238) of Turnitin officers showed that they can use the user guide when help is needed.

Research Question 4: What is the degree of fit between task performed and Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State?

Table 4.7 showed the Task-Technology Fit of Turnitin plagiarism detection technology. The table consisted of 20 items dealing with the degree of fitness between task characteristics of Turnitin officers and technology characteristics of Turnitin plagiarism detection technology.

TABLE 4.7: Task-Technology Fit

S/N	STATEMENT	SD (1)	MD (2)	SLD (3)	I (4)	SLA (5)	MA (6)	SA (7)	n	fx	x =226	DECISION
1	Turnitin plagiarism detection system has all details needed to effectively check plagiarism in students project.	1	3	0	1	8	18	11	42	236	fx>x	Agreed
2	I do my job effectively because all of the information needed is available.	5	4	2	3	10	9	9	42	198	fx<x	Disagreed
3	Turnitin provides appropriate level of details on project uploaded for plagiarism detection	1	2	0	2	9	16	12	42	238	fx>x	Agreed
4	Turnitin stores necessary information on project uploaded by students.	2	0	0	2	2	18	18	42	254	fx>x	Agreed
5	On the originality reports, the exact meaning of data elements is either obvious, or easy to find out.	1	0	0	8	8	15	10	42	233	fx>x	Agreed
6	Getting access to uploaded projects is time consuming and difficult	12	15	6	2	4	1	2	42	108	fx<x	Disagreed
7	Projects uploaded on turnitin maintain consistency at all time	3	2	1	2	8	18	8	42	222	fx<x	Disagreed
8	It is easy to compare results from uploaded projects, because the setting is defined similarly.	1	0	1	5	8	15	12	42	238	fx>x	Agreed

9	The details in Turnitin plagiarism detection technology are accurate enough for my task.	1	0	1	2	7	24	7	42	240	fx>$\bar{x}$	Agreed
10	I can get data quickly and easily when I need it.	1	0	1	4	8	24	4	42	232	fx>$\bar{x}$	Agreed
11	Turnitin plagiarism detection system is too flexible that it responds to my changing needs for plagiarism check.	7	5	2	7	8	13	0	42	169	fx<$\bar{x}$	Disagreed
12	I am getting as quick a turnaround as I need on requests for new reports or data.	4	1	5	7	12	8	5	42	192	fx<$\bar{x}$	Disagreed
13	I am getting the help I need in accessing originality report.	1	3	0	3	10	17	8	42	227	fx>$\bar{x}$	Agreed
14	Turnitin plagiarism detection system is convenient and easy to use.	4	0	0	2	4	20	12	42	236	fx>$\bar{x}$	Agreed
15	Turnitin plagiarism detection system is not subject to frequent problems and crashes.	1	2	2	5	8	12	12	42	227	fx>$\bar{x}$	Agreed
16	I can count on the system to be “up” and available when I need it	2	0	4	6	8	10	12	42	222	fx<$\bar{x}$	Disagreed
17	I can get data that is current enough to meet my needs	3	0	6	14	1	10	8	42	198	fx<$\bar{x}$	Disagreed
18	I am getting the training I need to be able to use Turnitin plagiarism system, procedures and data effectively.	3	0	6	14	1	10	8	42	198	fx<$\bar{x}$	Disagreed
19	The data that I need is displayed in a readable and understandable form	1	2	6	3	2	16	12	42	225	fx<$\bar{x}$	Disagreed
20	The data is stored using methods and forms that make it easy to know how to use it effectively.	1	0	3	8	4	19	7	42	225	fx<$\bar{x}$	Disagreed

KEY: SD: Strongly Disagreed MD: Moderately Disagreed SLD: Slightly Disagreed I: Indifferent SLA: Slightly Agreed MA: Moderately Agreed SA: Strongly Agreed

Table 4.7 showed that (1), (3), and (1) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that Turnitin plagiarism detection system has all details needed to effectively check plagiarism in students project, while (8), (18), and (11) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that Turnitin officers strongly disagreed, moderately disagreed and indifferent respectively that Turnitin plagiarism detection system has all details needed to effectively check plagiarism in students project. The total responses (236) of Turnitin officers showed that Turnitin plagiarism detection technology has all details needed to effectively check plagiarism in students' projects. The result also showed that (5), (4), (2), and (3) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that they can do their job effectively because all the information needed are available, while (10) (9) and (9) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they can do their job effectively because all the information needed are available. The total responses (198) of Turnitin officers showed that they cannot do their job effectively because all the information needed is not available.

The table also reveals that (1), (2), and (2) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that Turnitin plagiarism detection technology provides appropriate level on project uploaded for plagiarism detection, while (9), (16), and (12) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that Turnitin plagiarism detection technology provides appropriate level on project uploaded for plagiarism detection. The total responses (238) of Turnitin officers showed that Turnitin plagiarism detection technology provides an appropriate level on projects uploaded for plagiarism detection.

Similarly, the table showed that (2), (2), (2), (18), and (18) Turnitin officers strongly disagreed, indifferent, slightly agreed, moderately agreed, and strongly agreed respectively that Turnitin stores necessary information on project uploaded by students. The total responses (254) of Turnitin officers showed Turnitin stores necessary information on projects uploaded by students. The table also shows that (1), (8) (8) (15) and (10) Turnitin officers strongly disagreed, indifferent, slightly agreed, moderately agreed, and strongly agreed respectively that on the originality reports, the exact meaning of data elements is either obvious or easy to find out. The total responses (233) of Turnitin officers showed that on the originality reports, the exact meaning of data elements is either obvious or easy to find out. Also, the table revealed that (12) (15) (6) and (2) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that getting access to the uploaded project is time-consuming and difficult, while (4) (1) and (2) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that getting access to the uploaded project is time-consuming and difficult. The total responses (108) of Turnitin officers showed that getting access to the uploaded projects is time-consuming and difficult.

The result also showed that (3) (2)(1) and (2) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that projects uploaded on Turnitin maintain consistency at all times, while (8) (18) and (8) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that projects uploaded on Turnitin maintain consistency at all time. The total responses (222) of Turnitin officers showed that projects uploaded on Turnitin do not maintain consistency at all times. The table further showed that (1) (1) and (5) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that it is easy to compare the result from uploaded projects, because the setting is defined similarly,

while (8) (15) and (12) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that it is easy to compare the result from uploaded projects because the setting is defined similarly.

The total responses (238) of Turnitin officers showed that it is easy to compare the result from uploaded projects because the setting is defined similarly. Similarly, the result showed that (1) (1) (2) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that the details in Turnitin plagiarism detection technology are accurate enough for their task, while (7) (24) (7) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that the details in Turnitin plagiarism detection technology are accurate enough for their task. The total responses (240) of Turnitin officers showed that the details in Turnitin plagiarism detection technology are accurate enough for their task. The result revealed that (1) (1) (4) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that they can get data quickly and easily when they needed it in Turnitin plagiarism detection technology, while (8) (24) and (4) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they can get data quickly and easily when they needed it in Turnitin plagiarism detection technology. The total responses (232) of Turnitin officers showed that they can get data quickly and easily when they needed it in Turnitin plagiarism detection technology.

The table also showed that (7) (5) (2) and (7) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that Turnitin plagiarism detection system is too flexible and that it responded to their changing needs for plagiarism check, while (8) and (13) Turnitin officers slightly agreed and moderately agreed respectively that Turnitin plagiarism detection system is too flexible and that it responded to their changing needs for plagiarism check. The total responses (169) of

Turnitin officers showed that the Turnitin plagiarism detection system is not flexible in responding to their changing needs for plagiarism checks.

The table also showed that (4) (1) (5) and (7) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that they are getting quick turnaround on requests for new reports, while (12) (8) and (5) Turnitin officers slightly agreed, moderately agreed and strongly agreed respectively that they are getting quick turnaround on requests for new reports. The total responses (192) of Turnitin officers showed that they are not getting a quick turnaround on requests for new reports.

The table further showed that (1) (3) and (3) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that they are getting the help needed in accessing originality report, while (10) (17) and (8) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that they are getting the help needed in accessing originality report. The total responses (227) of Turnitin officers showed that they are getting the help needed in accessing originality reports. The table also revealed that (4) (2) (4) (20) and (12) Turnitin officers strongly disagreed, indifferent, slightly agreed, moderately agreed, and strongly agreed respectively that the Turnitin plagiarism detection system is convenient and easy to use. The total responses (236) of Turnitin officers showed that Turnitin plagiarism detection technology is easy to use.

The result also revealed that (1) (2) (2) and (5) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that Turnitin plagiarism detection system is not subjected to frequent problems and crashes, while (8) (12) (12) Turnitin officers slightly agreed, moderately agreed, and strongly agreed

respectively that Turnitin plagiarism detection technology is not subjected to frequent problems and crashes. The total responses (227) of Turnitin officers showed that Turnitin plagiarism detection technology is not subjected to frequent problems and crashes.

The result revealed that (2) (4) (6) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that they can count on the system to be "up" and available when they needed it, while (8), (10) and (12) slightly agreed, moderately agreed, and strongly agreed respectively that they can count on the system to be up and available when they needed it. The total responses (222) of Turnitin officers showed that they cannot count on the system to be up and available when they needed it. The result showed that (3) (6) (14) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that they can get data that is current enough to meet their needs, while (1) (10) and (8) slightly agreed, moderately agreed, and strongly agreed that they can get data that is current enough to meet their needs. The total responses (198) of Turnitin officers showed that they cannot get data that is current enough to meet their needs.

The table showed that (3) (6) (14) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that they are getting the training they needed to be able to use the Turnitin plagiarism system, procedures, and data effectively, while (1) (10) and (8) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they are getting the training they needed to be able to use Turnitin plagiarism system, procedures, and data effectively. The total responses (198) of Turnitin officers showed that they are not getting the training they needed to be able to use the Turnitin plagiarism system, procedures, and data effectively.

The table also showed that (1) (2) (6) and (3) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that the data they needed is displayed in a readable and understandable form, while (2) (16) and (12) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that the data they needed is displayed in a readable and understandable form. The total responses (225) of Turnitin officers showed that the data needed are not displayed in a readable and understandable form. Finally, the table showed that (1) (3) and (8) Turnitin officers strongly disagreed, slightly disagreed, and indifferent respectively that the data is stored using methods and forms that make it easy to know how to use it effectively, while (4) (19) and (7) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that the data is stored using methods and forms that make it easy to know how to use it effectively. The total responses (225) of Turnitin officers showed that the data is not stored in a way that makes it easy to know how to use it effectively.

Research Questions 5: What is the opinion of Turnitin Administrators on the usefulness of Turnitin plagiarism detection technology in performing their duties in Federal University of Technology of Minna, Niger State?

Table 4.8 showed the perceived usefulness of Turnitin plagiarism detection technology. The table consisted of 11 items dealing with the perceived usefulness of Turnitin plagiarism detection technology.

TABLE 4.8: Perceived Usefulness

S/N	STATEMENT	SD (1)	MD (2)	SLD (3)	I (4)	SLA (5)	MA (6)	SA (7)	n	fx	x=226	DECISION
1	Using Turnitin in my job enables me to accomplish task quickly	1	3	0	5	4	23	6	42	227	fx>x	Agreed
2	Using Turnitin enhances my job performance	2	3	4	3	6	19	5	42	211	fx<x	Disagreed
3	Using Turnitin in my job increases my productivity	3	5	2	6	8	13	5	42	196	fx<x	Disagreed
4	Using Turnitin enhances my effectiveness on the job	1	5	2	4	9	16	5	42	209	fx<x	Disagreed
5	Using Turnitin makes it easier to do my job	1	7	2	5	6	16	5	42	202	fx<x	Disagreed
6	I found Turnitin useful in my job	1	4	3	0	6	18	10	42	226	fx=x	Agreed
7	My job will be difficult to perform without Turnitin	6	6	4	4	8	11	3	42	173	fx<x	Disagreed
8	Using Turnitin gives me greater control over my work	4	4	3	5	12	11	3	42	188	fx<x	Disagreed
9	Turnitin saves me time	1	9	3	5	6	11	7	42	193	fx<x	Disagreed
10	Turnitin supports critical aspect of my job	2	9	3	0	10	14	4	42	191	fx<x	Disagreed
11	Turnitin improves the quality of the work I do	3	4	3	1	8	15	8	42	210	fx<x	Disagreed

KEY: SD: Strongly Disagreed MD: Moderately Disagreed SLD: Slightly Disagreed I: Indifferent SLA: Slightly Agreed MA: Moderately Agreed SA: Strongly Agreed

The result showed that (1) (3) and (5) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that using Turnitin in their job enables them to accomplish the task quickly, while (4) (23) and (6) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that using Turnitin in their job enables them to accomplish the task quickly. The total responses (227) of Turnitin officers showed that using Turnitin in their job enables them to accomplish the task quickly. The result also revealed that (2) (3) (4) and (3) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that using Turnitin enhanced their job performance, while (6) (19) and (5) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that using Turnitin enhanced their job performance. The total responses (211) of Turnitin officers showed that the use of Turnitin does not enhanced their job performance.

The result showed that (3) (5) (2) and (6) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that using Turnitin increases job productivity, while (8) (13) and (5) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that using Turnitin increases productivity. The total responses (196) of Turnitin officers showed that using Turnitin does not increase their job productivity. The table further showed that (1) (5) (2) and (4) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that using Turnitin enhanced their effectiveness on the job, while (9) (16) and (5) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that using Turnitin enhanced their effectiveness on the job. The total responses (209) of Turnitin officers showed that using Turnitin does not enhanced effectiveness on the job.

The result also revealed that (1) (7) (2) and (5) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that using Turnitin makes it easier to do their job, while (6) (16) and (5) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that using Turnitin makes it easier to do their job. The total responses (202) of Turnitin officers showed that Turnitin does not make it easier to do their job. The result revealed that (1) (4) and (3) Turnitin officers strongly disagreed, moderately disagreed, and slightly disagreed respectively that they found Turnitin useful in their job, while (6) (18) and (10) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they found Turnitin useful in their job. The total responses (226) of Turnitin officers showed that Turnitin is useful in plagiarism checks. The table further showed that (6) (6) (4) and (4) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that their job will be difficult to perform without Turnitin, while (8) (11) and (3) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that their job will be difficult to perform without Turnitin. The total responses (173) of Turnitin officers disagreed that their job will be difficult to perform without Turnitin.

The table revealed that (4) (4) (3) and (5) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that using Turnitin gives them greater control over their work, while (12) (11) and (3) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that using Turnitin gives them greater control over their work. The total responses (188) of Turnitin officers showed that using Turnitin does not give them greater control over their work. The table also showed that (1) (9) (3) and (5) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that Turnitin saves time, while (6) (11) and (7) Turnitin officers slightly agreed, moderately agreed, and strongly

agreed respectively that Turnitin saves time. The total responses (193) of Turnitin officers showed that Turnitin does not save time. The table showed that (2) (9) and (3) Turnitin officers strongly disagreed, moderately disagreed, and slightly disagreed that Turnitin supported critical aspect of their job, while (10) (14) and (4) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that Turnitin supported critical aspect of their job. The total responses (191) of Turnitin officers showed that Turnitin does not support critical aspects of their job.

Finally, the table revealed that (3) (4) (3) and (1) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that Turnitin improves the quality of the work done, while (8) (15) and (8) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that Turnitin improves the quality of the work done. The total responses (210) of Turnitin officers showed that Turnitin does not improve the quality of work done.

Research Question 6: What is the opinion of Turnitin Administrators on the ease of use of Turnitin plagiarism detection technology in performing their duties in Federal University of Technology Minna, Niger State?

Table 4.9 showed the user-perceived ease of use of Turnitin plagiarism detection technology in checking for plagiarism. The table consisted of 12 items dealing with the ease of use of Turnitin plagiarism detection technology.

TABLE 4.9: Perceived Ease of Use

S/N	STATEMENT	SD (1)	MD (2)	SLD (3)	U (4)	SLA (5)	MA (6)	SA (7)	n	fx	x =226	DECISION
1	I often become confused when using Turnitin	22	13	0	5	2	0	0	42	78	fx<x	Disagreed
2	I make errors frequently when using Turnitin	22	15	0	2	3	0	0	42	75	fx<x	Disagreed
3	Interacting with Turnitin is often frustrating	20	16	0	2	0	4	0	42	84	fx<x	Disagreed
4	I need to consult user manual often when using Turnitin	15	10	10	1	4	2	0	42	101	fx<x	Disagreed
5	I find it easy to recover from errors encountered while using Turnitin	10	8	4	5	9	5	1	42	140	fx<x	Disagreed
6	Learning to operate Turnitin is easy for me	5	3	3	0	7	19	5	42	204	fx<x	Disagreed
7	I found it easy to get Turnitin to do what I want it to do	5	5	0	1	9	18	4	42	200	fx<x	Disagreed
8	My interaction with Turnitin is clear and understandable	3	3	2	0	8	19	7	42	218	fx<x	Disagreed
9	I find Turnitin to be flexible to interact with	3	3	0	1	6	26	3	42	220	fx<x	Disagreed
10	I find Turnitin easy to use	3	3	0	1	5	21	9	42	227	fx>x	Agreed
11	It is easy for me to become skilful at using Turnitin	3	5	0	0	8	18	8	42	217	fx<x	Disagreed
12	Turnitin often behaves in unexpected ways	14	11	2	4	2	9	0	42	122	fx<x	Disagreed

KEY: SD: Strongly Disagreed MD: Moderately Disagreed SLD: Slightly Disagreed I: Indifferent SLA: Slightly Agreed MA: Moderately Agreed SA: Strongly Agreed

The result revealed that (22) (13) (5) and (2) Turnitin officers strongly disagreed, moderately disagreed, indifferent, and slightly agreed respectively that they are often confused when they use Turnitin. The total responses (78) of Turnitin officers showed that they are not confused when they use Turnitin. The table also revealed that (22) (15) (2) and (3) Turnitin officers strongly disagreed, moderately disagreed, indifferent, and slightly agreed respectively that they make mistakes frequently when using Turnitin. The total responses (75) of Turnitin officers showed that they do not make mistakes frequently when using Turnitin.

Similarly, the result showed that (20) (16) (2) and (4) Turnitin officers strongly disagreed, moderately disagreed, indifferent, and moderately agreed respectively that interacting with Turnitin is often frustrating. The total responses (84) of Turnitin officers showed that interacting with Turnitin is not frustrating. The table showed that (15) (10) and (10) Turnitin officers strongly disagreed, moderately disagreed, and slightly disagreed that they need to consult user manual often when using Turnitin, while (1) (4) and (2) Turnitin officers were indifferent, slightly agreed, and moderately agreed that they needed to consult user manual often when using Turnitin. The total responses (101) of Turnitin officers showed that they can use Turnitin without consulting the user manual often. The table showed that (10) (8) (4) and (5) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that they find it easy to recover from errors encountered while using Turnitin, while (9) (5) and (1) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they find it easy to recover from errors encountered while using Turnitin. The total responses (140) of Turnitin officers showed that they find it difficult to recover from errors encountered while using Turnitin.

The result further showed that (5) (3) and (3) Turnitin officers strongly disagreed, moderately disagreed, and slightly disagreed that learning to operate Turnitin is easy, while (7) (19) and (5) slightly agreed, moderately agreed and strongly agreed that learning to operate Turnitin is easy. The total responses (204) of Turnitin officers showed that learning to operate Turnitin is difficult. The table also showed that (5) (5) and (1) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that they found it easy to get Turnitin to do what they wanted it to do, while (9) (18) and (4) Turnitin officers slightly agreed, moderately agreed and strongly agreed respectively that they found it easy to get Turnitin to do what they wanted it to do. The total responses (200) of Turnitin officers showed that they found it difficult to get Turnitin to do what they wanted it to do.

The table further revealed that (3) (3) and (2) Turnitin officers strongly disagreed, moderately disagreed, and slightly disagreed respectively that their interaction with Turnitin is clear and understandable, while (8) (19) and (7) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that their interaction with Turnitin is clear and understandable. The total responses (218) of Turnitin officers showed that their interaction with Turnitin is not clear and understandable.

Similarly, the result showed that (3) (3) and (1) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that they find Turnitin to be flexible to interact with, while (6) (26) and (3) slightly agreed, moderately agreed, and strongly agreed respectively that they find Turnitin to be flexible to interact with. The total responses (220) of Turnitin officers showed that Turnitin is not flexible. The result showed that (3) (2) (1) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that they find Turnitin easy to use, while (5) (21) and (9)

slightly agreed, moderately agreed, and strongly agreed respectively that they find Turnitin easy to use. The total responses (227) of Turnitin officers showed that they find Turnitin easy to use. The result also showed that (3) (5) (8) (18) and (8) Turnitin officers strongly disagreed, moderately disagreed, slightly agreed, moderately agreed, and strongly agreed respectively that it is easy for them to become skilful using Turnitin. The total responses (217) of Turnitin officers showed that it is not easy for them to be skilful using Turnitin.

Finally, the table showed that (14) (11) (2) and (4) Turnitin officers strongly disagreed, moderately disagreed, slightly disagreed, and indifferent respectively that Turnitin often behaves in unexpected ways, while (2) and (9) Turnitin officers slightly agreed and moderately agreed respectively that Turnitin often behaves in unexpected ways. The total responses (122) of Turnitin officers showed that Turnitin does not behaved in unexpected ways.

Research Question 7: What is the opinion of Turnitin Administrators on satisfaction with the Turnitin plagiarism detection technology in performing their duties in Federal University of Technology Minna, Niger State?

Table 4.9 showed user satisfaction of Turnitin officers in Federal University of Technology Minna, Niger State on the use of Turnitin plagiarism detection technology. The table consisted of six (6) items dealing with user satisfaction of Turnitin officers.

TABLE 4.10: User Satisfaction

S/N	STATEMENT	SD (1)	MD (2)	SLD (3)	U (4)	SLA (5)	MA (6)	SA (7)	n	fx	x =226	DECISION
1	I am satisfied to continue using Turnitin	1	3	0	0	1	12	25	42	259	fx>x	Agreed
2	I am satisfied with the efficiency of Turnitin	2	1	2	0	7	17	13	42	238	fx>x	Agreed
3	The design of Turnitin take into consideration the desire and needs of the users	2	1	2	0	7	17	13	42	238	fx>x	Agreed
4	I am pleased with my previous experience in Turnitin	1	3	0	5	4	18	11	42	232	fx>x	Agreed
5	I will like to recommend Turnitin to my friends for plagiarism check	3	1	0	1	3	9	25	42	253	fx>x	Agreed
6	I am satisfied that Turnitin meets my information needs	2	3	0	2	1	24	10	42	235	fx>x	Agreed

KEY: SD: Strongly Disagreed MD: Moderately Disagreed SLD: Slightly Disagreed I: Indifferent SLA: Slightly Agreed MA: Moderately Agreed SA: Strongly Agreed

The result showed that (1) (3) (1) (12) and (25) of Turnitin officers strongly disagreed, moderately disagreed, slightly agreed, moderately agreed, and strongly agreed respectively that they are satisfied using Turnitin continuously. The total responses (259) of Turnitin officers showed that they are satisfied using Turnitin continuously. The table showed that (2) (1) and (2) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that they are satisfied with the efficiency of Turnitin, while (7) (17) and (13) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that they are satisfied with the efficiency of Turnitin. The total responses (238) of Turnitin officers showed that they are satisfied with the efficiency of Turnitin.

Similarly, the table revealed that (2) (1) and (2) Turnitin officers strongly disagreed, moderately disagreed, and slightly disagreed respectively that the design of Turnitin took into consideration the desire and needs of the users, while (7) (17) and (13) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that the design of Turnitin took into consideration the desire and needs of the users. The total responses (238) of Turnitin officers showed that the design of Turnitin took into consideration the desire and needs of the users.

The result further revealed that (1) (3) and (5) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that they are pleased with their previous experience in Turnitin, while (4) (18) and (11) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that they are pleased with their previous experience in Turnitin. The total responses (232) of Turnitin officers showed that they are pleased with their previous experience in Turnitin. The table also revealed that (3) (1) and (1) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that they will like to recommend Turnitin to their friends for plagiarism

check, while (3) (9) and (25) Turnitin officers slightly agreed, moderately agreed, and strongly agreed respectively that they will like to recommend Turnitin to their friends for plagiarism check. The total responses (253) of Turnitin officers showed that they will like to recommend Turnitin to their friends. The table finally revealed that (2) (3) and (2) Turnitin officers strongly disagreed, moderately disagreed, and indifferent respectively that Turnitin meets their information needs, while (1) (24) and (10) Turnitin officers slightly agreed, moderately agreed, and strongly agreed that Turnitin meets their information needs. The total responses (235) of Turnitin officers showed that Turnitin meets their information needs.

4.3 Hypotheses Testing

Hypothesis 1: Task characteristics of Turnitin Administrators have a significant impact on Task-Technology Fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State.

Table 4.11 showed the relationship between the task of Turnitin officers and the degree of fit of Turnitin plagiarism detection technology.

Table 4.11: Relationship between task characteristics and Task-Technology Fit

Correlations

			Task Characteristics	Task Technology Fit
Kendall's tau_b	task characteristics	Correlation Coefficient	1.000	.488
		Sig. (1-tailed)		.064
		N	7	7
	Task-Technology Fit	Correlation Coefficient	.488	1.000
		Sig. (1-tailed)	.064	

	N	7	20

**Significance p-value > 0.05

Table 4.11 showed the impact of task characteristics of Turnitin administrators on Task Technology Fit. The result showed that there is a positive relationship (0.488) between task characteristics of Turnitin officers and the Task Technology Fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. The result further showed that there is a significant (0.64) impact of task characteristics on Task-Technology Fit of Turnitin plagiarism detection technology. Since the p-value >0.05, the hypothesis is retained.

Hypothesis 2: Technology characteristics have a significant impact on Task-Technology Fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State.

Table 4.12 showed the relationship between technology characteristics and the degree of fit of Turnitin plagiarism detection technology.

Table 4.12: Relationship between technology characteristics and Task-Technology Fit

Correlations

			technology characteristics	Task Technology Fit
Kendall's tau_b	technology characteristics	Correlation Coefficient	1.000	-.105
		Sig. (1-tailed)		.400
		N	5	5
	Task-Technology Fit	Correlation Coefficient	-.105	1.000
		Sig. (1-tailed)	.400	
		N	5	20

**Significance p-value > 0.05

Table 4.12 showed the impact of technology characteristics of Turnitin on Task Technology Fit. The result showed that there is a negative relationship (-0.105) between the technology characteristics of Turnitin and the task-technology fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. The result further showed that there is a significant (0.400) impact of technology characteristics of Turnitin on Task-Technology Fit of Turnitin plagiarism detection technology. Since the p-value >0.05, the hypothesis is retained.

Hypothesis 3: Technology self-efficacy of Turnitin Administrators has a significant impact on Task-Technology Fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

Table 4.13 showed the relationship between the technology self-efficacy of Turnitin officers and the degree of fit of Turnitin plagiarism detection technology.

Table 4.13: Relationship between technology self-efficacy and task-technology fit of Turnitin plagiarism detection technology

Correlations

			technology self-efficacy	Task-Technology Fit
Kendall's tau_b	technology self-efficacy	Correlation Coefficient	1.000	.200
		Sig. (1-tailed)		.287
		N	6	6
	Task-Technology Fit	Correlation Coefficient	.200	1.000
		Sig. (1-tailed)	.287	
		N	6	20

**Significance p-value > 0.05

Table 4.13 showed the impact of technology self-efficacy of Turnitin officers on Task-Technology Fit. The result showed that there is a positive relationship (0.200) between the technology self-efficacy of Turnitin officers and the Task-Technology Fit of

Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. The result further showed that there is a significant (0.287) impact of technology self-efficacy on Task-Technology Fit of Turnitin plagiarism detection technology. Since the p-value >0.05, the hypothesis is retained.

Hypothesis 4: Task-Technology Fit has a significant impact on perceived usefulness of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State.

Table 4.14 showed the relationship between the degree of fit of Turnitin plagiarism technology and the perceived usefulness of Turnitin.

Table 4.14: Relationship between Task-Technology Fit and perceived usefulness of Turnitin plagiarism detection technology

Correlations

			Task Technology Fit	perceived usefulness
Kendall's tau_b	Task-Technology Fit	Correlation Coefficient	1.000	-.183
		Sig. (1-tailed)		.217
		N	20	11
	perceived usefulness	Correlation Coefficient	-.183	1.000
		Sig. (1-tailed)	.217	
		N	11	11

**Significance p-value > 0.05

Table 4.14 showed the impact of Task-Technology Fit on perceived usefulness of Turnitin plagiarism detection technology. The result showed that there is a negative relationship (-0.183) between Task-Technology Fit and the perceived usefulness of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. The result further showed that there is a significant (0.217) impact of Task-

Technology Fit of Turnitin on the perceived usefulness of Turnitin plagiarism detection technology. Since the p-value >0.05, the hypothesis is retained.

Hypothesis 5: Task-Technology Fit has a significant impact on perceived ease of use of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State.

Table 4.15 showed the relationship between the degree of fit of Turnitin plagiarism detection technology and the perceived ease of use of the Turnitin.

Table 4.15: Relationship between Task-Technology Fit and the perceived ease of use of Turnitin plagiarism detection technology.

Correlations

			Task Technology Fit	perceived ease of use
Kendall's tau_b	Task-Technology Fit	Correlation Coefficient	1.000	0.000
		Sig. (1-tailed)		.500
		N	20	6
	perceived ease of use	Correlation Coefficient	0.000	1.000
		Sig. (1-tailed)	.500	
		N	6	6

**Significance p-value > 0.05

Table 4.15 showed the impact of Task-Technology Fit on the perceived ease of use of Turnitin plagiarism detection technology. The result showed that there is no relationship (0.000) between Task-Technology Fit and the perceived ease of use of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. The result further showed that there is a significant (0.500) impact of Task-Technology Fit of Turnitin on the perceived ease of use of Turnitin plagiarism detection technology. Since the p-value >0.05, the hypothesis is retained.

Hypothesis 6: Task-Technology Fit has a significant impact on user satisfaction of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State

Table 4.16 showed the relationship between the degree of fit of Turnitin plagiarism detection technology and the satisfaction of Turnitin officers with the Technology.

Table 4.16: Relationship between Task-Technology Fit and user satisfaction

Correlations

			Task-Technology Fit	user satisfaction
Kendall's tau_b	Task-Technology Fit	Correlation Coefficient	1.000	-.015
		Sig. (1-tailed)		.473
		N	20	12
	user satisfaction	Correlation Coefficient	-.015	1.000
		Sig. (1-tailed)	.473	
		N	12	12

**Significance p-value > 0.05

Table 4.16 showed the impact of Task-Technology Fit on the user satisfaction of Turnitin plagiarism detection technology. The result showed that there is a negative relationship (-0.015) between Task-Technology Fit and user satisfaction of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. The result further showed that there is a significant (0.473) impact of Task Technology Fit of Turnitin on the user satisfaction of Turnitin plagiarism detection technology. Since the p-value >0.05, the hypothesis is retained.

4.4 Discussions of Findings

The result revealed that Turnitin officers can manage their Turnitin account anytime and anywhere, they can create a class for research upload, check uploaded work, check similarity index of the uploaded work, and check for the source of cited work in Turnitin. The findings are supported by (Al-Gharbawi, 2016; D'Ambra *et al*., 2013; & Koo *et al.*, 2011). The authors asserted that users of information system should be able to use the available information systems to perform the tasks the system was designed for. However, the result showed that Turnitin officers cannot paraphrase their work, and debugging of grammatical errors using Turnitin. The reason for the result is because Turnitin plagiarism detection technology is originally designed for paraphrasing of uploaded work, neither for grammatical correction, but mainly designed for similarity check, sources of cited works, and assessment of uploaded work.

The findings revealed that Turnitin plagiarism detection technology explicitly designed the tools needed in the system, suitability for plagiarism check, provision of numerous services such as grading rubric, assessment, comment, provision of originality report, real-time and secured services, as it uses cloud storage. The findings are supported by (Koo, *et al.,* 2011; Harris, 2012; Gipp, *et al.,* 2011; Buckley & Cowap, 2013; Kostka, & Maliborska, 2016). The authors asserted that plagiarism detection technologies should be able to provide real-time services such as the plagiarism check, originality report and assessment of uploaded work to it users.

The findings revealed that Turnitin officers understand the terms used in Turnitin plagiarism detection technology, complete assigned tasks without wasting time, describe the functions of Turnitin, used Turnitin without calling for help, and can use the user guide. The findings are supported by (Al-Gharbawi, 2016; & Akpan, 2018). The authors asserted that technology is beneficiary when those who are meant to use it, possessed the ability and confidence to use Turnitin plagiarism detection technology to

execute plagiarism check of uploaded work. However, the result revealed that Turnitin officers cannot troubleshoot plagiarism detection technology, which is against the assertion of (Al-Gharbawi, 2016).

According to the author, user of any information systems, should be able to troubleshoot the system used in executing their daily activities, in the case of system downtime. The inability of Turnitin officers to be able to troubleshoot Turnitin is because majority of the Turnitin officers are not Information Technology oriented. Similarly, majority have other engagement that they have little time to troubleshoot the system and inadequate training of Turnitin officers.

The findings showed that Turnitin plagiarism detection plagiarism technology has all the data needed to guide the Turnitin officers, Turnitin maintains data at an appropriate level of detail, it is also easy to find out what information Turnitin maintains on a given subject, originality result is explicit, and comparison of result from uploaded work in Turnitin is comparable. The result also showed that information in Turnitin is accurate, data can be obtained from Turnitin quickly and easily, and Turnitin officers are getting the help needed. Similarly, the result showed that Turnitin is easy to use, and not subject to frequent crashes. The findings are supported by (Nwabueze & Urhiewhu, 2015; Changchun, *et al.*, 2017).

The authors asserted that for an information system to be usable, there must be a degree of fit between the task characteristics and the technology characteristics of the system. In other word, Turnitin plagiarism detection technology should be able to match the tasks of the users and the capabilities of the technology. However, the findings showed that the effectiveness of Turnitin officers job dwindled, accessing relevant information sometimes takes time, inconsistencies on the project uploaded, lack of flexibility to

Turnitin officers changing needs, inadequate response time, not always dependable, inadequate current information pertinent to user needs, inadequate training for Turnitin officers, details in Turnitin are not explicit, and methods of data storage do not facilitate effective use of the system.

The reasons for the variation in findings are because Turnitin officers are not frequently trained as the system is often upgraded with new features. Also, the turnaround and response time of the Turnitin technology is often affected by inadequate internet bandwidth. Also, research uploaded when subjected to article rewriting approach, the system generates new results for the task. Also, Turnitin is not developed for a particular institution but on a generic term, therefore, users find it difficult to adjust the system to meet their changing needs. Also, the user interface has made it difficult for a novice to be able to navigate the system thereby accessing relevant information in Turnitin plagiarism detection technology.

The result showed that using Turnitin does not increase Turnitin officers' performance, productivity, effectiveness, and take control of their job. Similarly, the result showed that Turnitin does not increase the quality of the job done, consumes time in checking work uploaded more than once, and does not support critical aspects of the Turnitin officer job. Zaied, (2012) findings on the perceived usefulness of information systems are against the result of this study. According to the author, user perception of an existing information system is germane to the usability and acceptance of the system.

The findings of the author showed that the effectiveness and productivity of information system users have a direct link to the perceived usefulness of the system. The reason for the variation in findings is because many Turnitin officers see Turnitin plagiarism detection technology as a monologue system that cannot be used for other academic

tasks such as commenting on researcher's work, review purposes, and as such the system is underutilised. Also, many Turnitin officers believed that once users paraphrased their work, the work tends to lose its quality and professionalism, thereby making the work to be sub-standard. Also, the Turnitin officers need to go through the uploaded work to check what the user has uploaded so as not to bypass the integrity of the system, this in turn makes Turnitin officers manually go through the work.

Also, work uploaded repeatedly often takes time to get feedback from the system. Therefore, Turnitin officers concluded that Turnitin plagiarism detection technology does not support critical aspect of their job, as some users still endeavour to bypass the system, by using "0" in the place of "o"; "1" in the place of "I", scanning of work before uploading, inserting work into a table, and changing the font style/colour of work before uploading respectively. However, the findings of the study showed that Turnitin plagiarism detection technology enhances checking similarity index, and useful in plagiarism check. The findings are supported by (Chen, *et al.,* 2015). According to the author, the core essence of plagiarism detection technology is to check plagiarism and to produce originality report of the uploaded work.

The result showed that Turnitin officers are not confused when using the system, does not make errors easily, interaction with the system is not frustrating, and can use the system without necessarily consulting the user guide. The result also showed that Turnitin does not misbehave in unexpected ways, and it is easy to use. The findings are supported by (Hsieh & Lin, 2019). According to the author, for an information system to be acceptable and usable, such system must be easy to use and maintained consistencies at all time.

However, the findings revealed that Turnitin officers find it difficult to recover from errors, learning the use of Turnitin is difficult, engaging Turnitin to perform some tasks may be difficult, interaction with Turnitin is difficult, and becoming an expert with the use of Turnitin is time-consuming. The reason is that Turnitin officers lack the technical know-how on how to recover from error when encountered as they are not been trained on a recurrent basis. Zaied, (2012) asserted that system designers are to make full use of the completeness; understand-ability; security; availability; and accuracy of information to increase user satisfaction of Turnitin plagiarism detection technology. Also, system designers should actively seek methods of improving system security; system availability; system compatibility; system privacy; and system maintainability since these elements significantly affect Turnitin plagiarism detection technology acceptance and usability.

The result showed that Turnitin officers are satisfied with the efficiency in similarity index, design of the system and it meets their information needs. Similarly, the findings showed that the Turnitin officers are satisfied with their previous experience with the system and they can recommend the system for plagiarism check. The findings of the study are supported by (Chen, *et al.*, 2015). According to the author user satisfaction is measured by degree to which the users of the information system are willing to use the same system due to the benefits derived from the system. In other word, the users are satisfied with the efficiency gotten from Turnitin plagiarism detection technology. The reason is that Turnitin plagiarism detection technology is designed for plagiarism checks and provides information on originality reports.

The result showed that there is a positive and strong relationship between task characteristics of Turnitin officers and the Task-Technology Fit of Turnitin plagiarism detection technology in the Federal University of Technology Minna, Niger State,

which in turn mean that the task of checking similarity index, checking originality report, creating of class, are all related to the check of similarity by the Turnitin plagiarism detection technology. The findings are supported by (Omotayo & Haliru, 2020; Hsieh & Lin, 2019). The authors asserted that the tasks of information systems users must match with the designs and capabilities of the system for the system to be maximally used. Therefore, task characteristics of Turnitin officers have a strong impacted on the Task-Technology fit of Turnitin plagiarism detection technology.

The result also showed that there is a negative relationship between technology characteristics and task-technology fit of Turnitin plagiarism detection technology in the Federal University of Technology Minna, Niger State, which might be due to the design of the system, flexibility of the system, and availability of user guide. The finding is supported by (Ma, *et al.*, 2013; Hsieh & Lin, 2019). The findings of the authors revealed that technology characteristics such as the user interface of the system, learnability, flexibility of the system strongly impacted on Task-Technology Fit of any information systems.

The result showed that there is a positive relationship between technology self-efficacy of Turnitin officers and the Task-Technology Fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. The result is supported by (Al-Gharbawi, 2016). According to the finding of the author technology self-efficacy of information system users strongly influenced the Task-Technology Fit of the system.

The findings showed that there is a negative relationship between Task-Technology Fit and the perceived usefulness of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. The result further showed that the Task-

Technology Fit of Turnitin impacted the perceived usefulness of Turnitin plagiarism detection technology. The finding is supported by (Usoro *et al.*, 2010; Ma, *et al.*, 2013). The authors asserted that the degree of fit an information system influenced the perceived usefulness of the system.

The result showed that there is no relationship (0.000) between Task-Technology Fit and perceived ease of use of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. This implies that the degree of fit of Turnitin such as the creation of class, learnability, and the perceived ease of use of the system by the Turnitin officers do not have a relationship, which can be due to the perception of users towards the Turnitin plagiarism detection technology. The result, however, showed that the Task-Technology Fit of Turnitin has a significant impact on the perceived ease of use of Turnitin plagiarism detection technology. The finding is against the findings of Al-Mamary, *et al.*, (2014) and Lin (2012). The authors asserted that for an information system to be usable and acceptable the system must be easy to use by its users.

The result showed that there is a negative relationship between Task-Technology Fit and user satisfaction of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State. This implies that there is a need to improve on the technology characteristic of the systems vis-à-vis train and retraining of the user, as the system tends to be underutilised due to lack of technical know-how. The result further showed that there is a significant impact of Task-Technology Fit of Turnitin on user satisfaction of Turnitin plagiarism detection technology. The finding is supported by (Al-Mamary, *et al.*, 2014; Ali & Younes, 2013). According to the authors, when there is a match between the tasks of the users and the capabilities of the system, the satisfaction

of the users will increased thereby facilitate the usability and acceptability of the system.

4.5 Summary of Findings

The summary is based on the findings derived from the objectives and hypotheses that guided the study:

1. The tasks of Turnitin officers are creation of class on Turnitin, checking of uploaded work, cited sources and similarity index.
2. Turnitin plagiarism detection technology provides real-time and secured services such as plagiarism check, grading rubric, assessment, comment, originality report, and cloud storage.
3. Turnitin officers have proper understandings of the terms used in Turnitin plagiarism detection Technology. Also, Turnitin officer could complete tasks without calling for help and can use user guide. However, Turnitin officers cannot troubleshoot Turnitin plagiarism detection technology during system downtime.
4. Turnitin plagiarism detection technology maintains a degree fit between the tasks of the Turnitin officers and task characteristics of the system. However, accessing relevant information on the system sometimes delay, lack of flexibility of the system, and inadequate training of users have hampered the degree of fit between Task-Technology Fit of Turnitin plagiarism detection technology.
5. Turnitin plagiarism detection technology is useful to plagiarism check. However, Turnitin officers have no clear understanding on how to use the system for assessment and commenting purposes.

6. Turnitin officers find it difficult to use Turnitin plagiarism detection technology, due to inadequate training.
7. Turnitin officers are satisfied with the results they are getting from Turnitin plagiarism detection technology.
8. The tasks of Turnitin officers strongly influences the Task-Technology Fit of Turnitin plagiarism detection Technology.
9. Technology features of Turnitin plagiarism detection technology influences the Task-Technology Fit of Turnitin. However, the design of the technology should be improved.
10. Technology self-efficacy of Turnitin officers' influences Task-Technology Fit of Turnitin plagiarism detection Technology.
11. Task-Technology Fit of Turnitin plagiarism detection technology influences the usefulness of Turnitin.
12. Task-Technology Fit of Turnitin plagiarism detection technology influences the ease of use of the Turnitin. However, there is no relationship between Task-Technology fit and perceived ease of use, as Turnitin officers find it difficult to use the functionality available in the system.
13. Task-Technology Fit of Turnitin plagiarism detection technology influences the satisfaction of Turnitin officers.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

It is concluded that Turnitin plagiarism detection technology is used for plagiarism checks in Federal University of Technology Minna Niger State, while features such as comment rubric, and grade rubric are not being used. This has ensured that intellectual contents emanating from the university are free from plagiarism and may be safely used and referred to through the institutional repository. This will, in the long term, improve the university's research visibility on the Web and improved its ranking among other universities in Africa and the World. Also, Turnitin plagiarism detection technology as shown a high level of functionality and there is a degree of fitness between the task of plagiarism check and the qualities of the technology. Similarly, the underutilisation of Turnitin plagiarism detection by Turnitin officers is because of inadequate training of Turnitin officers, which has also make troubleshooting of the Turnitin plagiarism detection technology difficult by Turnitin officers. Therefore, there is a need to consistently train Turnitin officers in the Federal University of Technology Minna, Niger State, to be able to increase ease of use and satisfaction of Turnitin plagiarism detection technology.

5.2 Recommendations

The following recommendations are made in the study:

1. It is important to commend the accuracy and efficiency of Turnitin plagiarism detection Technology in adequately measuring plagiarism rate using similarity index and provision of originality report of uploaded work.

2. Due to the negative relationship between Task Characteristics and Task-Technology Fit, the school management is encouraged to take proper actions regarding the training of Turnitin officers.

3. To enhance technology functionality, Turnitin plagiarism detection technology developers are to improve the technical assistance and support to deal with the problems raised by the Turnitin officers.

4. It is clear that to enhance the Usefulness, Ease of Use, and User Satisfaction of Turnitin administrators, the fit between technology and task requirements should be improved.

5. When upgrading Turnitin, the developer should improve the flexibility of the system to enhance ease of use.

6. Turnitin plagiarism detection technology should not only be used for plagiarism checks but to provide feedback on the similarity index of the users.

7. Comment and grading rubric should be used in assessing students' projects.

5.3 Suggestions for Further Study

The following suggestions are made for further study:

1. The models used in the study can be used to study the newly developed plagiarism checker by the Nigerian University Commission (NUC).

2. Future research is recommended to replicate this study in new situations to confirm and to generalise the findings of this study.

3. Future research is recommended in using Task Technology Fit and Technology Acceptance Model in measuring the user satisfaction of automated library software

5.4 **Contributions to Knowledge**

1. The study established task-technology fit of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State.
2. The study established the user acceptance and satisfaction of Turnitin plagiarism detection technology in Federal University of Technology Minna, Niger State.
3. The findings of the study will help Turnitin developers in improving the features of the Turnitin plagiarism detection technology, thereby increasing the user satisfaction of the system.

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APPENDIX A

QUESTIONNAIRE FOR M.TECH STUDENTS OF THE DEPARTMENT OF LIBRARY AND INFORMATION TECHNOLOGY, FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE.

Department of Library and Information Technology,

Federal University of Technology,

Minna,

Niger State.

Date:……..

Dear respondent,

LETTER OF INTRODUCTION

I am a postgraduate student of Federal University of Technology, Minna with Matriculation number MTECH/SICT/2018/8016, currently working on a research topic titled **"IMPACT OF TASK TECHNOLOGY FIT OF TURNITIN PLAGIARISM DETECTION TECHNOLOGY ON USER ACCEPTANCE AND SATISFACTION AT FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE''**. I will appreciate it if you could kindly complete the attached questionnaire, as it will be instrumental to the completion of my research programme. The information requested for is purely for academic research purpose and will be treated with strict confidentiality. Please help to respond honestly to the questions as the identity of each respondent will not be required.

Thanks for your anticipated cooperation.

Yours sincerely,

ABU, SAMSON OKPANACHI
M.TECH/SICT/2018/8016

SECTION A: DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

School:_____

SECTION 2: TASK TECHNOLOGY FIT ON TURNITIN PLAGIARISM DETECTION SYSTEM USER ACCEPTANCE AND SATISFACTION

Please choose a score for each statement that you believe is most relevant

Choice	**Strongly disagreed**	**Moderately disagreed**	**Slightly disagreed**	**Indifferent**	**Slightly agreed**	**Moderately agreed**	**Strongly agreed**
score	1	2	3	4	5	6	7

TASK CHARACTERISTICS

s/n	STATEMENT	1	2	3	4	5	6	7
1	I can manage my Turnitin account anytime and anywhere.							
2	I can create class for research upload							
3	I can check uploaded work							
4	I can check similarity index of the uploaded work							
5	I can grade students using Turnitin plagiarism							
6	I can check for grammatical error on Turnitin							
7	I can check for sources of cited work in Turnitin							

TECHNOLOGY CHARACTERISTICS

s/n	STATEMENT	1	2	3	4	5	6	7
1	It is easy to understand which tool to use in Turnitin plagiarism detection system							
2	Turnitin plagiarism detection is suitable for plagiarism check							
3	The Turnitin plagiarism detection system provides numerous services.							
4	The Turnitin plagiarism detection system provides real-time services.							
5	The Turnitin plagiarism detection system provides secure services.							

TECHNOLOGY SELF-EFFICACY

s/n	STATEMENT	1	2	3	4	5	6	7
1	I understand terms/words used in Turnitin system							
2	I can complete a task on Turnitin without wasting time							
3	I can describe the functions of Turnitin plagiarism detection system							
4	I can use Turnitin without calling for help							
5	I can troubleshoot Turnitin plagiarism detection system							
6	I know how to use the user's guide when help is needed							

TASK-TECHNOLOGY FIT

s/n	STAMENT	1	2	3	4	5	6	7
1.	Turnitin plagiarism detection system has all critical data that would be very useful to me in my job.							
2.	I do my job effectively because all of the data I need is available.							
3.	The Turnitin plagiarism detection system maintains data at an appropriate level of detail for my purposes.							
4.	It is easy to find out what data the Turnitin plagiarism detection system maintains on a given subject.							
5.	On the originality reports, the exact meaning of data elements is either obvious, or easy to find out.							
6.	Getting authorization to access data that would be useful in my job is time consuming and difficult.							
7.	The data is free of cases when supposedly equivalent data from two different sources is inconsistent.							
8.	Always it is easy to compare or aggregate data from two different sources because the data is defined similarly.							
9.	The data that I use or would like to use is accurate enough for my purposes.							
10.	I can get data quickly and easily when I need it.							
11.	Turnitin plagiarism detection system is flexible to be able to respond to my changing needs for data.							
12.	I am getting as quick a turnaround as I need on requests for new reports or data.							
13.	I am getting the help I need in accessing and understanding the data							
14.	Turnitin plagiarism detection system is convenient and easy to use.							
15.	Turnitin plagiarism detection system is not subject to frequent problems and crashes.							
16.	I can count on the system to be “up” and available when I need it							
17.	I can get data that is current enough to meet my needs							
18.	I am getting the training I need to be able to use Turnitin plagiarism system, procedures and data effectively.							

19.	The data that I need is displayed in a readable and understandable form							
20.	The data is stored using methods and forms that make it easy to know how to use it effectively.							

PERCEIVED USEFULNESS

s/n	STATEMENT	1	2	3	4	5	6	7
1	Using Turnitin in my job enables me to accomplish task quickly							
2	Using Turnitin enhances my job performance							
3	Using Turnitin in my job increases my productivity							
4	Using Turnitin enhances my effectiveness on the job							
5	Using Turnitin makes it easier to do my job							
6	I found Turnitin useful in my job							
7	My job will be difficult to perform without Turnitin							
8	Using Turnitin gives me greater control over my work							
9	Turnitin saves me time							
10	Turnitin supports critical aspect of my job							
11	Turnitin improves the quality of the work I do							

PERCEIVED EASE OF USE

s/n	STATEMENT	1	2	3	4	5	6	7
1	I often become confused when I use Turnitin							
2	I make errors frequently when using Turnitin							
3	Interacting with Turnitin is often frustrating							
4	I need to consult user manual often when using Turnitin							
5	I find it easy to recover from errors encountered while using Turnitin							
6	Learning to operate Turnitin is easy for me							
7	I found it easy to get Turnitin to do what I want it to do							

8	My interaction with Turnitin is clear and understandable							
9	I find Turnitin to be flexible to interact with							
10	I find Turnitin easy to use							
11	It is easy for me to become skilful at using Turnitin							
12	Turnitin often behaves in unexpected ways							

USER SATISFACTION

s/n	Statement	1	2	3	4	5	6	7
1	I am satisfied to continue using Turnitin							
2	I am satisfied with the efficiency of Turnitin							
3	The design of Turnitin take into consideration the desire and needs of the users							
4	I am pleased with my previous experience in Turnitin							
5	I will like to recommend Turnitin to my friends for plagiarism check							
6	I am satisfied that Turnitin meets my information needs							

Appendix B

Scale: TASK CHARATERISTIC

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.797	7

Scale: TECHNOLOGY CHARATERISTICS

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.829	5

Scale: TECHNOLOGY SELF-EFFICACY

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.818	6

Scale: TASK-TECHNOLOGY FIT

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.725	20

Scale: PERCEIVE USEFULNESS

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.878	11

Scale: PERCEIVE EASE OF USE

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.881	12

Scale: USER SATISFACTION

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.738	6

Scale: OVERALL QUESTIONNAIRE

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.959	67