

**“A STUDY OF EMPLOYEES OF THE OFFICE OF  
ECONOMIC MATTERS ATTITUDE TOWARDS  
THE ICT WORKFORCE”**

**Thesis**

Submitted for the  
Degree of Doctor of Philosophy

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**Supervisor's Certificate**

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This is to certify that Mr. SEEMA TRIPATHI has completed the necessary academic turn and the swirl presented by him is a faithful record is a bonafide original work under my guidance and supervision. He has worked on the topic “A STUDY OF EMPLOYEES OF THE OFFICE OF ECONOMICS MATTERS ATTITUDE TOWARDS ICT WORKFORCE” under the School of Education, Maharishi University of Information Technology, Lucknow. No part of this thesis has been submitted by the candidate for the award of any other degree or diploma in this or any other University around the globe.

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Name of Supervisor: Dr. HALDHAR YADAV      Signature :

Date:

### **Declaration by the Scholar**

I hereby declare that the work presented in this thesis entitled “A STUDY OF EMPLOYEES OF THE OFFICE OF ECONOMIC MATTERS ATTITUDE TOWARDS ICT WORKFORCE” in fulfillment of the requirements for the award of Degree of Doctor of Philosophy, submitted in the Maharishi School of Education, Maharishi University of Information Technology, Lucknow is an authentic record of my own research work carried out under the supervision of Dr. HALDHAR YADAV and/or co-supervision of Dr. ANIL KUMAR DIXIT. I also declare that the work embodied in the present thesis-

- i) Is my original work and has not been copied from any journal/ thesis/ book; and
- ii) Has not been submitted by me for any other Degree or Diploma of any University/ Institution.

Signature of the Scholar

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*The secret of success is undaunted ardour, motivation, dedication, confidence on self and above all the blessing of God. I bow in reverence to the Almighty for bestowing upon me all his kindness that has helped me throughout the journey of my life. Success is an outcome of collaborated efforts aimed at achieving different goals. I hereby take this opportunity to acknowledge all those who have helped me in the completion of this dissertation work.*

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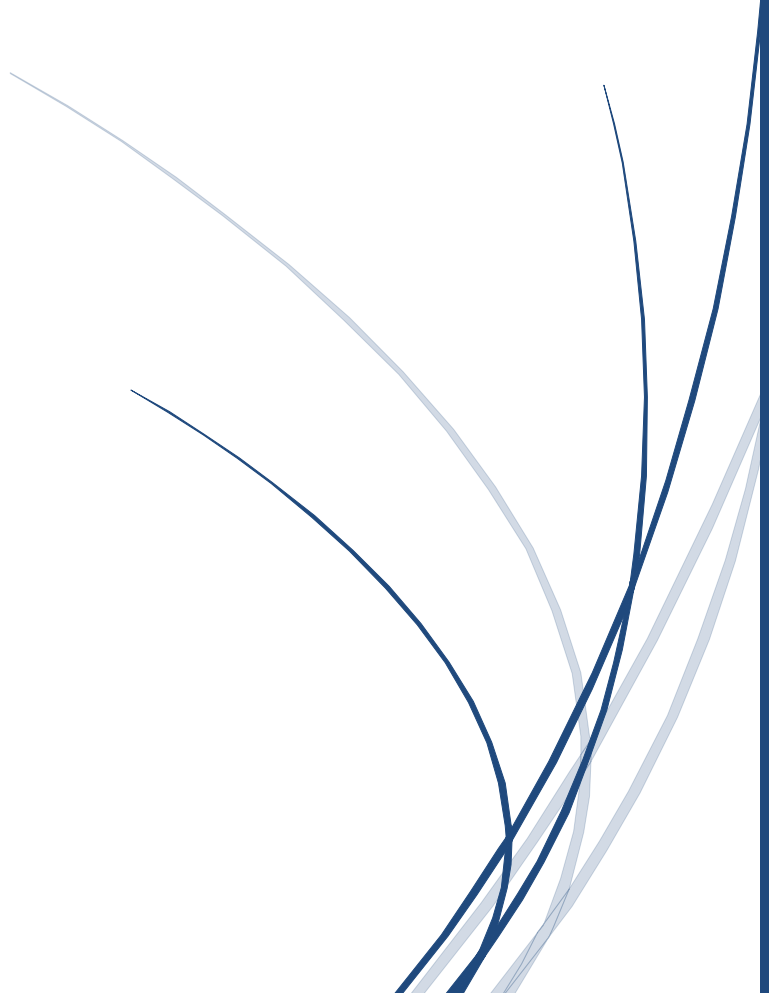
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# *CHAPTER 1*

## INTRODUCTION



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## CHAPTER 1

### INTRODUCTION

#### 1.1 PROLOGUE TO THE PROBLEM

There has been a dramatic shift in the way people interact with information and communication technology (ICT) in recent years. The information-based society has transformed as a result of the impact of ICT. Is it a new sort of cultural imperialism, or does it impact culture? As new cultural imperialism rises, people worldwide are being transformed into "global citizens". They have a wide range of skills and knowledge that they may use in a competitive, information-based society. Technology is making it easier for people worldwide to access information, which has led to a rise in issues that represent a global perspective.

The working process has transformed due to advances in information and communication technology (ICT). Complexity like work necessitates new ICT workers, namely those who can integrate ICT into their day-to-day tasks. People's expectations for how they will function in the new global economy are based on ICT. People must understand how to navigate vast data, analyze and make judgments, and master new knowledge areas in today's technology culture. Lifelong learning, collaborating with others, and efficiently employing diverse systems for representing and communicating knowledge are some of the skills they must possess.

In light of the new skills-based economy's increasing reliance on information and communication technologies (ICTs), the availability of skilled workers in every sector of the global economy has become a pressing concern. The traditional way of working is being transformed by the new digital society's revolution in information and communications technology (ICT). The new way of doing things was made possible by advances in information and communication technology (ICT). It also necessitates a shift in workers' job descriptions from the traditional manner of work to new jobs like computer facilitator. Adaptability and

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preparedness for new responsibilities in ICT use are essential for the workforce to cope with this shift.

In the period of globalization, an employee's work is different from the labour done in the past and now because of technological improvement. Advances in technology and working practises, for example, are becoming more prevalent in the workplace. There is an increase in workload due to the additional ICT skills required by workers. As a result, the importance of human capital in ensuring effective ICT implementation is increasingly recognized. They all point out how an employee's job varies over time; hence, the reasons for change must be examined and an overview of a rapidly changing environment that directly impacts the working system.

There needs to be a favourable attitude toward ICT in the workforce, and this positive attitude needs to be maintained as the world of technology changes (Omar et al., 2011)[2]. People in the workforce must lower their anxiety levels and boost their self-confidence to be ready for the inevitable changes in technology. ICT fear, confidence, like, and usefulness are all factors in the current state of the ICT posture, which will lead to the adoption of new practices in the workplace and the improvement of the organization's results. As a result, employees' attitudes toward ICT fear, confidence, like, and perceptions of ICT utility must be highlighted to help the firm achieve its objectives.

To summarise, in an era of globalization, every employee must constantly improve their attitude toward information and communications technology (ICT) to keep up with the rapid pace of change and ensure that their job is successful and of the highest quality. However, even though ICT has increased in the office of commercial affairs, there are still limitations on the workforce's ability to use them. It implies that office workers are not fully using information and communications technology (ICT). The success of e-government services using ICT is primarily a question of the workforce's perception and attitude. Even if all other circumstances and facilities are met, a successful ICT system is unlikely to evolve if the workforce lacks the necessary stance. Regarding attitudes about ICT

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anxiety, confidence, liking, and usefulness, this study will paint a clear image of how commercial enterprises' employees feel overall. It is intended that the findings of this study would serve as a foundation for enhancing, encouraging, promoting, and supporting the ICT abilities of commercial enterprises' employees.

## 1.2 STATEMENT OF THE PROBLEM

The present study intended to study under the problem:

### A STUDY OF EMPLOYEES OF THE OFFICE OF ECONOMIC MATTERS ATTITUDE TOWARDS THE ICT WORKFORCE

## 1.3 OBJECTIVES OF THE STUDY

ICT anxiety, ICT confidence, ICT liking, and ICT usefulness are some of the factors examined in this study. The study's aims are laid out as follows:

- (1) Investigate employees' attitudes regarding information and communications technology (ICT), including levels of anxiety, confidence, like, and usefulness associated with ICT.
- (2) An investigation on how sex-based differences in workers' attitudes about information technology (i.e. fear of the technology or awe of its usefulness) affect their use of the technology in the workplace.
- (3) To examine the differences in attitudes toward ICT (i.e., ICT anxiety, ICT confidence, ICT liking, and ICT usefulness) among the employees of a commercial enterprise from various groups of sex.
- (4) An investigation on how employees in commercial enterprises with varying levels of educational attainment feel about information and communications technology (ICT) (such as ICT anxiety, ICT confidence, ICT liking, and ICT usefulness).

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(5) An investigation of the differences in attitude toward ICT (such as ICT anxiety, ICT confidence, ICT liking and usefulness) across the commercial enterprise's staff of various work experience levels.

#### 1.4 DEFINITION OF THE IMPORTANT TERMS

It is the researcher's responsibility to define the following terms to avoid any misunderstandings about the keywords:

##### (1) Stance

Stance in psychology expresses one's feelings about a person, place, thing, event, or occurrences, such as liking or disliking it. Positive or negative is a mental or neural state of readiness that influences the individual's response to all objects, people, and events to which it is associated or related. It exerts a directional or dynamic impact.

People's behaviour can be predicted in part by their body language. For example, it can be generated from past and current experiences. Judgments, which everyone makes, are the most common source of it. Positions in psychology are based on an ABC approach (Affective, Behavioral Change, and Cognitive). If a person's body reacts physiologically to certain stimuli, their affective reaction effectively indicates what they prefer. In terms of behaviour, what matters is how a person communicates what they want to accomplish.

##### (2) Stance towards ICT

Stance towards ICT is the expression of favour or disapproval, like or dislike, regarding ICT response by the workforce of a commercial enterprise. A person's attitude toward information and communications technology (ICT) can be described in four ways: as fearful of it, confident of it, fond of it, and useful of it.

##### (2.1) ICT anxiety:

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Worry, anxiety, and concern over current or future use of ICT are all terms used here to describe the common reaction of business workers when confronted with new technologies. Fear, hate, and lack of confidence in using ICT can cause a severe and unpleasant sensation of anxiety or anguish, typically accompanied by psychological consequences including nausea, shaking, dyspnea, and rapid heartbeat. As a result of ICT fear, people are less likely to use ICT.

(2.2) ICT confidence:

Confidence in one's ability to succeed is referred to as "self-efficacy" here. Self-confidence specific to a business is defined as "mobilizing the motivation, cognitive resources, and courses of action needed to satisfy certain situational demands" by the business's staff members. Having a high level of ICT self-confidence can help one's performance on tasks that require ICT use. Conversely, having a low level of ICT self-confidence might hinder one's performance. Confidence in using information and communication technologies (ICTs) could encourage students to stick with their studies.

(2.3) ICT liking:

Here we're talking about whether or not the commercial enterprise workforce has a positive or negative relationship with the idea of developing their ICT abilities, as well as whether or not they're open to learning new things. Using ICT to solve problems and adopt new forms of technology also involves people loving or enjoying the process of doing so.

(2.4) ICT usefulness:

An important factor in determining how frequently and effectively ICT is used in an organization's workplace is the perceived usefulness of its staff. It is possible to gauge the effectiveness of ICT by looking at how often, for how long, and in what manner a user makes use of it.

(3) Information and Communication Technologies (ICT)

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Informatization and communication technologies are referred to as ICTs. Information can be stored and retrieved, processed, sent and disseminated in any form, including audio and video. It includes hardware and software and networks and media to make it easier to employ electronic means to acquire, store and retrieve information. Telecommunications, such as the Internet, wireless networks, mobile phones, and other communication methods are made available through this service.

The ICI and IT wards in ICT can be divided up. IT (Information Technology) refers to the hardware and software used for information collection, storage, processing, and presentation. ICI (Information and Communication Infrastructure) refers to physical telecommunications systems and networks (cellar, broadcast, cable, satellite, postal) and the services that utilize them (Internet, voice, mail). In addition to computers, networks, satellite communications, robots, videotext, cable television, email, electronic games, and automated office equipment.

#### (4) Office of commercial affairs

In the office, all the records necessary for a company's management, planning, and overall efficiency are made ready, handed out, and kept safe. Internal and external communications are facilitated, and the activities of the company's many divisions are coordinated through it.

All the actions related to collecting, storing, processing, and disseminating information for the efficient and successful management of an organization are carried out in the office. When it comes to carrying out the necessary clerical and administrative duties of a government agency or a corporate enterprise, a school or hospital or a voluntary organization, the existence of an office is essential. Software development is linked to the work done in the workplace. As a result, these activities include receiving and sending letters, typing, filing, printing, word processing, keeping records, drafting, utilizing information, handling money, and other activities.

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As a result, two broad groups of modern office tasks can be identified: Giwa, R. I. (2012) stated that [3]

(a) Basic functions:

The basic functions of an office are collecting and recording information, arranging/analyzing and processing information, preserving and providing information.

(b) Administrative functions:

For the office to run smoothly, administrative tasks must be undertaken and the primary office activities. Among these duties are asset protection, operational efficiency, stationery control, equipment selection, training, placement, and compensation for employees.

Office productivity rises directly to the amount of money spent on information technology (IT). Infrastructural and product developments that make it easier to gather, store, and analyze electronically transmitted data are called "ICT." You'll find everything from fax machines to computers to printers to phones to fax machines to mobile phones to FAX machines to video conferencing to voice mail to scanners to routers to modems to intranet/lane/internet/server to email to electronic data interchange.

An important function of the Office of Commercial Affairs is to assist Thai exporters and enterprises doing business abroad by coordinating trade and investment matters. Trade, business growth, export promotion, international trade negotiation, and intellectual property fall under one umbrella in the Ministry of Commercial Affairs. The three primary tasks are the trade regime, promotion, and service.

(a) Trade laws and regulations, trade knowledge, and trade disputes are primarily the trade regime's responsibility.

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(b) For the most part, trade promotion focuses on Thai product market research and marketing Thai product fairs in Thailand and conducting joint promotions with other countries to improve business prospects and extend the market for Thailand's Thai products.

(c) Trade inquiries, trade information services, and trade service facilitation are all part of trade service.

#### (5) Workforce

Part-time or full-time workers who are covered by an employment contract, whether verbal or written, have rights and responsibilities that are legally recognized. When an employer hires someone for a specific task or service, they can control all aspects of that employee's employment.

A Ministry of Commercial Affairs employee is defined in this study as someone who works in the Office of Commercial Affairs.

### 1.5 VARIABLES OF THE STUDY

There are two categories of variables in this study: independent and dependent variables. The independent variable is the one that the researcher manipulates or changes. Changing the independent variable results in a change in the dependent variable. The following are the specifics of the two factors examined in this research:

#### (1) Independent variables:

The independent variables in this study included gender, age, education, and work experience. These variables can be summarised as follows:

Sex is the subject of this article (i.e. Male and Female)

Aspects of Growing Older (i.e. 21-30 years, 31-40 years, 41-50 years, and 51-60 Years)

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Qualified educational background (i.e. lower than a bachelor degree, bachelor degree, and master degree onwards)

Experiential training (i.e. 01-10 years, 11-20 years, 21-30 years, and 31-40 years)

(2) Dependent variable:

Worker attitudes about ICT are measured in four ways: their willingness to use it and their willingness to learn about it.

Anxiety-related to new technologies

Confidence in information technology

ICT appreciates the utility of ICT

## 1.6 RESEARCH QUESTIONS

Formulating a research topic is one of the first actions an investigator must do in the research process. The importance of research questions lies in their ability to establish the concept and focus of a study independently. Listed below are each of the study's six research questions:

(1) As a business owner, what are your employees' feelings on using information and communication technology?

(2) What is the level of ICT worry, ICT confidence, ICT liking, and ICT usefulness among the employees of a commercial enterprise of various sexes, ages, educational qualifications, and work experiences?

(3) The mean scores of the posture toward ICT (i.e., anxiety, confidence, like, and usefulness) of male and female employees of a commercial enterprise are significantly different?

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(4) No significant difference in mean ICT anxiety, ICT confidence, ICT liking and ICT usefulness ratings of commercial enterprise's staff of different age groups?

(5) There is a notable variation between the mean scores of the attitude toward ICT (i.e. ICT anxiety, ICT confidence, ICT like, and ICT usefulness) of commercial enterprise's employees with various degrees of educational qualification.?

(6) No significant variation in mean scores of the posture toward ICT (i.e. fear, self-confidence, like and usefulness) of commercial enterprise's staff belonging to different years of employment?

#### 1.7 HYPOTHESES OF THE STUDY

There are 20 hypotheses in the study, all of which are based on the study's goals and research questions.

(1) There will be no discernible variation in the median scores of attitudes toward information and communications technology (total score) among employees in commercial enterprises who belong to different-sex groups.

(2) Mean scores of the attitude toward ICT (ICT Anxiety) of commercial enterprise's staff belonging to different sex groups will not differ significantly.

(3) When it comes to their attitude toward ICT (ICT Confidence) among the employees of a commercial enterprise, there will be no significant difference in mean scores.

(4) A commercial enterprise's workforce's attitude toward ICT (ICT Liking) will not change significantly between the mean scores of workers from different sex groups.

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(5) Mean scores of the attitude toward ICT (ICT Usefulness) of the employees of a commercial enterprise belonging to different sex groups will not differ significantly.

(6) Mean scores of the attitude toward ICT (total score) of commercial enterprise's employees belonging to different age groups will not be significantly different.

(7) A commercial enterprise's personnel of varying ages will not have significantly different mean scores on the attitude toward ICT (ICT Anxiety) scale.

(8) Mean scores of the attitude toward ICT (ICT Confidence) of commercial enterprise's staff of different age groups will not change significantly.

(9) Mean scores of the attitude toward ICT (ICT Liking) of commercial enterprise's employees of different ages will not change significantly.

(10) Mean scores of the attitude toward ICT (ICT Usefulness) of the business enterprise's workforce from different age groups will not change significantly.

(11) In terms of attitudes toward ICT (total score), there will be no discernible differences among commercial enterprise employees with varying levels of education.

(12) Mean scores of the posture toward ICT (ICT Anxiety) of commercial enterprise's employees belonging to different educational levels would not change significantly.

(13) Mean scores of the attitude toward ICT (ICT Confidence) of commercial enterprise's employees belonging to different educational levels will not differ significantly.

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(14) When it comes to a person's attitude toward information and communications technology, people with varying degrees of education have similar attitudes about ICT (ICT Liking).

(15) When it comes to attitudes toward ICT (ICT Usefulness), workers in commercial enterprises with various levels of education have similar mean scores.

(16) In terms of attitudes toward ICT (total score), there will be no discernible differences among commercial enterprise employees with varying levels of work experience.

(17) Mean scores of the posture toward ICT (ICT Anxiety) of commercial business employees with different years of work experience will not change significantly.

(18) Mean scores of the attitude toward ICT (ICT Confidence) of commercial enterprise employees with different years of work experience will not differ significantly.

(19) Mean scores of the attitude toward ICT (ICT Liking) of the commercial enterprise's personnel will not differ significantly based on the number of years of service.

(20) Employees with varied years of work experience will have similar attitudes about ICT (ICT Usefulness), with no significant differences in their mean scores.

## 1.8 LIMITATIONS OF THE STUDY

Defining the study's scope and boundaries are two of the study's most important limitations. To illustrate or restrict the critical thinking linked to your study problem. The following are some of the study's limitations:

(1) The current study focuses on the attitude of the commercial enterprise's personnel toward ICT, which includes fear, confidence, like, and utility (Loyd & Gressard, 1984)[4].

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(2) Data gathered in 2020 and 2021 are the only ones considered for this investigation.

(3) The study sample was the employees of the Ministry of Commercial Affairs at India's Office of Commercial Affairs.

## 1.9 IMPORTANCE OF THE STUDY

It is possible that the findings of this study could provide guidelines for improving the attitude of the workforce towards ICT, which will benefit organizational development, to encourage the workforce to pay more attention in raising their ICT confidence, their interest in using it, and their usefulness for effective work; to recommend the use of the Mini.

The study's findings may shed light on how commercial enterprise employees' gender, age, educational attainment, and job experience affect their attitudes about information and communications technology (ICT). The study's findings could be the basis for a more positive attitude toward implementing ICT within an organization. For this study, we seek to uncover specific abilities, confidence, and perceived usefulness of ICT for current and future work, which will increase high levels of organizational productivity and efficiency. To the best of our ability, we hope that the findings of this study will help us better understand the current workforce needs of commercial enterprises in this digital era.

## 1.10 CHARACTERIZATION

Chapters are arranged in the following way:

The first chapter dealt with the study's introduction, problem statement, study objectives, the definition of key terminology, study variables, research questions, study hypotheses, study limitations, study importance, and characterization.

The second chapter focuses on theoretical aspects of the stance toward ICT, such as the definition of stance, components of stance, stance types, stance changes, the importance of stance, and the various facets of stance toward ICT, i.e. ICT. In

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addition, a review of previous Thai and international studies on attitudes toward information and communications technology (ICT) was presented in this chapter.

Research method and research design, the needs of the tool, the tool and its characteristics, the construction of the tool, judges' agreement and the selection of the sample for a pilot study, administration of the tool, scoring of the pilot study, item analysis and the final selection of the items, population and sample, sampling technique and administration of the tool were discussed in the third chapter.

The fourth chapter of this Thesis shows the analysis and interpretation of results in a tabular format and conclusions about attitudes toward ICT.

There are two parts to this chapter.

This was the first section of the investigation into workers' attitudes in commercial enterprises regarding ICT. The second part of the study compared the mean scores of the stance toward ICT of commercial business's staff belonging to different characteristics, such as sex, age, educational qualification, and job experience, among other things.

Conclusions, comments, and recommendations for further research were included in Chapter 5 of the study's final report.

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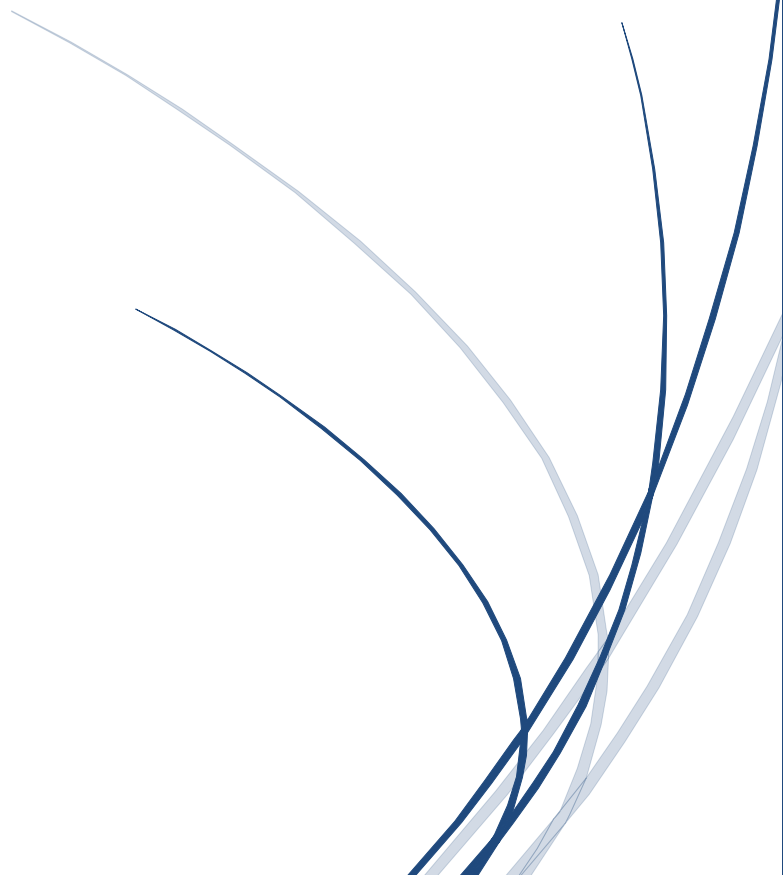
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# CHAPTER 2

A REVIEW OF PRIOR  
STUDIES AND AN  
INTRODUCTION TO  
THEORY



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## CHAPTER 2

### A REVIEW OF PRIOR STUDIES AND AN INTRODUCTION TO THEORY

#### 2.1 PROLOGUE

To have a sense of context and the overall significance of a topic, researchers must outline theoretical conceptions and core thoughts about the issue. The null hypothesis is constructed using theory, either proven or denied by the research itself. The literature review provides readers with a context for evaluating current knowledge on the topic and illuminates the new study's significance. Depending on the theory's links between concepts, hypotheses can be proven or disproved.

This chapter aims to inform readers on the theory behind ICT attitudes and previous studies that have explored these attitudes in the past.

#### 2.2 RELATIONSHIP BETWEEN THEORETICAL ORIENTATION AND ICT STANCE:

The theoretical focus of this work is to define stance, its components, its function kinds, its modifications, its importance, how to measure posture, and the importance of view about ICT.

##### 2.2.1 Definition of stance:

As one of the most significant variables in life, posture is crucial. It has a significant impact on the outcome. It determines whether or not a person

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is on the correct track. People's behaviour is influenced by their feelings, either positive or negative. It is possible to enjoy a fulfilling and prosperous life if you find fulfilment in your stances. Postures also influence other aspects of the discipline. For the right understanding of stance, it is necessary to understand how psychologists and educators have defined the term. Various definitions have been created to understand the term "stance" in theoretical and operational terms.

He said people can change their lives by changing their mental positions [2]. Stance is a regular way of thinking that can either be optimistic or pessimistic, depending on the individual. A person's attitude toward an object, idea or event or another person.

A "readiness of the psyche to behave or react in a certain way" is how Jung (2001) [3] defined posture. Pairs of stances are frequently seen in public. The following are the most important aspects of posture as defined by Carl Jung:

- It's a question of conscious and unconscious: "Two postures, one conscious, the other unconscious, are extremely common. "This indicates that consciousness has a separate constellation of contents from the unconscious, a duality most visible in neurosis,"
- Extroverts and introverts are essential to Jung's type theory that they were given the moniker "stance-types."
- Reasonable and unreasonable standpoints: The rational stance is subdivided into the psychological functions of thinking and feeling, each with its stance. The irrational stance is subdivided into the

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psychological functions of perceiving and intuition, each with its attitude.

According to Thurstone and Chave (2009 ) [4], "stance" is defined as "the amount to which a psychological item provokes positive or negative effect." Thurstone defines a psychological object as any symbol, phrase, slogan, person, institution, ideal, or notion toward which people can experience varied degrees of good or negative emotion. A person's posture expresses their emotional reaction to or opposition to a certain mental target or stimulus.

According to Lundberg (2009) [5], "stance" refers to the overall set of an organism's behaviour toward an item or environment that requires adjustment.

Bogardus (2001)[6] described a stance as a residuum of experience that conditions and influences subsequent activity.

Warren (2004) [7] defined "stance" as a state of preparation for a certain type of activity.

According to Cantril (2004) [8], "stance" is a more or less permanently persistent state of preparedness of the mental organisation that predisposes an individual to react in a particular way.

According to Allport (2005) [9], stance is a declaration of favour or disfavour towards a person, place, thing, or event. In current social psychology, stance is the most distinctive and fundamental notion.

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The past and the present might influence a person's attitude. A person's emotions and behaviour are influenced by their posture, measured and changed. This mental or neural state of preparedness can be regarded as a "stance," and it can influence an individual's response to all things and situations with which it is associated. In other words, an individual's behaviour is influenced by their posture, which is created via experience. Allport also emphasised the importance of keeping one's positions hidden. Experimentation shapes and organises it. Positions are not inert; they have a dynamic or guiding effect on behaviour.. Behaviour is thought to be directly influenced by one's posture.

According to Smith, Bruner, and White (2006) [10], a stance tends to feel, be motivated by, and act in predictable ways toward a class of objects.

Rosenberg (2000) [11] defined posture as an individual's attitude toward and disposition toward a "object."

Aggarwal (2004) [12] highlighted that "stance" refers to one's preferences and disapprovals. There is no restriction on the number of possible poses. It is a stance taken about external objects, either for or against. Individuals have distinct stances. Stances are the fundamental building blocks of behaviour incorporated into an organised system. Its utility does not always determine a person's attitude toward an object. Stance is always a relationship between a subject and an object.

Bem (2000) [13] defined positions succinctly as "likes and dislikes."

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Myers' definition of "stance" is that one's thoughts, feelings, or intentional behaviour convey one's evaluative attitude to something or someone [14]. If you're inclined to react positively or negatively toward something, you've a predisposition for it.

Ajzen and Fishbein (2000) [15] asserted that stance significantly predicts human behaviour. That is, by comprehending an individual's attitude toward an object, one can accurately forecast the individual's general pattern of behaviour toward the object. Stances are among the most misunderstood characteristics of individuals. Ajzen and Fishbein identified two flaws in the traditional understanding of attitude and communication. First, the term stance has been too broadened. Historically, no distinction was made between posture, belief, subjective norms, behavioural intention, and behaviour. They considered that these critical words should be separated since each played a distinct but critical function in action prediction and prediction. They have been defined too broadly, and the resulting outcomes have been inconsistent and frequently conflicting. Ajzen and Fishbein discovered a second issue with the standard view: the researchers appeared to disregard the receiver. He believed they focused exclusively on the message and treated the receiver as a "passive recipient of information." He hence attributed virtually entirely the credit for stance to the quality of the message and the quantity of the arguments. These issues required to be resolved. Ajzen and Fishbein determined that the first step in resolving these issues would be to define a stance distinct from beliefs, subjective norms, behavioural intention, and conduct, allowing each term to play a distinct role in their

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theories. He addressed the second issue by recognising each recipient as someone capable of systematic information processing, opinion development, and comprehension, rather than as a passive listener convinced just by the eloquence of the delivery or the amount of arguments shared by the sender. Fishbein's position theories provide a framework for comprehending and predicting behaviour.

Affective and cognitive nodes are linked via associative pathways in the brain's associative networks, which are spider-like structures in long-term memory, according to Anderson (2003) [16]. According to him, an associative network's inter-structure may be affected by activating a single node. Although effective and cognitive components are commonly linked, modifying one's posture may be possible by activating an emotional or emotion node. Constructing rational arguments against persuasive arguments and modifying one's posture is far more difficult when dealing with predominantly dynamic networks.

According to Fazio (2006) [17], stances are summary judgments on a subject or event that assist humans in managing their complex social settings.

Gibson et al. (2008) [18] described stance as a positively or negatively emotion or mental state of readiness that is learnt and organised via experience and exerts a distinct influence on how a person responds to people, objects, and situations.

Breckler and Wiggins (2002) [19] defined "stance" as "mental and neurological representations that have been structured via experience and

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that exert a directive or dynamic impact on behaviour." Standpoints and posture objects are cognitive, emotional, and conative functions.

Position is a psychological predisposition expressed as a degree of favour or disfavour for a specific thing, as per Eagly and Chaiken (2005) [20]. Affect (i.e. discrete emotions or general arousal) is commonly recognised as separate from posture as a measure of favorability, even though stance can be defined as a person's attitude toward an object. Allows for people to express both positive and negative viewpoints toward the same object simultaneously, accept that people might be conflicted or ambivalent about an object, and express both positive and negative views of it at the same time. "Biases and prejudices, predetermined ideas, beliefs, concerns, and convictions towards any given subject" were noticed by Taiwo in 2008[21]."

B. Yushau (2006) [22] defined stance as an acquired predisposition to respond positively or adversely to a certain object, circumstance, institution, or person. It permeates everything people do and, in reality, mirrors who they are, making it a determining element in how people behave.

According to Cunningham and Zelazo (2007) [23], stances are defined as assessment, which refers to the process of unfolding an emergent attribute of numerous processes through time. According to the hypothesis, evaluative discrepancies are caused by the differences in processing information, not by differences in attitudes representation stored in discrete memory systems.

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According to Exforsys Inc. (2007) [24], posture refers to attitudes toward specific persons, things, and events. Positive, negative, or neutral stances are all possible. Additionally, it is common to experience multiple of these feelings for anything. Typically, positions are derived from judgments, which everyone makes. In psychology, viewpoints are anchored in an ABC strategy (Affective, Behavioral Change, and Cognitive). The affective reaction to anything is a physiologic response to a specific stimuli that eloquently reflects the individual's choice. The behavioural component is the individual's verbal declaration of their intention to accomplish something.

Finally, there is the cognitive reaction to take into account. This term refers to an individual's cognitive assessment of an entity, subsequently used to establish a stance. The process of posture creation outlined above is considered to occur as a result of observation and imitation in a person's environment. Because most human nature is unreasonable, it is difficult to identify the precise relationship between one's stance and behaviour.

The free encyclopaedia Wikipedia (2010) states that an attitude is a hypothetical construct that expresses the degree to which an individual likes or dislikes something. There are various ways to express your feelings about a person, location or event. It is also possible for people to be conflicted or ambivalent about something, indicating that they have both positive and negative feelings toward it. Stances are made up of a variety of opinions and beliefs. They develop by the ABC model (affective, behavior, and cognitive). Affective reactions are emotional expressions of a person's personal preference for a certain object or

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person. An individual's verbal indication or typical behavioural inclination indicates their behavioural intention. Cognitive response is an assessment of the entity that constitutes an employee's conduct regarding an object. In most cases, a person's views are shaped by what they've seen or heard from others.

Dewey (2010) [26] provided the following definitions of posture proposed by several social psychologists:

- A posture is a favourable or unfavourable attitude toward a target.
- A stance is an inclination to respond positively or negatively to presented objects.
- The term "stance" does not refer to a neutral position; it refers to a value judgement, either positive or unfavourable, for or against.
- Stances are ingrained in us. They fall under the subject of human motivation that has been variably labelled "Social drives," "Social needs," "Social orientation," and the like. It is considered that the appearance of a stance is learned.
- Stances are not transient states; once created, they are more or less permanent. Of course, attitudes vary; nevertheless, once created, they gain a regulatory role that prevents them from changing in response to the highs and lows of the organism's homeostatic functioning or any first-noticeable shift in the stimulus settings. Stances inherently imply a link between the individual and the things. In other words, positions do not arise spontaneously. They are developed or learned psychologically in connection to identified

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references, such as individuals, groups, institutions, items, values, social issues, or ideologies.

- Stance is a term that refers to the relationship between a person and an object. It is not neutral, but possesses effective motivating qualities. These characteristics stem from the context of extremely significant social interaction. Numerous positions are formed, from the fact that items are not neutral to other individuals, and from the reality that the self develops and acquires positive value. As a result, the relationship between the individual and the social environment is rarely neutral.
- Stance is the specific topic relationship that is established via categories that distinguish both objects and people's positive or negative relationships with objects in various categories. The reference to stances is a set of things that can theoretically vary from one to many objects. However, taking a favourable or negative stance toward one thing typically implies a differentiated commitment to other objects within the same area."
- Having an authoritarian or dynamic effect on an individual's response to all initiatives and situations with which it is related, stance is a psychological or neural state of readiness that has been moulded by experience.
- Stance consists of a person's inclination and emotion, prejudice or bias, predetermined moves, ideas, fears, attitudes, and convictions about a certain subject.
- Stance is a collective propensity toward a group of individuals; it is the total of a person's inclinations; it is an emotional tendency.

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- Stance is a term that refers to the totality of a person's favourable and unfavourable feelings toward certain organisations, organizations, or circumstances.
  - Stance is an unconscious, drive-producing response that an individual considers socially relevant.
  - Stance is a tendency that indicates whether a person must favour or disfavour a particular social object or social behaviour.
  - Stance is a psychological state of readiness to react appropriately to a situation. While set may be transient, posture is more or less permanent.
  - A stance is an established and largely stable predisposition to react in a particular way in response to other people or objects.
  - A stance is a positioned preparation to respond consistently to a certain circumstance, person, or object that has been learned but became one's default way of response.
  - A stance is a psychological tendency shared by all persons, but varying in degree, that compels them to react positively or negatively to products, circumstances, or arguments.
  - A stance is an attitude toward other people, judgments, organizations, and organisations that is either good or unfavorable.
  - A stance is a persistent set of favourable or negative judgments, emotional responses, and behaviour patterns toward inanimate objects.

Stance is a psychological predisposition exhibited through a degree of favouring or disapproval, like or dislike, for a given entity, person,

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location, thing, event, or occurrence, as described in the previous paragraph. It is an emotional, intellectual, or neurological state of readiness that has been shaped by experience and exerts a directive or dynamic impact on the organisation about all objects, individuals, and circumstances with which it is associated or connected.

Stance is a significant predictor of human behaviour. It can be derived from both the past and present of an individual. It is frequently formed from subjective assessments that everyone makes. In psychology, positions are anchored in an ABC (Affective, Behavioral Change, and Cognitive) approach. The affective reaction to anything is a physiological response to a specific stimuli that eloquently reflects the individual's choice. The behavioural component is the individual's verbal declaration of their intention to accomplish something.

### **2.2.2 ELEMENTS OF STANCE:**

Stances are evaluative statements about a person, item, or event that are either favourable or unfavourable. They are a reflection of how an individual feels about something. Each individual has a unique viewpoint under various circumstances. Stance comprises three components (Rob Wengrzyn, 2013) [27].

1. Cognitive component: This section of an attitude that deals with one's thoughts, beliefs, and ideas. The cognitive component enters the picture when an individual generates an opinion or view about another person, thing, or situation.

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2. Affective component: This is the section of a position that expresses feelings or emotions, such as fear, pity, or hatred. When a person associates his or her emotions with an opinion generated about a person, item, or situation, the emotional component is activated. This section of attitude is concerned with statements that affect another person.
  3. It is the behavioural component of a stance. When a person develops a desire to conduct or act in a particular way due to the emotions associated with an opinion about a person, item, or situation, the behavioural component is activated.

### **2.2.3 Types of Stance and Function:**

A position is an opinion expressed favouring or against a person, location, item, or event. It is social psychology's most distinguishing and indispensable notion today. Additionally, it should be analysed and arranged from a variety of angles. It's instructive to examine the functions ascribed to positions.

According to Robert L. Johnson (2010) [28], posture types indicate the direction of an individual's interest or the movement of the libido.

Stance types are a screening mechanism for objective material that reorients its energy. Stance types are. The survival of living organisms is ensured by two separate adaptation mechanisms seen in nature. In the first case, a high rate of fertility, limited defence capabilities, and a short lifetime for the individual are all involved; in the second, multiple ways of self-preservation and a lower reproductive rate are all included.

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Jung (2001) [29] coined introverted and extraversion to refer to the two posture kinds.

- **Introverts:** Introverts adopt an abstracting posture because they are always worried about preventing libido from gaining influence over them. Introverts prevent acts from taking on an objective character because they observe things from a subjective point of view. Introverts place a high value on subjective factors. As a result, the object's orientation is determined by the perceptual and cognitive element, which reacts to sensory input in line with the individual's subjective preferences. Object impact is automatically reinforced when the introverted ego takes over the subject's claims. A compensatory relationship arises in the unconscious due to the ego's unadapted relationship with the object (a desire to dominate is not adaptation). Objective evidence becomes more and more enslaving to the ego as it aspires for autonomy, freedom from duty, and supremacy.
- **Extroverts:** Objects arouse the enthusiasm of extroverts. There is an emphasis on its significance to the point where their subjective perspective is constantly affected. The thing will never have enough values, and its significance will constantly need to be emphasised. The acts of extroverts are strongly tied to the outside world. Their ability to adjust to changing settings and discover acceptable play within the restrictions of the objective situation is more than just a reaction to external stimuli. It appears that no real effort is being made to break free from these limitations. Objective events possess

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an almost endless appeal for them, to the point that they rarely go elsewhere for their interests. The problem is that extroverts become engrossed in the object at hand and lose themselves in it. Individuals are compelled to self-regulate as a compensatory method because of the consequent functioning difficulties. Since the extroverted personality is predisposed to value the subjective, we shouldn't be surprised if we find an underlying inclination toward egocentrism in our subconscious. As an effective complement to the conscious extroverted position, the unconscious attitude is undeniably inward. Put another way, it directs a person's libido toward their own subjective needs and wants rather than toward those of others. Later in his career, Carl Jung expanded his theory to include four separate functions: intuitive perception; sensual perception; cognitive perception; and emotional perception.

- **Intuition:** Intuition is a question of time. This is the part of the programme that looks ahead. Our proverbial instincts and functions reveal an encounter or event's surroundings. In contrast to conscious experience, which is the function type of sensation, it is sometimes referred to as unconscious perception. Intuition is an irrational function because it cannot be based on logical progression. The fact that it just is, with no rationale or growth to support it, does not make it developmental or definitive. Perception is also feminine since it is linked to Wisdom, the feminine component of the divine, and is less accurate than experience.
- Sensation is the feature or technique of action that enables us to recognise that something exists in the here and now. It is

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completely in the present and makes no equivocations about its judgement. It's a form of perception based on the senses. Sensation is a sign that something is present. In other words, it doesn't tell us what something is, or even a single detail about it. Sensation, like intuition, is irrational, like its natural counterpart. It's as simple as intuition. In this case, there is no development or progress taking place.

- **Thinking:** Observation is the activity that helps us understand the world around us. It gives the sensory function a concept or name for what it is experiencing. The item's meaning and comprehension are provided by thinking, linked to perception. We can attribute our ability to reason to the development of growth. As a result of a sequence of interconnected perceptions and assessments, it does not exist. Thought is the ability to make connections between different objects. It comprehends the universe through thought, specifically through logical reasoning and intellect. When it comes to making a final decision, it does not make any judgments. When you think, you're doing something patriarchal in nature since it's linked to the male's mind and cosmos.
- **Feeling:** This is a moral question, not an emotional one. As the individual progresses through the stages, it helps them determine the object's worth. It is reasonable because a development regulates it. Relative value is assessed and judged using this method. Because the heart is linked to the feminine, the feeling function is feminine. It's crucial in determining the best course of action in life or a particular situation because it conveys what's most important. One

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cannot see and determine significance simultaneously, so it's incompatible with thinking. It is vital to avoid the head-heart debates that stifle progress if both are opposed in the individuality, even though they are.

Daniel Katz (2000) [30] noted that positions can serve an individual's purpose. He divides stance into four functional categories:

- **Knowledge** Stances give life significance (knowledge). The knowledge function is concerned with the requirement for a consistent and reasonably stable universe. This enables people to forecast what will occur, giving them a sense of control. Stances can assist individuals in organising and structuring their experiences. Understanding a person's posture enables one to forecast their behaviour. It assists individuals in organising and interpreting data. Individuals must maintain a coherent, meaningful, and stable perception of the world. Fundamental values and broad ideas might serve as a framework for our understanding. Stances accomplish this by ensuring that things fit together again and make sense.
- **Value-expressive.** The positions facilitate communication and provide a sense of accomplishment for those who have expressed their individuality. Stances can also be expressed non-verbally. Thus, postures are a component of identity and contribute to awareness by expressing one's feelings, beliefs, and values. It acts as a vehicle for expressing one's central ideals and self-concept. Cardinal virtues tend to develop an individual's identity and earn

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societal approval, demonstrating who they are and what they strive for.

- **Adaptive.** People's approval and social acceptance will be gained if they adopt and/or express socially acceptable positions. For example, those who flatter (and believe in) their superiors or teachers, or who remain silent when they believe a particular point of view is undesirable, are both examples of subservience. Again, expressiveness does not necessitate the use of words. When it comes to belonging to a social group, stances are concerned, and adaptive functions help individuals fit into a group. Aspiring individuals look for like-minded individuals and form positions that mirror those of others they like. It's possible to claim that people choose occupations that are financially rewarding and help them escape punishment. To put it another way, any stance taken solely for the benefit of oneself is said to serve a utilitarian purpose.
- Ego-defensive functioning refers to taking positions that safeguard individuals' self-esteem or that excuse activities that cause them to feel guilty. This function is based on psychoanalytic ideas, in which individuals employ defence mechanisms to safeguard themselves against psychological injury. Denial, Political oppression, Projection, and Rationalization are all mechanisms. The egodefensive concept is consistent with Downward Comparison Theory, which maintains that disparaging a less fortunate individual promotes our own subjective well-being. When people experience irritation or tragedy, they are more inclined to engage in ego-defensive behaviour.

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According to Myers (2005) [31], the attitudes and activities combine to generate eight distinct function-stance types:

- **Extraverted Sensing:** It is based on immediate, solid input. It has faith in the present moment and afterwards lets it go.
- **Introverted Sensing:** It makes comparisons between current facts and experiences and previous ones, places faith in the past, and saves sensory material for future use.
- **Extraverted Intuition:** It perceives opportunities in the outer environment and believes in glimpses from the subconscious that can be shared with others.
- **Introverted Intuition:** It examines the compatibility of ideas and thoughts against an internal framework and relies on sparks from the subconscious that may be difficult for others to comprehend.
- **Extraverted Thinking:** It is concerned with the outside world's logical consistency, as well as with outside laws and regulations.
- **Introverted Thinking:** It is concerned with the stability and consistency and logic of thoughts, and relies on an internalized foundation that may be difficult to express to others.
- **Extraverted Sensation:** It strives for harmony with and among people in the external world. It is critical to value psychological and cultural ties.
- **Introverted Feeling:** It strives for consistency between action and cognition and personal beliefs. It is possible that it does not always communicate such ideals.

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Positions, according to Rama Rao (2010) [32], have an important role in adjusting, defending one's self-esteem and conveying one's values to others.

**(1) Adjustment Function:**

People can be directed away from unpleasant or unpleasant things and toward pleasant or rewarding ones using this feature. Maximizing rewards while minimising punishment is in keeping with the utilitarian tenet. As a result, consumer opinions are heavily influenced by their evaluations of what they deem necessary, enjoyable, and punishing. A person's stance can be adjusted to achieve a certain result or to avoid an uncomfortable situation. positioning chosen in order to protect one's centrality or self-worth expressive - attitude acts as a vehicle for the concrete expression of specific ideals knowledge - gives a framework for understanding and responding to the world.

**(2) Ego Defensive Function:**

In order to satisfy the ego defence function, a person takes a variety of actions to protect his or her identity or self-perception. These attitudes are often manifested in ways that are the exact reverse of how the individual actually feels about himself.

**(3) Value expression function:**

Value expressive stances allow a person to communicate their underlying principles, while ego protective attitudes protect a person's self-perception. Because of this, customers take positions in an effort to clarify

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and communicate their ideas. To avoid clashing with the crowd, a conservative person may go for pinstripes and other darker colours.

**(4) Knowledge function:**

This yearning for an organised and regulated universe is what drives us to look for stability, definition, and comprehension. Attitudes toward learning are shaped by this requirement. In addition, the urge to learn is often distinctive in nature.

Van der Pligt & De Vries. (2005) [33] made the following distinctions between the functions of attitudes and the various purposes supplied by them:

**(1) Cognitive Function:**

The stance acts as a form of structural framework for understanding about and acting on the stance object cognitively. This function is particularly developed in theories that take the organisation of knowledge as an important causative factor in explaining behaviour.

**(2) Instrumental function:**

Instances, a relationship between those behavior intention and need satisfaction is expressed. This instrumental function of stances might be conceived retrospectively (as reflecting pleasurable or discouraging encounters with the object) or prospectively (as expressing expectations about the results of object-related behaviour).

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**(3) Ego-defensive function:**

Positions can help develop or sustain a favourable self-image (for example, stereotyping may serve to reinforce one's own supremacy).

**(4) Value-expressive function:**

Attitudes may reflect an individual's values and hence express a significant aspect of that individual's identity.

**(5) Social assimilation function:**

Articulating specific positions may serve to begin or sustain interpersonal relationships.

These are not necessarily exclusive in the exhaustive roles of stances. Stances are not inextricably linked to functions: the same stance may have many functions at different times in time, just as comparable stances may serve different functions for different individuals. This partially explains why altering stances is so difficult: cognitive tactics such as persuasive dialogues or media campaigns may be ineffective at altering attitudes that serve to defend a poor self-image.

**2.2.4 Changes instance:**

Stances are a collection of connected ideas and behaviours directed at a certain thing. They are not stable and, as a result of other people's communication and behaviour, are susceptible to change as a result of social influences and the individuals personal encouragement to sustain

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consistency in the presence of cognitive dissonance—when two positions on issues or stance and behaviour disagreement (McGuire et al., 2005) [34].

Stance refers to a sentiment, belief, or opinion expressing favour or disapproval of something. The term "behaviour" refers to an action or reaction that occurs in response to an external stimulus or an internal stimulus (i.e., thought) Alice Eagly and Shelly Chaiken, 2005 [35] People have intricate links between their stances and behaviours, which are complicated further by the social variables that influence both. Generally, but not always, behaviours reflect pre-established views and stances. In an ideal world, pleasant attitudes would show well-adjusted behaviours. However, in other instances, healthy attitudes can lead to bad behaviour. Beyond posture, a variety of factors might impact behaviour, including beliefs about oneself and others, monetary considerations, social influences (what peers and community members say and do), and convenience.

Daily existence is interlaced with stances and behaviours. Individuals register an instantaneous and involuntary reaction of "good" or "bad" to everything they meet in less than a second, even before they are conscious that they have taken a position. Advertising, political campaigns, and other persuasive media messages are all predicated on the concept that conduct follows stance, which may be affected by the appropriate message presented in the proper way.

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In 1955, clinical psychologist and educator George Kelly [36] proposed his theory of personal construction psychology. On the concept that each person's vision of the world is shaped by their prior assumptions, Kelly's constructions were based (i.e., constructs).

When confronted with new and different circumstances, these structures change and adapt. Humans, according to Kelly's hypothesis, can adjust their attitudes toward the environment by seeking out new experiences and putting those experiences into practice and adopting new behaviours. Therapists should allow patients to try with new behaviours and coping techniques because they and others have found that patients frequently adopt these helpful new behaviour patterns and then change their positions.

When behaviour contradicts one's stance, it is occasionally the product of social or social conditioning. While adult behaviour is frequently determined by held attitudes, children's stances are frequently formed by witnessed behaviour. Children replicate the activities of others from an early age and, to a degree, form their viewpoints and views based on this learnt behaviour. As children enter adolescence, their classmates' behaviour can have a big impact. At times, this peer pressure element can work in your favour. One study discovered that when adolescent classmates are used as instructors, anti-smoking initiatives targeting teenagers can have a greater success rate.

### **2.2.5 THE SIGNIFICANCE OF STANCE**

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Human life is significantly influenced by one's attitudes. It has a significant impact on practically everyone's life. It provides tremendous opportunities for both success and failure in life. Stances excite and develop a person's performance. Stances are a powerful motivation of behaviour and have an impact on all moral morality (Crow and Crow, 2009) [37]. A person who begins with a positive attitude can significantly speed his or her future success. A positive attitude has an effect on one's performance at work. As a result, being optimistic makes one stronger, happier, and healthier. Positive thinking is critical for overall happiness and work success. With a positive attitude, one will enjoy working more and achieving workplace goals more simply and quickly.

Thus, it is necessary to instil in the populace the formation of ethical attitudes as well as the acquisition of educationally desirable practises. Thus, promoting favourable attitudes in people benefits both them and the country. Promoting a favourable attitude among the public is intended to instil in them a sense of the individual's worth. Individuals that take a positive position will make purposeful choices that benefit their own and social well-being.

Anurag Aggarwal (2010) [38] stated that a cheerful attitude can work miracles. It has the ability to make possible what others believe is impossible.

Success and a positive attitude are inextricably linked. The mind is a machine for the generation of thoughts and ideas. Without filling it with optimistic, inspiring, and encouraging thoughts, it will deteriorate into a

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jungle of bad thoughts. Individuals with a negative attitude have a difficult time maintaining friendships, employment, and relationships. They wreak havoc on their homes and workplaces and then become a burden to society. Every person and situation include something positive. When an individual feels well on the inside, his performance improves and his relationships at home and at work improve.

The world appears to be more pleasant. There is an unbreakable link between emotion and behaviour. When someone achieve success in life, petty people will poke fun at them and attempt to bring them down. Therefore, if a person wishes to achieve in life, he should have a positive attitude and work to boost his confidence and self-esteem.

A good attitude is critical for social status, health, employment, and overcoming challenges. Positivity attracts more positive opportunities into one's life. In a culture that swings around, a successful stance can catapult a user to stardom on social media and land a once-in-a-lifetime opportunity. It draws successful individuals who share similar objectives. Positivity enables the body to recuperate more quickly from disease. The Psalmist declares in the Bible, "A cheerful heart is as good as medicine." Mental and emotional states do have an effect on our physical health. With a good attitude, one is already ahead of the game.

According to Noe, D.P. (2010) [39], maintaining a cheerful attitude towards work may not always be easy. If one can have a positive attitude for the bulk of the time, it will assist in managing those demanding and stressful job conditions. One must exercise control and make the personal

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choice to seek for the good side of employment situations. Maintaining a good attitude will assist in paving the way for necessary beneficial changes. A optimistic attitude can help everyone see solutions in a new light. Working in a favourable setting will enhance productivity and job happiness, as well as stimulate innovation. The value of maintaining a happy attitude at work might mean the difference between having a career and working for a successful firm.

According to Pawan Kumar (2010) [40], posture is the mental state in which one approaches a task, a problem, a person, love, or life in general. A positive attitude is a way of living that is characterised by optimism and confidence. Developing a positive attitude entails substituting positive thinking for negative in order to foster a good outlook on life and events. A people with a positive attitude has a more optimistic outlook on life in general, even during difficult circumstances. Keeping the glass half full rather than half empty is critical for maintaining a good attitude (Nico Riley, 2011)[41].

According to Zack Lim (2011) [42], a cheerful attitude is critical since it makes life easier. Not everything in life goes according to plan.

There will be times when you face difficulties and challenges. The most difficult part of life is not when things go easily, but how issues and challenges arise.

Those who have a good attitude will view any obstacle as a challenge.

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Rather of getting discouraged, kids will view each mistake as a learning opportunity and will be encouraged to succeed. Those who do not take a positive position will view problems and obstacles through a whole different lens. Life is already difficult; it becomes much easier if one adopts a positive attitude that will make life better and simpler.

A person who has a positive attitude toward everything will be happier. It is well established that those who have a good attitude will have a better body and live longer. People often like to associate with those who have a positive outlook, as happiness is highly contagious. Everybody will be touched by the intensity of a positive attitude, and they will develop an attitude of their own. Finally, maintaining a good attitude is critical. It makes life more enjoyable, and we can achieve anything we set our minds to as long as we maintain a positive attitude.

According to Max Shapiro (2011) [43], the true challenge in the modern workplace is to manage and overcome barriers and to learn from difficult and trying experiences. A person may overcome challenges only with a positive attitude, a concentrated mind, and the determination to conquer barriers. A person with a good outlook on life can easily survive many difficult situations. A person who maintains a cheerful attitude will serve as an example for others. Developing a good attitude aids in stress management, boosts self-esteem and conviction, and makes the person more productive and dynamic. Max listed the following four benefits of adopting a positive attitude at work:

**(1) Establishes a favourable environment:**

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Employers, on the whole, make an effort to keep their employees happy, uphold their ideals, and seek to create a favourable work environment for them so they may reap the benefits of increased productivity and, as a result, increased profitability. Workplace issues should not be viewed as problems; they should be viewed as opportunities. This contributes to the creation of a positive work environment and benefits both employees and businesses. Always consider methods to make something simpler or more pleasurable. A leader's positive attitude toward goal setting and problem solving encourages other colleagues to adopt a similar attitude.

**(2) Contributes to the achievement of goals:**

Persuading a consumer is significantly easier for someone who has a pleasant attitude. Additionally, research has revealed that sales professionals that think positively and believe in the advantages of their product perform better in sales. If a customer has a high attitude toward reaching objectives and achievement, they are more likely to take action to accomplish them. Positive thinking is a characteristic of an achiever. Positive thinking along with motivation aids in achieving various goals. It accrues additional benefits even after the objective is accomplished.

**(3) Enhances productivity:**

A positive attitude can be developed through developing positive relationships with colleagues and remembering the "bright side" of the profession. By revisiting the "positive aspects" of a job, one can rekindle excitement for it, resulting in an increase in productivity. A shift in perception or focus on something more pleasant might alleviate stressful

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sensations. Reduced stress among the workers translates into improved health, as stress may have a significant detrimental impact on health. This results in fewer absenteeism days and increased productivity.

#### **(4) Positivity and teamwork:**

Many executives believe that encouraging and establishing positive attitude will aid in team building. If members' ideas are appreciated and a positive attitude is adopted, team members will interact more frequently, resulting in fewer disagreements. If an individual is not optimistic at work, coworkers will avoid him. Therefore, if an individual has a positive attitude toward work and others, coworkers will perceive him or her as a likable person to have around.

#### **2.2.6 Attitudes regarding ICT:**

ICT plays a critical role in the world now that we have entered the information age. Through the use of ICT, an organisation or corporation can facilitate business transactions with customers, clients, suppliers, and distributors. Lack of suitable information at the appropriate moment results in decreased production, poor quality, and time wasted pursuing information. ICT is ingrained in people's daily lives and cannot be divorced from their basic necessities.

Over the last few generations, information and communication technologies have enabled a plethora of new communication options for society. For instance, individuals can speak with others in faraway countries in real-time with technology such as instant messenger and

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videoconferencing. Social networking services such as Facebook enable individuals from all over the world to stay connected and communicate on a consistent basis.

#### **2.2.6.1 ICT Definition:**

ICT was conceptualised by a team of mathematicians. The following are some of the definitions of ICT that have been provided by numerous scholars and educators.

J. Child (2007) [44] described ICT as "technology and applications that integrate the computation and storage capabilities of computers with the distance-communication abilities of telecoms."

Information and Communication Technology (ICT) can be described by G.P. Huber (2000) as any device that (a) transmits knowledge; and (b) processes information necessary for the user's communication or decision-making task. Videoconferencing, file transfer, discussion forums, file sharing, group assistance systems (e.g., GAS), electronic databases, electronic data interchange, fax, voice mail and the telephone are all instances of ICT.

Information technology, according to M.W. Anyakoha (2001) [46], is the use of human-made technologies to acquire, create, communicate, record, manage, and utilise information. Applications and equipment used to transfer, record, edit, store, alter, and broadcast information are included in this umbrella term.

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M. Aronu (2004) [47] described ICT as a synthesis of two technologies, computer and communication, with the primary objective of transmitting representations of data transmissions between remote sites.

Montgomerie and Irvine (2005) [48] described ICT as the process of manipulating audible, graphical, textual, and numerical information through the use of microelectronic-based computing and telecommunications equipment.

This clearly demonstrates the benefits of information dissemination via technology means, as practically all aspects of office work may be adequately handled.

Michiels & Van Crowder (2011) [49] described ICT as the technology which makes it possible to acquire, store, process, transmit, and disseminate information in all forms, comprising voice, text, data, images, and video, via electronic methods. It enables access to knowledge by utilising telecommunications technology such as the Internet, wireless communications, cell phones, and other modes of communication.

ICT was defined by Tinio, V.L. (2013) [50] as a broad set of technological tools used to transmit, create, distribute, store, and manage information. ICT encompasses radio, television, video, memory stick device (DVD), telephone, communications satellites, management information systems, computers and networks, as well as the accompanying services such as conferencing and electronic mail.

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According to the World Development Report (UNDP) (2013) [51], ICT are essentially information-processing tools—a wide variety of goods, applications, and services used to produce, store, process, distribute, and exchange information. [51] Radio, television, and the telephone are among the "old" ICTs; computers, satellites, and wireless technology, as well as the Internet are among the "new" ICTs. We now have the "networked world," which is an extensive network of interconnected telephone services, standardised computer hardware and networks for internet, radio and television broadcasting that reaches every corner of our planet. Transparency and slides, cassettes, radio, cassette tapes, television, and cinema are all examples of ICTs that aren't just cutting-edge computer and internet technology. "Analog media" refers to the older and more familiar technologies, while "digital media" refers to the more contemporary computer and Internet-based technologies. Nevertheless, in today's world, the lines between these various media are becoming increasingly blurred, and as a result, the way people describe and refer to ICTs is also becoming increasingly blurred. As though to distinguish between analogue and digital technologies, ICTs are frequently characterised in terms of "old" and "new."

ICT stands for "information and communication technology," according to Rachel Bolstad (2014) [52]. Scholars, policymakers, and practitioners are increasingly using this term in their work. Computers and the internet were previously referred to as "IT," or telecommunications, under the previous title. The literary and popular imagination have long been dominated by ICT's "information" component. Information and

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communication technology's "communication" component has recently risen to equal importance. Computers are not the only technology that falls under the umbrella of "ICT." ICT is defined as "anything that enables humans to receive information, communicate with one another, or alter the environment through the use of electrical or digital technology." The following types of software and hardware are included in the term "information and communication technology" (ICT):

- Personal computers (including desktop, laptop, and handheld computers)
- Digital cameras and digital video cameras
- Creativity and communication software and tools
- Internet
- Telephones, fax machines, mobile telephones, tape recorders
- Interactive stories, simulated environments, and computer games
- Videoconferencing technologies and closed-circuit television
- Data projectors, electronic whiteboards, and more

Electronic data storage, retrieval, processing, and communication (ICT) as defined by Sinnathumbu (2014) [54]. All aspects of computer and telecommunication technology are included in this wide term: Information and Communication Technology (ICT). Teaching and learning are made easier by the computing and networking resources and capabilities that ICT provides. There are many ICT-related activities, such as using broadcast or CD-ROM material as a source of historical information, using computers with appropriate keyboards and other devices to teach literacy and writing, using email to facilitate collaboration and the sharing

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of resources, using video-conferencing to facilitate the teaching of modern foreign languages, and using Internet-based research for geography.

As defined by the World Bank in 2015 [55], ICT includes the hardware, software, networks, and media that are used to gather, store, process, transmit, and present information (voice, data, text, and images) as well as associated services. ICI and IT are two subcategories of ICT. Physical telecommunications systems and networks (cellars, broadcast, cable, satellite, and postal) and the services they support (Internet, voice, mail, radio, and television) are known as ICI (Communication and Information Infrastructure), whereas IT (Information Technology) describes the hardware and software that are used to collect data, store it, process it, and present it. A subset of ICT, IT encompasses the research, design, development, implementation, support, and administration of computer-based information systems (such as software applications and computer hardware), as defined by the Information technology Association of America (ITAA). This broad term encompasses anything from computers and networks to communications systems and automated office equipment like videotext and cable television to e-mail and computer games.

A careful evaluation of technology, communication, and information is necessary to define the term ICT, according to Harrison, G.B. (2015)[56]. Technology is the use of scientific, material, and human resources to the fulfilment of a specific demand or goal. Words, visuals, signs, writing, or behaviour are all forms of communicating ideas and information. Even though the recipient does not need to be aware of the sender's desire to communicate at the moment of communication, communication can

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nonetheless occur across enormous time and space gaps because of the involvement of a sender, a message, and a recipient. There must be a common ground of communication between the parties involved in a conversation. The communication process is complete when the receiver understands the message sent by the sender. Feedback is necessary for effective communication between parties. Data that has been independently verified to be correct and up-to-date is referred to as "information." It has a clear objective and a specific audience in mind. A person's behaviour, choice, or outcome is the only factor that determines the value of information. In the absence of action, information is deemed worthless.

ICT is now described as the application of information technology, such as the internet, to meet human needs or goals. A effective way to think about ICT is to consider all of the ways that digital technology is already being utilised by individuals, businesses, and organisations to support them in their information-related operations. Digital information can be stored electronically, retrieved electronically, manipulated electronically and then transmitted or received via digital means via ICT. There are several examples, such as personal computers, digital televisions, email, and robotics. In other words, ICT is concerned with digital data storage and retrieval, manipulation, transmission, and receipt.

The acronym ICT stands for information, communication, and technology, according to Madeleine Woolley (2010) [57].

**Information:**

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Processed data that can be used to make decisions is what we mean by the term "information." A combination of data and learning results in knowledge. The ability to locate, extract, apply, and transform data into new knowledge. Information literacy competencies are commonly referred to as the critical competencies that learners need to achieve this shift. Awareness of the need for knowledge, critical analysis and evaluation of its usefulness, and the ability to apply the information, transforming it into knowledge are all necessary components.

**Communication:**

When 'information' and 'technology' are added to the mix, communication takes on a whole new meaning and purpose.

**Technology:**

When it comes to the design, production, and use of goods and services as well as the organisation of human activities, technology is the deliberate use of knowledge to achieve these goals. Although the term 'information technology' implies the use of the Internet and other telecommunications networks, it is not limited to the Internet and includes simpler technologies such as CD ROMs, video, and television.

According to Jide Owoeye (2011) [58], the term "information and communication technology" (ICT) is a catch-all for a wide range of technologies used to manipulate and communicate information, such as broadcast media, cable and satellite television, mobile phones, personal

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computers and networks, and satellite systems, as well as the services and applications they enable.

To put it another way, Megha Gokhe (2011) [59] defines ICT as technology that facilitates information-related activities. Data collection, processing, storage, and display are all part of these operations. Working in a team and communicating effectively are more important in these types of activities. Informatics technology refers to the use of informatics in society. What we call "communicating" refers to the exchange of information between two people, whether that information is conveyed verbally or nonverbally. Any sort of communication, whether it's verbal or nonverbal, traditional or unconventional, involving spoken words or other means of expression, can be considered communication, whether it's intended or not. IT has been shortened to ICT, which stands for information and communications technology.

To put it another way, knowledge management (ICT) is the integration of informatics and other, related technologies such as the communication technology.

When it comes to information and communications technology, Plantilla Ethereal (2012) [60] points out that there are generally two main product categories: One is traditional computer-based technologies (things that can be done on a personal computer or through the use of computers at home or work); and two is the more recent and quickly expanding range of digital communication technologies; (that enable people and organisations to communicate and collaborate digitally).

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The following two classifications demonstrate the breadth of ICT's use to various types of products and concepts:

**Traditional Computer Based Technologies:** These types of ICT

include:

<b>Application</b>	<b>Use</b>
<b>Word processing</b>	e.g. Microsoft Word: Write letters, reports etc.
<b>Spreadsheets</b>	e.g. Microsoft Excel; Analyze financial information; calculations; create forecasting models etc.
<b>Database software</b>	e.g. Oracle, Microsoft SQL Server, Access; Managing data in many forms, basic lists (e.g. customer contacts through to complex material)
<b>Presentation software</b>	e.g. Microsoft PowerPoint; make presentations, Publish in digital format via email or over the Internet
<b>Desktop publishing</b>	e.g. Adobe In-design, Quark Express, Microsoft Publisher; produce newsletters, magazines and other complex documents.
<b>Graphics Software</b>	e.g. Adobe Photoshop and Illustrator; Macromedia Freehand and Fireworks; create and edit images such as logos, drawings or pictures for use in DTP, websites or other publications.
<b>Specialist Applications</b>	
<b>Accounting package</b>	e.g. Sage, Oracle; Manage an organization's accounts including revenues/sales, purchases, bank accounts etc. A wide range of systems is available ranging from basic packages suitable for small businesses through to sophisticated ones aimed at multinational companies.
<b>Computer Aided Design</b>	Computer Aided Design (CAD) is the use of computers to assist the design process. Specialized CAD programmes exist for many types of design: architectural, engineering, electronics, roadways.
<b>Customer Relations Management</b>	Software that allows businesses to better understand their customers by collecting and analyzing data on them. Often linked to software applications that run call centres and loyalty cards for example.

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## **Conventional Computation Based Innovations:**

ICT refers to the use of electronic technologies to transmit data over large distances. In order to achieve this, transmission and reception networks, wires, and satellite links are frequently utilised. Effective communication necessitates the use of numerous tools and approaches. As far as network types and methods of Internet access are concerned, these are the most critical considerations.

### **(1) Internal connections:**

A local area network (LAN) is a collection of computer processing and input/output (I/O) devices located in a single office or building (LAN). Local area networks (LAN) permit the exchange of hardware, software, and data between computers in the same area. Having a network like this allows coworkers to share data and programmes, which is a significant perk.

### **(2) Networks on the outside:**

To communicate with someone outside of the company's internal network, you must have access to a Wide Area Network (WAN) (WAN). The Internet is the world's most advanced wide-area network (WAN). It's a maze of mazes.

#### **2.2.6.2 Utilization of ICT:**

ICT plays a critical role in contemporary society. It has accelerated structural change in various spheres of economic, social, and cultural life.

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At the moment, computers are widely employed in a variety of areas, including government, banking, education, health, commerce, agriculture, transportation, and communication. Computers could be utilised in government office operations for document typing, data storage and retrieval, data analysis, and for sending and receiving information across short and large distances. Computers are becoming increasingly popular in businesses because the job they perform is extremely fast, which leads to increased productivity, is accurate when completing repetitive tasks, and stores data safely in a relatively small amount of space. ICT is ubiquitous in today's world, and when combined with communication technology, the application possibilities are limitless. ICT is the process of storing, manipulating, converting, protecting, sending, and receiving data through the use of computer hardware, software, and communications equipment. Professionals may now acquire, store, alter, and share data and information more easily, both individually and within companies of all sizes, public and private. ICT has grown so ingrained in human daily life that it has had a significant impact on how people live, work, and play (Albert, Victoria, and Millicent, 2012) [62].

The usage of networking in government offices significantly aids in the transfer of information between offices. The proliferation of networked computers is one of the most significant trends in contemporary computing. Government office practitioners' work entails an extensive amount of documentation and information processing, storage, and retrieval. Due to the information-intensive nature of an officer's responsibilities, tools and technologies that facilitate documentation,

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management, and information handling are not only necessary but also desirable. The features of information that ICT systems generate to meet officers' information demands include accuracy, correctness, completeness, relevance, and timeliness. With the multiple good effects of ICT on organisations, it's difficult to picture a modern business operating without ICT adoption.

## **2.3 REVIEW OF PREVIOUS RESEARCHES:**

### **2.3.1 Prologue:**

A critical component of any research project is a review of previous studies. Typically, researchers analyse pertinent prior studies to give readers with context for comprehending existing knowledge on a topic and to emphasise the significance of the new study. The study of previous studies establishes a connection between the proposed research and previous investigations. It informs the researcher of numerous aspects that have already been demonstrated or determined by other researchers, and it also allows the reader to comprehend the data gathered via earlier research. (David N. Boote and Penny Beile, 2005) [113]

### **2.3.2 Previous research on attitudes toward ICT:**

This chapter summarises 15 previous studies on attitudes toward ICT that have been conducted in India and other countries, including the following:

**(a) “ICT Self-Efficacy, ICT Anxiety, and Stances toward the Internet: A Study among Undergraduates in Unimas” (Sam, H. K., Othman, A. E. A., & Nordin, Z. S.: 2005)[116]**

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Two research objectives were examined in this study. The first objective is to investigate the relationship between students at Universiti Malaysia Sarawak's ICT anxiety and self-efficacy, as well as their reported Internet use and attitudes toward the Internet (Unimas). Students' ICT anxiety, self-efficacy, attitudes about the Internet, and reported Internet use will be examined in the second part of this study.

**(b) “Stances and Perceived ICT Competency among Teachers”  
(Juana Risah Safari, Wong Su Luan & Samsilah Roslan: 2005)[122]**

Teachers' attitudes and perceived competence in ICT were the focus of this study. Specific research questions for this study include the following:

- (1) What are the teachers' attitudes toward technology?
- (2) What is the perceived level of IT proficiency among teachers?
- (3) Is there a discernible difference in the attitudes toward IT of skilled and incompetent teachers?
- (4) Is there a discernible difference in usefulness, confidence, anxiety, and aversion to IT between competent and poor teachers?

**(c) “Stances toward Computers, the Introductory Course and Recruiting New Majors: Preliminary Results”. (Daniel Farkas and Narayan Murthy: 2005) [125]**

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The purpose of this study was to ascertain students' attitudes toward computing over the duration of an introductory computing course for non-majors at a Northern Metropolitan University.

**(d) “Information professionals’ stance towards the adoption of ICT in everyday life” (Debbie, L. Rabina and David, J. Walczyk, 2007)[127]**

The purpose of this study was to determine librarians' innovativeness in terms of their propensity to adopt it. It is to discover broad traits and trends of librarians' innovativeness as they relate to the use of it.

**(e) “Stance of librarians in selected Nigerian Universities towards the Use of ICT” (Paul, A.A., Rosnold, O.O., and Adeyinka Tella, 2007)[128]**

Librarians' opinions toward ICT use and implementation in their libraries were examined in this study. In addition, the goal is to learn how librarians' attitudes regarding the use of technology in their libraries are influenced by their ICT training and knowledge.

**(f) “Pre-service teachers’ stance towards computer use: A Singapore survey” (Timothy Teo, 2008)[131]**

Pre-service teachers in Singapore were surveyed in this study to determine their views on computer use. In-depth consideration was given to the following research concerns:

(1) In general, how would you describe pre-service teachers' views on computer use?

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(2) Is there a difference in computer attitudes based on a person's age, gender, topic, number of years they've used a computer, and level of confidence they have in it?

**(g) "Importance of ICT in making healthy information society: A case study of Ethiopia East Local Government Area of Delta State, Nigeria" (Ogbomo, M.O. and Ogbomo, E.F., 2008)[133]**

For this study, researchers sought out the function of computers, the internet, email, telephone, radio and mobile phones in creating a healthy society.

**(h) Computer stance, ownership and use as predictions of computer literacy of Science teachers in Nigeria" (Babalola, J. Ogunkola, 2008)[134]**

It was the goal of this research to determine the level of computer literacy among science teachers by looking at factors such as computer posture, computer ownership, and frequency of computer use. When it comes to teachers' computer literacy, a variety of criteria are taken into account.

**(i) "Influence of computer anxiety and knowledge on computer utilization of senior secondary school students" (Rafiu Ademola Olatoye, 2009)[135]**

It was the goal of this study to examine the relationship between computer anxiety and computer expertise among high school students' use of computers.

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More precisely, this study addressed the following research questions:

(1) To what extent do students' computer anxiety and computer knowledge co-predict their computer use?

(2) What is the strength of the causal relationship between each independent variable (computer anxiety and computer knowledge) and students' computer use?

(3) Is there a strong correlation between computer fear, knowledge, and pupils' computer use?

(4) Is there a discernible difference in how male and female pupils use computers?

(5) Is there a substantial difference in computer anxiety between male and female students?

(6) Is there a major gap in computer expertise between male and female students?

**(j) “A study on computer usage and stance towards computer of prospective pre-school teachers” (Tamer Kutluca, 2011)[136]**

It was the goal of this study to learn more about the computer use and attitudes of pre-school teachers. Aside from that, the study will look into how various factors affect their perspectives.

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**(k) Stance of librarian staff to the use of ICT: The case of Kenneth Dike Library, University of Ibadan, Nigeria” (Eguavoen, O.E.,L.,2011)[138]**

The goal of this study was to learn more about the opinions of University of Ibadan library employees towards the use and application of ICT in the library system. This is necessary because the majority of research on related themes focuses on librarians' perspectives, even though the majority of library staff constitute a library system.

**(l) “A comparison of computer anxiety among Indian and Iranian University students” (Mehra Vandana and Omidian Paranak, 2011)[139]**

The purpose of this study was to examine computer anxiety levels among Indian and Iranian university students by country, faculty, and gender.

**(m) “Student-Teachers’ competence and stance towards ICT: A case study in a Nigerian University” (Yusuf, Mudasiru O., 2011)[141]**

The goal of this research was to find out how well-versed in ICT student-teachers were and how they felt about it. To be more specific, this study looked at student-teachers' views toward, ability to use, and attitudes of ICT in the classroom.

**(n) “Stance of teachers and students towards use of computers in teaching of computer studies curriculum in secondary schools” (Nathan Murithi and Francis Chisikwa Indoshi, 2011)[142]**

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It was the goal of this study to find out how teachers and students feel about computer use in relation to the Computer Studies Curriculum. Students' and teachers' opinions toward the employment of computers in the teaching of computer studies curriculum were also examined as part of the study.

**(o) Stance toward ICT in residential aged care in Western Australia”  
(Loh, Poh-Kool, Flicker, Leon, Horner, Barbara, 2012)[143]**

An investigation into the failure of the Prologue of health counselling via video conference meetings in residential aged care homes was the goal of this study. Hybrid methods were employed to obtain quantitative and qualitative data in this investigation.

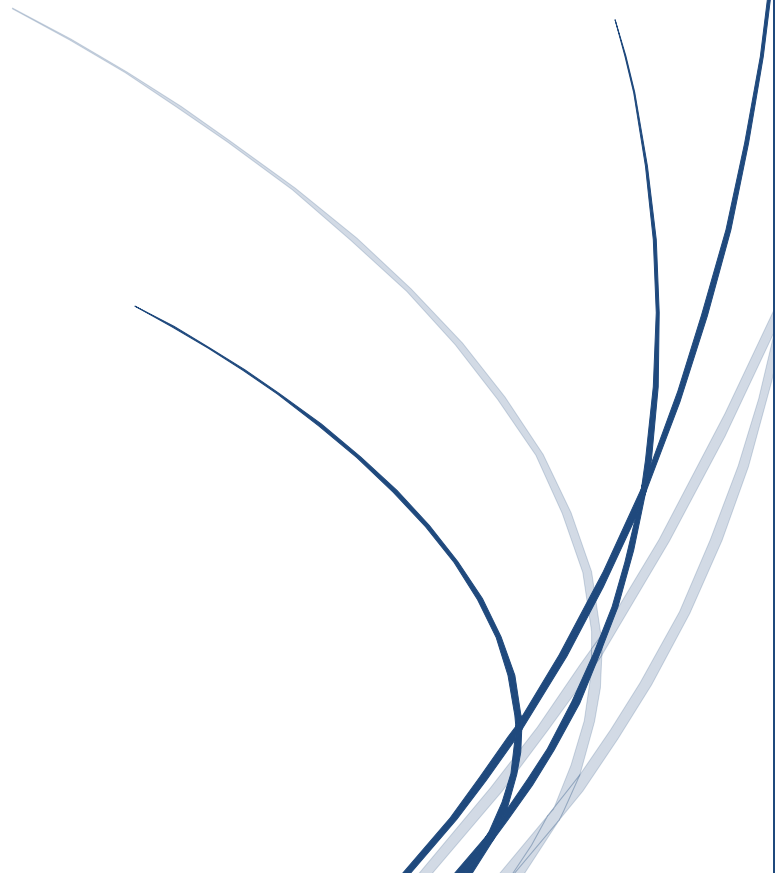
**2.4 Summary:**

In the second chapter, we looked at the theoretical underpinnings and previous research on people's views about information and communications technology. The term "stance" refers to a person's tendency to like or dislike a particular thing, person, place, object, event, or occurrence. Whether it's a good feeling or a bad feeling, it's a mental or neural state of readiness that has been shaped by experience and affects how a person reacts to whatever it's associated with or affiliated with.

# CHAPTER 3

[Date]

# Research Methodology



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## Chapter 3

### Research Methodology

#### 3.1 PROLOGUE:

The research methodologies used in this study are discussed in detail in the third chapter. Research technique is crucial in identifying the most relevant techniques and tactics for addressing the research problem effectively and efficiently.

A research methodology is a technique for determining the outcome of a certain problem on a particular subject. In Methodology, the researcher employs a variety of criteria when researching a certain subject. Diverse sources employ various approaches to problem-solving (Industrial Research Institute, 2010)[1].

In Research Methodology, the researcher always attempts to search the provided question systematically and independently to elicit all possible responses. If research is not organized, there is less chance of discovering the end outcome. A researcher faces numerous difficulties when determining or researching research questions, which can be effectively overcome by employing the appropriate research methodology (Industrial Research Institute, 2010) [2].

According to this chapter's scientific method, which was outlined, the research method encompassed various aspects of the research design, the construction of the instrument and its characteristics (such as reliability

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and validity), the tool's administration and scoring of a scale (the population and sample), as well as data analysis techniques.

### **3.2 METHOD OF RESEARCH**

Research methodology relates to the wide range of techniques used in a scientific investigation. The term "research methods" covers all of a researcher's approaches when conducting research. Research methods include various techniques, such as theories, experimental studies, numerical systems, and statistical Methodology. A researcher's job is made easier by research methods, which facilitate the collection of data and samples and discovering a solution to a problem. On the other hand, research methodology involves the use of a wide range of approaches, including experiments, tests, and surveys. For this reason, research methods and approaches differ in their focus on resolving problems in the field of research.

Three research methods are used to classify educational research in terms of Methodology: (J. H. McMillan: 2003) [3].

#### **(1) Historical research:**

Researchers interested in chronicling historical occurrences and conditions employ the historical method. To draw conclusions about past events or make predictions, it is necessary to gather evidence. To comprehend the historical, the current, and the future, historians use historical research, which involves analyzing, recording, assessing, and interpreting past events. Because of this, historical research often leads to

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short or long-term trials that attempt to provide light on what happened in the past.

**(2) Descriptive research:**

The descriptive survey method describes the characteristics of a population or phenomenon being studied. Observation, documentation, analysis, and interpretation are all part of the process of assessing current conditions. Attempts to establish correlations between existing data are a part of the process. Descriptive research gathers data on a target audience to draw conclusions about them based on statistical evidence. Due to closed-ended questions in this type of research, new insights cannot be generated. When used properly, it can help an organization better define and measure the relevance of a group of respondents and the population they represent.

The most common application of descriptive research is to survey a group's demographic characteristics (age, income, marital status, and gender, for example). This data can then be analyzed at face value to determine trends over time or for more sophisticated data analysis. Frequencies, averages, and other statistical computations are performed using the description. Before doing descriptive study, the ideal strategy is to perform a survey examination.

**(3) Experimental research:**

Methodologically and scientifically, the experimental method involves manipulating one or more variables while concurrently controlling and

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observing any variation in other variables. To determine if a change in one variable affects another, scientists use an experimental technique that involves manipulating that variable. This method employs a controlled procedure, random selection, and variable modification to test a hypothesis. Through controlled experiments, scientists can better understand what happens when certain variables are altered or controlled precisely.

The descriptive research method was chosen for this investigation. This type of research aims to ascertain the workforce's attitude toward ICT. The description is utilized in statistical calculations for occurrences, averages, standard deviation, t-test, and F-test.

### **3.3 DESIGN OF RESEARCH:**

The subject is observed and described in a descriptive study design without any intervention. There are two types of quantitative research: descriptive and inferential. Descriptive research examines the relationship between two variables, independent and dependent or outcome. Descriptive research is used to address the following questions: What's going on? How is anything possible? What's going on? An individual, organization, location, or phenomenon can be described using a descriptive research design; researchers characterize two or more groups in a comparative descriptive design. It is possible to establish the existence of a quantitative comparison between two or more independent variables through correlation research.

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According to Jackson, S.L. (2013) [4], descriptive methods are classified into three broad categories: observational methods, case-study methods, and survey approaches.

**(1) Method of Observation:**

Naturalistic perception and laboratory observation are two broad categories of observation. One of the key benefits of taking a normative approach is that investigators can examine organisms in their natural surroundings instead of laboratory settings. Observation in a laboratory is often superior to naturalistic observation because of the more controlled conditions. In comparison to fieldwork, laboratory studies are more practical and less expensive.

**(2) Case Study Technique:**

For example, a case study is an in-depth investigation of a person or group of people. There are two major limitations to case studies: expectation effects and atypical individuals. Experimental activities may be influenced by the experimenter's preexisting biases, which are known as "expectancy effects." Participants' descriptions may be misrepresented as a result of these biases. It's possible that describing outliers will lead to fewer generalizations and less external validity.

**(3) Methodology of the Survey:**

Participants in survey research reply to questions by completing surveys or interviews. Researchers have described the responses to the

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questionnaire once participants have filled it out. To ensure the validity and reliability of the survey, the questions must be properly designed.

As stated in the study's objectives, the current research is focused on finding out how workers feel about ICT. Descriptive research (survey approach) was used to gather the data needed to create accurate results to meet the study's objectives.

### **3.4 THE TOOL'S REQUIREMENTS:**

To ascertain the attitude of the commercial affairs workforce (OCAE) toward ICT, a legitimate and trustworthy tool was required. The researcher considered carrying out the procedure of developing a scale for calculating the workforce of commercial enterprises (OCAE). To that end, the researcher began by constructing as many statements as possible to quantify the attitude toward ICT of the commercial affairs workforce (OCAE) and attempt to standardize them.

The Likert-type scale is used to collect data. The simple descriptive study design is utilized to ascertain the commercial affairs workforce's level toward ICT. The comparative descriptive design is used to determine whether there is a significant difference in mean scores for the attitude toward ICT as judged by members of the commercial affairs workforce who differ in terms of sex, age, educational attainment, and job experience. Thus, sex, age, educational attainment, and work experience were utilized as independent variables in this study. In contrast, the attitude of commercial affairs personnel toward ICT was used as a dependent variable.

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### **3.5 TOOL AND ITS SPECIFICATIONS:**

The researcher sought to employ a tool in the form of a five-point Likert scale in this investigation. The scale used to assess the commercial affairs workforce's attitude toward ICT comprised of 100 statements grouped into four categories:

(a) Anxiety Regarding ICT

(b) Confidence in ICT

(c) Affection for ICT

(d) The Utility of ICT

"Strongly Agree," "Agree," "Uncertain," "Disagree," "Strongly disagree" are the five levels of agreement for each item on the Scale that analyses the business affairs workforce's attitude towards ICT."

### **3.6 THE TOOL'S CONSTRUCTION:**

The Likert Scale (2000) [5] was used to collect data for this investigation. One-dimensional, ordered Likert scales allow respondents to select the most closely reflects their thoughts and beliefs. For the Likert Scale, points can range from 4 to 6. On the other hand, odd-numbered scales allow for a degree of ambiguity in response. The Likert Scale allows respondents to indicate how much they agree or disagree with a proposition.

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According to the definition, a Likert item is a statement about which the respondent is asked to express an opinion based on any number of subjective or objective criteria. Psychometricians argue for seven or nine levels, although a recent empirical study found that a 5- or 7-point scale gives somewhat higher mean scores relative to the greatest conceivable attainable score than a 10-point scale does, and this difference is statistically significant; The following is an example of a Likert-scale item with five possible responses:

For the level of agreement: "Strongly disagree", "Disagree", "Uncertain", "Agree", and "Strongly agree".

For the frequency: "Very frequently", "Frequently", "Occasionally", "Rarely", and "Very rarely".

For the level of performance or efficiency: "The most", "Much", "Moderate", "Less", and "The least".

As per the Likert technique, the following stages had to be followed when developing the Scale that measures the commercial enterprise's workforce's attitude toward ICT:

1. Research studies and papers on the attitudes of commercial affairs workers toward ICT have been compiled into many assertions.
2. Examination of the assertions
3. From "Strongly Agree," "Agree," "Uncertain," "Disagreement," and "Strongly disagree," the assertions can be rated on a five-point scale."
4. Analyze pre-flight forms with the judge's approval

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5. Development of the Scale's pilot version
  6. Identification of the collection for administering the Scale's pilot version
  7. Scale administration
  8. Scale evaluation
  9. Composing an item evaluation (validity, discrimination, and reliability) The validity index was calculated using the item test correlation, the discrimination index was calculated using the t-test, and the reliability index was calculated using the test-retest method.
  10. The ultimate configuration of the Scale

The details of the tool's construction are as follows:

### **3.6.1 Compilation of the Scale's statements:**

Likert statements can be developed from three sources: current measures, literature and documentation, and a discussion with an expert.

They were all extensively consulted during our investigation. To better understand the attitudes of the commercial affairs workforce toward ICT, the researcher acquired and consulted with relevant literature and papers. The researcher generated 160 statements for the Scale measuring the attitude of commercial affairs staff toward ICT based on exit scales, literature and documents, and interviews with specialists in this field: I worry about technology, but I'm confident in it, and I like it, and I think it's useful.

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The scale used to measure the attitude of commercial firm personnel toward ICT is based on the claims in Table 3.1.

**TABLE 3.1**  
**NUMERAL STATEMENTS INCORPORATED IN EACH FACET IN THE PREPARATION FORM OF THE SCALE WHICH MEASURES THE STANCE TOWARDS ICT OF COMMERCIAL AFFAIR'S WORKFORCE**

No.	Facets of the Stance towards ICT of Commercial Affairs Workforce	Numeral Statements		
		Positive	Negative	Total
1	ICT Anxiety	02	30	32
2	ICT Confidence	25	08	33
3	ICT Liking	27	24	51
4	ICT Usefulness	38	06	44
	<b>Total</b>	<b>92</b>	<b>68</b>	<b>160</b>

Commercial affairs staff's attitude toward ICT is assessed using a 160-item questionnaire, as illustrated in Table 3.1. The attitude toward ICT can be broken down into four distinct categories. Thirty-two statements were categorized as "ICT worry," with the remaining items being "ICT assurance," "ICT like," and "ICT usefulness."

### **3.6.2 Examination of the assertions:**

Phase two of the Scale's development included screening statements for clarity and accuracy in depicting the workforce's mindset toward information and communications technology (ICT). To help determine

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the statements that were included in the Scale's pre-pilot form, researchers used the following criteria:

- The language in the statement should be clear and concise. Anyone with a passing knowledge of English may read and understand the comments.
- The statement can be used to ascertain the business enterprise's workforce's attitude toward information technology.
- Complex sentences were avoided to the greatest extent possible.
- Statements that contain two negatives should be avoided.
- Avoid making ambiguous statements.

Pre-pilot statements were reviewed by the researcher with guidance from the guide. Some sections have been reworded and restructured. Statements 16, 18, 22-25, 39, 48-49, 60, 64, 67, 71-74, 77, 87, 90, 92, 94-95, 97-108, 119, 125, 130, 132, 134, 137, 143, 145-146, 147, 149, and 160 were found to be missing from the scale's prepared form. Thus, the remaining 114 statements were selected for inclusion in the pre-pilot version of the Scale that analyses the attitude of commercial affairs workers toward ICT. The screening method did not necessitate the calculation of statistical data.

Using the pre-pilot version of the ICT attitude assessment scale, Table 3.2 shows how many statements were included in each facet.

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**TABLE 3.2**  
**NUMERAL STATEMENTS INCORPORATED IN EACH FACET IN THE**  
**PRE-PILOT FORM OF THE SCALE WHICH MEASURES THE STANCE**  
**TOWARDS ICT OF**  
**COMMERCIAL AFFAIR'S WORKFORCE**

No.	Facets of the Stance towards ICT of Commercial Affairs Workforce	Numeral Statements		
		Positive	Negative	Total
1	ICT Anxiety	01	25	26
2	ICT Confidence	21	07	28
3	ICT Liking	15	13	28
4	ICT Usefulness	27	05	32
	<b>Total</b>	<b>64</b>	<b>50</b>	<b>114</b>

It can be shown in Table 3.2 that there are 114 statements in the pre-pilot form of the ICT attitude scale for commercial affairs staff. The attitude toward ICT can be broken down into four distinct categories. Twenty-six comments were categorized as "ICT anxiety," while another 28 were categorized as "ICT confidence," and a further 32 were classified as "ICT like" and "ICT useful," respectively.

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### 3.6.3 Scaling the assertions:

As it was decided to scale the statement on five points, the respondents were requested to read the statement one by one and put a tick mark (✓) under appropriate column according to their agreement regarding the stance towards ICT of commercial affair's workforce. The five columns were provided against each statement. For the scale which measures the stance towards ICT of commercial affair's workforce, there were five levels of agreements i.e. "Strongly agree", "Agree", "Uncertain", "Disagree", and "Strongly disagree".

A total of eighty judges were selected, and each received a booklet. Seventy-four of the eighty booklets distributed were returned. More than 70 booklets were found meticulously filled in. A total of 70 booklets were kept for additional inspection after the researcher eliminated four that had been filled out haphazardly. According to Table 3.3, the number of booklets accepted by the judges is listed.

**TABLE 3.3**  
**LIST OF JUDGES AND NUMERAL ACCEPTED BOOKLETS**

No	List of Judges	Numeral Accepted Booklets	
		Number	Percentage
1.	Administration officer	09	12.86
2.	Provincial commercial affairs officer	10	14.28
3.	Computer technical officer	08	11.43
4.	Department director	10	14.28
5.	Senior commercial affairs officer	09	12.86
6.	Human resource officer	09	12.86
7.	Trade officer	08	11.43
8.	Legal officer	07	10.00
	<b>Total</b>	<b>70</b>	<b>100.00</b>

Table 3.3 displays the responses of the 70 judges to each item on the scale used to gauge the attitude of the commercial affairs staff toward ICT.

Judges' levels of agreement on each statement were calculated using the IOC (Index of Item Objective Congruence). Content validity is assessed at the item generation stage of the test development process using Rovinelli and Hambleton's (2000)[6]'s index of item-objective congruence (IOC). Individual items can be rated on their capacity to measure or not measure the test developer's stated objectives using an evaluation method known as the index of item objective congruence

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(IOC). It will be reviewed by an expert who will give it a rating of +1, 0, or -1 for each item.

+1 = clearly measuring

- 1 = not clearly measuring

0 = unclear

As long as the experts aren't aware of the tested constructions, they can make unbiased assessments. Thongsanga Pongpaew's (2009) algorithm was used to calculate the index of item objective congruence (IOC).

$$IOC = \frac{\Sigma R}{N}$$

Whereas

IOC means the congruence between the scale's objectives and the statements in the scale which measures the stance towards ICT of commercial affair's workforce

$\Sigma R$  means the total scores of the agreement of judges in each statement

N means the total numeral judges

Results were then compared to the criteria after applying the IOC approach to the judges' agreement replies. An IOC value of between 0.50 and 1.00 should be used for statements that may be recognized as being included in the Scale's pilot form, according to Thongsanga Pongpaew (2009) [8].

Table 3.4 contains an examination of the IOC of the Scale used to assess the workforce's attitude toward ICT in business affairs.

**TABLE 3.4**  
**INDEX OF ITEM OBJECTIVES CONGRUENCE (IOC) OF EACH**  
**STATEMENT INCORPORATED IN THE PRE-PILOT FORM OF THE**  
**SCALE WHICH MEASURES THE STANCE TOWARDS ICT OF**  
**COMMERCIAL AFFAIR'S WORKFORCE**

No	Facets and Statement in the Scale which Measures the Stance towards ICT of Commercial Affairs Workforce	N	$\Sigma$ R	IOC	Remarks
<b>(1) ICT Anxiety</b>					
1	I feel insecure about my ability to use ICT.	70	66	0.94	Accepted
2	I feel worry and uneasiness over my impending use of ICT.	70	63	0.90	Accepted
3	I am afraid that if I begin to use ICT I will become dependent upon them and lose some of my reasoning skills.	70	28	0.40	Rejected
4	I feel apprehensive about using ICT.	70	62	0.89	Accepted
5	I hesitate to use ICT for fear of making mistakes that I cannot correct.	70	64	0.91	Accepted
6	I have phobia for ICT equipments.	70	61	0.87	Accepted
7	I fear ICT can cause electric shock.	70	65	0.93	Accepted
8	I get confused while operating ICT.	70	67	0.96	Accepted
9	I am afraid virus on ICT tools can effect human being.	70	63	0.90	Accepted
10	I always get scared with ICT.	70	68	0.97	Accepted
11	I find using ICT very frustrating.	70	62	0.89	Accepted
12	If given the opportunity to use ICT, I am afraid that I might damage it in some way.	70	65	0.93	Accepted

13	I have unpleasant feeling of nervousness or distress when I use ICT.	70	64	0.91	Accepted
14	ICT makes me feel uncomfortable.	70	67	0.96	Accepted
15	Using ICT does not scare me at all.	70	61	0.87	Accepted
16	I need an experienced person nearby when I use ICT.	70	69	0.99	Accepted
17	Working with ICT makes me feel tense and uncomfortable.	70	68	0.97	Accepted
18	Working with ICT would make me very nervous and frustrate.	70	66	0.94	Accepted
19	Working with ICT makes me feel isolated from other people.	70	61	0.87	Accepted
20	I dislike working with ICT because It makes me confuse.	70	62	0.89	Accepted
21	I have difficulty in understanding the technical facets of ICT.	70	68	0.97	Accepted
22	I have avoided ICT because they are unfamiliar and somewhat intimidating to me.	70	64	0.91	Accepted
23	I have feeling of frustration, failure and disappointment when I use ICT.	70	65	0.93	Accepted
24	I don't feel threatened when others talk about ICT.	70	63	0.90	Accepted
25	It wouldn't bother me at all to learn ICT.	70	68	0.97	Accepted
26	ICT make me feel uneasy and confused.	70	69	0.99	Accepted
<b>(2) ICT Confidence</b>					
27	I look forward to use ICT in my job with confidence.	70	61	0.87	Accepted

28	I do not think I would be able to improve my ICT skills.	70	69	0.99	Accepted
29	I feel that I will be able to keep up with the advances happening in the ICT field.	70	70	1.00	Accepted
30	I am not sure I could learn the ICT language.	70	68	0.97	Accepted
31	I can locate and run an application on ICT programmes.	70	65	0.93	Accepted
32	I feel confident learning to use a variety of ICT tools.	70	66	0.94	Accepted
33	I can search for files on ICT systems and move files between drives.	70	61	0.87	Accepted
34	I can access information on CD/DVD and organize electronic files into folders.	70	70	1.00	Accepted
35	I have confidence in using simple word processing software in my work i.e. sort and filter data, modify colors of text, bold, italic etc.	70	63	0.90	Accepted
36	I have confidence to create basic presentation package using ICT tools.	70	65	0.93	Accepted
37	I have confidence to access an internet, download files, send and receive e-mail message.	70	67	0.96	Accepted
38	I have confidence to communicate online with others using instant messaging tools i.e. hotmail, yahoo, g-mail, MSN, Skye etc.	70	65	0.93	Accepted
39	I have confidence to use the search engine i.e. Google, Altheweb, AltaVista, Surf Wax, Vivissimo, HotBot, etc.	70	68	0.97	Accepted
40	I have confidence to use a digital camera to capture images, and use the web camera to communicate on the internet.	70	65	0.93	Accepted
41	I have confidence to use scanner to copy images.	70	61	0.87	Accepted

42	I have confidence to set up and use Liquid Crystal Display (LCD) or Multimedia projector.	70	62	0.89	Accepted
43	If I sit before ICT tools, I would not know how to use it.	70	23	0.33	Rejected
44	I confidence I have a fair amount of ICT experiences.	70	64	0.91	Accepted
45	I feel more competent with ICT than some other people.	70	66	0.94	Accepted
46	If compared with other people, I know very little about ICT.	70	68	0.97	Accepted
47	I have very little sense of how ICT operates.	70	61	0.87	Accepted
48	I do not need someone to tell me the best way to use ICT.	70	65	0.93	Accepted
49	I find it easy to select appropriate ICT resources relate to work environment.	70	63	0.90	Accepted
50	I have a lot of self confidence when I work with ICT.	70	25	0.36	Rejected
51	I feel intimidated when I have to use ICT.	70	27	0.39	Rejected
52	I don't think I would do advanced ICT work.	70	68	0.97	Accepted
53	I am sure I could do effective work with the help of ICT.	70	69	0.99	Accepted
54	I have a lot of confidence when it comes to work with ICT.	70	62	0.89	Accepted
<b>(3) ICT Liking</b>					
55	If given an opportunity, I would like to learn and use ICT in my work.	70	62	0.89	Accepted
56	I am comfortable when using ICT for my work.	70	24	0.34	Rejected
57	I prefer getting information from a printed page instead of ICT.	70	67	0.96	Accepted

**TABLE 3.4 (Continued)**

No .	Facets and Statement in the Scale which Measures the Stance towards ICT of Commercial Affairs Workforce	N	$\Sigma$ R	IOC	Remarks
<b>(3) ICT Liking (Continued)</b>					
58	The frustrations created by ICT are more trouble than they are worth.	70	68	0.97	Accepted
59	The only way I would use ICT is if someone told me I had to do it.	70	66	0.94	Accepted
60	I am more interests in learning about ICT.	70	23	0.33	Rejected
61	I think that the challenges of work using ICT is exciting.	70	66	0.94	Accepted
62	I think that working on ICT is a good way to use my spare time.	70	64	0.91	Accepted
63	Using ICT makes me feel creative.	70	29	0.41	Rejected
64	I would like to learn about ICT if it is essential for my promotion.	70	63	0.90	Accepted
65	I would avoid taking a job if I knew it involved working with ICT tools.	70	64	0.91	Accepted
66	I only use ICT at my workplace when I am told to do it.	70	66	0.94	Accepted
67	I like to apply ICT regularly in my work environment.	70	68	0.97	Accepted
68	I dislike anything relevant information using ICT.	70	61	0.87	Accepted
69	I think that working with ICT would be enjoyable and stimulating.	70	65	0.93	Accepted
70	Learning about ICT is boring to me.	70	68	0.97	Accepted
71	I enjoy learning how ICT is used in my daily lives.	70	65	0.93	Accepted

72	Job using ICT would be very interesting.	70	66	0.94	Accepted
73	I would never take a job where I had to work with ICT.	70	61	0.87	Accepted
74	ICT makes me uncomfortable because I don't understand it.	70	64	0.91	Accepted
75	I enjoy life which is easier and faster running by ICT.	70	62	0.89	Accepted
76	I do not think I could handle the ICT operation because it is frustrating to work with.	70	67	0.96	Accepted
77	The challenge of solving problems with ICT does not appeal to me.	70	65	0.93	Accepted
78	I dislike ICT because when there is a problem with ICT run, I can't immediately solve.	70	68	0.97	Accepted
79	I enjoy spending much time working with ICT.	70	64	0.91	Accepted
80	Once I start to work with ICT, I would find it hard to stop.	70	66	0.94	Accepted
81	I don't enjoy talking with others about ICT.	70	70	1.00	Accepted
82	If given the opportunity, I would like to learn and use ICT more.	70	63	0.90	Accepted
<b>(4) ICT Usefulness</b>					
83	ICT can't help me to solve any really important problems.	70	65	0.93	Accepted
84	I am successfully using ICT in my daily routines.	70	25	0.36	Rejected
85	I have avoided ICT because they are not useful for me.	70	27	0.39	Rejected
86	I feel ICT is a useful tool in both my modern living and my work setting.	70	62	0.89	Accepted
87	ICT helps me to create extremely large	70	67	0.96	Accepted

	amount of information.				d
88	I can know and learn more from ICT than I can do from books.	70	70	1.00	Accepted
89	ICT is useful in dissemination of information.	70	61	0.87	Accepted
90	ICT gives opportunity for me to have more experience.	70	70	1.00	Accepted
91	I prefer using ICT because it improves accuracy, provide complicated analysis and deliver alternatives.	70	67	0.96	Accepted
92	Gathering data for work is simple by using ICT.	70	69	0.99	Accepted
93	There are many more important tasks in my life than working with ICT applications.	70	64	0.91	Accepted
94	ICT enables most effective ways of resource sharing and exchanging information.	70	66	0.94	Accepted
95	ICT helps me to improve my better work and more productivity.	70	63	0.90	Accepted
96	ICT can enhance the presentation of my work to a degree which justifies the extra effort.	70	64	0.91	Accepted
97	ICT motivates the workforce to work effectively.	70	62	0.89	Accepted
98	ICT saves time of workforce in may ways.	70	65	0.93	Accepted
99	Knowing how to work with ICT will increase the job possibilities.	70	65	0.93	Accepted
100	Learning to operate ICT is like learning any new skill, the more I practice, the better I become a worthwhile skill.	70	62	0.89	Accepted
101	The use of ICT creates more interaction between me and others.	70	61	0.87	Accepted
102	ICT knowledge is essential for my life.	70	29	0.41	Rejected

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103	Working with ICT means working on my own, without contact with others.	70	67	0.96	Accepted
104	Usefulness of ICT has helped to increase the efficiency of several organization and business works.	70	67	0.96	Accepted
105	I can't think of any way that I will use ICT in my career.	70	70	1.00	Accepted
106	Knowing how to work with ICT will increase my job possibilities.	70	28	0.40	Rejected
107	Working with ICT will not be important to my life's work.	70	24	0.34	Rejected
108	ICT can be used for designing better and effective routine work.	70	67	0.96	Accepted
109	ICT can be used to organize my administrative work in a better way.	70	68	0.97	Accepted
110	The overuse of the ICT may be harmful and damaging to humans.	70	70	1.00	Accepted
111	Having ICT available to me would improve the overall quality of life and general satisfaction.	70	67	0.96	Accepted
112	It is important for me to learn how to use ICT.	70	23	0.33	Rejected
113	ICT helps me to improve the performance of government organizations in many ways.	70	67	0.96	Accepted
114	ICT can be useful for improving many areas of the government service.	70	66	0.94	Accepted

As shown in Table 3.4, the pre-pilot version of the Scale used to assess the workforce's attitude toward ICT included 114 statements. The judges

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agreed that the obtained IOC value for each statement indicated which statements were acceptable and which were refused. It was discovered that 13 statements (i.e., statements No. 3, 43, 50-51, 56, 60, 63, 84-85, 102, 106, 107, and 112) in the pre-pilot form of the Scale measuring the attitude of commercial affairs' personnel toward ICT were eliminated.

The researcher produced the prototype version of the Scale that assesses the attitude of commercial affairs' personnel toward ICT based on the preceding calculation using IOC. It contained 101 assertions.

### **3.6.5 Establishment of the Scale's pilot version:**

An IOC value of 0.50-1.00 was established by interviewing industry experts, and a prototype scale was built to gauge the attitude of the commercial affairs workforce toward ICT.

There are numerical statements included in each component of the pilot-scale used to measure commercial affairs staff's attitudes toward ICT in Table 3.5.

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**TABLE 3.5**  
**NUMERAL STATEMENTS INCORPORATED IN EACH FACET IN THE**  
**PILOT FORM OF THE SCALE WHICH MEASURES THE STANCE**  
**TOWARDS ICT OF COMMERCIAL AFFAIR'S WORKFORCE**

No.	Facets of the Stance towards ICT of Commercial Affairs Workforce	Numeral Statements		
		Positive	Negative	Total
1	ICT Anxiety	01	24	25
2	ICT Confidence	20	05	25
3	ICT Liking	12	13	25
4	ICT Usefulness	22	04	26
	<b>Total</b>	<b>55</b>	<b>46</b>	<b>101</b>

A prototype version of a questionnaire with 101 statements is assessed for the staff's attitude toward ICT, as illustrated in Table 3.5. The attitude toward ICT can be broken down into four distinct categories. ICT anxiety had twenty-five statements, while the other twenty-six statements were divided into three categories: ICT self-confidence, ICT liking, and ICT usefulness.

It was on the first page of the prototype form of the Scale that measures the attitudes of commercial affairs employees toward ICT. The following instructions were published on the first page of the manual:

1. You may freely respond to the statements as this is not a test.

- 
2. One hundred-one statements have been written and finalized for inclusion in the pilot version of the Scale that assesses the commercial affairs workforce's attitude toward ICT.
  3. Using a five-point scale, we can see how the workforce feels about information and communications technology (ICT) in five different ways: strongly agree, agree, disagree, uncertain, and strongly disagree."
  4. You are kindly requested to read the message in its entirety. After reading, you must weigh it and determine the level of your success in terms of your workforce's attitude toward ICT. Please mark it with a check (✓) in the appropriate column.
  5. Feel free to express your views, as they will be kept private.

100 copies of the Scale, which measures employees' attitudes toward ICT, were printed to deploy the Scale in the first place.

### **3.6.6 Scale's pilot version was tested on this group of people.:**

After constructing the Scale's pilot version, the sample was chosen to be representative of the overall population. As a result, it was decided to use a random sampling approach to obtain the sample. As a result, 100 commercial affairs employees were chosen from ten commercial affairs offices located throughout Central India.

In Western India, 22 provinces, including Agra, Aligarh, Kasganj, Bareilly, etc.

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Ten commercial affairs offices were randomly selected to administer the Scale's pilot version.

Ten commercial affairs employees from each office were randomly selected to serve as the sample for administering the Scale's pilot version. Thus, 100 commercial affairs offices' workforces were chosen as the pilot study's sample.

The sample described in Table 3.6 was chosen to administer the pilot version of the Scale that assesses the attitude of commercial enterprise employees toward ICT.

**TABLE 3.6 NUMERAL COMMERCIAL AFFAIR'S WORKFORCE  
SELECTED FOR THE ADMINISTRATION OF THE PILOT FORM OF  
THE SCALE**

No.	Name of Selected Offices of Commercial Affairs	Numeral Selected Commercial Affairs Workforce
1	Kasgang	10
2	Agra	10
3	Indore	10
4	Jaipur	10
5	Udaipur	10
6	Lucknow	10
7	New Delhi	10
8	Aligarh	10
9	Kanpur	10
10	Bareilly	10
	Total	100

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### **3.6.7 Pilot testing of the Scale's administration is underway.:**

The researcher contacted and delivered the Scale to chosen commercial offices as part of the pilot administration. Permission was obtained from the corporate headquarters. The researcher held a casual telephone conversation with the designated head commercial office regarding administering the Scale's pilot form. The sample was then given the Scale.

### **3.6.8 Calculation of the pilot form of the Scale's score:**

Following the administration of the measure, the next duty was to score it using the preset scoring key. The scoring criteria for the Scale used to assess the commercial affairs workforce's attitude toward ICT were follows.

**For the positive statements of the scale which measures the stance towards ICT of commercial affair's workforce**

Strongly Agree	=	5 Score
Agree	=	4 Score
Uncertain	=	3 Score
Disagree	=	2 Score
Strongly disagree	=	1 Score

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**For the negative statements of the scale which measures the stance towards ICT of commercial affair's workforce**

Strongly Agree	=	1 Score
Agree	=	2 Score
Uncertain	=	3 Score
Disagree	=	4 Score
Strongly disagree	=	5 Score

Positive remarks received a 5 to 1, while negative ones received a score of 1 to 5. Item analysis was performed on the data collected following scoring.

### **3.6.9 Analyses of the tool's items:**

Item analysis is a term that refers to a collection of statistics computed for each item on a tool. The item analysis assists in determining the function of each item within the tool as a whole. The primary goal of item analysis is to enhance the tools' effectiveness by changing or removing ineffective items. Two item analysis methods can be employed to establish the item analysis, namely the validity and discrimination indices.

#### **3.6.9.1 Index of validity:**

When we talk about the validity of a study, we're referring to the amount to which the results match what the researchers set out to discover. According to Freeman (2000), [9], an index of validity examines how

closely a test measures what it is supposed to measure in contrast to approved criteria.

Four requirements must be met for a measure to be valid (Mason and Bramble, 2009) [10].

For establishing the construct validity of the present scale, the concept of the stance towards ICT of commercial affair's workforce was analyzed in different facets. It was against this analysis the researcher checked the scale to see the construct validity. The Item-Test Correlation was applied to the data obtained from 100 commercial affair's workforce. The Pearson Product Moment was calculated for the ' $r_{xy}$ ' value from the total scores and the score of each item.

The formula for calculation of  $r_{xy}$  is as follow: (Wierman, William, 1990)<sup>15</sup>

$$r_{xy} = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{\{N\Sigma x^2 - (\Sigma x)^2\}\{N\Sigma y^2 - (\Sigma y)^2\}}}$$

whereas

- $\Sigma X$  = Sum of scores of X variable
- $\Sigma Y$  = Sum of scores of Y variable
- $\Sigma X^2, \Sigma Y^2$  = Sum of the square of X scores, Sum of the square of Y scores
- $\Sigma XY$  = Sum of the product of paired X and Y scores
- N = Numeral paired scores

The validity test of the Scale used to assess the workforce's attitude toward ICT is shown in Table 3.7.

Table 3.7

**CONSTRUCT VALIDITY OF THE SCALE WHICH MEASURES THE STANCE  
TOWARDS ICT OF COMMERCIAL AFFAIR'S WORKFORCE**

No	Facets and Statements in the Scale which Measures the Stance towards ICT of Commercial Affairs Workforce	$r_{xy}$
<b>(1) ICT Anxiety</b>		
1	I feel insecure about my ability to use ICT.	0.65
2	I feel worry and uneasiness over my impending use of ICT.	0.72
3	I feel apprehensive about using ICT.	0.71
4	I hesitate to use ICT for fear of making mistakes that I cannot correct.	0.68
5	I have phobia for ICT equipments.	0.79
6	I fear ICT can cause electric shock.	0.74
7	I get confused while operating ICT.	0.66
8	I am afraid virus on ICT tools can effect human being.	0.73
9	I always get scared with ICT.	0.62
10	I find using ICT very frustrating.	0.74
11	If given the opportunity to use ICT, I am afraid that I might damage it in some way.	0.69
12	I have unpleasant feeling of nervousness or distress when I use ICT.	0.80
13	ICT makes me feel uncomfortable.	0.65
14	Using ICT does not scare me at all.	0.75
15	I need an experienced person nearby when I use ICT.	0.65
16	Working with ICT makes me feel tense and uncomfortable.	0.73
17	Working with ICT would make me very nervous and frustrate.	0.78
18	Working with ICT makes me feel isolated from other people.	0.65
19	I dislike working with ICT because It makes me confuse.	0.81
20	I have difficulty in understanding the technical facets of ICT.	0.63
21	I have avoided ICT because they are unfamiliar and somewhat intimidating to me.	0.75
22	I have feeling of frustration, failure and disappointment when I use ICT.	0.67
23	I don't feel threatened when others talk about ICT.	0.76
24	It wouldn't bother me at all to learn ICT.	0.79
25	ICT make me feel uneasy and confused.	0.62

26	I look forward to use ICT in my job with confidence.	0.71
27	I do not think I would be able to improve my ICT skills.	0.64
28	I feel that I will be able to keep up with the advances happening in the ICT field.	0.69
29	I am not sure I could learn the ICT language.	0.71
30	I can locate and run an application on ICT programmes.	0.78
31	I feel confident learning to use a variety of ICT tools.	0.65
32	I can search for files on ICT systems and move files between drives.	0.68
33	I can access information on CD/DVD and organize electronic files into folders.	0.74
34	I have confidence in using simple word processing software in my work i.e. sort and filter data, modify colors of text, bold, italic etc.	0.67
35	I have confidence to create basic presentation package using ICT tools.	0.79
36	I have confidence to access an internet, download files, send and receive e-mail message.	0.69
37	I have confidence to communicate online with others using instant messaging tools i.e. hotmail, yahoo, g-mail, MSN, Skye etc.	0.80
38	I have confidence to use the search engine i.e. Google, Althweb, AltaVista, Surf Wax, Vivissimo, HotBot, etc.	0.82
39	I have confidence to use a digital camera to capture images, and use the web camera to communicate on the internet.	0.67
40	I have confidence to use scanner to copy images.	0.62
41	I have confidence to set up and use Liquid Crystal Display (LCD) or Multimedia projector.	0.74
42	I confidence I have a fair amount of ICT experiences.	0.71
43	I feel more competent with ICT than some other people.	0.65
44	If compared with other people, I know very little about ICT.	0.75
45	I have very little sense of how ICT operates.	0.76
46	I do not need someone to tell me the best way to use ICT.	0.68
47	I find it easy to select appropriate ICT resources relate to work environment.	0.77
48	I don't think I would do advanced ICT work.	0.63

**TABLE 3.7 (Continued)**

No.	Facets and Statements in the Scale which Measures the Stance	$r_{xy}$
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<b>towards ICT of Commercial Affairs Workforce</b>		
<b>(2) ICT Confidence (Continued)</b>		
49	I am sure I could do effective work with the help of ICT.	0.77
50	I have a lot of confidence when it comes to work with ICT.	0.69
<b>(3) ICT Linking</b>		
51	If given an opportunity, I would like to learn and use ICT in my work.	0.72
52	I prefer getting information from a printed page instead of ICT.	0.80
53	The frustrations created by ICT are more trouble than they are worth.	0.75
54	The only way I would use ICT is if someone told me I had to do it.	0.72
55	I think that the challenges of work using ICT is exciting.	0.63
56	I think that working on ICT is a good way to use my spare time.	0.67
57	I would like to learn about ICT if it is essential for my promotion.	0.66
58	I would avoid taking a job if I knew it involved working with ICT tools.	0.78
59	I only use ICT at my workplace when I am told to do it.	0.71
60	I like to apply ICT regularly in my work environment.	0.65
61	I dislike anything relevant information using ICT.	0.74
62	I think that working with ICT would be enjoyable and stimulating.	0.83
63	Learning about ICT is boring to me.	0.70
64	I enjoy learning how ICT is used in my daily lives.	0.66
65	Job using ICT would be very interesting.	0.79
66	I would never take a job where I had to work with ICT.	0.79
67	ICT makes me uncomfortable because I don't understand it.	0.66
68	I enjoy life which is easier and faster running by ICT.	0.70
69	I don't think I could handle the ICT operation because it is frustrating to work with.	0.81
70	The challenge of solving problems with ICT does not appeal to me.	0.75
71	I dislike ICT because when there is a problem with ICT run, I can't immediately solve.	0.65
72	I enjoy spending much time working with ICT.	0.83
73	Once I start to work with ICT, I would find it hard to stop.	0.76
74	I don't enjoy talking with others about ICT.	0.69
75	If given the opportunity, I would like to learn and use ICT more.	0.71
76	ICT can't help me to solve any really important problems.	0.61

**TABLE 3.7 (Continued)**

No.	Facets and Statements in the Scale which Measures the Stance towards ICT of Commercial Affairs Workforce	$r_{xy}$
<b>(4) ICT Usefulness</b>		
77	I feel ICT is a useful tool in both my modern living and my work setting.	0.77
78	ICT helps me to create extremely large amount of information.	0.68
79	I can know and learn more from ICT than I can do from books.	0.70
80	ICT is useful in dissemination of information.	0.80
81	ICT gives opportunity for me to have more experience.	0.79
82	I prefer using ICT because it improves accuracy, provide complicated analysis and deliver alternatives.	0.63
83	Gathering data for work is simple by using ICT.	0.81
84	There are many more important tasks in my life than working with ICT applications.	0.68
85	ICT enables most effective ways of resource sharing and exchanging information.	0.74
86	ICT helps me to improve my better work and more productivity.	0.68
87	ICT can enhance the presentation of my work to a degree which justifies the extra effort.	0.75
88	ICT motivates the workforce to work effectively.	0.69
89	ICT saves time of workforce in may ways.	0.65
90	Knowing how to work with ICT will increase the job possibilities.	0.61
91	Learning to operate ICT is like learning any new skill, the more I practice, the better I become a worthwhile skill.	0.76
92	The use of ICT creates more interaction between me and others.	0.70
93	Working with ICT means working on my own, without contact with others.	0.73
94	Usefulness of ICT has helped to increase the efficiency of several organization and business works.	0.77
95	I can't think of any way that I will use ICT in my career.	0.79
96	ICT can be used for designing better and effective routine work.	0.65
97	ICT can be used to organize my administrative work in a better way.	0.67
98	The overuse of the ICT may be harmful and damaging to humans.	0.61
99	Having ICT available to me would improve the overall quality of life and general satisfaction.	0.65
100	ICT helps me to improve the performance of government organizations in many ways.	0.77
101	ICT can be useful for improving many areas of the government service.	0.24

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From table 3.7, it can be seen that the score of each item in the scale which measure the stance towards ICT of commercial affair's workforce obtained from 100 commercial affair's workforce indicates the  $r_{xy}$  value between 0.24 - 0.83.

According to statistical evaluation criteria for outcome measures suggested by Andresen, E.M. (2000)<sup>16</sup> and Salter, K., Jutai, J., Foley, N., & Teasell, R. (2005)<sup>17</sup>, the correlations value of construct validity are as follow:

$r_{xy}$	Excellent	$\geq 0.60$
$r_{xy}$	Adequate	0.31 - 0.59
$r_{xy}$	Poor	$\leq 0.30$

It can be seen that the  $r_{xy}$  value of 100 statements in the scale which measures the stance towards ICT of commercial affair's workforce indicated the item-test correlation at excellent level. Only 1 statement (statement No. 101) obtained  $r_{xy}$  value at poor level which to be discarded. It confirmed that 100 statements in the scale which measures the stance towards ICT of commercial affair's workforce indicated the degree to which the scale measures the construct it was designed to measure ( $r_{xy}$  between 0.61 - 0.83).

### **3.6.9.2 Index of discrimination:**

Item discrimination, or the ability of a test item to distinguish between success and failure, relates to the extent to which passing or failing an item implies the possession of the capability being measured. The discriminating index of items indicates the degree of agreement between examiners on the trait being tested, i.e., between high and low scores. To

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create a proper scale, the discrimination index must be established. This can be quantified in various ways or via multiple phases in its calculation. Correlating item replies to total test scores is one way; only items with the highest correlation to the overall score are preserved for the final version of the test. T.M. Haladyna, S.M. Downing, and M.C. Rodriguez, 2002) [18].

25 percent of the books should be chosen from the top, and 25 percent from the bottom, as Allen Edwards (2001) [20]. Because of this, two factions emerged. Using these two groups as a starting point, we collected numerical samples from the upper and lower groups that indicated whether they agreed, disagreed, agreed, disagreed, or disagreed strongly with the statements in question. After that, the t-test formula was used to figure out the value of t. (James P. Key, 2007) [21].

$$t = \frac{\bar{X}_U - \bar{X}_L}{\sqrt{\frac{S_U^2}{n_U} + \frac{S_L^2}{n_L}}}$$

$\bar{X}_u$  = The mean score on a given statemens for the upper group.

$\bar{X}_l$  = The mean score on a given statemens for the lower group

- $S_u^2$  = The variance of distribution of responses of the upper group
- $S_l^2$  = The variance of distribution of responses of the lower group
- $n_u$  = The numeral commercial affair's workforce in the upper group
- $n_l$  = The numeral commercial affair's workforce in the lower group

The discriminating value of the statements on the scale used to assess the workforce's attitude toward ICT is shown in Table 3.8.

**TABLE 3.8**  
**DISCRIMINATION VALUE OF THE STATEMENTS OF THE SCALE**  
**WHICH MEASURES THE STANCE TOWARDS ICT OF**  
**COMMERCIAL AFFAIR'S WORKFORCE**

No.	Facets and Statements in the Scale which Measures the Stance towards ICT of Commercial Affairs Workforce	Upper Group		Lower Group		<i>t</i> -value
		$\bar{X}$	SD.	$\bar{X}$	SD.	
<b>(1) ICT Anxiety</b>						
1	I feel insecure about my ability to use ICT.	4.41	0.84	3.15	1.07	4.63
2	I feel worry and uneasiness over my impending use of ICT.	4.65	0.69	3.33	1.12	5.02
3	I feel apprehensive about using ICT.	4.37	0.72	2.9	1.04	5.81
4	I hesitate to use ICT for fear of making mistakes that I cannot correct.	4.53	0.63	3.01	1.05	6.21
5	I have phobia for ICT equipments.	4.27	0.68	3.03	1.17	4.58
6	I fear ICT can cause electric shock.	4.42	0.7	3.23	1.04	4.75
7	I get confused while operating ICT.	4.35	0.55	2.89	1.02	6.30
8	I am afraid virus on ICT tools can effect human being.	4.49	0.60	3.48	0.91	4.63
9	I always get scared with ICT.	3.66	0.82	2.56	1.00	4.25
10	I find using ICT very frustrating.	3.89	0.74	2.22	0.87	7.31
11	If given the opportunity to use ICT, I am afraid that I might damage it in some way.	4.18	0.97	2.35	1.05	6.40

12	I have unpleasant feeling of nervousness or distress when I use ICT.	4.41	0.70	3.39	0.79	4.83
13	ICT makes me feel uncomfortable.	4.45	0.76	3.62	0.90	3.52
14	Using ICT does not scare me at all.	4.28	0.62	3.28	0.78	5.02
15	I need an experienced person nearby when I use ICT.	3.80	0.81	2.44	1.02	5.22
16	Working with ICT makes me feel tense and uncomfortable.	3.67	0.83	2.41	1.00	4.85
17	Working with ICT would make me very nervous and frustrate.	4.69	0.52	3.67	0.70	5.85
18	Working with ICT makes me feel isolated from other people.	3.97	0.75	2.72	0.96	5.13
19	I dislike working with ICT because it makes me confuse.	4.35	0.61	3.04	1.03	5.47
20	I have difficulty in understanding the technical facets of ICT.	3.85	0.77	2.61	1.11	4.59
21	I have avoided ICT because they are unfamiliar and somewhat intimidating to me.	3.97	0.73	2.77	0.86	5.32
22	I have feeling of frustration, failure and disappointment when I use ICT.	3.48	1.01	2.27	1.08	4.09
23	I don't feel threatened when others talk about ICT.	3.52	0.82	2.39	0.93	4.56
24	It wouldn't bother me at all to learn ICT.	4.31	0.64	3.30	0.74	5.16
25	ICT make me feel uneasy and confused.	3.79	0.89	2.45	1.03	4.92
<b>(2) ICT Confidence</b>						
26	I look forward to use ICT in my job with confidence.	4.06	0.91	2.61	1.20	4.81
27	I do not think I would be able to improve my ICT skills.	4.31	0.66	3.02	0.77	6.36
28	I feel that I will be able to keep up with the advances happening in the ICT field.	3.76	0.82	2.12	0.99	6.38
29	I am not sure I could learn the ICT language.	4.37	0.62	3.41	0.83	4.63
30	I can locate and run an application on ICT programmes.	4.06	0.71	2.80	0.94	5.35
31	I feel confident learning to use a variety of ICT tools.	4.58	0.54	3.12	1.09	6.00
32	I can search for files on ICT systems and move files between drives.	4.23	0.96	3.02	0.73	5.02

33	I can access information on CD/DVD and organize electronic files into folders.	4.48	0.82	3.08	1.07	5.19
34	I have confidence in using simple word processing software in my work i.e. sort and filter data, modify colors of text, bold, italic etc.	4.52	0.71	3.24	1.00	5.22
35	I have confidence to create basic presentation package using ICT tools.	4.13	0.63	3.27	0.88	3.97
36	I have confidence to access an internet, download files, send and receive e-mail message.	4.48	0.59	3.20	0.87	6.09
37	I have confidence to communicate online with others using instant messaging tools i.e. hotmail, yahoo, g-mail, MSN, Skye etc.	4.32	0.63	3.08	0.92	5.56
38	I have confidence to use the search engine i.e. Google, Altheweb, AltaVista, Surf Wax, Vivissimo, HotBot, etc.	4.51	0.59	3.18	1.22	4.91
39	I have confidence to use a digital camera to capture images, and use the web camera to communicate on the internet.	4.58	0.57	3.31	0.83	6.31
40	I have confidence to use scanner to copy images.	4.05	0.84	2.94	1.01	4.22
41	I have confidence to set up and use Liquid Crystal Display (LCD) or Multimedia projector.	4.53	0.59	3.48	0.86	5.03
42	I confidence I have a fair amount of ICT experiences.	4.18	0.70	3.09	1.08	4.23
43	I feel more competent with ICT than some other people.	4.46	0.61	3.38	0.91	4.93
44	If compared with other people, I know very little about ICT.	4.40	0.62	3.50	0.74	4.66
45	I have very little sense of how ICT operates.	3.44	0.90	2.24	1.01	4.44
46	I do not need someone to tell me the best way to use ICT.	4.65	0.51	3.55	0.73	6.18
47	I find it easy to select appropriate ICT resources relate to work environment.	4.06	0.71	2.80	0.94	5.35
48	I don't think I would do advanced ICT work.	4.38	1.04	2.48	1.12	6.22

49	I am sure I could do effective work with the help of ICT.	4.14	0.71	3.27	0.77	4.15
50	I have a lot of confidence when it comes to work with ICT.	4.21	0.69	2.69	0.95	6.47
<b>(3) ICT Liking</b>						
51	If given an opportunity, I would like to learn and use ICT in my work.	3.74	0.84	2.59	0.97	4.48
52	I prefer getting information from a printed page instead of ICT.	3.99	0.77	2.37	1.02	6.34
53	The frustrations created by ICT are more trouble than they are worth.	4.56	0.85	3.23	0.93	5.28
54	The only way I would use ICT is if someone told me I had to do it.	3.59	0.76	2.11	1.01	5.85
55	I think that the challenges of work using ICT is exciting.	4.26	0.61	2.97	1.14	4.99
56	I think that working on ICT is a good way to use my spare time.	4.37	0.82	3.16	1.08	4.46
57	I would like to learn about ICT if it is essential for my promotion.	4.09	0.95	2.88	1.14	4.08
58	I would avoid taking a job if I knew it involved working with ICT tools.	4.49	0.77	2.84	1.07	6.26
59	I only use ICT at my workplace when I am told to do it.	3.62	0.83	2.07	0.95	6.14
60	I like to apply ICT regularly in my work environment.	4.37	0.82	3.16	1.08	4.46
61	I dislike anything relevant information using ICT.	4.09	0.95	2.87	1.14	4.11
62	I think that working with ICT would be enjoyable and stimulating.	4.03	0.63	3.07	0.93	4.27
63	Learning about ICT is boring to me.	4.44	0.97	3.04	1.07	4.85
64	I enjoy learning how ICT is used in my daily lives.	4.05	0.73	3.07	0.87	4.31
65	Job using ICT would be very interesting.	4.59	0.53	3.33	0.83	6.40
66	I would never take a job where I had to work with ICT.	4.65	0.57	3.07	0.90	7.42
67	ICT makes me uncomfortable because I don't understand it.	3.88	0.81	2.70	0.94	4.75
68	I enjoy life which is easier and faster running by ICT.	4.49	0.60	3.17	0.87	6.25

69	I don't think I could handle the ICT operation because it is frustrating to work with.	4.52	0.80	3.32	1.08	4.46
70	The challenge of solving problems with ICT does not appeal to me.	4.65	0.69	3.32	1.09	5.15
71	I dislike ICT because when there is a problem with ICT run, I can't immediately solve.	4.45	0.77	3.28	1.08	4.41
72	I enjoy spending much time working with ICT.	4.47	0.77	3.16	0.99	5.22
73	Once I start to work with ICT, I would find it hard to stop.	4.27	0.68	3.03	1.17	4.58
74	I don't enjoy talking with others about ICT.	4.42	0.70	3.23	1.04	4.75
75	If given the opportunity, I would like to learn and use ICT more.	3.66	0.86	2.43	0.98	4.72
<b>(4) ICT Usefulness</b>						
76	ICT can't help me to solve any really important problems.	4.65	0.55	3.69	0.68	5.49
77	I feel ICT is a useful tool in both my modern living and my work setting.	4.32	0.66	3.37	0.83	4.48
78	ICT helps me to create extremely large amount of information.	3.98	0.77	2.84	0.91	4.78
79	I can know and learn more from ICT than I can do from books.	4.65	0.60	3.35	1.06	5.34
80	ICT is useful in dissemination of information.	3.77	0.84	2.64	0.95	4.46
81	ICT gives opportunity for me to have more experience.	4.50	0.74	3.42	0.77	5.06
82	I prefer using ICT because it improves accuracy, provide complicated analysis and deliver alternatives.	4.18	0.66	2.88	0.95	5.62
83	Gathering data for work is simple by using ICT.	3.64	0.84	2.16	0.94	5.87
84	There are many more important tasks in my life than working with ICT applications.	4.39	0.60	3.38	0.78	5.13
85	ICT enables most effective ways of resource sharing and exchanging information.	3.87	0.77	2.28	0.90	6.71

86	ICT helps me to improve my better work and more productivity.	4.41	0.83	3.06	1.10	4.90
87	ICT can enhance the presentation of my work to a degree which justifies the extra effort.	4.69	0.67	3.36	1.10	5.16
88	ICT motivates the workforce to work effectively.	4.61	0.70	3.56	0.88	4.67
89	ICT saves time of workforce in may ways.	3.74	0.81	2.5	0.93	5.03
90	Knowing how to work with ICT will increase the job possibilities.	4.26	0.70	3.19	1.07	4.18
91	Learning to operate ICT is like learning any new skill, the more I practice, the better I become a worthwhile skill.	4.54	0.73	3.36	0.96	4.89
92	The use of ICT creates more interaction between me and others.	4.42	0.79	3.3	0.95	4.53
93	Working with ICT means working on my own, without contact with others.	4.46	0.73	3.18	1.05	5.00
94	Usefulness of ICT has helped to increase the efficiency of several organization and business works.	4.42	0.79	3.3	0.85	4.83
95	I can't think of any way that I will use ICT in my career.	4.45	0.83	2.98	0.9	6.00
96	ICT can be used for designing better and effective routine work.	3.83	0.84	2.74	0.96	4.27
97	ICT can be used to organize my administrative work in a better way.	4.58	0.96	3.11	1.14	4.93
98	The overuse of the ICT may be harmful and damaging to humans.	4.65	0.61	3.16	0.89	6.90
99	Having ICT available to me would improve the overall quality of life and general satisfaction.	4.16	0.91	2.96	1.09	4.23
100	ICT helps me to improve the performance of government organizations in many ways.	4.36	0.74	3.28	1.08	4.12
101	ICT can be useful for improving many areas of the government service.	3.41	0.97	3.06	1.13	1.18

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Commercial affairs personnel' attitudes toward ICT were assessed using a 100-item pilot form of a scale that received a value-t of more than 1.96, which indicates that the given statements differentiated between higher and lower groups. Only one statement (statement 101) had an at-score lower than 1.96, and that was the exception. With the help of 100 statements from the Scale that measures commercial affairs personnel's attitude toward ICT, researchers were better equipped to collect data.

### **3.6.9.3 Establishment of trustworthiness:**

Reliability is a term that refers to the state in which a measurement technique produces consistent ratings over repeated measurements (given unaltered measurable phenomena). When a psychological test is used to assess a characteristic or behavior, reliability is critical (Rosenthal & Rosnow, 2001) [22]. In other words, dependability refers to the degree to which measurements can be repeated — whether they are performed by different individuals on different occasions, under different conditions, and using allegedly alternative devices that measure the same item. In summary, dependability is defined as measurement consistency (Bollen, 2009) [23] or measurement stability in a variety of conditions in which essentially the same results should be achieved (Nunnally, 2008) [24].

Reliability is defined as "the consistency with which a test provides the same findings when measuring whatever it measures" by Remmers and Gage (2007) [25]. The definition states that the Scale's scores should be stable if given to the same person repeatedly. On two independent occasions, the dependable test yields the same results. To achieve test

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dependability, it is necessary to ensure that the test is stable concerning the elements that operate between the first and second tests. A weak or insignificant correlation implies that the time interval influences the variables. However, the test must deal with people in various moods and at different points in time, so perfect reliability remains a challenge.

No matter how many times the same test is used to check cores, "reliability refers to a person's capacity to consistently obtain the same cores at the same time." To summarise, the reliability of a scale must be satisfactorily proved. Scales are useless unless they can be relied upon.

Table 3.9 displays the correlation computed using the product-moment approach for establishing the Scale's reliability used to assess the attitude of the commercial enterprise's workforce toward ICT.

**TABLE 3.9**  
**TEST-RETEST RELIABILITY OF THE SCALE WHICH MEASURES THE**  
**STANCE TOWARDS ICT OF COMMERCIAL AFFAIR'S WORKFORCE**

<b>Facets and Statements in the Scale which Measures The Stance towards ICT of Commercial Affairs Workforce</b>		<i>r<sub>xy</sub></i>
1	ICT Anxiety	0.91
2	ICT Confidence	0.92
3	ICT Liking	0.89
4	ICT Usefulness	0.90
	<b>Total</b>	<b>0.91</b>

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The final form of the Scale that evaluates the attitude of the commercial affairs workforce toward ICT is shown in Table 3.10.

**TABLE 3.10**  
**NUMERAL STATEMENTS INCORPORATED IN EACH FACET IN THE**  
**FINAL FORM OF THE SCALE WHICH MEASURES THE STANCE**  
**TOWARDS ICT OF**  
**COMMERCIAL AFFAIR'S WORKFORCE**

No.	Facets of the Stance towards ICT of Commercial Affairs Workforce	Numeral Statements		
		Positive	Negative	Total
1	ICT Anxiety	01	24	25
2	ICT Confidence	20	05	25
3	ICT Liking	12	13	25
4	ICT Usefulness	21	04	25
	<b>Total</b>	<b>54</b>	<b>46</b>	<b>100</b>

As illustrated in Table 3.10, there are 100 statements in the final form of the Scale that assesses the commercial affairs workforce's attitude toward ICT. There are four dimensions to the attitude toward ICT. Twenty-five statements were included in the facet of ICT anxiety. In contrast, the remaining twenty-five, twenty-five, and twenty-five statements were included in the facets of ICT confidence, ICT like, and ICT usefulness.

The details of the number statements used in the final form of the Scale used to assess the workforce's attitude toward ICT are shown in Table 3.11.

**TABLE 3.11**  
**DETAILS OF NUMERAL STATEMENTS INCORPORATED IN THE FINAL**  
**FORM OF THE SCALE WHICH MEASURES THE STANCE TOWARDS**  
**ICT OF COMMERCIAL AFFAIR'S WORKFORCE**

No.	Facets of the Stance towards ICT	Numeral Statements				Grand Total
		Positive		Negative		
		Statement No.	Total	Statement No.	Total	
1	ICT Anxiety	14	1	1-13, 15-25	24	25
2	ICT Confidence	26, 28, 30-43, 46-47, 49-50,	20	27, 29, 44-45, 48	05	25
3	ICT Liking	51-52, 55-56, 60, 62, 64-65, 68, 72-73, 75	12	53-54, 57-59, 61, 63, 66-67, 69-71, 74	13	25
4	ICT Usefulness	77-92, 94, 96-97, 99-100	21	76, 93, 95, 98	04	25
	<b>Total</b>	<b>54</b>		<b>46</b>		<b>100</b>

As shown in Table 3.11, the final form of the Scale contains 100 statements that reflect the workforce's attitude toward ICT. There are four dimensions to the attitude toward ICT. Twenty-five statements were included in the facet of ICT anxiety. In contrast, the remaining twenty-five, twenty-five, and twenty-five statements were included in the facets of ICT confidence, ICT like, and ICT usefulness. There were 54

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affirmative statements and 46 negative remarks. The final scale form used to assess the workforce's attitude toward ICT is provided in Appendix D.

### **3.7 ASSESSMENT OF THE POPULATION AND A SAMPLE:**

#### **3.7.1 THE STUDY'S POPULATION:**

"A population is any collection of individuals who share one or more characteristics that the researcher is interested in," says John W. Best (2003) [35]. All individuals of a particular type or a subset of those individuals may constitute the population. It is necessary to select a subset of a larger population for study for research purposes.

Sing Sidhu (2005) states that "the entirety of the things or individuals about whom conclusions are derived in a sampling investigation is defined as a population." "Any collection of people that share one or more features that interest the researcher" is how one defines a population."

Borg and Gall (2003) [37] define population or universe as "all members of a real or imaginary group of people, events, or things concerning which we intend to generalize the outcomes of our research."

Researchers strive to arrive at results and develop conclusions that are true for the population. However, researchers can quantify every individual. It appears to be an enormous effort in time, energy, and money. The researcher must employ a strategy that enables accurate and reliable population estimation. The extent to which these estimates are

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valid about the current population, of which the sample is a subset. It is contingent upon its being representative of the people.

The population of this study was the workforce in commercial affairs in India in the year 2020-2021.

### **3.7.2 THE STUDY'S SAMPLE:**

If you want to analyze a population, you must select a sample. The characteristics of the sample can be used to infer information about the population from which it was drawn.

It is a frequent misconception that samples are picked at random; rather, they are chosen in a planned manner to allow for chance or the action of probability.

The sample for the study was chosen using stratified random sampling. The following are the steps involved in this study's stratified random sampling:

#### **Step 1:**

It is separated into five distinct regions: the northern, western, central, eastern, and southern. Each state in India has a different number of workers employed by commercial firms:

#### **TABLE 3.12 NUMBER OF COMMERCIAL AFFAIRS OFFICES AND COMMERCIAL AFFAIRS WORKFORCES IN EACH DISTRICT OF INDIA**

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No.	Different Parts of Thailand	Numeral Office of Commercial Affairs	Numeral Commercial Affairs's Workforce
1	Northern part	14	0644
2	Western part	20	0920
3	Central part	22	3800
4	Eastern part	07	0340
5	Southern part	14	0658
	Total	77	6362

As seen in Table 3.12, India is divided into five regions. 14 commercial offices are located in northern India, while the remaining 20, 22, 7, and 14 commercial offices are located in the country's western, central, eastern, and southern parts. 644 commercial affairs employees are assigned to various commercial affairs offices in the northern portion. In contrast, the remaining 920, 3800, 340, and 658 commercial affairs employees are assigned to commercial affairs offices in the western, central, eastern, and southern parts.

### **Step 2:**

To estimate the sample size, the researcher turns the data into a table based on the recommendations of Krejcie and Morgan (2000) [39]. The facts regarding the number of commercial affairs workforce in each region of India selected according to the table of sample size for the present study are in Table 3.13.

TABLE 3.13 WORKFORCE FOR COMMERCIAL AFFAIRS IN EACH PART OF INDIA SELECTED BY THE TABLE OF SAMPLE SIZE

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Different Parts of Thailand	Numeral Commercial Affair's Workforce	Numeral Sample According to Table of Size of Sample
Northern part	0644	242
Western Part	0920	269
Central part	3800	351
Eastern part	0340	181
Southern part	0658	242
Total	6,362	1,285

As shown in Table 3.13, the commercial affairs workforce has a population of 6,362. From 6,362 employees, 1,285 are chosen according to the sample size table proposed by Krejcie and Morgan.

**Step 3:**

Simple random sampling was used to choose 13–26 employees from each commercial office (slot drawing). The personnel of numeral commercial affairs is detailed in Table 3.14.

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**TABLE 3.14**  
**NUMERAL WORKFORCE IN EACH OFFICE OF COMMERCIAL AFFAIRS**  
**SELECTED TO BE THE SAMPLE OF THE STUDY**

<b>Different Parts of Thailand</b>	<b>Numeral Commercial Office</b>	<b>Numeral Sample According to Table of Size of Sample</b>	<b>Numeral Selected Commercial Affairs Workforce</b>
Northern part	14	242	17-18
North-Eastern part	20	269	13-14
Central part	22	351	15-16
Eastern part	07	181	25-26
Southern part	14	242	17-18
<b>Total</b>	<b>77</b>	<b>1,285</b>	<b>Between 13-26</b>

As shown in Table 3.14, the total number of commercial affairs employees chosen as the study's sample is 1,285. According to Table Size of Sample (as suggested by Krejcie and Morgan), the numerical sample size of commercial affairs' workforce in the Northern part is 242. In contrast, the numerical sample size of commercial affairs' workforce in the North-Eastern, Central, Eastern, and Southern parts is 269, 351, 181, and 242, respectively.

Simple random sampling (slot drawing) was used to select the workforce of 17-18 commercial affairs from commercial offices in the Northern part, whereas simple random sampling (slot drawing) was used to select the workforce of 13-14, 15-16, 25-26, and 17-18 commercial affairs from

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commercial offices in the Western part, Central part, Eastern part, and Southern part.

As shown in Table 3.14, the survey sampled 1,285 commercial affairs employees from the commercial office. The workforce of 1,285 commercial enterprises was categorized as follows by sex, age, educational attainment, and work experience:

Table 3.15 shows the classification of number and percentage (%) of the sample according to the variables i.e.

- ❖ Sex (Male and female)
- ❖ Age (21-30 years, 31-40 years, 41-50 years, and 51-60 years)
- ❖ Educational qualification (Lower than Bachelor degree, Bachelor degree, and Master degree onwards)
- ❖ Work experience (01-10 years, 11-20 years, 21-30 years, and 31-40 years)

**TABLE 3.15**  
**CLASSIFICATION OF THE SAMPLE ACCORDING TO VARIABLES**  
**(TOTAL NUMBER = 1,285)**

Variables	Numeral Commercial Affair's Workforce	Percentage (%)
(1) Sex		
❖ Male	379	29.49 %
❖ Female	906	70.51 %
(2) Age		
❖ 21-30 years	065	05.06 %
❖ 31-40 years	339	26.38 %
❖ 41-50 years	475	36.96 %
❖ 51-60 years	406	31.60 %
(3) Educational qualification		
❖ Lower than Bachelor degree	078	06.07 %
❖ Bachelor degree	660	51.36 %
❖ Master degree onwards	547	42.57 %
(4) Work experience		
❖ 01-10 years	067	05.21 %
❖ 11-20 years	333	25.91 %
❖ 21-30 years	460	35.80 %
❖ 31-40 years	425	33.08 %

As shown in Table 3.15, the total workforce for the numbered commercial affair was 1,285. The whole numerical commercial enterprise personnel can be categorized according to gender, age,

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educational attainment, and work experience. Males made up 379 (29.49%) of the commercial affair's workforce, while females made up 906 (70.51%). 65 (5.06 percent) of the commercial enterprise's employees were between the ages of 21 and 30, while the remaining 339 (26.38 percent), 475 (36.96 percent), and 406 (31.60 percent) of the commercial enterprise's workforce were between the ages of 31-40 years, 41-50 years, and 51-60 years. 78 (6.07 percent) of commercial enterprises' employees were classified as having less than a bachelor's degree, while the remaining 660 (51.36 percent) and 547 (42.57 percent) classified as having a bachelor's degree or above. There were 67 (5.21 percent) commercial affairs workforce members who had between one and ten years of work experience, while the remaining 333 (25.91 percent), 460 (35.80 percent), and 425 (33.08 percent) commercial affairs workforce members had between one and ten years of work experience.

Table 3.16 summarises the parameters for assessing the workforce's attitude toward ICT.

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**TABLE 3.16**  
**CRITERIA OF LEVELS OF THE STANCE TOWARDS ICT OF**  
**COMMERCIAL AFFAIR'S WORKFORCE**

Scores Obtained from the Scale	Mean Scores	Level of the Stance towards ICT of Commercial Affairs Workforce
100.00 - 180.00	1.00 - 1.49	Low
180.01 - 260.00	1.50 - 2.49	
260.01 - 340.00	2.50 - 3.49	Moderate
340.01 - 420.00	3.50 - 4.49	High
420.01 - 500.00	4.50 - 5.00	

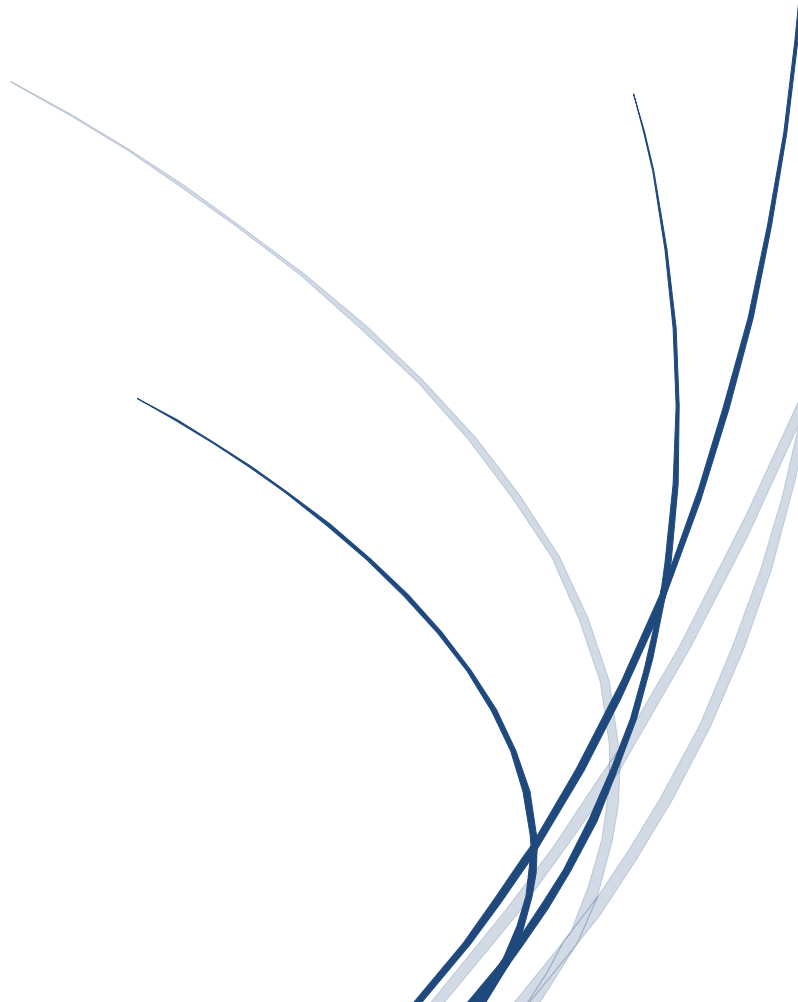
As shown in Table 3.16, scores were calculated after responses on a scale assessing the workforce's attitude toward ICT were gathered. The researcher used the criteria above to establish three categories of the commercial affairs workforce's attitude toward ICT, namely "high," "moderate," and "low."

The scores for the "Low" level of the commercial enterprise's workforce's attitude toward ICT range from 1.00 to 2.49, the scores for the "Moderate" level of the commercial enterprise's workforce range from 2.50 to 3.49, and the scores for the "High" level of the commercial enterprise's workforce range from 3.50 to 5.00 (Boonchom Srisa-ard and Boonsong Nilkaew, 2002) [41 ].



# *CHAPTER 4*

## **DATA ANALYSIS AND EXPLANATION**



## CHAPTER 4

### DATA ANALYSIS AND EXPLANATION

#### 4.1 PROLOGUE:

The fourth chapter discussed the analysis and interpretation of data. The primary objective of this study was to ascertain the attitude of the commercial enterprise's employees toward ICT. The hypotheses were evaluated and the results interpreted using appropriate statistical techniques.

The researcher made a concerted effort to investigate the properties of the data and construct an analytic approach that was suited for the data using a computer (SPSS PC+ and Excel).

Mean ( $\bar{X}$ ), standard deviation (S.D), t-test (independent), ANOVA (analysis of variance), and Studentized Range Statistic Test were used to investigate the null hypotheses ( $q$ ).

The researcher intended to divide the outcomes of the data analysis into two sections:

(a) The tiers of attitudes toward ICT were determined by the commercial affairs workforce as a whole and classified by sex, age, educational attainment, and job experience.

(b) In a commercial enterprise with a diverse mix of sexes, ages, educational backgrounds, and job experience, employees were asked to rate their own attitudes about information and communications technology (ICT).

#### 4.2 ECHELONS OF A POSITION TOWARDS THE WORKFORCE OF THE ICT OF COMMERCIAL AFFAIRS:

To determine the echelon of attitudes toward ICT, which consisted of four dimensions, the mean ( $\bar{X}$ ) and standard deviation (S.D.) of the replies of

commercial affairs' personnel were determined. The analysis's findings were presented in terms of a total score and for each aspect of attitude toward ICT.

The scale contains 100 statements and assesses an individual's attitude toward ICT as judged by the commercial affairs staff. The data were scored by adding the weights allocated to the scale's statements. For the total score on the scale, which measures a respondent's attitude toward ICT as judged by the commercial affairs workforce, the maximum possible score was 500, and the smallest possible score was 100.

Here are four facets of a commercial enterprise's workforce's attitude toward information and communication technology, i.e.

ICT-related anxiety,

ICT-related confidence,

ICT-related liking, and

ICT-related usefulness.

The score was converted to the criterion specified in Chapter 3 to see if it reflects the echelon of commercial affairs staff's attitude toward information and communications technology (high, moderate, or low). The scale's number assertions, e.g. 25, 25, 25, and 25, are then used to split the score.

4.2.1 Echelons of an attitude toward ICT as judged by the workforce of a commercial enterprise in terms of overall score and other aspects (entire group sample):

The mean ( $\bar{X}$ ) and standard deviation (S.D.) were calculated to determine the strata of an attitude toward ICT stated by the workforce of commercial affairs. ICT anxiety, ICT confidence, ICT like, and ICT usefulness are the four dimensions of the workforce's attitude toward ICT. For a company's workforce ( $N$

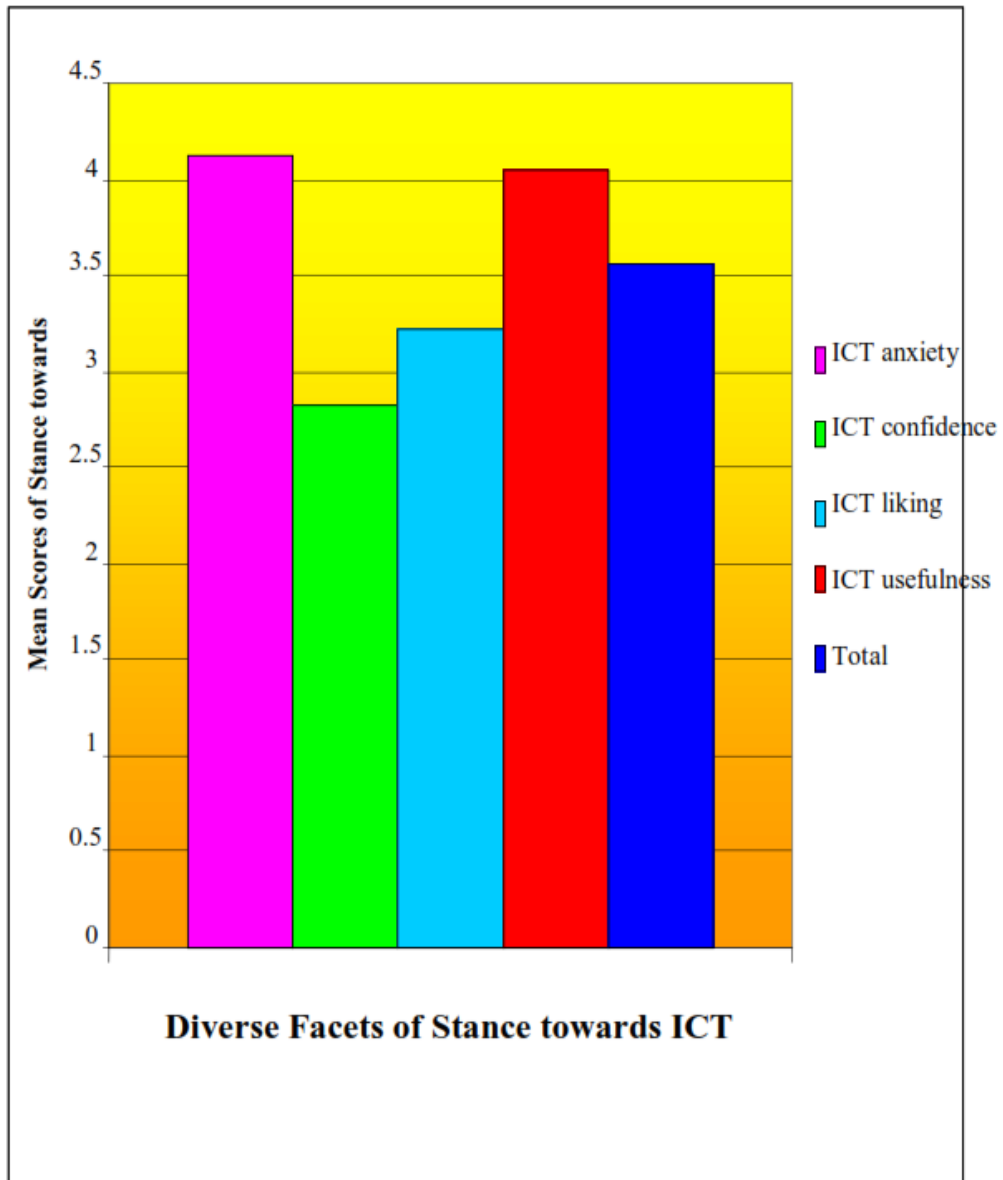
= 1285), total scores and aspect scores are shown. An interpretation of the data is provided in a table given below.

**TABLE 4.1**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**RATED THROUGH**  
**COMMERCIAL AFFAIR'S WORKFORCE**

No.	Stance Towards ICT	$\bar{X}$	S.D.	Echelon of Stance Towards ICT
1	ICT anxiety	4.12	0.96	High
2	ICT confidence	2.82	1.19	Moderate
3	ICT liking	3.22	1.13	Moderate
4	ICT usefulness	4.04	0.88	High
	<b>Total</b>	<b>3.55</b>	<b>1.04</b>	<b>High</b>

A mean score of 3.55 (SD = 1.04) was found after 1,285 commercial affairs personnel were polled about their views on information and communications technology, as shown in table 4.1.

To aid comprehension, graph 4.1 summarises the mean scores for attitudes toward ICT as reported by the commercial affairs workforce.



**GRAPH 4.1**  
**SUMMARY OF THE MEAN SCORES OF A STANCE TOWARDS ICT**  
**RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE IN TOTAL**  
**SCORE AND IN EACH FACET**

**TABLE 4.2**  
**MEAN AND STANDARD DEVIATION OF EACH STATEMENT OF A**  
**STANCE TOWARDS ICT (ICT ANXIETY) RATED THROUGH**  
**COMMERCIAL AFFAIR'S WORKFORCE**

No.	Stance towards ICT (ICT Anxiety)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
1	I feel insecure about my ability to use ICT.	4.25	0.94	High
2	I feel worry and uneasiness over my impending use of ICT.	4.26	0.96	High
3	I feel apprehensive about using ICT	4.11	0.99	High
4	I hesitate to use ICT for fear of making mistakes that I cannot correct.	4.22	0.87	High
5	I have phobia for ICT equipments.	3.89	1.08	High
6	I fear ICT can cause electric shock.	4.14	0.98	High
7	I get confused while operating ICT.	4.04	0.96	High
8	I am afraid virus on ICT tools can effect human being.	3.93	1.06	High
9	I always get scared with ICT.	3.96	1.03	High
10	I find using ICT very frustrating.	4.28	0.86	High
11	If given the opportunity to use ICT, I am afraid that I might damage it in some way.	4.03	1.02	High
12	I have unpleasant feeling of nervousness or distress when I use ICT.	4.15	0.93	High
13	ICT makes me feel uncomfortable.	4.12	0.97	High
14	Using ICT does not scare me at all.	4.08	0.88	High
15	I need an experienced person nearby when I use ICT.	4.23	1.00	High
16	Working with ICT makes me feel tense and uncomfortable.	4.09	0.97	High
17	Working with ICT would make me very nervous and frustrate.	4.02	0.89	High
18	Working with ICT makes me feel isolated from other people.	4.13	0.92	High

**TABLE 4.2 (CONTINUED)**

No.	Stance towards ICT (ICT Anxiety)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
19	I dislike working with ICT because It makes me confuse.	4.16	0.95	High
20	I have difficulty in understanding the technical facets of ICT.	4.29	0.97	High
21	I have avoided ICT because they are unfamiliar and somewhat intimidating to me.	4.10	1.01	High
22	I have feeling of frustration, failure and disappointment when I use ICT.	4.34	0.93	High
23	I don't feel threatened when others talk about ICT.	4.19	0.97	High
24	It wouldn't bother me at all to learn ICT.	4.08	0.89	High
25	ICT make me feel uneasy and confused.	3.91	1.09	High
	<b>Total</b>	<b>4.12</b>	<b>0.96</b>	High

As shown in Table 4.2, the total mean score for an attitude toward ICT (ICT anxiety) as reported by the commercial affairs workforce is 4.12 ( SD = 0.96), which is in the high echelon.

**TABLE 4.3**  
**MEAN AND STANDARD DEVIATION OF EACH STATEMENT OF A**  
**STANCE TOWARDS ICT (ICT CONFIDENCE) RATED THROUGH**  
**COMMERCIAL AFFAIR'S WORKFORCE**

No.	Stance towards ICT (ICT Confidence)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
26	I look forward to use ICT in my job with confidence.	2.62	1.25	Moderate
27	I do not think I would be able to improve my ICT skills.	2.93	1.13	Moderate
28	I feel that I will be able to keep up with the advances happening in the ICT field.	2.78	1.21	Moderate
29	I have difficulty in understanding the technical facets of ICT.	2.90	1.08	Moderate
30	I can locate and run an application on ICT programmes.	2.75	1.23	Moderate
31	I feel confident learning to use a variety of ICT tools.	2.89	1.24	Moderate
32	I can search for files on ICT systems and move files between drives.	2.66	1.29	Moderate
33	I can access information on CD/DVD and organize electronic files into folders.	2.84	1.26	Moderate
34	I have confidence in using simple word processing software in my work i.e. sort and filter data, modify colors of text, bold, italic etc.	2.63	1.23	Moderate
35	I have confidence to create basic presentation package using ICT tools.	2.81	1.25	Moderate
36	I have confidence to access an internet, download files, send and receive e-mail message.	2.67	1.26	Moderate
37	I have confidence to communicate online with others using instant messaging tools i.e. hotmail, yahoo, g-mail, MSN, Skye etc.	2.77	1.20	Moderate

**TABLE 4.3 (Continued)**

No.	Stance towards ICT (ICT Confidence)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
38	I have confidence to use the search engine i.e. Google, Altheweb, AltaVista, Surf Wax, Vivissimo, HotBot, etc.	2.79	1.12	Moderate
39	I have confidence to use a digital camera to capture images, and use the web camera to communicate on the internet.	2.91	1.19	Moderate
40	I have confidence to use scanner to copy images.	2.86	1.16	Moderate
41	I have confidence to set up and use Liquid Crystal Display (LCD) or Multimedia projector.	2.79	1.15	Moderate
42	I confidence I have a fair amount of ICT experiences.	2.87	1.16	Moderate
43	I feel more competent with ICT than some other people.	2.82	1.13	Moderate
44	If compared with other people, I know very little about ICT.	2.70	1.2	Moderate
45	I have very little sense of how ICT operates.	3.25	1.06	Moderate
46	I do not need someone to tell me the best way to use ICT.	2.72	1.27	Moderate
47	I find it easy to select appropriate ICT resources relate to vocation environment.	2.90	1.15	Moderate
48	I don't think I would do advanced ICT vocation.	2.89	1.17	Moderate
49	I am sure I could do effective vocation with the help of ICT.	2.91	1.11	Moderate
50	I have a lot of confidence when it comes to vocation with ICT.	2.84	1.17	Moderate
	<b>Total</b>	<b>2.82</b>	<b>1.19</b>	<b>Moderate</b>

As shown in Table 4.3, the total mean score for an attitude toward ICT (ICT confidence) as judged by the commercial affairs workforce is 2.82 ( SD = 1.19) which places it in the moderate echelon.

**TABLE 4.4**  
**MEAN AND STANDARD DEVIATION OF EACH STATEMENT OF A**  
**STANCE TOWARDS ICT (ICT LIKING) RATED THROUGH COMMERCIAL**  
**AFFAIR'S WORKFORCE**

No.	Stance towards ICT (ICT Liking)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
51	If given an opportunity, I would like to learn and use ICT in my vocation.	3.34	1.12	Moderate
52	I prefer getting information from a printed page instead of ICT.	3.25	1.16	Moderate
53	The frustrations created by ICT are more trouble than they are worth.	3.17	1.21	Moderate
54	The only way I would use ICT is if someone told me I had to do it.	3.23	1.14	Moderate
55	I think that the challenges of vocation using ICT is exciting.	3.21	1.14	Moderate
56	I think that working on ICT is a good way to use my spare time.	3.15	1.22	Moderate
57	I would like to learn about ICT if it is essential for my promotion.	3.29	1.16	Moderate
58	I would avoid taking a job if I knew it involved working with ICT tools.	3.16	1.10	Moderate
59	I only use ICT at my workplace when I am told to do it.	3.08	1.19	Moderate

**TABLE 4.4 (Continued)**

No.	Stance towards ICT (ICT Liking)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
60	I like to apply ICT regularly in my vocation environment.	3.26	1.13	Moderate
61	I dislike anything relevant information using ICT.	3.23	1.02	Moderate
62	I think that working with ICT would be enjoyable and stimulating.	3.15	1.12	Moderate
63	Learning about ICT is boring to me.	3.27	1.22	Moderate
64	I enjoy learning how ICT is used in my daily lives.	3.26	1.16	Moderate
65	Job using ICT would be very interesting.	3.35	1.01	Moderate
66	I would never take a job where I had to work with ICT.	3.15	1.05	Moderate
67	ICT makes me uncomfortable because I don't understand it	3.20	1.05	Moderate
68	I enjoy life which is easier and faster running by ICT.	3.04	1.19	Moderate
69	ICT is difficult to understands and frustrating to work with.	3.13	1.18	Moderate
70	The challenge of solving problems with ICT dos not appeal to me.	3.22	1.09	Moderate
71	I dislike ICT because when there is a problem with ICT run, I can't immediately solve.	3.27	1.20	Moderate
72	I enjoy spending much time working with ICT.	3.16	1.06	Moderate
73	Once I start to work with ICT, I would find it hard to stop.	3.27	1.20	Moderate
74	I don't enjoy talking with others about ICT.	3.29	1.10	Moderate
75	If given the opportunity, I would like to learn and use ICT more.	3.37	1.03	Moderate
	<b>Total</b>	<b>3.22</b>	<b>1.13</b>	Moderate

As shown in Table 4.4, the total mean score for an attitude toward ICT (ICT like) as judged by the commercial affairs workforce is 3.22 ( SD = 1.13), placing it in the moderate echelon.

**TABLE 4.5**  
**MEAN AND STANDARD DEVIATION OF EACH STATEMENT OF A**  
**STANCE TOWARDS ICT (ICT USEFULNESS) RATED THROUGH**  
**COMMERCIAL AFFAIR'S WORKFORCE**

No.	Stance towards ICT (ICT Usefulness)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
76	ICT can't help me to solve any really important problems.	3.71	1.02	High
77	I feel ICT is a useful tool in both my modern living and my vocation setting.	3.82	0.73	High
78	ICT helps me to create extremely large amount of information.	3.69	1.07	High
79	I can know and learn more from ICT than I can do from books.	3.74	0.87	High
80	ICT is useful in dissemination of information.	3.88	0.98	High
81	ICT gives opportunity for me to have more experience.	3.92	1.01	High
82	I prefer using ICT because it improves accuracy, provide complicated analysis and deliver alternatives.	3.77	0.99	High
83	Gathering data for vocation is simple by using ICT.	4.04	0.88	High

**TABLE 4.5 (Continued)**

No.	Stance towards ICT (ICT Usefulness)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
84	There are many more important tasks in my life than working with ICT applications.	3.66	1.05	High
85	ICT enables most effective ways of resource sharing and exchanging information.	3.55	1.10	High
86	ICT helps me to improve my better work and more productivity.	3.52	1.11	High
87	ICT can enhance the presentation of my vocation to a degree which justifies the extra effort.	3.13	1.06	Moderate
88	ICT motivates the workforce to work effectively.	4.48	0.73	High
89	ICT saves time of workforce in may ways.	4.36	0.82	High
90	I see ICT as something I will rarely use in my daily life.	4.42	0.76	High
91	Learning to operate ICT is like learning any new skill, the more I practice, the better I become a worthwhile skill.	4.59	0.65	High
92	The use of ICT creates more interaction between me and others.	4.51	0.77	High
93	Working with ICT means working on my own, without contact with others.	4.52	0.73	High
94	Usefulness of ICT has helped to increase the efficiency of several organization and business vocations.	4.54	0.73	High
95	I can't think of any way that I will use ICT in my career.	4.50	0.75	High
96	ICT can be used for designing better and effective routine vocation.	4.55	0.71	High
97	ICT can be used to organize my administrative vocation in a better way.	4.09	0.98	High
98	The overuse of the ICT may be harmful and damaging to humans.	4.01	0.81	High

**TABLE 4.5 (Continued)**

No.	Stance towards ICT (ICT Usefulness)	$\bar{X}$	S.D.	Echelon of Stance towards ICT
99	Having ICT available to me would improve the overall quality of life and general satisfaction.	4.05	0.86	High
100	ICT helps me to improve the performance of government organizations in many ways	3.95	0.90	High
	<b>Total</b>	<b>4.04</b>	<b>0.88</b>	High

As shown in Table 4.5, the total mean score for an attitude toward ICT (ICT Usefulness) as judged by commercial affairs' workforce is 4.04 ( SD = 0.88), which is in the upper echelon.

As the purpose of this research is to examine a company's workforce's attitude toward ICT, we surveyed employees from varied categories of sex, age, educational attainment, and job experience. Additionally, the following table clarified these variables.

4.2.2 The tiers of an attitude toward ICT as measured by the commercial affairs personnel grouped by sex:

The replies of male and female commercial affairs personnel were computed in terms of mean ( $\bar{X}$ ) and standard deviation (SD) to identify the echelon of an attitude toward ICT, which included of four dimensions ( S.D.).

Overall and other dimensions, as considered by the commercial affair's workforce grouped according to gender, are summarised in the tables 4.6–4.10.

**TABLE 4.6**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(TOTAL SCORE) RATED BY MALE AND FEMALE**  
**COMMERCIAL AFFAIR'S WORKFORCE**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (Total Score)	Male	379	3.49	1.01	Moderate
	Female	906	3.61	1.08	High
	<b>Total</b>	<b>1285</b>	<b>3.55</b>	<b>1.04</b>	<b>High</b>

As shown in Table 4.6, the numerical male commercial enterprise employs 379 people, whereas the numeral female commercial enterprise employs 906. The overall mean score for a male commercial affairs workforce's attitude toward ICT is 3.49 (SD = 1.01), which is in the moderate echelon, whereas the total mean score for a female commercial affairs workforce's attitude toward ICT is 3.61 (SD = 1.08), which is in the high echelon.

**TABLE 4.7**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT (ICT ANXIETY) RATED BY MALE AND FEMALE COMMERCIAL AFFAIR'S WORKFORCE**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Anxiety)	Male	379	4.08	0.98	High
	Female	906	4.16	0.95	High
	<b>Total</b>	<b>1285</b>	<b>4.12</b>	<b>0.96</b>	<b>High</b>

As shown in Table 4.7, the numerical male commercial enterprise employs 379 people, whereas the numeral female commercial enterprise employs 906.

**TABLE 4.8**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT CONFIDENCE) RATED BY MALE AND FEMALE**  
**COMMERCIAL AFFAIR'S WORKFORCE**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Confidence)	Male	379	2.75	1.25	Moderate
	Female	906	2.89	1.15	Moderate
	<b>Total</b>	<b>1285</b>	<b>2.82</b>	<b>1.19</b>	<b>Moderate</b>

As shown in Table 4.8, the numerical male commercial enterprise employs 379 people, whereas the numeral female commercial enterprise employs 906.

**TABLE 4.9**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT (ICT LIKING) RATED BY MALE AND FEMALE COMMERCIAL AFFAIR'S WORKFORCE**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Liking)	Male	379	3.15	1.27	Moderate
	Female	906	3.29	1.21	Moderate
	<b>Total</b>	<b>1285</b>	<b>3.22</b>	<b>1.13</b>	<b>Moderate</b>

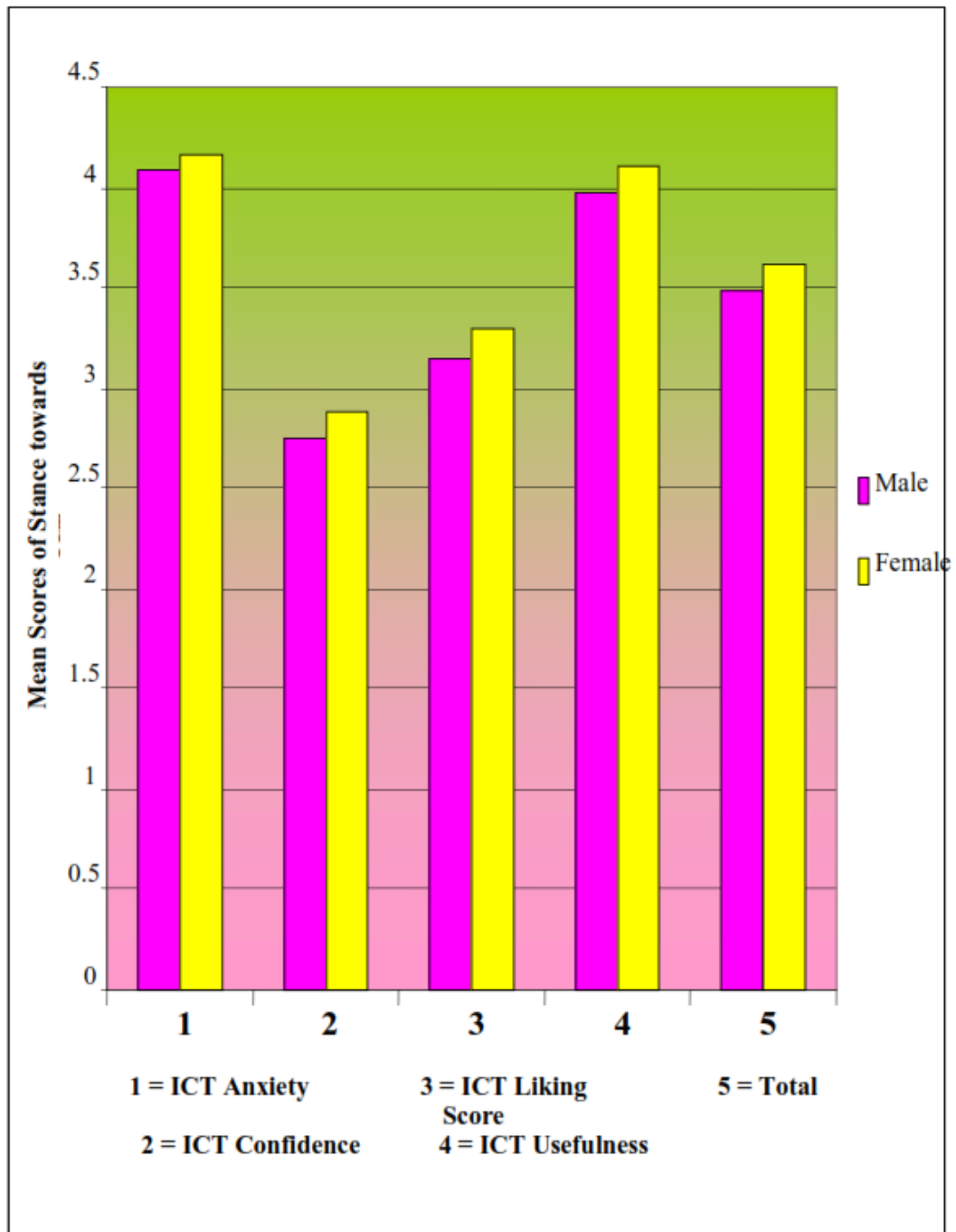
As shown in Table 4.9, the numerical male commercial enterprise employs 379 people, whereas the numeral female commercial enterprise employs 906.

**TABLE 4.10**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT USEFULNESS) RATED BY MALE AND FEMALE**  
**COMMERCIAL AFFAIR'S WORKFORCE**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Usefulness)	Male	379	3.98	1.14	High
	Female	906	4.10	1.02	High
	<b>Total</b>	<b>1285</b>	<b>4.04</b>	<b>0.88</b>	<b>High</b>

As shown in Table 4.10, the numerical male commercial enterprise employs 379 people, while the numeral female commercial enterprise employs 906.

To aid comprehension, graph 4.2 depicts the mean scores for an attitude toward ICT in overall and in several dimensions as reported by male and female commercial affairs employees.



**GRAPH 4.2**  
**MEAN SCORES OF STANCE TOWARDS ICT IN TOTAL SCORE AND IN**  
**DIVERSE FACETS RATED BY MALE AND FEMALE**  
**COMMERCIAL AFFAIR'S WORKFORCE**

4.2.3 The tiers of an attitude toward ICT as judged by the employees of commercial enterprises representing varied age groups:

Mean ( $\bar{X}$ ) and standard deviation (SD) were used to compute the echelon of an attitude toward ICT, which included four dimensions (i.e., 21-30 years, 31-40 years, 41-50 years, and 51-60 years) from commercial firm personnel (S.D.).

Table 4.11 – 4.15 summarises the total mean score for an attitude toward ICT in terms of overall score and other aspects as judged by commercial enterprise's personnel classified by age groups.

**TABLE 4.11**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

<b>Stance Towards ICT</b>	<b>Variable (Age-Group)</b>	<b>N</b>	$\bar{X}$	<b>S.D.</b>	<b>Echelon of Stance</b>
<b>Stance Towards ICT (Total Score)</b>	21-30 Years	065	3.69	0.97	High
	31-40 Years	339	3.67	1.01	High
	41-50 Years	475	3.47	1.05	Moderate
	51-60 Years	406	3.37	1.09	Moderate
	<b>Total</b>	<b>1285</b>	<b>3.55</b>	<b>1.04</b>	<b>High</b>

As shown in Table 4.11, the numerical commercial enterprise workforce is 65 years old for those aged 21-30, while the numeral commercial enterprise workforce for those aged 31-40, 41-50, and 51-60 years is 339, 475, and 406.

There are three distinct groups of workers in the commercial enterprise workforce: those aged 21-30, those aged 31-40, and those aged 41-50. The total mean score for each group is 3.69 (SD = 0.97), which is in the upper echelon of the scale, whereas the total mean score for each group is 3.67 (SD = 1.01), 3.47 (SD = 1.05), and 3.37, respectively.

**TABLE 4.12**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Stance Towards ICT	Variable (Age-Group)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Anxiety)	21-30 Years	065	3.48	1.17	Moderate
	31-40 Years	339	4.09	1.09	High
	41-50 Years	475	4.42	1.02	High
	51-60 Years	406	4.49	0.95	High
	<b>Total</b>	<b>128</b>	<b>5</b>	<b>4.12</b>	<b>0.96</b>

As shown in Table 4.12, the numerical commercial enterprise workforce is 65 years old for those aged 21-30, while the numeral commercial enterprise workforce for those aged 31-40, 41-50, and 51-60 years is 339, 475, and 406.

**TABLE 4.13**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Stance Towards ICT	Variable (Age-Group)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Confidence)	21-30 Years	065	3.40	0.82	Moderate
	31-40 Years	339	2.97	0.94	Moderate
	41-50 Years	475	2.47	1.01	Low
	51-60 Years	406	2.44	1.11	Low
	<b>Total</b>	<b>128</b>	<b>5</b>	<b>2.82</b>	<b>1.19</b>

As shown in Table 4.13, the numerical commercial enterprise workforce is 65 years old for those aged 21-30, while the numeral commercial enterprise workforce for those aged 31-40, 41-50, and 51-60 years is 339, 475, and 406.

**TABLE 4.14**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE**  
**BELONGING TO DIVERSE AGE-GROUPS**

<b>Stance Towards ICT</b>	<b>Variable (Age-Group)</b>	<b>N</b>	$\bar{X}$	<b>S.D.</b>	<b>Echelon of Stance</b>
<b>Stance Towards ICT (ICT Liking)</b>	21-30 Years	065	3.60	0.82	High
	31-40 Years	339	3.51	0.90	High
	41-50 Years	475	2.98	1.03	Moderate
	51-60 Years	406	2.79	1.10	Moderate
	<b>Total</b>	<b>1285</b>	<b>3.22</b>	<b>1.13</b>	<b>Moderate</b>

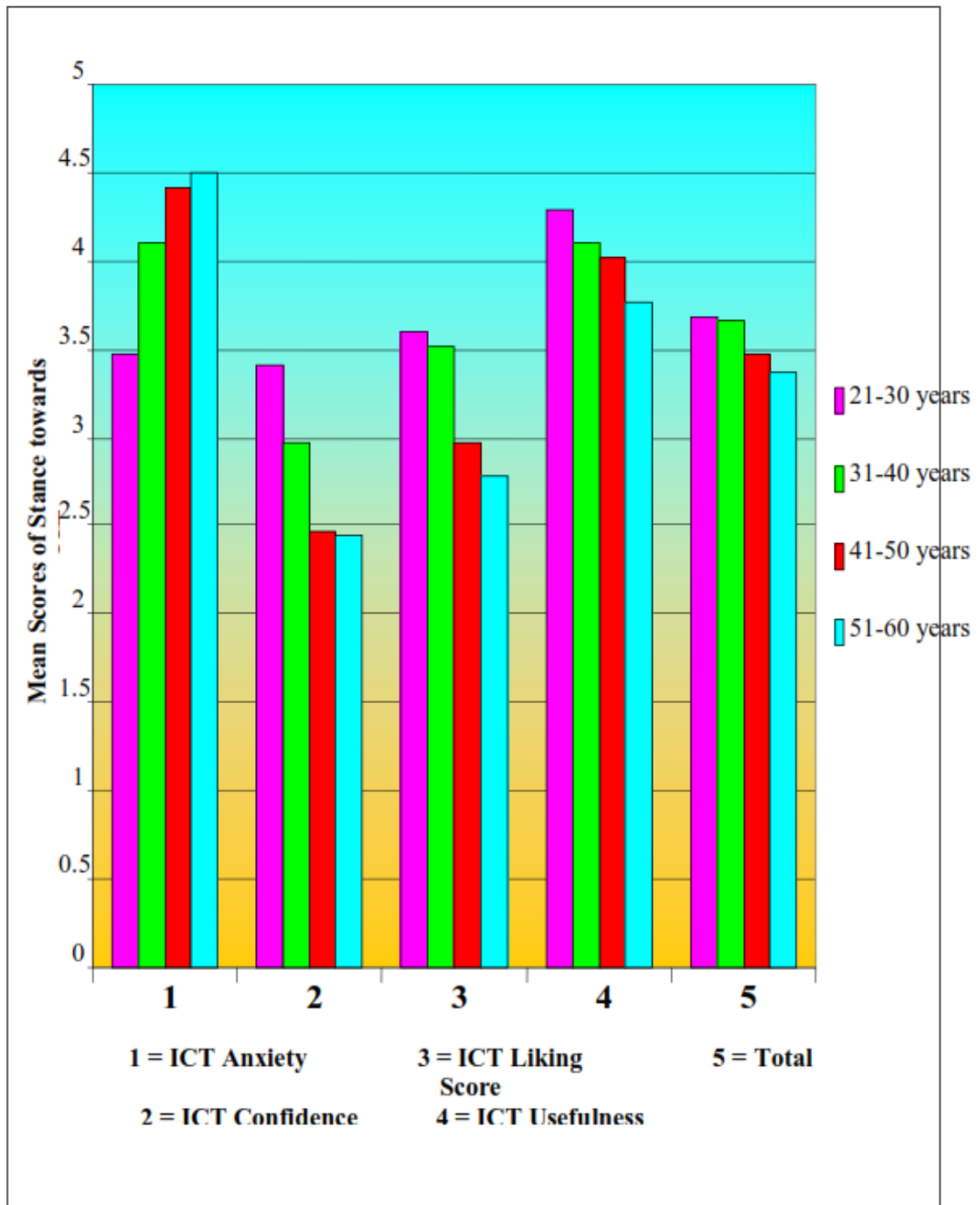
According to table 4.14, the numerical commercial enterprise workforce is 65 years old, whereas the numeral commercial enterprise workforce is 339, 475, and 406.

**TABLE 4.15**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Stance Towards ICT	Variable (Age-Group)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Usefulness)	21-30 Years	065	4.28	0.79	High
	31-40 Years	339	4.11	0.88	High
	41-50 Years	475	4.01	1.13	High
	51-60 Years	406	3.76	1.10	High
	<b>Total</b>	<b>1285</b>	<b>4.04</b>	<b>0.88</b>	<b>High</b>

As shown in Table 4.15, the numeral commercial enterprise workforce is 65 years old for those aged 21-30, while the numeral commercial enterprise workforce for those aged 31-40, 41-50, and 51-60 years is 339, 475, and 406.

To aid comprehension, graph 4.3 depicts the mean scores for a positive attitude toward ICT in total and in several dimensions as reported by commercial enterprise employees of various age groups.



**GRAPH 4.3**

**MEAN SCORES OF STANCE TOWARDS ICT IN TOTAL SCORE AND IN DIVERSE FACETS RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

4.2.4 The tiers of an attitude toward ICT are determined by the educational qualifications of the commercial enterprise's staff:

An attitude toward ICT, which was divided into four dimensions, was analysed using the mean ( $\bar{X}$ ) and standard deviation (SD) of responses from commercial enterprise employees with various educational qualifications (i.e. less than a bachelor's degree, a bachelor's degree, and a master's degree or higher) ( S.D.)

The mean scores for a commercial enterprise's employee's attitude toward ICT are shown in Table 4.16–4.20. The workforce comes from a variety of educational backgrounds.

**TABLE 4.16**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL**  
**QUALIFICATION**

<b>Stance Towards ICT</b>	<b>Variable (Educational Qualification)</b>	<b>N</b>	$\bar{X}$	<b>SD.</b>	<b>Echelon of Stance</b>
<b>Stance Towards ICT (Total Score)</b>	Lower than Bachelor Degree	078	3.29	1.17	Moderate
	Bachelor Degree	660	3.66	1.06	High
	Master Degree Onwards	547	3.70	0.91	High
	<b>Total</b>	<b>1285</b>	<b>3.55</b>	<b>1.04</b>	<b>High</b>

As shown in Table 4.16, the numerical commercial enterprise workforce

comprises 78 individuals with less than a bachelor's degree, 660 individuals with a bachelor's degree, and 547 individuals with a master's degree or higher.

**TABLE 4.17**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT (ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

Stance Towards ICT	Variable (Educational Qualification)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Anxiety)	Lower than Bachelor Degree	078	4.60	0.61	High
	Bachelor Degree	660	4.55	0.83	High
	Master Degree Onwards	547	3.21	0.69	Moderate
	<b>Total</b>	<b>1285</b>	<b>4.12</b>	<b>0.96</b>	<b>High</b>

As shown in Table 4.17, the numerical commercial enterprise workforce comprises 78 individuals with less than a bachelor's degree, 660 individuals with a bachelor's degree, and 547 individuals with a master's degree or higher.

**TABLE 4.18**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL**  
**QUALIFICATION**

Stance Towards ICT	Variable (Educational Qualification)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Confidence)	Lower than Bachelor Degree	078	2.21	1.07	Low
	Bachelor Degree	660	2.69	0.96	Moderate
	Master Degree Onwards	547	3.56	0.78	High
	<b>Total</b>	<b>1285</b>	<b>2.82</b>	<b>1.19</b>	<b>Moderate</b>

As shown in Table 4.18, the numerical commercial enterprise workforce comprises 78 individuals with less than a bachelor's degree, 660 individuals with a bachelor's degree, and 547 individuals with a master's degree or higher.

**TABLE 4.19**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT (ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

Stance Towards ICT	Variable (Educational Qualification)	N	$\bar{X}$	SD.	Echelon of Stance
Stance Towards ICT (ICT Liking)	Lower than Bachelor Degree	078	2.68	1.15	Moderate
	Bachelor Degree	660	3.33	1.02	Moderate
	Master Degree Onwards	547	3.65	0.90	High
	<b>Total</b>	<b>1285</b>	<b>3.22</b>	<b>1.13</b>	<b>Moderate</b>

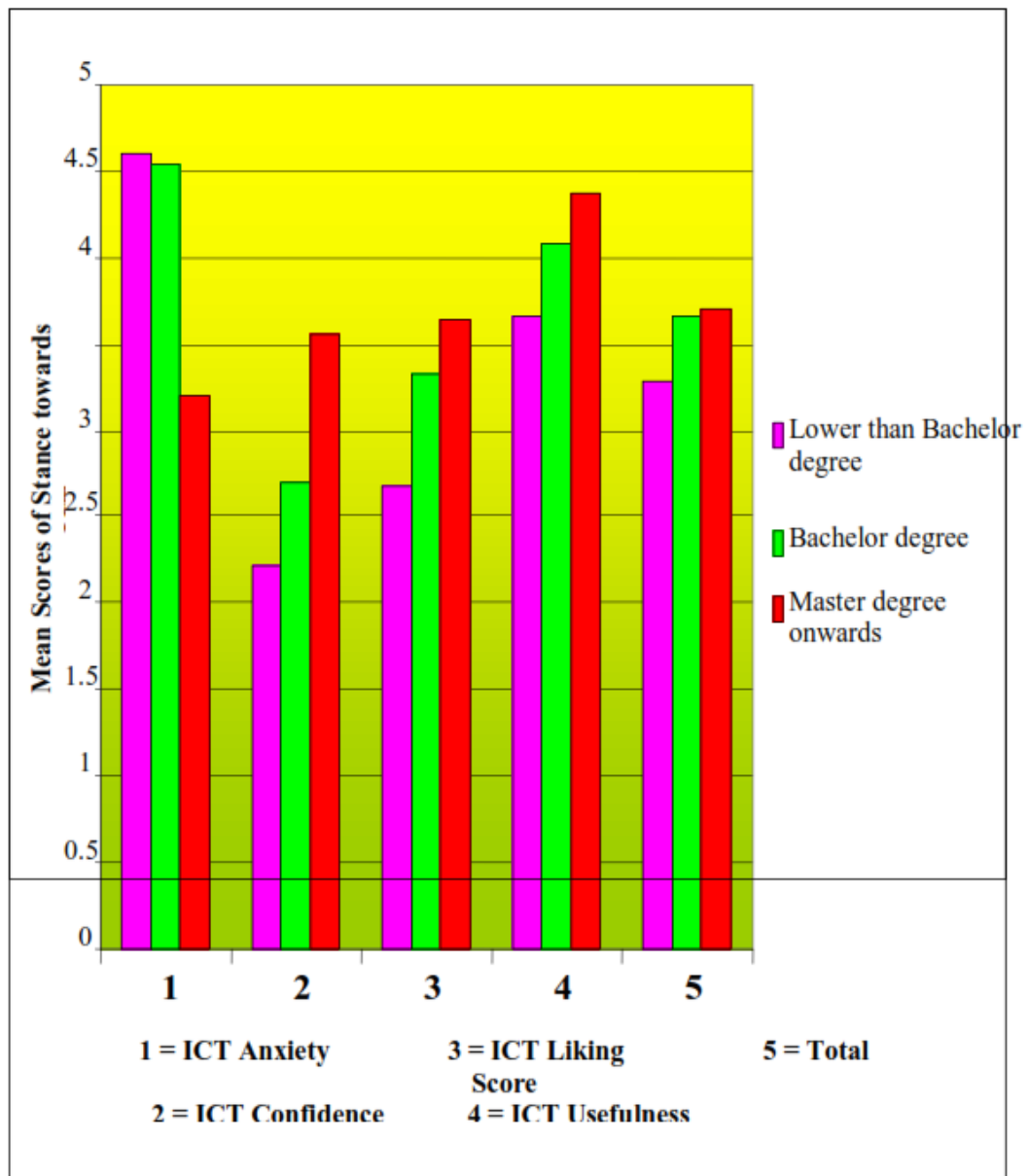
As shown in Table 4.19, the numerical commercial enterprise workforce comprises 78 individuals with less than a bachelor's degree, 660 individuals with a bachelor's degree, and 547 individuals with a master's degree or higher.

**TABLE 4.20**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE**  
**BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

<b>Stance Towards ICT</b>	<b>Variable (Educational Qualification)</b>	<b>N</b>	$\bar{X}$	<b>SD.</b>	<b>Echelon of Stance</b>
<b>Stance Towards ICT (ICT Usefulness)</b>	Lower than Bachelor Degree	078	3.67	1.13	High
	Bachelor Degree	660	4.07	1.03	High
	Master Degree Onwards	547	4.38	0.92	High
	<b>Total</b>	<b>1285</b>	<b>4.04</b>	<b>0.88</b>	<b>High</b>

As shown in Table 4.20, the numerical commercial enterprise workforce comprises 78 individuals with less than a bachelor's degree, 660 individuals with a bachelor's degree, and 547 individuals with a master's degree or above.

To aid comprehension, graph 4.4 depicts the mean score for an attitude toward ICT in overall and in several dimensions as judged by commercial enterprise employees with varying levels of educational degree.



**GRAPH 4.4**  
**MEAN SCORES OF STANCE TOWARDS ICT IN TOTAL SCORE AND IN DIVERSE FACETS RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

4.2.5 The tiers of an attitude toward ICT are determined by the commercial affairs workforce's different years of work experience:

The replies of commercial enterprise employees with varied years in the workforce (i.e. 01-10 years, 11-20 years, 21-30 years, and 31-40 years) were evaluated in terms of mean ( $\bar{X}$ ) and standard deviation to estimate the echelon of an attitude toward ICT, which included four aspects (S.D.).

Table 4.21 – 4.25 summarises the total mean score for an attitude toward ICT in terms of overall score and other characteristics as judged by commercial enterprise's employees with varying years of vocation experience.

**TABLE 4.21**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION**  
**EXPERIENCE**

<b>Stance Towards ICT</b>	<b>Variable (Vocation Experience)</b>	<b>N</b>	$\bar{X}$	<b>S.D.</b>	<b>Echelon of Stance</b>
<b>Stance Towards ICT (Total Score)</b>	01-10 Years	067	3.78	0.93	High
	11-20 Years	333	3.65	1.03	High
	21-30 Years	460	3.45	1.07	Moderate
	31-40 Years	425	3.32	1.16	Moderate
	<b>Total</b>	<b>1285</b>	<b>3.55</b>	<b>1.04</b>	<b>High</b>

As shown in Table 4.21, the numeral commercial enterprise workforce with 1-10 years of experience is 67, whereas the numeral commercial enterprise workforce with 11-20 years, 21-30 years, and 31-40 years of experience is 333, 460, and 425.

**TABLE 4.22**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION**  
**EXPERIENCE**

Stance Towards ICT	Variable (Vocation Experience)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Anxiety)	01-10 Years	067	3.46	1.22	Moderate
	11-20 Years	333	3.86	1.15	High
	21-30 Years	460	4.48	0.98	High
	31-40 Years	425	4.68	0.93	High
	<b>Total</b>	<b>1285</b>	<b>4.12</b>	<b>0.96</b>	<b>High</b>

As shown in Table 4.22, the numeral commercial enterprise workforce with 1-10 years of experience is 67, whereas the numeral commercial enterprise workforce with 11-20 years, 21-30 years, and 31-40 years of experience is 333, 460, and 425.

**TABLE 4.23**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION**  
**EXPERIENCE**

<b>Stance Towards ICT</b>	<b>Variable (Vocation Experience)</b>	<b>N</b>	$\bar{X}$	<b>S.D.</b>	<b>Echelon of Stance</b>
<b>Stance Towards ICT (ICT Confidence)</b>	01-10 Years	067	3.39	0.79	Moderate
	11-20 Years	333	3.04	0.95	Moderate
	21-30 Years	460	2.47	1.01	Low
	31-40 Years	425	2.38	1.18	Low
	<b>Total</b>	<b>1285</b>	<b>2.82</b>	<b>1.19</b>	<b>Moderate</b>

As shown in Table 4.23, the numeral commercial enterprise workforce with 1-10 years of experience is 67, whereas the numeral commercial enterprise workforce with 11-20 years, 21-30 years, and 31-40 years of experience is 333, 460, and 425.

**TABLE 4.24**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE**  
**BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

Stance Towards ICT	Variable (Vocation Experience)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Liking)	01-10 Years	067	4.00	0.85	High
	11-20 Years	333	3.59	0.80	High
	21-30 Years	460	2.83	1.02	Moderate
	31-40 Years	425	2.46	1.06	Low
	<b>Total</b>	<b>128</b>	<b>5</b>	<b>3.22</b>	<b>1.13</b>

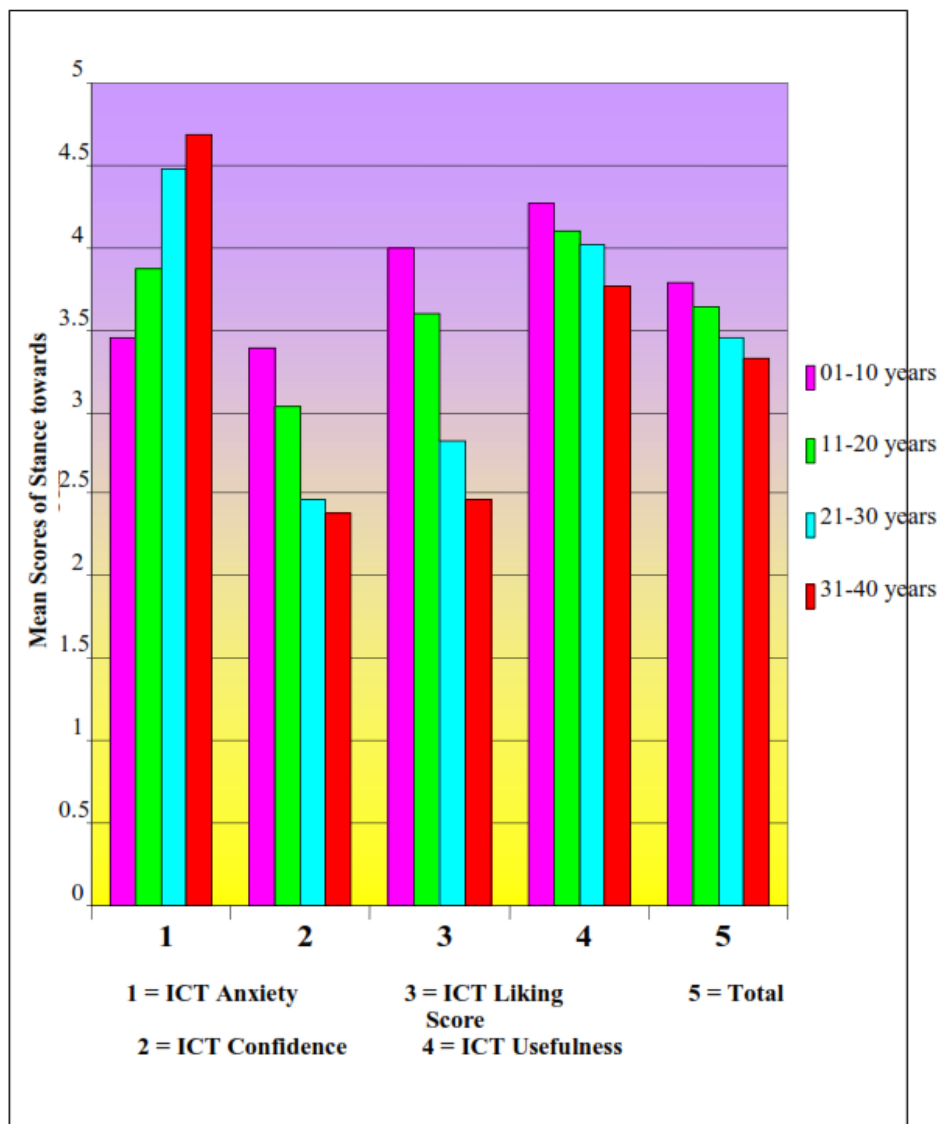
As shown in Table 4.24, the numeral commercial enterprise workforce with 1-10 years of experience is 67, whereas the numeral commercial enterprise workforce with 11-20 years, 21-30 years, and 31-40 years of experience is 333, 460, and 425.

**TABLE 4.25**  
**MEAN AND STANDARD DEVIATION OF A STANCE TOWARDS ICT**  
**(ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION**  
**EXPERIENCE**

Stance Towards ICT	Variable (Vocation Experience)	N	$\bar{X}$	S.D.	Echelon of Stance
Stance Towards ICT (ICT Usefulness)	01-10 Years	067	4.27	0.96	High
	11-20 Years	333	4.11	1.03	High
	21-30 Years	460	4.02	1.06	High
	31-40 Years	425	3.76	1.16	High
	<b>Total</b>	<b>128</b>	<b>5</b>	<b>4.04</b>	<b>0.88</b>

As shown in Table 4.25, the numeral commercial enterprise workforce with 1-10 years of experience is 67, whereas the numeral commercial enterprise workforce with 11-20 years, 21-30 years, and 31-40 years of experience is 333, 460, and 425.

To aid comprehension, graph 4.5 depicts the mean scores for an attitude toward ICT in total and in several dimensions as judged by commercial enterprise employees with varying years of vocation experience.



**GRAPH 4.5**  
**MEAN SCORES OF STANCE TOWARDS ICT IN TOTAL SCORE AND IN DIVERSE FACETS RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

4.3 Comparison of mean scores for a commercial enterprise's workforce's attitude toward ICT:

4.3.1 Comparison of mean scores for an attitude toward ICT as judged by commercial affairs' personnel classified by sex:

Participants (workers of commercial enterprises) were divided into male and female groups in order to compare the mean scores of attitudes toward ICT in general and in specific dimensions, namely (i) ICT Anxiety, (ii) ICT Confidence, (iii) ICT Liking, and It was decided to utilise the t-test to compare the mean score of an attitude toward ICT amongst commercial affairs personnel of both sexes (independent). In Tables 4.26 – 4.30, the results of the data analysis are given and explained.

**TABLE 4.26**  
**SIGNIFICANT DIFFERENCE BETWEEN MEAN SCORES OF A STANCE TOWARDS ICT (TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE CLASSIFIED BY SEX**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	S.D.	<i>t</i> -test
Stance Towards ICT (Total Score)	Male	379	3.49	1.01	1.90 <sup>ns</sup>
	Female	906	3.61	1.08	

*t*-value at 0.05 = 1.96

*t*-value at 0.01 = 2.58

ns = Not Significant

T-test results demonstrate a difference between male and female commercial affairs workers of 1.90, which is not statistically significant, in attitudes toward

ICT (total score). It's possible to make the case that attitudes regarding ICT don't differ based on gender (total score).

If employees' attitudes about ICT are measured by male commercial affairs personnel, then the resulting mean score should be the same as the resulting mean score when female commercial affairs employees are polled. In other words, the results backed up premise No. 1.

A business's employees' attitudes toward information and communications technology (ICT) can be classified into four categories: anxiety, confidence, liking, and usefulness.

The differences in mean scores for attitudes toward ICT in several dimensions are shown in Table 4.27 - 4.30.

**TABLE 4.27**  
**SIGNIFICANT DIFFERENCE BETWEEN MEAN SCORES OF A STANCE TOWARDS ICT (ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE CLASSIFIED BY SEX**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	SD.	<i>t</i> -test
Stance Towards ICT (ICT Anxiety)	Male	379	4.08	0.98	1.35 <sup>ns</sup>
	Female	906	4.16	0.95	

*t*-value at 0.05 = 1.96

*t*-value at 0.01 = 2.58

ns = Not Significant

Table 4.27 shows that the t-test does not demonstrate a statistically significant difference between the mean scores of male and female commercial affairs workers for an attitude toward ICT (ICT Anxiety). It's possible to make the case that attitudes regarding ICT don't differ based on gender (ICT Anxiety).

Employees' attitudes about ICT (ICT Anxiety) may be equated to female commercial affairs employees' attitudes toward ICT (ICT Anxiety), according to the results of this study. As a result, it was concluded that the second hypothesis was correct.

**TABLE 4.28**  
**SIGNIFICANT DIFFERENCE BETWEEN MEAN SCORES OF A STANCE TOWARDS ICT (ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE CLASSIFIED BY SEX**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	SD.	<i>t</i> -test
Stance Towards ICT (ICT Confidence)	Male	379	2.75	1.25	1.87 <sup>ns</sup>
	Female	906	2.89	1.15	

*t*-value at 0.05 = 1.96

*t*-value at 0.01 = 2.58

ns = Not Significant

As shown in Table 4.28, the difference in mean scores for an attitude toward ICT (ICT Confidence) as judged by male and female commercial affairs workforce testing using the t-test is 1.87, which is not statistically significant. One could argue that gender has no effect on the mean score of an attitude toward ICT (ICT Confidence).

It may be deduced that the mean score for an employee's attitude toward ICT (ICT Confidence) when rated by a male commercial affairs employee is equivalent to the mean score for an employee's attitude toward ICT (ICT Confidence) when rated by a female commercial affairs employee. As a result, the null hypothesis No. 3 was accepted.

**TABLE 4.29**  
**SIGNIFICANT DIFFERENCE BETWEEN MEAN SCORES OF A STANCE**  
**TOWARDS ICT (ICT LIKING) RATED THROUGH COMMERCIAL**  
**AFFAIR'S WORKFORCE CLASSIFIED BY SEX**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	SD.	<i>t</i> – test
Stance Towards ICT (ICT Liking)	Male	379	3.15	1.27	1.83 <sup>ns</sup>
	Female	906	3.29	1.21	

*t* – value at 0.05 = 1.96

*t* – value at 0.01 = 2.58

ns = Not Significant

The t-test results in a mean difference of 1.83 between male and female commercial affairs workers' attitudes toward ICT (ICT Liking), as shown in Table 4.29. This difference is not statistically significant. It's possible to make the case that attitudes regarding ICT don't differ based on gender (ICT Liking).

Accordingly, it can be concluded that the mean score of an employee's attitude toward ICT (ICT Liking) when scored by male and female commercial affairs personnel is the same, regardless of gender. In this way, the fourth and final null hypothesis might be considered as valid.

**TABLE 4.30**  
**SIGNIFICANT DIFFERENCE BETWEEN MEAN SCORES OF A STANCE**  
**TOWARDS ICT (ICT USEFULNESS) RATED THROUGH COMMERCIAL**  
**AFFAIR'S WORKFORCE CLASSIFIED BY SEX**

Stance Towards ICT	Variable (Sex)	N	$\bar{X}$	S.D.	<i>t</i> -test
Stance Towards ICT (ICT Usefulness)	Male	379	3.98	1.14	1.77 <sup>ns</sup>
	Female	906	4.10	1.02	

*t*-value at 0.05 = 1.96

*t*-value at 0.01 = 2.58

ns = Not Significant

A positive attitude toward ICT (ICT Usefulness) is measured in Table 4.30 by t-testing male and female commercial affairs staff, and the difference in mean scores is 1.77, which is not statistically significant. It's possible to make the case that attitudes regarding ICT don't differ based on gender (ICT Usefulness).

It may be deduced that the mean score of an employee's attitude toward ICT (ICT Usefulness) when rated by male commercial affairs employees is equivalent to the mean score of an employee's attitude toward ICT (ICT Usefulness) when rated by female commercial affairs employees. Thus, the finding supported null hypothesis No. 5.

4.3.2 Comparison of mean scores for attitudes toward ICT as reported by commercial enterprise employees of various age groups:

Respondents (employees of commercial enterprises) were divided into four age groups to compare the mean scores of attitudes toward ICT on several dimensions: those aged 21-30, 31-40, 41-50, and 51-60. It was used to compare

the mean scores of ICT attitudes reported by commercial firm employees of different age groups (the analysis of variance or ANOVA). Following a thorough data analysis, the findings are presented in tables 4.31–4.40.

**TABLE 4.31**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS**  
**ICT (TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Source of Variance	df	SS	MS	F
Between Group	3	19.42	6.47	5.88**
Within Group	1281	1413.03	1.10	
Total	1284	1432.45		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

Commercial affairs' workforce members aged 21-30, 31-40, 41-50, and 51-60 years have an F-ratio of 5.88, which is statistically significant at the 0.01 level of confidence (Table 4.31), according to the results of this study.

We may therefore deduce that the average score of an enterprise's workforce's ICT attitude is influenced by age (total score). In terms of views toward ICT, commercial firm personnel of different ages have vastly different mean scores (total score). Consequently, the null hypothesis 6 is seen to have been rejected.

When utilising the Newman Keuls Method, ANOVA was employed to identify which pairs had significant differences (The Studentized Range Statistics Test: q). Table 4.32 summarises the findings, with explanations provided after the table.

**TABLE 4.32**

**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Mean Scores of Stance Towards ICT	Diverse Age-Groups and Mean Scores of Stance Towards ICT			
	51-60 years	41-50 years	31-40 years	21-30 years
	3.37	3.47	3.67	3.69
3.37 (51-60 years)	-	0.10	0.30*	0.32*
3.47 (41-50 years)		-	0.20	0.22
3.67 (31-40 years)			-	0.02
3.69 (21-30 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.21	0.25	0.27
q 0.01		0.27	0.31	0.33

\*\* = Significant at 0.01 echelon of confidence

According to table 4.32, commercial affairs' workforce members aged 21 to 30 years, 31 to 40 years, 41 to 50 years, and 51 to 60 years have the same attitude toward ICT (total score). According to the results, workers in commercial affairs who are 51-60 years old have a lower overall score for their attitude toward information and communications technology (ICT) than workers in commercial affairs who are 21-30 years old and 31-40 years old. The 0.01 level of confidence indicates a significant difference between the previously mentioned pairs in terms of mean scores.

There are four dimensions to a person's attitude toward ICT in a commercial setting, namely ICT Anxiety, ICT Confidence, ICT Liking, and ICT Usefulness.

The tables 4.33–4.40 illustrate the statistically significant variation in mean scores for attitudes toward ICT in several dimensions.

**TABLE 4.33**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS**  
**ICT (ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Source of Variance	df	SS	MS	F
Between Group			26.69	25.18**
Within Group	3	80.08	1.06	
Total	1281	1352.37		
	1284	1432.45		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

At the 0.01 level of confidence, the F-ratio on ANOVA of a commercial affairs' workforce member's attitude toward ICT (ICT Anxiety) is 25.18, according to table 4.33, which shows a statistically significant result.

As a result, the average score of a commercial enterprise's workforce's attitude toward information and communications technology (ICT) can be attributed to age (ICT Anxiety). The attitudes of commercial company personnel of various ages toward ICT (ICT Anxiety) varied significantly in terms of mean scores. No. 7 is ruled out as the null hypothesis.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.34 provides an overview of the findings, and the interpretation follows.

**TABLE 4.34**

**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Mean Scores of Stance Towards ICT	Diverse Age-Groups and Mean Scores of Stance Towards ICT			
	21-30 years	31-40 years	41-50 years	51-60 years
	3.48	4.09	4.42	4.49
3.48 (21-30 years)	-	0.61**	0.94**	1.01**
4.09 (31-40 years)		-	0.33**	0.40**
4.42 (41-50 years)			-	0.07
4.49 (51-60 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.20	0.24	0.26
q 0.01		0.26	0.30	0.32

\*\* = Significant at 0.01 echelon of confidence

It can be determined from table 4.34 that workers in commercial firms aged 21-30, 31-40, 41-50, and 60-plus have the same level of ICT Anxiety. Mean scores for a position toward ICT (ICT Anxiety) as stated by commercial affairs' workforce aged 21-30 years are lower than those of commercial affairs' workforce aged 31-40, 41-50, and 51-60 years, respectively. Mean ICT Anxiety (ICT Anxiety) stance indicated by commercial enterprise employees aged 31-40 years is lower than the mean ICT Anxiety stance reported by commercial enterprise employees aged 41-50 and 51-60 years. The 0.01 level of confidence indicates a significant difference between the previously mentioned pairs in terms of mean scores.

**TABLE 4.35**

**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS ICT (ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Source of Variance	df	SS	MS	F
Between Group			34.81	33.47**
Within Group	3	104.42	1.04	
Total	1281	1328.03		
	1284	1432.45		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

Table 4.35 shows that the F-ratio for an ANOVA of the attitude toward ICT (ICT Confidence) is 33.47, which is significant at the 0.01 level of confidence, as determined by commercial affairs employees of various age groups, namely 21-30 years, 31-40 years, 41-50 years and 51-60 years.

As a result, the average score of a commercial enterprise's workforce's attitude toward information and communications technology (ICT) can be attributed to age (ICT Confidence). Mean ICT Confidence scores for commercial firm personnel in various age groups vary significantly across the board.. Eighth null hypothesis is thus ruled out.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.36 provides a summary of the findings, and the interpretation follows.

**TABLE 4.36**  
**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Mean Scores of Stance Towards ICT	Diverse Age-Groups and Mean Scores of Stance Towards ICT			
	51-60 years	41-50 years	31-40 years	21-30 years
	2.44	2.47	2.97	3.40
2.44 (51-60 years)	-	0.03	0.53**	0.96**
2.47 (41-50 years)		-	0.50**	0.93**
2.97 (31-40 years)			-	0.43**
3.40 (21-30 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.20	0.24	0.26
q 0.01		0.26	0.30	0.32

\*\* = Significant at 0.01 echelon of confidence

Table 4.36 shows the link between the mean scores of an attitude toward ICT (ICT Confidence) as judged by commercial enterprise employees of various age groups, namely 21-30 years, 31-40 years, 41-50 years, and 51-60 years. This relationship is shown in the graph below. Mean scores for ICT Confidence (ICT Confidence) reported by commercial enterprise's staff aged 21-30 years are higher than mean scores for ICT Confidence rated by commercial enterprise's workforce aged 31-40, 41-50, and 51-60 years, respectively. A more positive attitude toward ICT (ICT Confidence) is indicated by employees in commercial businesses between the ages of 31 and 40 years old than it is by employees between the ages of 41 and 60 years old. The 0.01 level of confidence indicates a significant difference between the previously mentioned pairs in terms of mean scores.

**TABLE 4.37**

**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS ICT (ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Source of Variance	df	SS	MS	F
Between Group			39.66	38.50**
Within Group	3	118.99	1.03	
Total	1281	1313.46		
	1284	1432.45		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

In Table 4.37, commercial affairs' workforce members aged 21-30, 31-40, 41-50, and 51-60 years rated their liking of ICT as 38.50, which is statistically significant at a 0.05 level of confidence. 'ICT Liking' is defined as a positive attitude toward ICT.

As a result, the average score of a commercial enterprise's workforce's attitude toward information and communications technology (ICT) can be attributed to age (ICT Liking). In terms of their attitude toward ICT (ICT Liking), commercial firm personnel of various ages have a significant disparity. Consequently, the null hypothesis 9 is discarded.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.38 provides a summary of the findings, and the interpretation follows.

**TABLE 4.38**

**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Mean Scores of Stance Towards ICT	Diverse Age-Groups and Mean Scores of Stance Towards ICT			
	51-60 years	41-50 years	31-40 years	21-30 years
2.79	2.79	2.98	3.51	3.60
(51-60 years)	-	0.19	0.72**	0.81**
(41-50 years)		-	0.53**	0.62**
(31-40 years)			-	0.09
(21-30 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.20	0.24	0.26
q 0.01		0.26	0.30	0.32

\*\* = Significant at 0.01 echelon of confidence

It is possible to determine from table 4.38 that there is a relationship between the mean scores of an attitude toward ICT (ICT Liking) given by commercial enterprise employees of various age groups: 21-30 years, 31-40 year, 41-50 year, and 51-60 year olds. ICT liking is more prevalent among commercial affairs employees aged 21-30 than it is among those in commercial affairs aged 41-50 and 51-60, and the difference can be seen as a result of the study's finding that younger commercial affairs employees are more likely to have a positive attitude toward ICT (ICT Liking). To put it another way, the mean score for the attitude toward ICT (ICT Liking) of a commercial enterprise's workforce aged 31-40 years is higher than that of the workforce aged 41-50 and 5160 years, respectively. These two sets of data are statistically significant at the 0.01 confidence level.

**TABLE 4.39**

**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS ICT (ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Source of Variance	df	SS	MS	F
Between Group			10.52	9.65**
Within Group	3	31.55	1.09	
Total	1281	1400.90		
	1284	1432.45		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

At the 0.01 level of confidence, the F-ratio on ANOVA (ICT Usefulness) of a stance toward ICT (ICT Usefulness) as judged by commercial enterprise's workforce belonging to various age groups (21-30, 31-40, 41-50 and 51-60 years) is 9.65, according to table 4.39.

As a result, the average score of a commercial enterprise's workforce's attitude toward information and communications technology (ICT) can be attributed to age (ICT Usefulness). When asked about their views on ICT (ICT Usefulness), personnel of different ages in the business world gave wildly varying answers. As a result, the tenth null hypothesis is discarded.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.40 provides a summary of the findings, and the interpretation follows.

**TABLE 4.40**

**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE AGE-GROUPS**

Mean Scores of Stance Towards ICT	Diverse Age-Groups and Mean Scores of Stance Towards ICT			
	51-60 years	41-50 years	31-40 years	21-30 years
3.76	3.76	4.01	4.11	4.28
(51-60 years)	-	0.25*	0.35**	0.52**
4.01		-	0.10	0.27*
(41-50 years)				
4.11			-	0.17
(31-40 years)				
4.28				-
(21-30 years)				
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.20	0.24	0.27
q 0.01		0.27	0.30	0.32

\* = Significant at 0.05 echelon of confidence

\*\* = Significant at 0.01 echelon of confidence

For example, from table 4.40, it is possible to assume that commercial firm personnel aged 21-30, 31-40, 41-50, and 60-plus have a similar attitude toward ICT (ICT Usefulness). ICT Usefulness (ICT Stance) as measured by commercial enterprise's workforce aged 51-60 years is lower than the mean ICT Stance as measured by the workforce aged 21-30 years, 31-40 years, and 41-50 years, respectively. For employees aged 41-50 years, the mean score for an attitude toward ICT (ICT Usefulness) is lower than the mean score for employees aged 21-30 years, the workforce of commercial enterprises. There is a statistically significant difference between the mean scores of the two groups shown above at the 0.05 and 0.01 level of confidence.

4.3.3 Comparison of mean scores for attitudes toward ICT as reported by commercial enterprise employees with varying levels of educational attainment:

More than a bachelor's degree, bachelor's degree or above, and less than a bachelor's degree (B.A.) were used to categorise respondents (commercial company employees) in order to compare the mean scores of attitudes toward ICT in total and specific dimensions. Employees from various educational backgrounds from commercial enterprises were asked to rate their attitudes toward information and communications technology (ICT) using the F-test (the analysis of variance or ANOVA). In Tables 4.41–4.50, the results of the data analysis are given and explained.

**TABLE 4.41**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS**  
**ICT (TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL**  
**QUALIFICATION**

Source of Variance	df	SS	MS	F
Between Group	2	11.52	5.76	5.65**
Within Group	1282	1301.32	1.02	
Total	1284	1312.84		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

According to table 4.41, the F-ratio on ANOVA of a stance toward ICT (total score) as rated by commercial affairs' workforce members with varying levels of educational qualification, i.e. less than a bachelor's degree, bachelor's degree, and master's degree and higher, is 5.65, which is significant at the 0.01 level of confidence.

Thus, it can be inferred that educational attainment has an effect on the mean score of a commercial enterprise's workforce's attitude toward ICT (total score). There is a substantial variation in the mean scores of attitude toward ICT (total score) as reported by commercial enterprise employees with varying levels of educational qualification. As a result, null hypothesis 11 is rejected.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.42 provides an overview of the findings, and the interpretation follows.

**TABLE 4.42**  
**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

Mean Scores of Stance Towards ICT	Diverse Echelons of Educational Qualification and Mean Scores of Stance Towards ICT		
	Lower than Bachelor Degree	Bachelor Degree	Master Degree Onwards
	3.29	3.66	3.70
3.29 (<Bachelor Degree)	-	0.37**	0.41**
3.66 (Bachelor Degree)		-	0.04
3.70 (Master Degree>)			-
F 0.05		2.77	3.31
F 0.01		3.64	4.12
q 0.05		0.20	0.24
q 0.01		0.27	0.30

\*\* = Significant at 0.01 echelon of confidence

There is a clear correlation between the mean scores of an attitude toward ICT (total score) reported by commercial company workforce members with various

educational levels, i.e. less than bachelor's degree, bachelor's degree, and higher level of education. For those with less than a bachelor's degree, the average total score for their position toward ICT (total score) is significantly lower than the average total score for those with a bachelor's degree or higher. The 0.01 level of confidence indicates a significant difference in mean scores between the previously mentioned pairs.

For example, a person's attitude toward ICT in the workplace might be divided into anxiety, confidence, and like.

Table 4.43 - 4.50 illustrates the statistically significant difference in mean scores for attitudes toward ICT across multiple dimensions.

**TABLE 4.43**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS**  
**ICT (ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL**  
**QUALIFICATION**

Source of Variance	df	SS	MS	F
Between Group		568.72	284.36	490.28**
Within Group	2	744.12		
Total	1282		0.58	
	1284	1312.84		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

According to Table 4.43, the F-ratio for an ANOVA of a stance toward ICT (ICT Anxiety) as rated by commercial affairs' workforce members with varying levels of educational qualification, i.e. less than a bachelor's degree, bachelor's degree, and master's degree and higher, is 490.28, which is significant at the 0.01 level of confidence.

According to this, a commercial enterprise's workforce's attitude toward ICT can be attributed to educational achievement (ICT Anxiety). Workers in commercial enterprises with various degrees of educational qualification have very different attitudes regarding ICT (Anxiety). As a result, the null hypothesis 12 is deemed to be incorrect.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). In Table 4.44, you'll find a summary and an explanation of the data.

**TABLE 4.44**  
**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

Mean Scores of Stance Towards ICT	Diverse Echelons of Educational Qualification and Mean Scores of Stance Towards ICT		
	Master Degree Onwards	Bachelor Degree	Lower than Bachelor Degree
	3.21	4.55	4.60
3.21 (Master Degree>)	-	1.34**	1.39**
4.55 (Bachelor Degree)		-	0.05
4.60 (<Bachelor Degree)			-
F 0.05		2.77	3.31
F 0.01		3.64	4.12
q 0.05		0.15	0.18
q 0.01		0.20	0.23

\*\* = Significant at 0.01 echelon of confidence

An association between the mean ICT anxiety scores reported by employees of commercial enterprises at various educational levels (less than a bachelor's

degree), a bachelor's degree, and a master's degree and above, may be drawn from table 4.44. This study found a lower average ICT Anxiety score for commercial affairs' workforce members with a master's degree or higher than for commercial affairs' workforce members with a bachelor's degree or higher. The 0.01 level of confidence indicates a significant difference between the previously mentioned pairs in terms of mean scores.

**TABLE 4.45**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS**  
**ICT (ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL**  
**QUALIFICATION**

Source of Variance	df	SS	MS	F
Between Group		282.40	141.20	176.50**
Within Group	2	1030.44		
Total	1282		0.80	
	1284	1312.84		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

F-ratio for an attitude toward ICT (ICT Confidence) as rated by commercial enterprise's workforce at various educational levels, such as less than a bachelor's degree, a bachelor's degree, and a master's degree or higher is 176.50; this is significant at the 0.01 level of confidence, according to table 4.45 in the report

This means that a company's workforce's overall attitude toward information and communications technology (ICT) is influenced by their level of education (Confidence). In terms of ICT Confidence, there is a significant disparity in the mean scores given by commercial firm personnel with varied levels of education. Consequently, the null hypothesis 13 is discarded.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.46 summarises the findings, with explanations provided after the table.

**TABLE 4.46**

**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

Mean Scores of Stance Towards ICT	Diverse Echelons of Educational Qualification and Mean Scores of Stance Towards ICT		
	Lower than Bachelor Degree	Bachelor Degree	Master Degree Onwards
	2.21	2.69	3.56
2.21 (<Bachelor Degree)	-	0.48**	1.35**
2.69 (Bachelor Degree)		-	0.87**
3.56 (Master Degree>)			-
F 0.05		2.77	3.31
F 0.01		3.64	4.12
q 0.05		0.18	0.22
q 0.01		0.24	0.27

\*\* = Significant at 0.01 echelon of confidence

From table 4.46, the following link may be deduced between the mean scores of an attitude toward ICT (ICT Confidence) as judged by commercial enterprise's employees at various educational levels, i.e. less than a bachelor's degree, bachelor's degree, and master's degree and higher. It demonstrates that the mean score for a stance toward ICT (ICT Confidence) as rated by commercial enterprise's workforce with less than a bachelor's degree is lower than the mean score for a stance toward ICT (ICT Confidence) as rated by commercial enterprise's workforce with a bachelor's degree or higher. The mean score for a stance toward ICT (ICT Confidence) as reported by commercial enterprise's workforce with a bachelor's degree is lower than the mean score for a stance toward ICT (ICT Confidence) as rated by commercial enterprise's workforce with a master's degree or above. The difference in mean scores between the pairs indicated previously is significant at the 0.01 level of confidence.

**TABLE 4.47**

**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS ICT (ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

Source of Variance	df	SS	MS	F
Between Group			39.97	41.64**
Within Group	2	79.94	0.96	
Total	1282	1232.90		
	1284			
		1312.84		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

An ANOVA of attitudes toward ICT (ICT Liking) among commercial affairs employees with varying levels of educational qualification, i.e. less than a bachelor's degree, bachelor's degree, and master's degree and higher, is shown in Table 4.47 with an F-ratio of 41.64, statistically significant at the 0.01 level of confidence.

This means that a company's workforce's overall attitude toward information and communications technology (ICT) is influenced by their level of education (Liking). People with different degrees of education have significantly different attitudes toward ICT (ICT Liking) than people with similar levels of education. Consequently, the null hypothesis 14 is discarded.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.48 summarises the findings, with explanations provided after the table.

**TABLE 4.48**

**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

Mean Scores of Stance Towards ICT	Diverse Echelons of Educational Qualification and Mean Scores of Stance Towards ICT		
	Lower than Bachelor Degree	Bachelor Degree	Master Degree Onwards
	2.68	3.33	3.65
2.68 (<Bachelor Degree)	-	0.65**	0.97**
3.33 (Bachelor Degree)	-	-	0.32**
3.65 (Master Degree>)	-	-	-
F 0.05		2.77	3.31
F 0.01		3.64	4.12
q 0.05		0.20	0.24
q 0.01		0.26	0.29

\*\* = Significant at 0.01 echelon of confidence

This association between the mean scores of an attitude toward ICT (ICT Liking) as judged by commercial enterprise employees at various levels of educational qualification, i.e. less than a bachelor's degree, a bachelor's degree and a master's degree and higher, may be determined from table 4.48. There is a significant discrepancy between the mean score of employees in commercial affairs with less than or equal to a bachelor's degree and the mean score of employees in commercial affairs with a bachelor's degree or more when it comes to attitudes toward ICT (ICT Liking). Workforces in commercial enterprises with a bachelor's degree report a lower mean score for an attitude toward ICT (ICT Liking) than those in commercial enterprises with a master's degree or higher report a higher mean score for this trait. The 0.01 level of confidence indicates a significant difference in mean scores between the previously mentioned pairs.

**TABLE 4.49**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS**  
**ICT (ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL**  
**QUALIFICATION**

Source of Variance	df	SS	MS	F
Between Group			25.08	25.59**
Within Group	2	50.15	0.98	
Total	1282	1262.69		
	1284	1312.84		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

F-ratio on ANOVA of a stance toward ICT (ICT Usefulness) as rated by commercial enterprise's workforce at various educational levels, such as less than a bachelor's degree, a bachelor's degree, and master's degree and above, is 25.59, which is significant at the 0.01 level of confidence, according to table 4.49.

According to this, a commercial enterprise's workforce's attitude toward ICT can be attributed to educational achievement (ICT Usefulness). The attitudes of commercial firm personnel with various levels of education toward ICT (ICT Usefulness) varied significantly in terms of mean scores. That's why we can rule out null hypothesis 15.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.50 summarises the findings, with explanations provided after the table.

**TABLE 4.50**

**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE ECHELONS OF EDUCATIONAL QUALIFICATION**

Mean Scores of Stance Towards ICT	Diverse Echelons of Educational Qualification and Mean Scores of Stance Towards ICT		
	Lower than Bachelor Degree	Bachelor Degree	Master Degree Onwards
	3.67 (<Bachelor Degree)	4.07	4.38
3.67 (<Bachelor Degree)	-	0.40**	0.71**
4.07 (Bachelor Degree)	-	-	0.31**
4.38 (Master Degree>)	-	-	-
F 0.05		2.77	3.31
F 0.01		3.64	4.12
q 0.05		0.20	0.24
q 0.01		0.26	0.30

\*\* = Significant at 0.01 echelon of confidence

Table 4.50 shows the following relationship between the mean scores of an attitude toward ICT (ICT Usefulness) as rated by commercial enterprise workers at various educational levels, i.e. less than a bachelor's degree, bachelor's degree, and master's degree and above. According to the results, workers in commercial enterprises with less than a bachelor's degree gave ICT (ICT Usefulness) a lower mean score than workers in commercial enterprises with a bachelor's degree or higher did. Commercial enterprise's staff with bachelor's degrees has a lower mean score for a stance toward ICT (ICT Usefulness) than the workforce with a master's degree or higher. The 0.01 level of confidence indicates a significant difference between the previously mentioned pairs in terms of mean scores.

4.3.4 Comparison of mean scores for attitudes toward ICT as reported by commercial enterprise employees with varying years of vocation experience:

Survey participants (commercial enterprise employees) were grouped into four groups based on their work experience: those with less than ten years, those with ten to twenty years and those with twenty to thirty years. F-test was used to assess the mean scores for a position on ICT, overall and in specific aspects, as judged

by commercial firm staff with varied years of work experience. ANOVA stands for Table 4.51–4.60 shows the results of the data analysis, which have been interpreted accordingly.

**TABLE 4.51**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS ICT (TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

Source of Variance	df	SS	MS	F
Between Group			8.82	7.47**
Within Group	3	26.47	1.18	
Total	1281	1509.76		
	1284	1536.23		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

At the 0.01 level of confidence, the F-ratio for an attitude toward ICT (total score) as rated by commercial enterprise's employees with various years of vocation experience, namely 01-10 years, 11-20 years, 21-30 years, and 31-40 years, is 7.47.

A company's employees' overall attitude toward information and communications technology (ICT) appears to be influenced by their years of experience in the workplace (total score). When it comes to their attitude toward ICT, commercial firm personnel with varied years of experience have a wide range of mean scores (total score). In the end, we can rule out null hypothesis 16.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range

Statistics Test: q). Table 4.52 provides a summary of the findings, and the table's interpretation follows.

**TABLE 4.52**  
**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (TOTAL SCORE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

Mean Scores of Stance Towards ICT	Diverse Years of Vocation Experience and Mean Scores of Stance Towards ICT			
	31-40 years	21-30 years	11-20 years	01-10 years
	3.32	3.50	3.65	3.78
3.32 (31-40 years)	-	0.18	0.33**	0.46**
3.50 (21-30 years)		-	0.15	0.28*
3.65 (11-20 years)			-	0.13
3.78 (01-10 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.21	0.25	0.28
q 0.01		0.28	0.32	0.34

\* = Significant at 0.05 echelon of confidence      \*\* = Significant at 0.01 echelon of confidence

An attitude toward ICT (total score) as rated by commercial enterprise workers with varied years of professional experience can be determined from table 4.52 in the following way: 0110, 11-20 and 21-30 and 31-40 year mean scores.

Commercial enterprise's workforce in the 01-10-year age group had a higher mean ICT (total score) than commercial enterprise's workforce in the 2130-year and 31-40-year age groups, according to the results of this study.

This means that commercial affairs' workforce aged 11-20 years has a more positive attitude toward ICT compared to commercial affairs' workforce aged 31-40 years, who have a more negative attitude toward ICT overall.

At the 0.05 and 0.01 level of confidence, the difference in mean scores between the two sets is statistically significant.

People's attitudes toward information and communications technology (ICT) in the workplace can be broken down into four categories: "ICT Anxiety," "ICT Confidence," "ICT Liking," and "ICT Usefulness."

As shown in the following tables, there is a statistically significant difference in mean scores for attitudes toward ICT on various domains.

**TABLE 4.53  
SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS  
ICT (ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S  
WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION  
EXPERIENCE**

Source of Variance	df	SS	MS	F
Between Group		186.68	62.23	59.27**
Within Group	3	1349.55	1.05	
Total	1281			
	1284	1536.23		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

As shown in Table 4.53, a statistically significant F-ratio for an ANOVA of a commercial affairs workforce's attitude toward ICT (ICT Anxiety) is 59.27, which is statistically significant at the 0.05 level of confidence.

A company's employees' overall attitude toward information and communications technology (ICT) appears to be influenced by their years of experience in the workplace (ICT Anxiety). Workers from different years of professional experience indicate a wide range of attitudes toward ICT (ICT Anxiety) as a result of this study. Hypothesis 17 is thus ruled out as a null hypothesis.

There were significant differences between pairs of data collected using ANOVA and the Newman-Keuls method (also known as the Studentized Range Statistics Test: q). Table 4.54 provides a summary of the findings, and the interpretation follows.

**TABLE 4.54**  
**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT ANXIETY) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

Mean Scores of Stance Towards ICT	Diverse Years of Vocation Experience and Mean Scores of Stance Towards ICT			
	01-10 years	11-20 years	21-30 years	31-40 years
	3.46	3.86	4.48	4.68
3.46 (01-10 years)	-	0.40**	1.02**	1.22**
3.86 (11-20 years)		-	0.62**	0.82**
4.48 (21-30 years)			-	0.20
4.68 (31-40 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.20	0.24	0.26
q 0.01		0.26	0.30	0.32

\*\* = Significant at 0.01 echelon of confidence

Table 4.54 shows that the mean scores of an attitude toward ICT (ICT Anxiety) as reported by the workforce of commercial businesses belonging to various age groups, namely 01-10 years, 11-20 years, 21-30 years, and 31-40 years, may be extrapolated from the results. Commercial affairs employees aged 1 to 10 were

found to have a lower mean score for ICT Anxiety than those aged 11 to 20; 21 to 30; and 31 to 40. For commercial affairs' workforce aged 11-20 years, the average ICT Anxiety score is lower than for commercial affairs' workforce aged 31-40 years, although this difference is not statistically significant. The 0.01 level of confidence indicates a significant difference between the previously mentioned pairs in terms of mean scores.

**TABLE 4.55**

**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS ICT (ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

Source of Variance	df	SS	MS	F
Between Group	3	132.97	44.32	40.29**
Within Group	1281	1403.26	1.10	
Total	1284	1536.23		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

As shown in Table 4.55, the F-ratio on ANOVA of an attitude toward ICT (ICT Confidence) as judged by commercial affairs' workforce with varying years of vocation experience, i.e. 01-10 years, is 0.

Table 4.55 shows that the F-ratio for an ANOVA of an attitude toward ICT (ICT Confidence) as rated by commercial enterprise's workforce with varying years of vocation experience, namely 01-10 years, 11-20 years, 21-30 years, and 31-40 years, is 40.29, which is significant at the.01 level of confidence.

As a result, years of work experience have an impact on the mean score of a worker's attitude toward information and communications technology (ICT) (ICT Confidence). The ICT Confidence scores provided by commercial firm employees

with varied years of work experience show significant range in the mean scores. Null hypothesis 18 is deemed invalid as a result.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range Statistics Test: q). Table 4.56 provides a summary of the findings, and the interpretation follows.

**TABLE 4.56**  
**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT CONFIDENCE) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

Mean Scores of Stance Towards ICT	Diverse Years of Vocation Experience and Mean Scores of Stance Towards ICT			
	31-40 years	21-30 years	11-20 years	01-10 years
	2.38	2.47	3.04	3.39
2.38 (31-40 years)	-	0.09	0.66**	1.01**
2.47 (21-30 years)		-	0.57**	0.92**
3.04 (11-20 years)			-	0.35**
3.39 (01-10 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.21	0.25	0.27
q 0.01		0.27	0.31	0.33

\*\* = Significant at 0.01 echelon of confidence

If you look at table 4.56, you'll see that there is a correlation between the mean scores of an attitude toward ICT (ICT Confidence) as rated by commercial enterprise's employees who have had varied amounts of experience in the workforce. ICT Confidence is higher among commercial enterprise employees aged 1 to 10 than among those aged 11 to 20 or between 21 and 30 or between 31 and 40, indicating a more positive attitude toward ICT among commercial enterprise employees aged 1 to 10. ICT Confidence is higher among employees aged 11-20 than among those aged 21-30 and 31-40, indicating a more positive

attitude toward ICT among the working population of commercial firms in this age range. The 0.01 level of confidence indicates a significant difference between the previously mentioned pairs in terms of mean scores.

**TABLE 4.57**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS**  
**ICT (ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION**  
**EXPERIENCE**

Source of Variance	df	SS	MS	F
Between Group		318.62	106.21	111.80**
Within Group	3	1217.61		
Total	1281		0.95	
	1284	1536.23		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

As shown in Table 4.57, a statistically significant F-ratio for an ANOVA of a commercial affairs workforce's attitude toward ICT (ICT Liking) is 111.80, which is statistically significant at the 0.01% level of confidence.

A company's employees' overall attitude toward information and communications technology (ICT) appears to be influenced by their years of experience in the workplace (ICT Liking). Among commercial firm personnel with varied years of professional experience, there is a significant disparity in the mean scores of attitude toward ICT (ICT Liking). Consequently, the null hypothesis 19 is deemed invalid.

It was determined by using the Newman Keuls Method of ANOVA to identify which pairs had a statistically significant difference (The Studentized Range

Statistics Test: q). There is a summary in Table 4.58, followed by an explanation of what it means.

**TABLE 4.58**  
**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT LIKING) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

Mean Scores of Stance Towards ICT	Diverse Years of Vocation Experience and Mean Scores of Stance Towards ICT			
	31-40 years	21-30 years	11-20 years	01-10 years
	2.46	2.83	3.59	4.00
2.46 (31-40 years)	-	0.37**	1.13**	1.54**
2.83 (21-30 years)		-	0.76**	1.17**
3.59 (11-20 years)			-	0.41**
4.00 (01-10 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.19	0.23	0.25
q 0.01		0.25	0.28	0.30

\*\* = Significant at 0.01 echelon of confidence

This association between the mean scores of an attitude toward ICT (ICT Liking) as rated by commercial enterprise workers with increasing years of professional experience may be determined from table 4.58: 0110 years, 11-20 years, 21-30 years, and 31-40 years..

When it comes to a positive attitude toward ICT, commercial affairs' workforce aged between the ages of 11 and 20 is more likely to have a higher mean score for

ICT Liking than commercial affairs' workforce aged between the ages of 21 and 40.

**TABLE 4.59**  
**SUMMARY OF THE RESULTS OF ANOVA FOR A STANCE TOWARDS**  
**ICT (ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S**  
**WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION**  
**EXPERIENCE**

Source of Variance	df	SS	MS	F
Between Group	3	32.45	10.82	9.25**
Within Group	1281	1503.78	1.17	
Total	1284	1536.23		

F-test significant at 0.05 echelon of confidence = 2.60

F-test significant at 0.01 echelon of confidence = 3.78

\*\* = Significant at 0.01 echelon of confidence

At the 0.01 level of confidence, the F-ratio for an ANOVA of the attitudes toward ICT (ICT Usefulness) as judged by commercial firm employees with various years of work experience, ranging from one to ten years, is 9.25, according to table 4.59.

**TABLE 4.60**

**SUMMARY OF STUDENTIZED RANGE STATISTICS TEST (q) APPLIED TO ANOVA FOR DIVERSE PAIRS OF MEAN SCORES OF STANCE TOWARDS ICT (ICT USEFULNESS) RATED THROUGH COMMERCIAL AFFAIR'S WORKFORCE BELONGING TO DIVERSE YEARS OF VOCATION EXPERIENCE**

Mean Scores of Stance Towards ICT	Diverse Years of Vocation Experience and Mean Scores of Stance Towards ICT			
	31-40 years	21-30 years	11-20 years	01-10 years
	3.76	4.02	4.11	4.27
3.76 (31-40 years)	-	0.26*	0.35**	0.51**
4.02 (21-30 years)		-	0.09	0.25**
4.11 (11-20 years)			-	0.16
4.27 (01-10 years)				-
F 0.05		2.77	3.31	3.63
F 0.01		3.64	4.12	4.40
q 0.05		0.21	0.25	0.28
q 0.01		0.28	0.32	0.34

\* = Significant at 0.05 echelon of confidence

\*\* = Significant at 0.01 echelon of confidence

There is a correlation between table 4.60 and the mean scores of an attitude toward ITC (ITC Usefulness) as determined by commercial enterprise's employees with varying years of vocation (Table 4.60).

#### 4.4 SUMMARY:

Commercial affairs employees' views on information and communications technology (ICT) were the focus of this study. The mean (X), standard deviation (S.D.), independent t-test, analysis of variance, and Studentized Range Statistic Assess were used to test twenty hypotheses (q).

For the whole sample set (N = 1285), the study found that the total mean score for a good attitude toward ICT from the commercial affairs workforce was in the upper tier.

Among male and female commercial enterprise employees, the overall mean score for an ICT stance is 3.49 (SD=1.01), placing it in the moderate echelon, while among female commercial enterprise employees, the overall mean score for an ICT stance is 3.61 (SD=1.08), placing it in the high echelon.

It is more useful to have a lower ICT attitude (total score, ICT Confidence, ICT Liking, and ICT Usefulness) than a higher ICT stance (total score, ICT Confidence, ICT Liking, and ICT Usefulness) if you have less than five years of vocation experience in the commercial affairs field.

Among those in commercial affairs with less than five years of professional experience, employees' attitudes toward information and communications technology (ICT) were regarded as "less anxious" than those in the field with more than five years of professional experience ("more anxious").

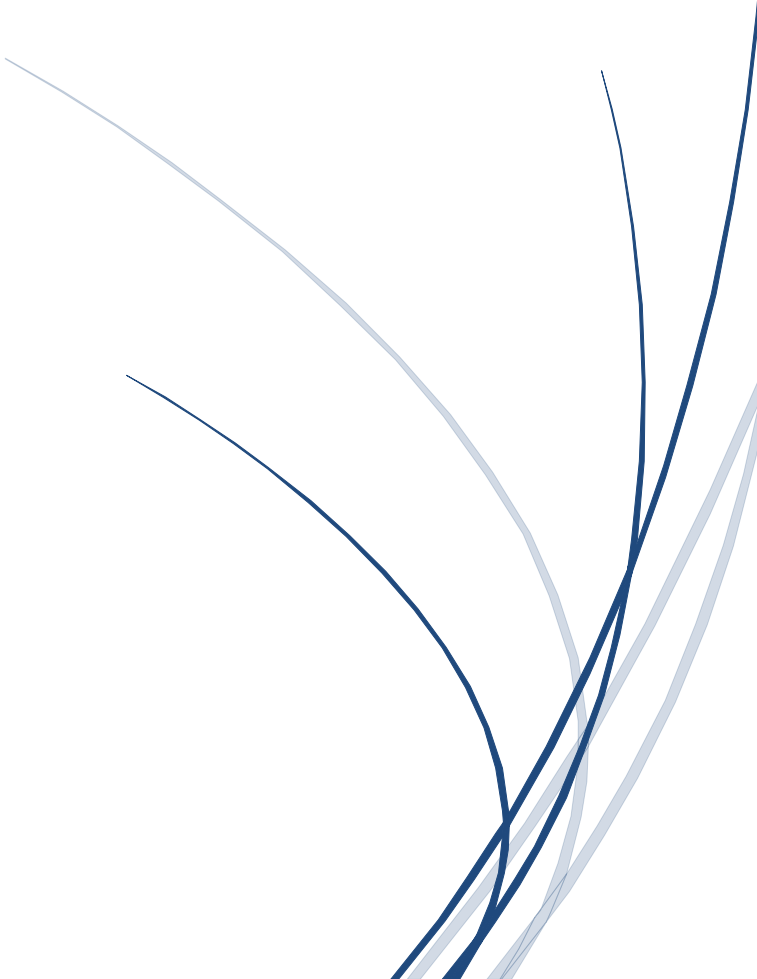
Overall, the average score for a positive attitude toward information and communications technology (ICT) among the commercial affairs staff was very high. As a result of these findings, it was determined that "ICT anxiety" had the highest mean scores on an attitude toward ICT at the high level, while the mean scores on an attitude toward ICT at the high, moderate, and moderate levels were attained by "ICT usefulness," "ICT like," and "ICT confidence."

ICT attitudes are not affected by gender, however age group, educational qualification and job experience all affect the mean score of a commercial enterprise's workforce's attitude toward ICT. Sex does not affect the mean score



# *CHAPTER 5*

ASSESSMENT OF THE  
STUDY, ITS PRINCIPALS  
FINDINGS, CONCLUSIONS,  
IMPLICATIONS, AND  
RECOMMENDATIONS FOR  
FURTHER RESEARCH



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## CHAPTER 5

### ASSESSMENT OF THE STUDY, ITS PRINCIPALS FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

#### 5.1 PROLOGUE:

Information and communication technology has had a huge impact on workplaces. An entirely new kind of ICT worker is needed to adapt to new forms of employment and incorporate ICT into their everyday routines. Individuals' expectations of how to perform in the new global economy are summed up in the term "information and communications technology," or ICT. People must learn to navigate vast amounts of data, analyse and make decisions, and master new knowledge domains in an increasingly technological world.

ICT has had such a deep impact on the new era that it has become a crucial issue globally to meet the needs of the new skills-based economy (Barone & Hagner, 2011)[1]. During the globalisation era, changes occur, and employee labour differs from that of earlier years and now in terms of technological advancement.. A few examples include a shift in the way people work and the use of new technologies in the workplace. As a result, employees must acquire new ICT skills, which adds to the growing workload. This has led to an increased focus on the importance of staff involvement in ensuring effective ICT implementation. Because no two jobs are ever exactly the same, it's important to examine what factors are at play, what a given employee's responsibilities are at any given time, and how the working environment is shifting.

Workforce attitudes towards IT are critical, and they must grow in lockstep with technology advancements to remain positive (Omar et al., 2011). [2] It's a good thing. Employees must overcome their fears, gain self-assurance, cultivate a sense of purpose, and be ready to adapt to the rapid advancements in information and communications technology (ICT). ICT fear, confidence, liking, and usefulness are all factors that influence how employees use technology in the workplace.

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Recognizing these factors can help employees adopt new practises in their work processes, which has an impact on organisational outcomes. For this reason, it is imperative that employers place a high value on the attitudes of employees toward their perceptions of ICT anxiety, confidence, enjoyment, and usefulness.

Staff members' access to ICT remains constrained despite the office's increased use of ICT. In light of this, it may be concluded that there is an inequality in the usage of ICT in the workplace. Employee attitudes and perceptions are critical to the success of ICT-based e-government services. Even if all other prerequisites and conditions are met, a successful ICT system is unlikely to emerge if staff lack the proper mindset. Anxiety, confidence, like, and usefulness of ICT will all be examined in this study, as will the general attitude of commercial firm employees. ICT skills of commercial affairs workers are expected to be enhanced, encouraged, promoted and supported by the findings of this study.

## 5.2 IMPORTANT RESEARCH RESULTS:

The following are the findings of this study:

The study discovered that the overall mean score for the attitude toward ICT as judged by commercial affairs personnel in the complete sample (N = 1285) was quite high.

Employees' views on information and communications technology (ICT) fell into four categories: worry, confidence, liking, and usefulness. When it came to a positive attitude toward ICT, the greatest mean score was given to the aspect of "ICT anxiety." When it comes to attitudes toward ICT, "ICT utility" had the second highest mean score. Moderate posture toward ICT put "ICT like" in third place in terms of mean scores. The attitude toward ICT was modest, with the lowest mean score for the factor of "ICT confidence."

The whole mean score for male commercial affairs employees' attitudes toward ICT was moderate, whereas the total mean score for female commercial affairs employees' attitudes toward ICT was high.

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Male commercial affairs employees' mean score for their stance toward ICT (ICT Anxiety) was high, whereas female commercial affairs employees' mean score for their stance toward ICT (ICT Anxiety) was high.

Male commercial affairs employees' mean score for their attitude toward ICT (ICT Confidence) was moderate, whereas female commercial affairs employees' mean score for their attitude toward ICT (ICT Confidence) was moderate.

The mean score for male commercial affairs employees' attitudes toward ICT (ICT Liking) was moderate, whereas the mean score for female commercial affairs employees' attitudes toward ICT (ICT Liking) was moderate.

The mean score for male commercial affairs employees' attitudes toward ICT (ICT Usefulness) was high, whereas the mean score for female commercial affairs employees' attitudes toward ICT (ICT Usefulness) was high.

There was no significant difference in mean ratings for male and female commercial affairs personnel' attitudes toward ICT.

While the overall mean score for the attitude toward ICT among commercial affairs employees ages 21-30 was high, that of commercial affairs employees ages 31-40 was moderate, and that of commercial affairs employees aged 51-60 was moderate.

ICT Anxiety was low among commercial affairs employees aged 21-30 years, but it was high among those aged 31-40 years, 41-50 years, and 51-60 years in the categories of commercial affairs personnel.

According to the results of the ICT Confidence Scale, commercial affairs employees aged 21-30 years had moderate attitudes toward ICT (ICT Confidence), whereas commercial affairs personnel ages 31-40 years had moderate attitudes toward ICT (ICT Confidence).

The mean score for the attitude toward ICT (ICT Liking) among commercial affairs employees aged 21-30 years was high, whereas the mean score for the

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attitude toward ICT (ICT Liking) among commercial affairs employees aged 31-40 years, 41-50 years, and 51-60 years was high, moderate, and moderate.

The mean score for stance toward ICT (ICT Usefulness) among commercial affairs employees aged 21-30 years was high, whereas the mean score for stance toward ICT (ICT Usefulness) among commercial affairs employees aged 31-40 years, 41-50 years, and 51-60 years was high, high, and high, respectively.

When asked about their views on information and communications technology (ICT), employees of commercial organisations ranging in age from 18 to 65 had significantly different mean scores. As judged by younger commercial affairs personnel, the mean score of the stance toward ICT is more valuable than the mean score of the stance toward ICT as reported by older commercial affairs employees. As measured by younger commercial affairs employees, the mean score for the posture toward ICT (ICT Anxiety) is lower than the mean score as measured by older commercial affairs employees (ICT Anxiety).

employees in commercial affairs with less than a bachelor's degree had a moderate attitude toward information and communications technology (ICT), while employees in commercial affairs with a bachelor's degree and a master's degree or higher had high and high overall mean scores for their attitudes toward ICT.

The mean score for the stance toward ICT (ICT Confidence) among commercial affairs employees with less than a bachelor's degree was low, whereas the total mean score for the stance toward ICT (ICT Confidence) among commercial affairs employees with a bachelor's degree and higher was moderate to high.

The mean score for the stance toward ICT (ICT Liking) among commercial affairs employees with less than a bachelor's degree was moderate, whereas the total mean score for the stance toward ICT (ICT Liking) among commercial affairs employees with a bachelor's degree and higher was moderate to high.

The mean score for the stance toward ICT (ICT Usefulness) among commercial enterprise employees with less than a bachelor's degree was high, whereas the

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total mean score for the stance toward ICT (ICT Usefulness) among commercial enterprise employees with a bachelor's degree and higher was high.

There was a substantial variation in mean scores for personnel of commercial enterprises with varying degrees of educational qualification regarding their attitude toward ICT.

For commercial affairs personnel with 1-10 years of work experience, the total mean score for those with 11-20 years of work experience, 21-30 years of work experience, and 31-40 years of work experience was high.

More experienced commercial affairs personnel were more likely to have a moderate attitude toward ICT (ICT Anxiety) compared to less experienced commercial affairs employees, who were more likely to have a high, medium or low attitude toward ICT (ICT Anxiety).

There was a reasonable level of confidence in ICT (ICT Confidence) among commercial affairs employees who had worked for less than ten years. However, there was a low level of confidence among commercial affairs employees who had worked for more than ten years.

When it came to attitudes toward ICT (ICT Liking), commercial affairs employees with 1-10 years of work experience had a high mean score, while the mean scores for commercial affairs employees with 11-20 years, 21-30 years, and 31-40 years of work experience were moderate, high, and low, respectively.

While the total mean score for the attitude toward ICT (ICT Usefulness) among commercial affairs personnel with 11-20 years of work experience was high, those with 21-30 years of work experience were even more positive about the technology.

### 5.3 CONCLUSION:

This study's overall mean score for commercial affairs personnel's attitude toward information and communications technology (N = 1385) was fairly high.

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Employees' views on information and communications technology (ICT) fell into four categories: worry, confidence, liking, and usefulness. There was a strong correlation between low levels of "ICT anxiety" and high levels of positive attitudes toward ICT. When it comes to attitudes toward ICT, "ICT utility" had the second highest mean score. ICT like was measured by the criterion with the third-highest mean score, indicating a moderate attitude toward information and communications technology. Mean scores for a positive attitude toward ICT were moderately low in the "ICT confidence" component.

A commercial enterprise's employees' attitude toward ICT is not affected by sex, but the age group of the employees and the education of the employees have an effect on the mean score of the employees' attitude toward ICT.

#### 5.4 SUGGESTIONS:

According to the findings of this study, the total mean score for the attitude toward ICT as judged by commercial affairs personnel in the complete group of sample was quite high. Additionally, it was observed that "ICT anxiety" achieved high mean scores on the stance toward ICT, but "ICT usefulness," "ICT like," and confidence achieved high, moderate, and moderate mean scores on the stance toward ICT, respectively.

Male and female employees of commercial enterprises obtained comparable mean scores on their attitudes toward ICT in both the total score and indifferent components.

Personnel aged 40 and below had higher mean scores on their attitude toward ICT in general, as well as on the dimensions of IT self-belief, ICT liking, and IT utility. Mean scores on ICT Anxiety components for employees aged 41 and above at a commercial enterprise were higher.

For the characteristics of ICT Confidence, ICT Liking, and ICT Usefulness, employees with less than a bachelor's degree scored lower on average. There was a lower mean score on the components of ICT Anxiety among commercial firm employees with bachelor's and master's degrees.



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