**ACCRA TECHNICAL UNIVERSITY**

**DESIGN AND IMPLEMENTATION OF EMPLOYEE ATTENDANCE AND LEAVE MANAGEMENT SYSTEM FOR ROCKWELL DISTRIBUTION.**

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**AWARD OF HIGHER NATIONAL DIPLOMA (HND)**

**In**

**COMPUTER SCIENCE**

**SEPTEMBER, 2022**

# DECLARATION BY STUDENTS

This project is submitted as part of fulfillment for the award of a **Higher National Diploma** in **Computer Science**: The work is a result of our investigation. All sections of the text and results which have been obtained from other works/ sources are fully referenced. We understand that cheating and plagiarism constitute a breach of Accra Technical University and will be dealt with accordingly.

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**I hereby confirm that the above students are HND students in the Department of Accounting and Finance under my academic and research supervision in accordance to the requirements in Accra Technical University. The students are currently in their final year of study and they are expected to complete in 2021.**

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# DEDICATION

We dedicate this project work to God Almighty in heaven for his immense mercies, protection and direction to us, throughout our stay in school and also to our supervisor and head of the department for their help.

# 

# ACKNOWLEDGEMENTS

We wish to express our profound gratitude to our parents for their encouragement and their advice, may God bless them.

Exceptional gratitude goes to our supervisor in the person of Mr. Joseph Agyiriwho was always there for us in time of assistance and advice to make this project a successful one.

We also extend our gratitude to the HOD of the computer science department in the person of Mr. Tony Adegboyiga and other lecturers in these departments.

We will not forget our good friends, well-wishers and loved ones who in one way or the other contributed immensely to the success of this project, we ask almighty God to bless you all Amen.

# 

# ABSTRACT

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# CHAPTER ONE

# INTRODUCTION

## 1.1 **BACKGROUND** OF THE STUDY

Employees are the backbone of every company therefore their management plays a major role in deciding the success of an organization (Simaanya, 2014). Large, medium and even small sized companies have always implemented a way to be able to manage its employees effectively and such is the employee records. Every organization requires these records to calculate pay, manage workforce and see performance of employees. The effective management of these records ensures sound decisions based on full, accurate and up-to-date information to be made. This also ensures that any decision made can be traced, scrutinized and justified if necessary (J. Phiri, 2016). The ever-changing trend in technology brought the necessity for the automation of everything from paper-and-pen based to absolute computer domination. Management of all these records is a tedious task and a time-consuming process for the Human Resource team which can be solved by using technological processes.

The Human Resource segment have long used such information to track employees’ performance, attendance, incentives, problems etc. to streamline the company’s input and consequently, maximize its productivity, yet there are still potholes that need to be filled. Empirical studies conducted reveals that the attendance management aspect of Employee Management System that keeps track of the presence or absence of an employee from an event or place (Patel & Priya, 2014) need to be updated.

These needs paved way to probe into the employee management system and to add to this debate by focusing on the value of attendant management and the direct effects it has on organizations. Studies specifically relating to attendance management system have shown that, most system have lenient features that check attendance of employees allowing employees do their own thing hence, the need to advance this system to generate various report such as attendance record, monthly attendance record and employee attendance analysis to ensure that the employees are punctual and do their work on time.

## 1.2 STATEMENT OF THE PROBLEM

Currently, Rockwell Distribution Company with a total of hundred and five (105) employees at Tema has a membership registration system for managing it employees, this system lacks the essential attribute for proper managing of employees at Rockwell Distribution Company. The system only stores personal information of employees leaving the others manual. Manual handling of employee information at Rockwell Distribution Company poses a number of challenges. This is evident in procedures such as leave management where an employee of Rockwell Distribution Company is required to fill in a form which may take several weeks or months to be approved. Also, most leaves are verbal hence making it difficult to retrieve leave reports of an employee when needed.

Secondly, another problem is observing and recording the attendance of employees in the company using attendance book and due to that, employees put wrong time that he/she arrived at the company and also departure. The use of paper work in handling some of these processes could lead to human error, papers may end up in the wrong hands and not forgetting the fact that this is time consuming. The above identified problems can be resolved using the technological processes.

## 1.2.1 **Research** Questions

In order to achieve the aim of the study, the following questions were asked

* What is the current method of managing employees at Rockwell Distribution Company?
* What are the challenges of the existing employee management system at Rockwell Distribution Company?
* How can the challenges associated with the existing system at Rockwell Distribution Company be resolved?

## 1.3 OBJECTIVES OF THE STUDY

The main objectives of this research work are as follows:

* To identify the current method of managing employees at Rockwell Distribution Company.
* To investigate and analyze the challenges associated with the existing employee management system at Rockwell Distribution Company.
* To propose and develop Attendance and Leave Management System for Rockwell Distribution Company.

## 1.3.1 Aim of the Project

To design an Attendance and Leave Management System.

* To allow the system administrator track/locate an employee when signed in.
* To enable employee request for leave.
* To allow the system generate employee’s attendance report.

## 1.4 **SIGNIFICANCE** OF THE STUDY

The study of the usability of Attendance and Leave Management System at Rockwell Distribution Company at Tema is very important looking at the numerous problems it will solve. The successful development and implementation of the attendance and leave management System will take away the stress of the HR manager by having easy access to data as well as services such as online leave management, timely report generation, project management and employee tracking. This system will also eliminate some problems of employees especially when applying for a leave. Without an attendance management system, it is very tedious for the human resource department to keep track of each and every employee and even harder for a project manager to assign tasks to the project team. The attendance and leave management system will be developed to provide information of employees and many other facilities at the click of a button.

The system will store and maintain employee record in a database with privacy only accessed by the admin. The system makes it easy for the admin to monitor the attendance of the employee consistently. The employee can only clock in and clock out using the PC keyboard with the clock program which generate the location of the employee when clocked in.

## 1.5 **ORGANIZATION OF THE STUDY**

There are essentially two aspects to this project’s organization, the first being the project document or write-up and the other part is the system development. The entire write-up of the research project is divided into five Chapters; a summary of the content contained in each chapter is described below:

## **Chapter One – Introduction:** This chapter comprises of the project‘s Introduction, Background of the Study, Problem Statement, Aims and Objectives, Significance of the study as well as the Organization of the Study.

## **Chapter Two** – Literature Review: Talks about related works of the study (Literature Review). At this stage, critical examination is done with respect to other related works vis-à-vis the current project under development and current trends of the project under development. Evaluation is also done on previous systems or existing systems of similar nature enumerating possible features which the current project had identified.

## **Chapter Three** - Methodology: This chapter elaborates on the research methodological approach and highlights the research strategy and paradigms. There is a discussion on the sampling techniques employed as well as the sample size utilized. The instrument for data collection and the methods used as well as data analysis and presentation are expanded in this chapter.

## **Chapter Four** – Proposed System and Implementation: This chapter seeks to address the execution of the system itself. This is where the actual system development and implementation is discussed, producing screenshots of the system interface and functionalities to address the system’s prescribed requirements.

## **Chapter Five** – Conclusion and Recommendation: It captures the conclusion of both the write-up and system development. The chapter summarizes the entire project, including the challenges encountered; personal experiences that pave way for the areas about the system that can be further researched and developed.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 **INTRODUCTION**

This chapter provides support for the study. The literature review is not simply a collection of notes from books or journals. Read, understand then write it in your own words. Sources of material for the Literature Review should include:

* Books
* Journals
* Internet
* Reports
* Conference Proceedings
* Newspapers, etc.

Table 2.1: First Table in Chapter 2

|  |  |  |
| --- | --- | --- |
| **REGION** | **CAPITAL CITY** | **OTHER CITIES** |
| Greater Accra | Accra | Madina |
| Ashanti | Kumasi | Bekwai |
| Western | Sekondi-Takoradi | Anaji |
| Eastern | Koforidua | Kyebi |

## 2.1 **CONCEPT OF LITERATURE REVIEW**

The literature review (recommended length: 1000-1500 words) represents the theoretical core of a project. In this section, we will discuss the purpose of a literature review. We will also consider how one should go about to find appropriate literature on which to base a literature review and how this information should be managed. Finally, we will answer four questions that first-time researchers often battle with when compiling a literature review factors (cf. de Brentani, 1989, 1991; de Brentani & Cooper, 1992; Easingwood, 1986; Jones, 1995; Scheuing & Johnson, 1989), these questions are:

* Which aspects should I include in a literature review?
* How should I go about to synthesize information in a literature review?
* How should I structure a literature review?
* What writing style should I use when compiling a literature review?

## 2.2 PURPOSE OF LITERATURE REVIEW

The purpose of a literature review is to “look again” (re + view) at what other researchers have done regarding a specific topic. A literature review is a means to an end, namely to provide background to and serve as motivation for the objectives and hypotheses that guide your own research.

Table 2.2: Second Table in Chapter 2

|  |  |
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| Western | Sekondi-Takoradi |
| Eastern | Koforidua |

A good literature review does not merely summarize relevant previous research. In the literature review, the researcher critically evaluates, re-organizes and synthesizes the work of others. In a sense, compiling a literature review is like making a smoothie or fruit shake: The end product is a condensed mix that differs totally in appearance from the individual ingredients used as inputs.

The key to a successful literature review lies in your ability to “digest” information from different sources, critically evaluate it and present your conclusions in a concise, logical and “reader-friendly” manner (Easingwood, 1986; Jones, 1995; Scheuing & Johnson, 1989).

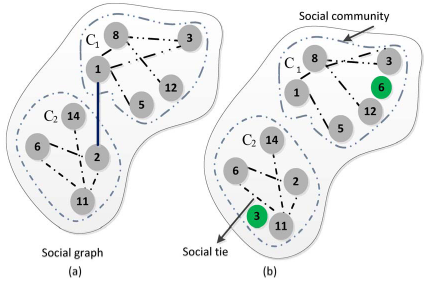


Figure 2.1: First Figure in Chapter 2

First-time researchers often naively believe everything they read or are scared to criticize the work of others. However, academic research is all about critical enquiry! It is, therefore, extremely important that you critically evaluate the material that you read.

* Do you agree with the arguments and conclusions of other researchers?
* If you disagree, why?
* Can you identify contradictory arguments or findings?
* How could one explain these contradictions?
* Do the findings of previous studies apply in all contexts or are the findings context- specific?
* What are the criticisms against the conceptual models or measurement approaches discussed in the literature?
* Which limitations should be considered when interpreting the results of previous research?

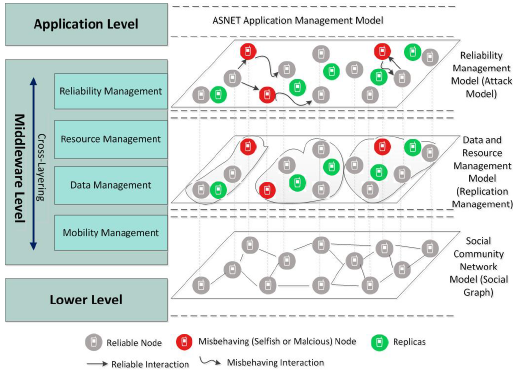


Figure 2.2: Second Figure in Chapter 2

You have to carefully read the most recent available literature with a view to identify specific gaps, inconsistencies and/or controversies that may form the basis of your own research. Always show that you have considered an issue from a number of angles and that you are aware of the arguments for and against a specific point of view (Ennew & Binks, 1996). To compile a proper literature review, one has to overcome three specific challenges, namely:

* Finding appropriate literature on a specific topic,
* Managing the information, and
* Presenting a logical, synthesized and reader-friendly review of the current knowledge relating to a specific topic.

### 2.2.1 Finding Appropriate Literature on a Specific Topic

Use the following steps to search for information on which to base your literature review:

* Step 1: Find and read the basis articles listed in the document on research topics.
* Step 2: Identify possible search terms (keywords) from these base articles by listing the main concepts/constructs mentioned in the articles. The main concepts/constructs of a study are normally listed in the title, keywords, abstract and introduction. Use these keywords as search terms in further searches for relevant literature. It may sometimes be necessary to look for synonyms or broader terms that would include the construct/concept that you want. For example, if you are doing a study on the influence of widow displays on consumer behaviour, you may want to experiment with the following search terms: “window displays”, “sales promotions” AND “retailing”, and “store windows”.
* Step 3: Once you have identified appropriate search terms, you have a number of options:
* See what academic textbooks have to say about these terms (e.g., see what “Retail Marketing” textbooks have to say about window displays).

Consider the following search strategies:

* Option 1: Find articles published in international academic journals
* Option 2: Find articles published in international academic journals using Google Scholar
* You can also search for articles in international academic publications by using Google Scholar.

### 2.2.2 Managing the Information

It can become quite a challenge to manage the information gathered for a literature review. Consider the following tips:

Initially limit the time period of your searches to the last three years. Increase the time period incrementally if you cannot find any relevant articles.

Keep a record of the complete reference to a book, journal article or web page will save you the trouble of having to find the source again when you have to compile the list of references of your final proposal or research article.

Because the contents of the web can change from one day to the next, it is best to print copies of any web pages from which you have taken information. This will ensure that you have a permanent record of the information which you have consulted. These printouts will also contain the relevant URL and the date on which the information was accessed Alam, 2000; Harris et al., 1999; Martin et al., 1999; Sundbo 1997).

Diarize the due dates of all library books and inter-library loan items. You will be fined if you return books late and may even be “blacklisted”, which means that you will be prevented from borrowing books in future.

Place all your printed articles together in a box or file so that you do not have to search for a particular article, as this can waste a lot of time. Where possible, save electronic copies to a dedicated folder on your PC (Alam, 2000; Harris et al., 1999; Martin et al., 1999; Sundbo 1997).

This saves a lot of time when one has to find a particular article again, especially towards the end of the year.

How to read an academic journal article:

First read the abstract, then the introduction and then the conclusion to determine whether the article will be of value to you.

Article titles are sometimes very misleading. Always read the abstract and introduction to determine whether a specific article is relevant to your study.

## 2.3 COMPILING LITERATURE REVIEW

As was mentioned above, a literature review is not merely a chronological summary of what different authors have said about a specific topic. To compile a good literature review, you have to “digest” the available literature and then provide a critical evaluation and synthesized summary of the current knowledge related to your chosen topic.

### 2.3.1 White Diamonds

This type of diamond is most used for gifts and weddings & engagement jewelry. It is found in different parts of the world with different shapes and sizes.

### 2.3.2 Blue Diamonds

Blue diamonds are very expensive and extremely rare to find. In recent years, there is what to custom develop a blue fancy diamond. Fancy blue diamonds are now available in a wide range of shades, ranging from sky blue to sapphire.

### 2.3.3 Pink Champagne Diamonds

These are attractive champagne diamonds that tend to have a secondary pink color. These varieties of diamonds normally command a higher price per carat compared to champagne diamonds and display slight to bold flash of light.

### 2.3.4 Yellow diamonds

Also called canary diamonds, yellow diamonds are available in a wide range of shades ranging from rich canary colors to light yellow. As they often say, the more yellow the diamond, the more expensive it becomes.

### 2.3.5 Orange Diamonds

They are energetic and vibrant in nature. These diamonds usually represent creativity and success. They come in a wide range of variety ranging from fancy orange diamonds to vivid orange diamonds.

### 2.3.6 Synthetic Diamonds

These are man-made diamonds that are created in a lab. They are not considered as rare or valuable as real diamonds, but still tend to be fairly expensive.

### 2.3.7 Purple Diamonds

They are definitely natural, assuming no one artificially enhanced the diamond and influenced the color. In order that we can classify the stones, the Gemological Institute of America (GIA) developed a uniform list of 12 main colors. Most purple diamonds come from mines in Australia, such as the Argyle mine.

### 2.3.8 Green Diamonds

The natural green diamond, which probably originated in the Kollur mine in the state of Andhra Pradesh in India.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.0 **INTRODUCTION**

This is the "HOW" section of your research report. Precision and exact details are key to this section, but do not include irrelevant material. The information is presented in simple past tense, either active voice (We collected water samples every three days) or passive voice (Samples were collected every three days). The ultimate test of a well-written Methods section is in replicability -- could someone else reproduce the study given what you wrote? Include enough information about materials and methods to enable another suitably qualified person to repeat your experiments. Relegate tedious but necessary details to an Appendix, so that there are no breaks in the flow of ideas in your presentation. The methods section generally includes three types of information:

* Subjects / participants / substances / samples;
* Apparatus / materials / instruments / equipment; and
* Procedure for data collection
* Procedure for data analysis

Whatever is in Methods should find a corresponding mention in Results.

The detail and emphasis of what is covered will be different in different disciplines.

* **Scientific and technical disciplines:** 
  + Rationale for choosing materials, methods and procedures
  + Details of materials, equipment and procedures that will allow others to
    - Replicate experiments
    - Understand and implement technical solutions
* **Social science disciplines:** 
  + Demonstration of fit between methods chosen and research question(s)
  + How the data was
    - Collected
    - Recorded
    - Analyzed
  + Rationale for sampling or choice of cases, representability of sample or case
* **Humanities disciplines:**
  + What sources were used
  + Rationale for choice of sources (considering their fit with the research question, and how representative they are)
  + Approach to interpretation - what approach was chosen and why

This chapter highlight how information and data was obtained for the project. This chapter consist of the Mood board, Fabric board, Tools and Materials, Sketches of Designs, Pattern, Layout and Cutting, Constructing process, Analysis of the design, and Final garment (Langeard et al., 1986; Martin & Horne, 1995; Normann, 1991; Vermillion, 1999).

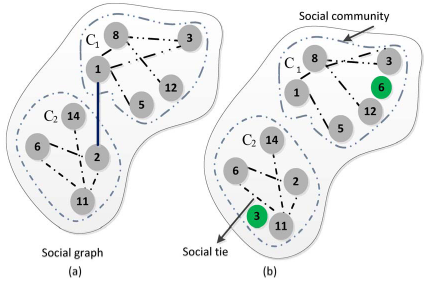


Figure 3.1: First Figure in Chapter 3

Mood board may be described as an inspirational board, story board or as collage consisting of composition of images, visuals and other object often created for the purpose for design or presentation. Mood board consist of styles colours, texture and images. It is used to illustrate the **direction** of styles which has been produced. Mood board helps designers to figure out how to create unified styles for design. Mood board are often physical installation that are made with foam board or cardboard where designs are pasted on the board. It is from the mood board they get their colour scheme, fabric and shapes.

Again, a mood board is a type of collage consisting of image, text and samples of object in a composition. It can be used upon a set topic or can be any material chosen at random. A mood board can be used to give a general idea of a topic, or show how different something is from the modern.

**Table 3.1: First Table in Chapter Three**

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| Western | Sekondi-Takoradi | Anaji |
| Eastern | Koforidua | Kyebi |

## 

## 3.2 **FABRIC** BOARD

It a board made with the fabric and materials that are used for the garment or design.

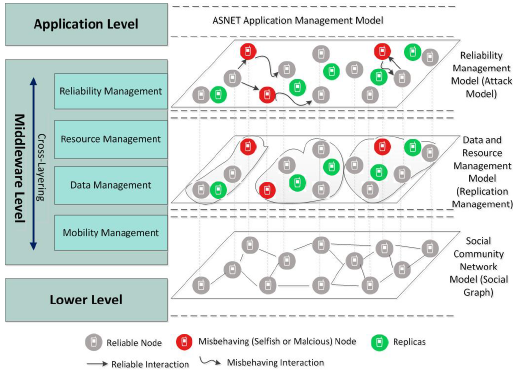


Figure 3.2: Second Figure in Chapter 3

## 3.3 **COLOUR** BOARD

A colour board is a simple strip cut from a piece of material. The colour boars is also known as colour swatches. The colour board which is attached to the mood board was obtained from the mood board since it contains variety of pictures of my concept and colours are black, white, and blue-violet.

. 

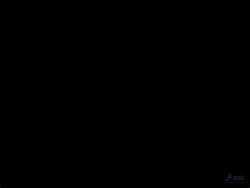
 

Figure 3.3: Third Figure in Chapter 3

Table 3.2: First Table in Chapter Three

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| Western | Sekondi-Takoradi |
| Eastern | Koforidua |

## 3.4 TOOLS AND **MATERIALS**

**Working Table:** surface for cutting.

**Pencil:** for sketches.

**Iron:** for pressing.

**Tape Measure:** for taking body measurement and fabric.

**Tracing Wheel:** for tracing patterns.

**Scissors:** for cutting.

**Tailors Chalk:** making markings on fabric.

**Yard Stick:** drawing long straight lines.

**Measuring Rule:** taking measurement of short intervals.

**Pins:** pining fabrics together.

**Sewing Machine:** stitching the garment parts together.

**Seam Ripper:** unpicking seams.

**Needles:** hand stitching and hemming.

**Zipper:** closure for opening.

**Curves:** drawing curves during patterns.

**Thread:** holds seams of garment together.

**Thumbs Tacks:** holding patterns in place during drafting.

**Fashion Fabric:** materials for producing garment.

# CHAPTER FOUR

# RESULTS AND DISCUSSIONS

## 4.1 **INTRODUCTION**

Whatever is in Methods should find a corresponding mention in Results. Results are the ultimate objective of research: here you summarize the data collected and the statistical treatment of them. This section consists of the observations and measurements recorded while conducting the procedures described in the Methods section. These components must address the questions raised in the introduction and any hypotheses formulated there.

Results are often presented in numerical form and indeed are more reader-friendly if presented graphically in tables and graphs than in written text. The writer must aim for ACCURACY as these results are a permanent source of academic knowledge.

The arrangement of the RESULTS AND DISCUSSION should "match" that of the METHODS section. If the Methods section was a single, straightforward test, then the Results can follow the classic order: answer the research question first, and then arrange the results from most important findings to least important findings. If the Methods section was structured, consider structuring the Results section similarly. Use subheadings in the Results section. Often, this can make it somewhat easier for the reader to follow.

* + The results obtained may be presented in the form of tables, figures, photographs, charts, etc. However, the same data must not be presented in two different forms. Each illustration must be preceded by a brief text to explain the salient points being illustrated.
  + Tables should be placed on the same page or not far away from the text describing them.
  + Tables are not to be drawn with vertical and horizontal lines forming cells. However, one or two horizontal lines may be needed for the top and bottom parts of the Table.
  + If a Table spills over to next page, there should be an indication such as (Table 1 continued).
  + All Tables should be numbered consecutively with Arabic numerals in the order in which they are first mentioned in the text. If a table in not mentioned at all in the text, it should not appear anywhere in the Research Project Report or report.
  + Table are supposed to be on the same page and not far away from the reference discussions.

The Brocade and Lycra fabric were used in the construction and garment 1. Sequence were used to embellish the finished garment. Brocade is a rich fabric, woven with a raised pattern, commonly with gold and silver thread.

Table 4.1: First Table in Chapter Four

|  |  |  |
| --- | --- | --- |
| **REGION** | **CAPITAL CITY** | **OTHER CITIES** |
| Greater Accra | Accra | Madina |
| Ashanti | Kumasi | Bekwai |
| Western | Sekondi-Takoradi | Anaji |
| Eastern | Koforidua | Kyebi |

This design was a bit challenging to produce especially with the palazzo shorts, but a successful outcome was achieved. However, a focal point was the surface of the fabric depicting the sparkling nature of a diamond.

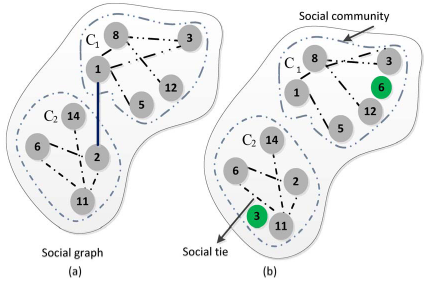


Figure 4.1: First Figure in Chapter 4

This garment was designed for the young ladies between the ages of 18-30; as an evening wear which can be worn for red carpet on the runway.

Garment two (2) was constructed with a black brocade fabric and a sequence fabric. The design has a scooped neckline.

Table 4.2: Second Table in Chapter Four

|  |  |  |
| --- | --- | --- |
| **REGION** | **CAPITAL CITY** | **OTHER CITIES** |
| Greater Accra | Accra | Madina |
| Ashanti | Kumasi | Bekwai |
| Western | Sekondi-Takoradi | Anaji |
| Eastern | Koforidua | Kyebi |

It has a detachable half suit with the lapel collar dropping to the shoulder and a belt which is tied to the left/right side of the garment. The focal point of the attire was on the lapel collar, belt and the bell trousers. The design has a one hand long sleeve which was made with a Lycra fabric and a piece of black brocade at the wrist.

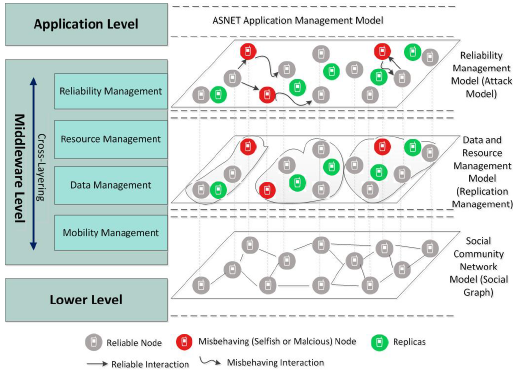


Figure 4.2: Second Figure in Chapter 4

# CHAPTER FIVE

# SUMMARY, CONCULSIONS AND RECOMMENDATIONS

## 5.0 **INTRODUCTION**

Chapter five concludes and present relevant and reliable recommendation of study, the important of the study, the significant of diamonds.

## 5.1 **SUMMARY**

Summarize your research study in accordance to for example:

* **Chapter One** elaborated on the concept in the background of the study, the researcher defines the concept, sources of inspiration, and further explained the statement of the problem, objectives of the study, the importance of the study and organization of the study.
* **Chapter Two** discussed the review of related literature, definition of diamond, history of diamond, origin of diamond, types of diamond, definition of darkness, history of darkness, definition of night, history of night, origin of night, types of night, fashion, history of fashion, types of fashion, brief of clothing, importance of clothing, accessories.
* **Chapter Three** outlined the methodology, definitions of mood board, colour board, tools and equipment, sketches of design, patterns, layout and cutting, construction process, final garment and accessories.
* **Chapter Four** presented of results and discussions pertaining to the study.

## 5.2 **CONCLUSION**

This section concludes the study and outlines a summary of the problem and relevant results found during the study. For example:

The project has created discovery that fashion is an evolving industry and creativity and innovation must be discovered. It is important, therefore, to discover new areas as a source inspiration for producing new designs considering the elements and principle of design. No matter how many times inspiration and concept are used, there is something always new.

It is therefore important for a designer to use the principle and elements of design in way that it will create a desired effect based on the concept been produced. The process requires a lot of research to actualize the concept. The addition of accessories added interest and style to the garment to create the desired look.

## **RECOMMENDATIONS**

With reference to the findings of the research, the following recommendations should be considered:

* The institution (ATU); department of fashion design and textiles should teach and encourage student to use the elements and principles of design properly.
* Fashion designers must take the initiative to learn more techniques and strategies of making new designs.
* Designers should be more innovative and creative, study more and good use of their environment.
* There should also know how to blend African fashion with international fashion, over reliance on exiting designs make fashion boring.
* Students should learn how to treat and handle special fabrics.
* Producing of creative and innovative designs should be researched extensively.

**REFERENCES**

Al-Adwan, A., Al-Adwan, A., & Smedley, J. (2013). Exploring students’ acceptance of e-learning using Technology Acceptance Model in Jordanian universities. *International Journal of Education and Development using Information and Communication Technology*, *9*(2), 4-18.

Alam, S.S., & Noor, M.K.M. (2009). ICT adoption in small and medium enterprises: An empirical evidence of service sectors in Malaysia. *International Journal of Business and Management*, *4*(2), 112-120.

Almarabeh, T. (2014). Students' perceptions of e-learning at the University of Jordan. *International Journal of Emerging Technologies in Learning (IJET)*, *9*(3), 31-35.

Angeles, R. (2013). 7G’s Environmental initiative through the lens of the technology organization environment (TOE). *Computer Technology and Application*, *4*, 39-68.

Annan, N.K., Ofori-Dwumfuo, G., & Falch, M. (2012b). Authoring m-learning content: A case study of using power point mobile enabled tools to create content for learning anywhere anytime. In *Proceedings of the IEEE International Conference on Education and e-Learning Innovations (ICEELI)*, Sousse, Tunisia, 1-5.

Annan, N.K., Ofori-Dwumfuo, G.O., & Falch, M. (2012a). Mobile learning platform: A case study of introducing m-learning in Tertiary Education. *GSTF Journal on Computing (JoC)*, *2*(1), 23-28.

Ansong, E., Boateng, R., Boateng, S.L., & Anderson, A.B. (2017). The nature of e-learning adoption by stakeholders of a university in Africa. *E-Learning and Digital Media*, *14*(4), 226-243.

Arkorful, V. & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, *12*(1), 29-42.

Baris, M.F., & Tosun, N. (2013). Influence of E-portfolio supported education process to academic success of the students. *Procedia-Social and Behavioral Sciences*, *103*, 492-499.

Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The case research strategy in studies of information systems. *MIS Quarterly*, *11*(3), 369-386.

Brakel, P.A., & Chisenga, J. (2003). Impact of ICT-based distance learning: The African story. *The Electronic Library*, 21(5), 476-486.

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development using Information and Communication Technology*, *8*(1), 136-135.

Budu, K.W.A., Yinping, M., & Mireku, K.K. (2018). Investigating the effect of behavioral intention on e-learning systems usage: Empirical study on tertiary education institutions in Ghana. *Mediterranean Journal of Social Sciences*, *9*(3), 201-216.

Chau, P., & Hu, P. (2002). Investigating healthcare professionals’ decisions to accept telemedicine technology: An empirical test of competing theories. *Information and Management*, *39*, 297-311.

Clark, R.C., & Mayer, R.E. (2016). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning*. John Wiley & Sons.

Danish Ministry of Science and Innovation (2003). *Perspectives for competence development: Report on E-learning*, Copenhagen, Denmark.

Davis, D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319-340.

Davis, F., Bagozzir, R., & Warshaw, P. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*(8), pp. 982-1003.

Deng, L., & Tavares, N.J. (2013). From Moodle to Facebook: Exploring students' motivation and experiences in online communities. *Computers & Education*, *68*, pp. 167-176.

Easterly, W. & Levine, R. (1997). Africa's growth tragedy: policies and ethnic divisions. *The Quarterly Journal of Economics*, *112*(4), 1203-1250.

Gamliel, E., & Davidovitz, L. (2005). Online versus traditional teaching evaluation: mode can matter. *Assessment & Evaluation in Higher Education*, *30*(6), 581-592.

Gatautis, R. (2008). The impact of ICT on public and private sectors in Lithuania. *Engineering Economics*, *59*(4), 18-28.

Isaacs, S., & Hollow, D. (2012). *The eLearning Africa 2012 Report*. Germany: ICWE.

Kanuka, H., & Anderson, T. (2007a). Online social interchange, discord, and knowledge construction. *International Journal of E-Learning & Distance Education*, *13*(1), 57-74.

Kanuka, H., & Anderson, T. (2007b). Ethical issues in qualitative e-learning research*. International Journal of Qualitative Methods*, *6*(2), 20-39.

Keller, C., & Cernerud, L. (2002). Students’ perceptions of e‐learning in university education. *Journal of Educational Media*, *27*(1-2), 55-67.

Kelman, H.C. (1958). Compliance, identification, and internalization three processes of attitude change. *Journal of Conflict Resolution*, *2*(1), 51-60.

Lederer, A., Maupin, D., Sena, M., & Zhuang, Y. (2000). The technology acceptance model and the world wide web”. *Decision Support Systems*, *29*(3), 269-282.

Lule, I., Omwansa, T., & Waema, T. (2012). Application of Technology Acceptance Model (TAM) in M-Banking Adoption in Kenya. *International Journal of Computing and ICT Research*, *6*(1), 31-43.

Moore, G.C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, *2*(3), 192-222.

Moore, J.L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? *The Internet and Higher Education*, *14*(2), 129-135.

Mwakisole, K., Kissaka, M., & Mtebe, J. (2018). Feasibility of cloud computing implementation for eLearning in secondary schools in Tanzania. *International Journal of Education and Development using ICT*, *14*(1), 91-102

Namisiko, P, Munialo, C., & Nyongesa, S. (2014). Towards an optimization framework for E-learning in developing countries: A case of private universities in Kenya. *Journal of Computer Science and Information Technology* *2*(2), 131–148.

Namisiko, P., Mindila, R., Chepkoech, E., & Nyeris, R. (2014). A review of application of web 2.0 and open source softwares in E-learning: A baseline survey in a private university, Kenya. *International Journal of Computer Science Issues*, *11*(2), 190-196.

National Accreditation Board (2018). Accredited Tertiary Institutions. Available at: http://www.nab.gov.gh/ (Accessed 10th June, 2018).

Oyelere, S.S., Suhonen, J., & Sutinen, E. (2016). M-learning: a new paradigm of learning ICT in Nigeria. *International Journal of Interactive Mobile Technologies (IJIM)*, *10*(1), 35-44.

Porter, C., & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of Business Research*, *59*, 999-1007.

Selim, H.M. (2007). Critical success factors for e-learning acceptance: Confirmatory factor models. *Computers & Education*, *49*(2), 396-413.

Shen, Q., Chung, J.K., Challis, D.I., & Cheung, R.C. (2007). A comparative study of student performance in traditional mode and online mode of learning. *Computer Applications in Engineering Education*, *15*(1), pp. 30-40.

Tagoe, M., & Abakah, E. (2014). Determining distance education students' readiness for mobile learning at University of Ghana using the Theory of Planned Behavior. *International Journal of Education and Development using Information and Communication Technology*, *10*(1), 91-100.

Tagoe, M. (2012). Students’ perceptions on incorporating e-learning into teaching and learning at the University of Ghana. *International Journal of Education and Development using ICT*, *8*(1), pp. 91-103.

Trifonova, A. (2006). Mobile learning: Wireless and mobile technologies in education, towards hoarding content in m-learning context”, *Unpublished PhD in ICT Thesis*, University of Trento, Italy.

Venkatesh, V., & Davis, F. (2000). A theoretical extension of the technology acceptance model: four longitudinal filed studies. *Management Science*, *46*(2), 186-204.

Vululleh, P. (2018). Determinants of students’ e-learning acceptance in developing countries: An approach based on Structural Equation Modeling (SEM). *International Journal of Education and Development using ICT*, *14*(1), 141-151.

Wu, Y. L., Tao, Y., & Yang, P.-C. (2008). Using UTAT to explore the behaviour of 3G mobile Communication Users. *Journal of Statistics & Management Systems*, *11*(5), 919–949.

Xia, F., Asabere, N.Y., Ahmed, A.M., Li, J., & Kong, X. (2013). Mobile multimedia recommendation in smart communities: A survey. *IEEE Access*, *1*, 606-624.

Yamin, M., Al-Ismail, M., Gedeon, T., & Sankaranarayana, R. (2016). M-learning preferences and learning preferences. In *Proceedings of the 3rd IEEE International Conference on Computing for Sustainable Global Development*, 1363-1367.

Yu, J., Liu, C., & Yao, J., (2003). Technology acceptance model for wireless Internet. *Internet Research*, *13*(3), 206-222.