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Information Technologies

BIOMETRICS RECOGNITION SYSTEM IN AIRPORT REGISTRATION USING ARTIFICIAL INTELLIGENCE

ZAINAB SHAKER NAJEE AL-YASSEREE

Master of Science

Supervisor

Asst. Prof. Dr. Abdullahi Abdu IBRAHIM

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BIOMETRICS RECOGNITION SYSTEM IN AIRPORT REGISTRATION USING ARTIFICIAL INTELLIGENCE

by

ZAINAB SHAKER NAJEE AL-YASSEREE

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Asst. Prof. Dr. Abdullahi Abdu IBRAHIM

Supervisor

Thesis Defense Jury Members:

Asst. Prof. Dr. Abdullahi Abdu IBRAHIM	School of Engineering Architecture, Altinbas University	_____
Asst. Prof. Dr. Ahad Khaledgi ARDABILI	School of Engineering Architecture, Altinbas University	_____
Assoc. Prof. Dr. A. Mohammed ABUBAKAR	Faculty of School Economics, Administrative and Social Science, Antalya Science University	_____

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

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ZAINAB SHAKER NAJEE AL-YASSEREE

DEDICATION

In the name of God, the Most Gracious, the Most Merciful, and peace be upon the Prophet Muhammad, I thank God for what has given me, and I dedicate the fruit of my efforts to my wonderful friend and companion HAWRAA ABDEL KARIM. I also dedicate my success to the soul of my father, who if he existed would surely be very proud of me. I will not forget the mention of my children wishing them success, and my mother, who did not forget me in supplication,

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I am very grateful to have had the opportunity to work with Asst. Prof. Dr. Abdullahi Abdu IBRAHIM Thesis advisor. And thanks for his advice and guidance to finish this job. I would also like to thank the other members of my committee.

ABSTRACT

BIOMETRICS RECOGNITION SYSTEM IN AIRPORT REGISTRATION USING ARTIFICIAL INTELLIGENCE

ZAINAB SHAKER NAJEE AL-YASSEREE,

M.Sc., Information Technologies, Altınbaş University,

Supervisor: Asst. Prof. Dr. Abdullahi Abdu IBRAHIM

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The rapid advancement in the world of technology has made dealing mainly and directly with electronic operations in all aspects of life, using modern technology, aimed at surveying the effects of the use of identification systems on airport customers and travelers and attempts to find out how much implementation affects customer satisfaction - a viable viewpoint to help executives from air stations. This proposal sought to answer the examination question by evaluating the motives related to Acknowledgment and status levels of biometric ID frameworks across passengers at airports. Discovering unauthorized access to some suspected individuals and pursuing wanted persons. Get tasks done quickly and easily. At the airport, through biometric matching, we can use facial recognition devices through computers linked to the cameras to record these features and other data like iris and fingerprints as this data is stored in an encrypted form. Also, the aim of the research was to expand knowledge about artificial intelligence and databases and according to the results and analyzes adopted by other researchers, from the use of use facial recognition devices through computers connected to the cameras and collect this vital data with the central database every time when passengers check in to make sure Match the information and issue a secure entry permit order for individuals. This study examines the willingness and acceptance of users represented by a sample of Arab youth in Arab societies to use biometrics as a validation tool. A survey of 274 individuals was conducted. The most important factor was deciding whether or not to accept the use of new technologies.

Keywords: Fingerprints, Face Geometry, Biometrics, Eye Print, Hand Geometry.

TABLE OF CONTENTS

Pages

LIST OF TABLES

Pages

LIST OF FIGURES

Pages

LIST OF ABBREVIATIONS

IAM	:	Internet Acceptance Model
MIS	:	Management Information Systems
CCTV	:	Closed Circuit Television
GUI	:	Graphical User Interface
MRZ	:	Machine Readable Zone
ID	:	International Identity
IATA	:	International Air Transport Association
CFIS	:	Computerized Fingerprint Identification System
CIDB	:	Construction Industry development Board

1. INTRODUCTION

1.1 INTRODUCTION

The use of biometrics, which includes facial recognition, fingerprint and iris recognition, as well as demographic information ((Example gender and ethnicity), which are secondary information, provides important information about individuals [6]. Biometrics are defined as characteristics that distinguish each individual and these characteristics can increase the safety of the systems used in airports, when integrating biometrics with the system work according to hardware compatible programming, can provide us with many advantages as biometric features reveal information about individuals that can be easily captured and often pre-recorded on individuals and can be detected in the environment from sufficient distances[6] and other researchers in the past years have studied and compared the effect of using information and data in biometrics on travelers who were able to experience biometrics at air stations. Where customer service is an important part of the success of passenger transport operations through airports, which aims to satisfy customers using advanced means, where techniques have been applied to solve the problem of accurate identification of passengers using some methods and devices to improve performance, the more secure the security situation is using monitoring techniques very sensitive to combating terrorism and tracking criminals, especially through the most important windows, which are airports, whenever the growth is effective amid continuous change. To achieve these goals, the ease of passenger mobility plays an important role in improving the passenger experience through a series of processes that begin with the purchase of a ticket and end with the departure of the airport, an overall process that is often a complex series of processes and procedures that achieve a smooth balance of progress such as security requirements, regulatory requirements and business improvement. The airport system model relies on dealing with a large number of passengers and there is no place where these demands are more evident than a hub airport as it should be. Measurements in this project, we will study the use of modern technologies of biometrics and their impact on travelers [7].

1.2 MOTIVATION

This project has two main roles:

On a personal level, it is to increase knowledge about the use of biometrics at airports for most travelers who have not been searched for before or have never been examined in this specific place, and more specifically about knowing the effects of these measurements actually applied to people on the other hand to examine the impact of The use of biometric identification evidence at air stations, exploratory screening helps me sharpen the focal point of my examination and is only an important stage in evaluating the impact of using a particular instrument as biometric frameworks to establish discrimination on an air traveler. Another goal is to evaluate these effects by which the implementation of these modern technologies used or may be used at a later time in the journey for each passenger. The main objective of the research is to present a set of conclusions and recommendations on the use of biometrics and to facilitate expectations resulting from its application to countries that aim to use these techniques.

1.3 PROBLEM STATEMENT

The main problem discussed in this research is the application of innovative biometric technologies used in the airport industry and their impact on passengers. Where this topic is unknown to most countries, especially developing countries, and there are very few studies about it and almost non-existent by researchers in these countries, but they face some conflicting results in achieving their goals and visions. The reason lies in new factors, including the speed of changes and the entry of the world into technology The increasing development we are witnessing these days. Therefore, evaluating the impact of biometric identity technology will give a general view on the safe movement between countries through major airports and the granting of permits to leave and receive passengers, which in turn affects travelers in various aspects of airport operations, including services provided at airports. Interaction with airport operations, technology and services is one of the main challenges facing air terminals. The term "airport" is not limited to airport operators only, but refers to a large network of participants in the safe flight of aircraft and passengers and the provision of convenient transportation of goods to their destinations. This enhances the ability of airlines or airports to run successfully. Doing so is not without significant challenges, due to the use of a variety of fast and reliable technologies, especially in international airports, which depend on the use of technology. This refers to factors

identifying opportunities to apply the digitization of complete information as an approach to enhance the ease of movement of passengers and control the security situation of wanted persons, as well as to add technology that enables us to match information quickly and confidentially by following these strategies and the applied communication methods used by the specialization of airlines, considering airports among the most important safety points and ports in the world. This research will study technology and the possibility of its application in the Arab countries and know the extent of the impact of development on it.

1.4 CONTRIBUTION

The importance of this study stems from the fact that the use of advanced technology and its support for the existing system in air stations has become an imperative for any institution seeking to succeed in the quality of using these systems to achieve its goals, knowing that the leading institutions adopt these modern methods to enable them to establish an important site for them and in this way the importance of this study is demonstrated in the impact that will happen to institutions if they use the biometric system, as well as identifying challenges and opportunities, in addition to knowing the strengths and weaknesses in the application of biometric identity in the state of Iraq and some Arab countries that lack the application of this technology, so it will be an important and new contribution. And with that, it is the first paper showing digitization of biometric data and measurements for Arab travelers through airports, because it considers the readiness and acceptance of passengers for biometric identity, something that may differ from one individual to another according to their own characteristics according to cultural and social contexts [6]. In the study of this project, I tried to shed light on the knowledge of dealing with and accepting modern technology systems and how they affect people who do not dispense with the use of digital devices, and the results will be according to the environment set for the study.

1.5 AIM AND OBJECTIVE

The main objective of this research is to provide sufficient information for decision makers to choose and enable the type of biometric control in the airports of the Arab countries regarding the smoothness of dealing with it, cost, acceptance and readiness. By the management of air stations that seek to apply biometric systems to carry out their activities more effectively, making them distinctive and unique in the region. Also, the research aims to provide a set of

recommendations and conclusions and provide appropriate guidance that tells us how we can apply the biometrics system and reduce the risks of uncertainty as it shows the departments what they must do to achieve the desired goals of using powerful systems to identify and sort permits for departure or transportation of passengers in a consistent manner. Although many systems implemented inside airports include high-resolution cameras that capture clear videos of passengers, today we are trying to live up to a high level of accuracy in which the error rate of people detection and identification is low. Through human biometrics, the automatic recognition process is one of the unique human characteristics of each person, including physiological characteristics such as facial features or behavioral characteristics such as gait and physical construction according to the skeleton of each individual using the latest technologies in the biometrics and biometric monitoring system, which It provides human effort in examining data, maintaining its confidentiality, ease of storage, archiving and returning to it anywhere and increasing security in knowing all information related to travelers. Among the main objectives of this research are:

Provides relevant information so that people can recognize it

Improving communication between companies and travelers in particular, with measures that individuals may adopt and contribute to achieving

Identify the extent to which individuals are prepared to use biometric technology on a large scale such as identification and security issues, and the possibility of dealing with it on a large scale in the areas of civil application and biometric data collection

Administrative solutions for data encryption and coordination between the efforts and activities of departments and individuals, which contributes to the success of the work and development of these systems, which reduces confusion and misunderstanding.

This research will target the role of the internal environment in the Arab Gulf states, where there are characteristics that differ completely from the European countries, and we do not have a specific expectation for the different nature of the passengers in which this technology was applied [8].

1.6 SCOPE OF THE SEARCH

In this research, we have relied on the inductive approach, and we will design a questionnaire by collecting basic data in the analysis and presentation of elements related to the effects of applying biometrics on air travelers knowing the extent of the impact of its implementation on the Arab countries, due to the lack of the community of Arab countries to test the experience of biometrics by choosing the appropriate sample of individuals who had experiences of travel and the use of airports. This research sought to answer the main examination question and sub-themes by evaluating the motives and theories may appear as a result of the research.

1.7 THESIS ORGANIZATION

The thesis is organized as follows:

Section 2 where we review some previous and valuable work related to biometrics and their use. In section 3, we review the main research question and the strategy for answering it, mentioning the axes adopted in answering the questions of the questionnaire, and describing the method of data collection to conduct the final analysis on them.

In Section 4 it is explained about the target place in which biometrics are to be carried out to give the reader of this thesis an adequate understanding of the thesis.

Section 5 consists of the concepts of assumptions in the acceptance of biometric systems to assess the readiness of the technology in its acceptance

Section 6 in this section the primary data will be analyzed and data analysis is discussed with recommendations.

2. LITERATURE REVIEW

2.1 THE METHODS USED TO IDENTIFY THE PERSONALITY OF INDIVIDUALS

Checking faces in passport photographs is an important but difficult problem in computer vision, and most techniques perform well, in particular, existing techniques that rely on vital features (such as skin color, eyes, etc.) [9] and one of the most common methods of identifying individuals is Private passwords, as certain symbols are used with them, and some people often intend to put difficult codes to avoid them being stolen, but it may be difficult to remember them later, but it is difficult to manipulate the biological characteristics of the individual, including: fingerprint, iris and blood type, taking into account the different ages of the passengers Including children The more accurate and clear the information, the more work efficiency and safety "Crib anon " reviewed the literature on notable theories of IT validation and acceptance. His dissertation focused on technology use behavior and behavioral intention. The IAM (Internet Acceptance Model) explains user behavior and expectations for such use and may help professionals analyze reasons for technology rejection and may contribute to effective action to improve and user acceptance of technology [10]. "Tout " studied cultural norms and beliefs in multinational organizations. The first region covered the Arab countries (Libya) in North Africa. As for the second region, it covered the Arab countries in the Persian Gulf (Saudi Arabia, Oman, Kuwait, and the United Arab Emirates). The results of this study showed that the two regions are heterogeneous. The study also showed that education levels, age and gender are among the factors that contribute to the success of the adoption of management information systems (MIS) in both regions [11]. " Ramayana " studied the acceptance of the use of online bill payment on Masters Students, Department of Business Administration, University of Science Malaysia, and "Penang " They modified and developed the Expanded Technology Acceptance Model and Social Perception Theory in order to identify the factors that determine and influence the payment of bills using the online system. The results showed that the expected ease of use with interest was the main motive for accepting the use of bill payment using the online system. They also found that the main determinants of benefit were subjective standard and expected ease of use, while the results showed that risk correlated negatively with benefit. And that the self-efficacy used in the computer had an important role in influencing the ease of paying bills using the online system [12].

We can reduce the process of impersonation and combat child trafficking by attempting to smuggle them by traveling from one country to another.

2.2 FACE RECOGNITION MODES

a. Verification: It generally represents matching with a one-to-one system; because the system matches the image of an individual against a particular picture of him is already in his database file.

b. Monitoring: Surveillance is carried out by means of a large number of surveillance cameras to search for wanted persons, including known smugglers, criminals, terrorists, etc., and the authorities can give a warning signal when locating someone.

c. Identification: It is to verify the displayed image with the image already in the database.

There are many total numbers of images in the database, as shown in the (figure below2.1)**.**

2 .3 MATERIALS AND METHODS

2.3.1 Analysis of the Components of Airport Security Information Systems

We will need to know the components of private information systems in airport security, and we can define information systems as the use of people's data through the use of certain devices according to special programs that are carried out under certain procedures, and we will talk about the different devices that are used by airlines and security agencies, including the security cameras that are used to detect unauthorized objects inside the airport and suspicious persons.

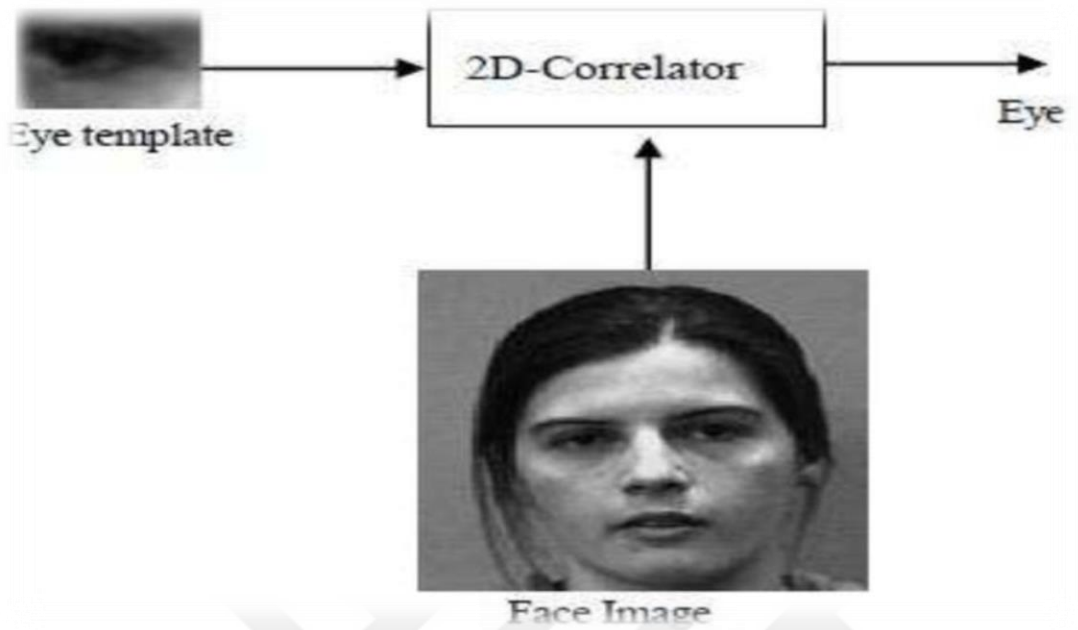

Figure 2.1: An example of Template based face recognition[13].

We may notice the abundance of security cameras in places of entry and departure in the airport and other safe areas, but despite the large presence of these security cameras, we may not be able to prevent the penetration that may happen to airports, for example attacking airplanes from outside or targeting missiles launched towards the airport by some terrorists those who may be able to sneak inside due to the weakness of the security monitoring devices and their failure to reach the required ideal. Therefore, the surveillance cameras must be connected to each other and control them be through one system. IP (internet protocol) network cameras are quite good, and so is the analog camera or CCTV (closed circuit television). According to " Bryant (2006) ", the Internet based camera digitizes the video signal by means of special encryption programs that include inside a web server that allows the IP camera to work like a network device, in order to allow viewing video images captured through a web browser that can be accessed via the internet and not only through the network. The use of this type of analog camera system does not provide the complete integration and flexibility required with computer networks, unlike the camera that relies on the technology of its operation on the internet protocol, and what should be paid attention to is the periodic inspection and maintenance of the cameras and to ensure that the components of the storage unit are updated to work well and correctly. The internal memory is one of the most important parts of security surveillance cameras, as it can temporarily store video

recordings in case the server fails until the computer server returns to work again. The existing plan is to use these devices as secondary scanners only. This means that most travelers will not go through this kind of technological screening, except for some suspects [14].(Figure 2.2) An image representing the millimeter wave technology while(figure 2.3) an example image of the reverse dispersion technique.

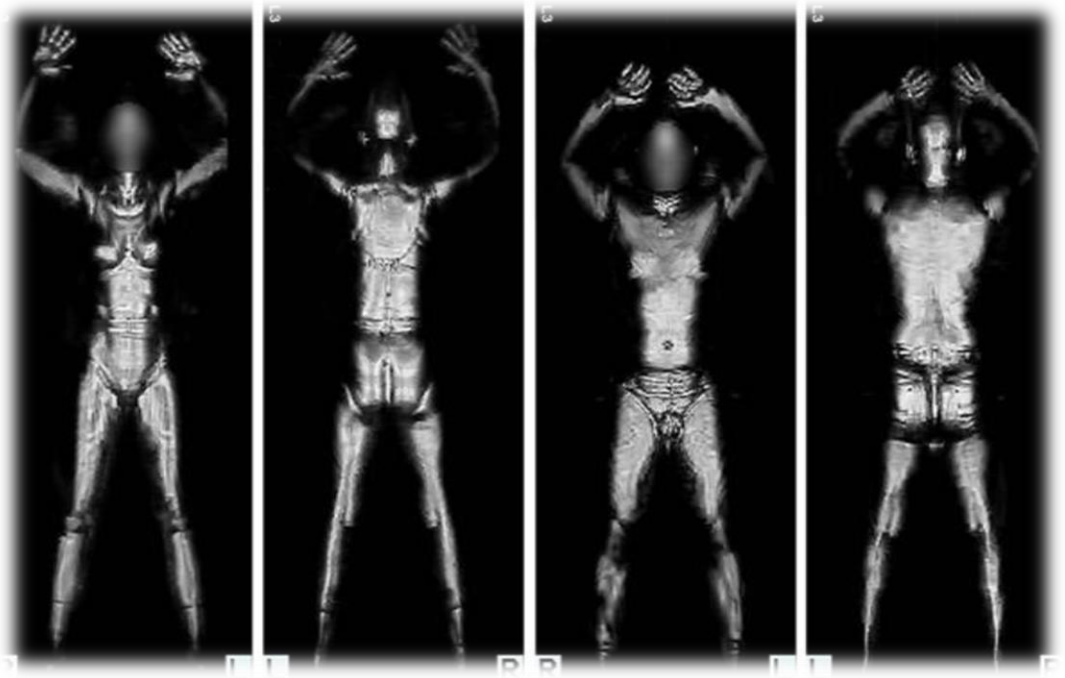

Figure 2.2: Example image of millimeter wave technology[1].

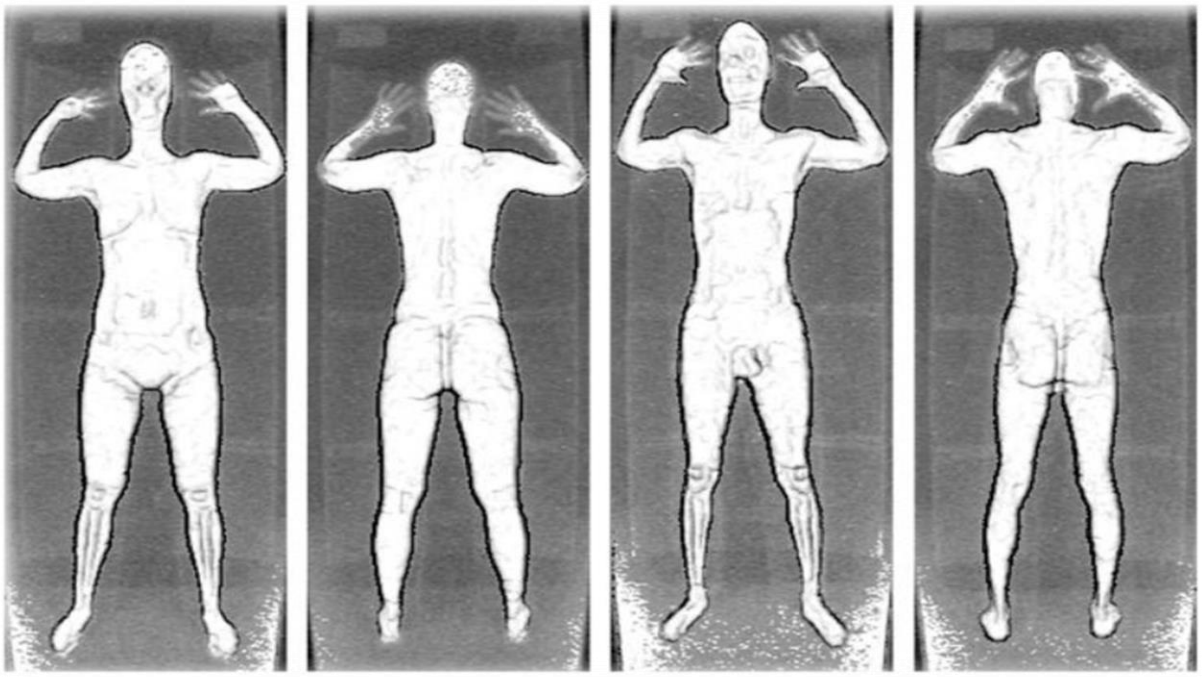

Figure 2.3: Example image of backscatter technology[1].

2.3.2 Biometrics Based Access

Biometrics depends on specific applications that are based on several factors of passenger identification techniques. Data is processed to increase the security and accuracy of information as the biometric document reaches the web and the feasibility of this system is demonstrated by designing a prototype that uses manual engineering by comparing the data. Previously stored with recent data from individuals according to a series of steps to grant them entry authorization The technique of identifying people using biometrics has become the most secure in identifying the individual file because it depends on behavioral or physical characteristics as it is an unconventional method and does not require the need to remember the password to authenticate it. The camera and microphone from biometric sensors represent standard low-price options. And we also expect the cheapness of palm fingerprint capture devices completely in the future[2] [15] The use of hand the system geometry is distinctive as only checks hand geometry instead of thumbprints to ensure that the user is indeed the same person it claims to be.

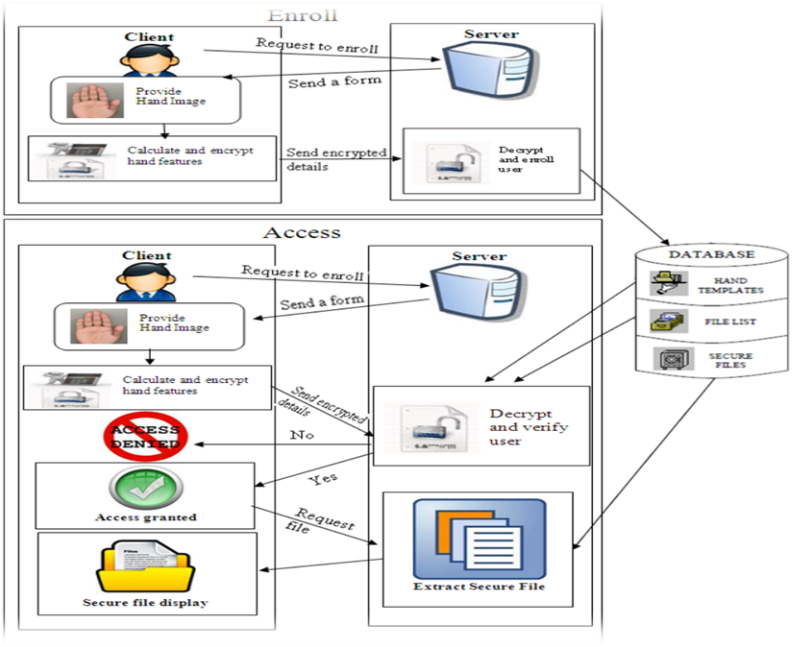

Figure 2.4: Flow diagram of client server interaction[2].

2. 3.3 Use the Manual Engineering System

The palm of the user's right hand is scanned on the surface (which contains five pegs) provided that the palm is facing downward. For the handicapped in the right hand, the palm of the left hand is placed facing upward. The five pegs act as control points for the user's hand to position them appropriately. An improved graphical user interface (GUI).

Figure 2.5: Graphic user interface for capturing the hand geometry[3].

The recording unit and the verification unit represent the two main units in hand geometry. Each user first logs in to access a webpage. To add a new user or update an existing user's program in the database we use the module. During recording, multiple photos are taken of the same hand via vectors. The feature vectors for each user are stored in the database as templates and the geometric features are determined according to the characteristics of length, width, thickness of the hand, etc. (Figure 2. 6) shows the extracted features of the geometric figure on the one hand. To verify the previously recorded person, the extracted features are matched with the person’s record. The geometric features are calculated using the same algorithm[3].

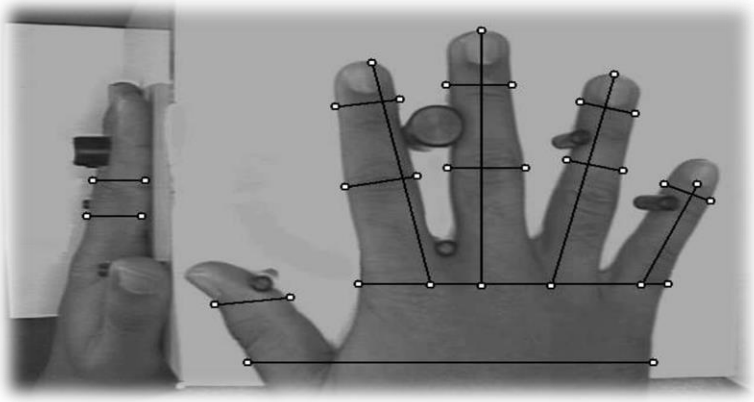

Figure 2.6: Features extracted from the image of a hand[3].

2.3.4. Face Recognition

We can notice the differences in the set of samples taken and the comparisons between them. All faces have been entered into the database, which may be affected by the dynamic structure of showing the face, so even the level of illumination plays an important role in the clarity of showing the accuracy of facial features as well as the facial muscles in the case of the individual smiling or frowning while taking the picture or when comparing a sample (the image of a former brother) with the sample of a person directly, but we find that the face detection devices may give satisfactory results, resulting in quality when revealing the identity of individuals, as the system allows two modes of operation that result in false positives in a very small percentage, and the other situation is false negatives at lower rates [16].

Figure 2.7: Face recognition with Image[4].

2.4 BIOMETRIC UNITS SYSTEM

We can divide the biometric units into the following components.

2.4.1 Recording Unit

It is the unit for recording individuals' information in a huge database in the biometric system. At this point, the biometric reader's job is to scan the biometrics feature to produce its digital representation.

2.4.2 Feature Extraction Unit

This unit processes the input sample to create a compressed representation that we can call the template, and then it will be stored in the central database or on the smart card that is later issued to the individual.

2.4.3 Conformity Unit

The matching unit compares the current entry unit with the template. When the identity is verified, the system compares the new properties with the user's main template and shows matching results or values (one to one match) When the system performs a matching process of defining new features against many main templates for users, it will give us multiple match values (one match is too much).

2.4.4 Decision Maker

Here the unit will reject or accept the user based on the degree of safety and the percentage of match.

2.5 VISUAL DISCREPANCY IN UNMONITORED DISCRIMINATION

Figure7 examples of information taken from a random sample of security matters in the country we notice that a pair of column-coordinated photos of the same individual can be drastically different when taken due to various situations such as we notice a significant visual difference in the same footage of the camera walking under different views (see Figure2.7). This visual discrepancy, due to some difference, leads to great difficulty in detecting and recognizing unsupervised discrimination learning [4] Matches mean correct matches, and false positives are

likewise one expresses the difference between the number of valid matches and the final number of matches they will be represented the real negative result is the number of photos. The condition called "true negative" was called a failure to recognize a face and no record of that was made because no face was detected[17] .

2.6 DOCUMENT PROCESSING COMPONENTS

Document processing components:

a. Discovery MRZ (machine-readable zone).

b. Block Code Sequence.

c. Recognize individual symbols.

d. extraction and diagonal compensation of document symbols.

Template matching and cross-validation are used with the screening area, to find out the percentage of validity of the data and match it with individuals. Image skew, as well as noise occurrence, makes this technique less reliable and accurate. Figure 2. 8, shows a picture of the bottom of the documents[5] .

Figure 2.8: MRZ and individual codes[5].

2.7 PRIMARY USES OF BIOMETRICS IDENTIFICATION SYSTEM

The official identity includes those ratios (fixed and variable) that people can use for example, introducing yourself when managing official institutions such as governments and presidents. This often includes your name, location, date of birth, gender, and current location. Identity or family ties such as parents, friends, youth, or other data is important to describe the rights and obligations of people towards these institutions. Since names, birthday events, and addresses are shared by many individuals, formalizations usually include special identifiers focusing information or attributes that interest them. This is usually a number (for example, a social security number) and then, at this point connects it to other individuals' authority data and archives. Biometric identifiers are one of a kind within a population and can be used to communicate the identifier[18] To some extent recently, not only has it replicated biometrics innovations such as identity frameworks expand after plus the amount of purposes. Conditional with the positional biometrics identifier Frames are sent and applications can be categorized into more diverse pools.

Forensic biometric identifiable proof frameworks are used to identify fraudsters (e.g. analysis Biometric highlights with evidence collected at the crime scene) or monitoring in frames (in view of biometric highlights for facial recognition).

Government: The biometric data of advanced visas is remembered, which is used during decisions to ensure the identity of the citizen or carried out to verify the authenticity of representatives.

Commercial: The use of biometric identity frameworks for cash departments is widespread, and It takes up a huge area of development. Fingerprints Premium Evidence Frameworks are used as a methodology to ensure welfare on premiums instead of them Secret phrase, pins or original shipping labels Travel: Personal identification frameworks can be used to identify individuals who are traveling (e g for immigration or security reasons).

3. RESEARCH QUESTION

Biometric Identification Systems can change the strategy where an air terminal regulates the own administrations to travelers. Along these lines, the client ventures changes and thus extraordinary touch focuses or experiences change reshaping the traveler experience and its end result:
the consumer loyalty. This present Master's theory will investigate how the biometric distinguishing proof frameworks may have an affection traveler's to air terminal plan of action. Thus, the examination question of the theory is:

The answer to the research question mentioned above will give a clear idea to those who wanted to read this thesis What opportunities and risks can this innovation bring to the air terminal industry If it is implemented. Through three distinct axes that will help to talk about the main test question from different points of view.

research question

What does biometric identification mean for an air Traveler?

i. How does recognition of biometric identification systems affect the traveler at the airport exploring recognition of biometric developments would waive some of the protection, security, and social concerns that have been underlined by previous explorations and writings on these distinctive evidentiary frameworks?
ii. How can the situation of the passenger who sees a proof frame that can be identified using biometrics as an advanced device that works to achieve comfort and safety for the air traveler?

This axis will survey the drivers and risks that constitute the idea of a state of innovation for biometric identifier frameworks. For emerging countries that may apply this technology using creative innovation and it can be the basis of consumer loyalty as emphasized by few past few

explores depending on the innovation status of the customer regarding the use of self-management progress.

i. How the use of biometric identification with a biometric system can effect on Passengers experience and their flight?

Through basic and optional information, information about the airport will be collected, developments in the airport, airport activities and through visualizations. In addition, we will learn about the difference between systems that apply biometrics to passengers, the success of airport workflow and passenger satisfaction, and a system that does not implement proof frameworks that can be identified using biometrics. The various evidence will help to better understand what distinguishes testing from management experiences (or touch points) that have an impact on the customer's recent experience. In this way, in this thesis, biometric identification systems will be presented in various ways such as biometric arrangements, biometrics innovations or biometric confirmation strategies to keep the content flowing

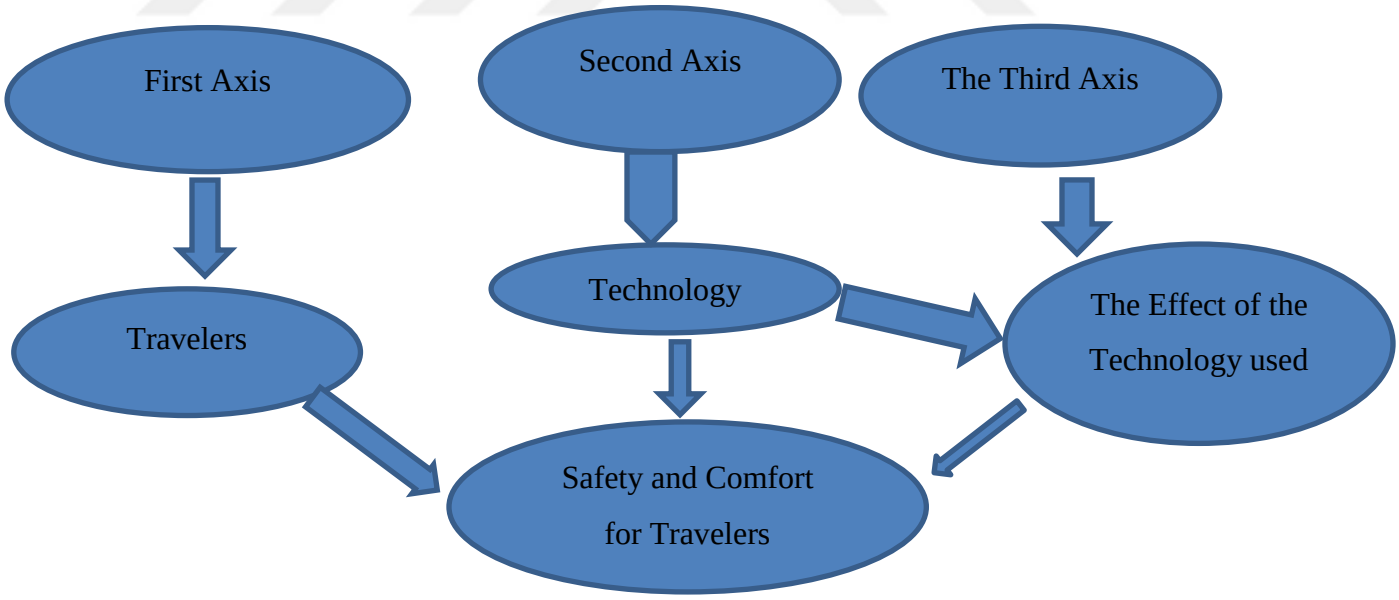

Figure 3.1: Conceptual map of the thesis.

3.1 STRATEGIES TO ANSWER THE RESEARCH QUESTION

This section presents the rationale and arrangement of strategies used to address the examination question as well, to achieve the exploration purposes described in the preceding area. Moreover, it gives the metaphysics and epistemology of examination, essential explanations for the legitimacy and quality of the complete examination.

The examination follows an inductive strategy. inductive exploration system,

such as expectation to build constrained associations around appropriation, and examples of the relationship between people's observed or appreciated traits and social relationships." An induction strategy is recommended for an exploratory examination based on the observed couple or then again on

the assessed traits of the occasions. This exploration system needs to select a set from the clips, gather specific information with them, and then elicit speculation from them. For this examination technique, the social world must be observed or appreciated using distinctive ideas of the world. Additionally, we believe that the solution to our query will be influenced by our experience information, from hypothesis and previous research as well, from custom within the control and its existence will be restricted. Self-exploration is suitable for understanding the phenomena within Develop and discover connections between ideas, practices and production. Hypothesis revision Far from self-actualization, quantitative investigation attempts to verify occasions and build realistic connections between them Factors, summarizing the results for the audience from which the example was drawn. Although the subjective and quantitative techniques were generally Global disparities are seen as completely uncorrelated, and are gradually realized [19] That inductive analysis begins with an examination of the value of the world and then, at that point, makes glorious speculations called designs, and in doing so, the inspector of this approach to thinking builds "observational conjectures" and learns about the relationship to his basic hypothesis. Induction methodology dissecting a case with no hypothesis at the start of the examination; Speculation may arise as a result of exploration.

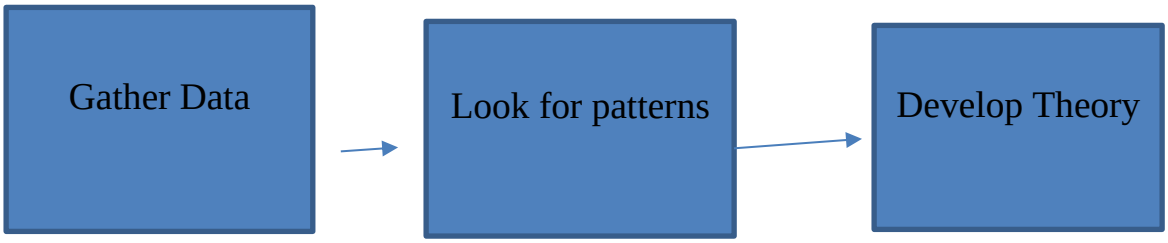

Figure 3.2: The inductive methodology.

3.2 PROCEDURE OF INQUIRY

The ordering methodologies used in this thesis are: self-examination of auxiliary information, it is moreover called additional examination and a mixed technique of self- and quantitative background information. The optional examination, with basic information, will help in processing Axes 1 and 2, while Axis 3 is handled with hardly any quantitative information, personal information from the basic examination, and a few ancillary information.

3.3 E-REVIEW

Electronic reviews are a study driven by the use of electronic tools such as the Internet. In terms of custom tests, electronic overviews are less expensive, faster, and easier to use. It is also possible to reach a relatively large number of individuals in a short period of time. The primary motivation for using the review is to compile a key measure of individuals' responses to deconstruct that which allows for more comprehensive speculations about the population.

In light of this, an electronic review was chosen to contact more individuals and respond to the main themes in this study. The full questionnaire can be found in the appendix. Electronic studies are initially a quantitative exploration technique, and this review was also fundamental. To accumulate more subjective information and realize a new point of view not being considered now, some inquiries had an "other" open reaction alternative.

respondents to have different feelings and alternatives that had not been considered when planning the study in case they did not feel that any of these ideas were consistent with their own views.

The reason for directing the electronic study was to get more feedback, and thus to gather more information and have higher generalizability than would have been imagined by self-examination. In addition, it was useful to join the post-effects of a single pool of electronic review inquiries and visualizations to improve.

Before starting to make inquiries, carefully consider the information and data that is being pursued, so that you do not have any trivial inquiries. Then, at that point, when planning the survey,

Suggestions on how to get the best results were used:

The study was rather short to get more answers and fewer withdrawals.

a. Reaction options have been restricted to making each closed query.
b. No photos or graphics shown within the review were included to ensure the study

Don't be late to stock up. Moreover, these components may be shifted when rounding the revision

They can also raise the amount of withdrawals and incomplete polls.

c. The use of drop-down menus is prohibited, as these menus can regularly lead to the selection of respondents.

Advice on language abilities was used to tailor inquiries. slang and

Abbreviations are rejected to ensure that everyone can understand the issues. Also, very long,

Unconfirmed and extended inquiries are not considered. To ensure that individuals who did not hear or did not remember what biometrics are responding with “No” or “I knew about it, but I don’t know exactly what it is” to the main inquiry

Do you know what the biometric identity framework is? To allow cross-order checking,

Travel theme questions are integrated, just like there are sectional questions Regarding topographical start, level of training and ability to innovate. To conduct the electronic study, a product that serves the survey requirements was selected. He. She It was necessary to discover a product where the survey could be generated in order, without The presence of any requirements

that can affect the quality in any capacity. Before distribution of the review, individuals were selected for survey testing in Request to ensure that everything will follow the established line and inquiries were good. Some input regarding language has been given from the people tested, and a Hardly any adjustments were made before the last form of revision was distributed. To correlate the respondents, a non-probability test was used. audience for this investigation Everyone had gone across the plane. Choosing to use an irregular example with expansion The population was due to the need to test a distinct "class" of individuals. Due to time and asset constraints, residence check has been used primarily for the convenience of electronic review. Through Facebook, greetings were sent from companions and recruiters to various Gatherings and group people on Facebook. The public display was similarly published on various websites identified with joint moves and flights. This is a self-selecting screening technique since the respondent has chosen whether or not to participate in the overview.

3.4 NATURE OF RESEARCH

Quality criteria were applied to criticism in the nature of the investigation: reliability and legality.

Legitimacy and reliability have been important for some time in quantitative exploration where

Objectivity was the best, making carefully perceived strategies and factors vital[20]. With a self-examination, once again, there was Conversations about whether or not these quality models are appropriate. was to a greater degree a conversation about how best to learn about a great and less important personal exam [20]. In any case, both reliability and legitimacy can be used for self-assessment of the research as well. The legitimacy of the exploration is fundamental, and is related to whether the findings help in the answer The hard assertion and whether what the scan says it measures is what it really measures. The legitimacy of this exploration is so high, on the basis of what is plausible, that by carefully constructing an electronic overview question, and satisfying the perceptions of its components, the legitimacy has been refined in this assumption, measurable legitimacy is somewhat hindered in

consideration Audience friendly photography. The electronic review urges weaker factual legitimacy. It Is difficult to summarize population-dependent results, which means that external legitimacy is disrupted. In an ideal world, more individuals of different age groups would have to

be reached in quantum exploration, and more individuals from different air stations would have to be remembered for self-exploration. Because of time and asset limits, However, this is difficult to implement. It will be important to make the overall objectives dependent on discoveries. From the hypothesis, it is possible to identify designs among the test-dependent population. Consistent quality shows whether exploration techniques are so well characterized everywhere that others can reformulate the search and obtain similar results. [20]

Reliability is much more material for quantitative information because exact estimates are troublesome in self-examination. In interviews, information is obtained through cooperation between two people. Each affects the other [21]. Thus, it is difficult to get the exact same results if another broker is playing the meeting. As an attempt to improve reliability, the scientist tried to stay away from experts during gatherings and revealed topic opinions. The goal was to reduce critical errors and biases in the examination. Whatever the case, on the whole, dependence was not relevant in association with the self-discovery performed in the study. In terms of quantitative examination, electronic overview, consistent quality has been attempted by not doing There are no errors in the questionnaire. If the probe is difficult to decode, for example, Individuals may have taken it based on a different hypothesis and the results were then It was accomplished by some chance[21]. In addition, the information has been handled with caution so that no fraudulent results are collected. Regarding the ancillary information, a basic methodology has been taken to ensure that the data It was from accurate and well-established sources as a reliable resource The mindset was maintained while reading the article that it can be one-sided photograph shooting Definitely work. Locations were used when the sender was clear and specific. The demand has been placed on using widely understood and updated websites. In view of these steps and measures, it is accepted that the secondary optional information used is reliable

3.5 THE USE OF BIOMETRICS AS SECURITY DEVICES FOR AIR TERMINALS

After the September 11 attacks, air terminals began to offer a course type for passenger screening

Improving airline welfare[5] . Airport security has become superior worldwide in order to get away from other acts of injustice based on fear but in addition to stopping the insecurity experienced by travelers. Less luxurious discrimination by travelers has affected the entire airline industry., US Air Travel Service declined 31.3% after 4-5 months and carrier income declined by

$9.1 billion annually after the attacks (this was also expected to result in lower air fees and development intensity),[22] Refers to a rapid drop in the air passenger pile by half compared to hostel accommodation. Along these lines, understanding the passenger vision associated with safety efforts has become a major angle for the entire aviation industry and the various partners identified with the movement's business. The essential features of biometrics include its uniqueness, so only one person possesses it which stands out precisely. Because of this unique component, biometric progress is currently being made at about 28% of the world's air stations, with states currently granting biometric visas, which compares to more than half of all international ID (international identity) cards granted worldwide[23]. IATA (International Air Transport Association) and the Airports Council around the world support biometric identity frameworks as a driver feature to facilitate time strategy The security of air terminals has increased after 9/11. As stated in the correspondence from the Commission to the European Parliament and the European Council on 4 April 2016 titled “More coherent and intelligent information systems for borders and security” made after the fear-based injustice attacks on the floor area of Brussels Airport on 22 March 2016, innovation can reduce Biometrics reduce the risks of interpersonal mixing, separation and ethnic composition and, therefore, “can similarly add to expanding the security of the population living in the Schengen area as it helps combat psychological warfare and real wrongdoing.” (European Commission, 2016) [24] Assuming an air terminal is a country border, countries or groupings (e.g. countries of the Schengen Area) that use or intend to take advantage of biometric advancement to assist customs authorities in distinguishing and collecting information about arrivals, exits and travel to and from a particular country or region. For example, the European Schengen Data System (SIS) mid-2017 added an “Computerized Fingerprint Identification System” (CFIS) which will be made available by the European Union Legal Requirements Organization Europol (European Commission, 2016) [25]. Besides, the European Commission is evaluating other functions of a GIS such as the use of facial recognition as a proof framework that can be recognized by biometrics, in an extension of CFIS (European Commission, 2016) [24].

4. AIR STATIONS

This part presents an analysis of air terminals, starting with a general outline of the air terminal industry, future difficulties that may be encountered by travelers and illustrating the work of the airport, managements and characteristics of air terminals**.**

4.1 MANAGING WORK AT AIRPORTS

The airport is a framework that supports the various departments associated with the development of good and travelers and is one of the essential parts of the air transport framework. The idea of an air station is generated all the time: an air station as a basis gives a modular arrangement of the vehicle between ground and air for passengers and payload. These days, air terminals are multipurpose touch points for transportation where aviation divisions provide various services to cater the business from them. Departments (e.g. stores, convenience and tourism companies, car transport companies, etc.) [26]. Promoting business practices other than avionics addresses the source of income. In 2010, air terminal income came as a result of a 46.5% increase in non-air sources (ACI, 2012). For this reason, airport customers are aircraft that buy management care, but in addition to this, travelers who currently have the opportunity to purchase a wide variety of items and departments directly at the airport (Smart Airports, 2009). Today, air stations are improving their foundations and working spaces by proposing different exercises and administrations: these recommendations have been made due to new demand patterns and the evolution of competition in the global market [26]. Due to unimaginable budgetary requirements to move a wide range of new departments and meet new needs, few air stations are abandoning public institutions to private board organizations

4.2. AIR TERMINAL FUTURE CHALLENGES

The Malaysian government has been pressuring everyone - organizations, public offices and even people - to receive information technology as a component of a larger goal to accomplish what has been established and consistently set the country. The Ministry of Finance for example introduced the expected electronic procurement (ep) system to each and every one of its providers. The Construction Industry Development Board (CIDB) has implemented the Building Electronic Entry and is currently dealing with electronic offerings. In accordance with these turn of events, an exploratory assessment directed on the state of innovation of supervisors of

construction companies in the Malaysian development industry. Innovation status refers to “people’s inclinations” to embrace and use new innovation to achieve goals in home and work life [27] Management arrangements have expanded on the planet, nowadays there are over 2,500 combinations of arrangements.

New orders and new departments helped increase the number of air assistance facilities. Passengers like a clock mechanism have doubled since the mid-1980s, and in the following 20 years it is a natural progression of 4.6% per year [28]. Because of this increase, passengers have additionally become more modern customers at air terminals; They travel more regularly than previously, and this leads them to be more in demand than the air terminals, in terms of the quality of management and the amount of accessible commercial offices to reach the full benefits offered by the development of passengers and air travel managements, the modernization of air terminals is important to oblige the development of traffic in a way that Managed: already critical number of stations exceed 60%/70% of their coordination limit Airbus (2015) estimates that if the enterprise stays the same until 2020, over 50 airports in Europe will exceed 80% of its ability. To confirm this information, which measures the European development of 20.4 million passengers every year and 20 of Europe's largest airports will be completely submerged by 2030: this means that 11% of flights will not have to land (2.3 million flights every year). Business with a more modest limited edge is reflected in the departments offered to travelers: long Airlines, relieving deferred assignments and delayed flights that upend the traveler experience and Passenger assumptions regarding assistance, to assess the air terminal and its customers, aircraft [29]. To reduce the impact of submersion of pneumatic stations and transfer a to better support travelers, air stations are gearing up with innovations that capture data and information to improve the passenger experience and operational productivity. By embracing the new and Current Developments of Data Acquisition, Linkage and Deconstruction in Air Terminal Framework What's more, by using this information to become more efficient and robust, air station chiefs can create a more responsive and coordinated business and business climate. And due to globalization and the development of motor vehicles, the number of travelers abroad is little by little expanding. The current immigration control framework moves manually from identification screening and requires time-consuming movement time, which places a burden on travelers. Furthermore, programmed identification review requires precision to handle to

implement essential capabilities, for example, judgment on travel papers produced, search for a wanted offender or an individual who is prohibited from immigrating, [30]

4.3 SERVICES PROVIDED AT AIRPORTS

In the new years there has been a development in the volume of air traffic, in an attempt to improve the basis and low-cost carriers that suggest travelers to reduce sections to contain expenses [29]. Air stations are trying to adopt air departments that cater to passenger services, as they are increasingly becoming enterprises that fall to the customers. As providing a travel experience is a basic need for some air stations. The types of sections offered by air stations can be divided into Aviation Sections and aviation departments.

The aviation departments of the aviation departments as a whole take upon themselves the tasks of the departments that are handed over

From the stage of preparation for the departure of the aircraft to the stage of landing the aircraft on the runway and each section is defined by the movement of passengers (such as registration, things and belongings for passengers, care, etc.) while the non-flight sections are the commercial activities at the air terminal, and others suggest additional sections for passengers (meetings for men works) [29]. The departments offered by current air stations are categorized into 4 unique classifications:

i. Advantages of exchanging passengers and goods
ii. Traditional administrations, registration, data
iii. Expected departments and multi-unit departments.

A wide range of departments, strategic departments, legislative departments, business exercises, tourism departments and advisory departments

The general foundations of the air stations, at this stage, are not related to the center's usual capabilities and management, the materials of the air stations with an extended period were only attracting carriers as primary customers and fulfilling the demands of carriers was the primary goal. Then, at that point, the air terminals were trying to meet needs that did not change conditions on the basis of no market risk. Specific number of air terminals that handed over an airport area to a particular air passenger was just an attractive characteristic[22]. With the

development of air stations and air administrations proposed here and there are proposed at different stations in similar areas, distinguish the divisions and the degree of expansion of the recommended division across air stations[22]. likewise, for the main centers, the departments proposed by the airport represent a vital and important aspect. Critical motivational strength is determined, especially if an inelastic cost to customers must arise for a long time to choose an air station by the type, quality and frequencies of the air sections operating across the carriers, and in which case there may be an increased number of passengers. I was affected by the extravagance in the help desks of the air stations and the most prominent air stations. This may be to put the hubs of the air terminals close to each other and with a collection area similar to Dubai International Airport and what is more, Abu Dhabi International Airport with this opposition due to the development of the market, the air station supervisors begin to create the relationship file with the passengers, and a few air terminals Such as Copenhagen Airport or Milan Malpensa Airport dedicated reliability scheme, talk about credits, travel, luxury and air. Sections as the main credits that appeal to air travelers. [22]

All things considered, it says cost remains the main feature of importance to air travelers and divides the others into two distinct classifications:

i. The main type is determined by flight characteristics such as flight frequency, number of stops in flight, travel time, obstruction or reliability of flights, airlines offering courses, and types of aircraft.
ii. The second category of characteristics is more related to the most prominent air terminals such as air terminal arrival time, arrival mode, airport desks, checks, desks, traffic desks, speed of methodology, and business. The entire aviation industry respects the nature of air terminal departments.

Productivity, so aircraft and air explorers were associated with related ratios. Air station limit increase. Moreover, developments in dispensing with bottlenecks and lines and for security reasons are essential for full frames. The simplest air terminal fairs Customers face problems with air travel, both for air carriers and air explorers, since flight delays and rollbacks due to terminal management failures affect the entire airline industry [29]. Carriers initially assess the basic basis of the air station, the costs of the air stations to operate there, and the quality and cost of ground care for the administrations provided. [29]. In addition, aircraft studies the interests

and style of passengers. Which is therefore affected by the nature given by the airport administrations. In the end, there is a file Significant importance of air station charges or fees and costs of air station activity on board, which may affect ticket costs and consequently explorers' choice to use or not to use an air station or aircraft, as further indicated, the cost of the ticket and very likely the main credits for air passengers [29].

The quality of assistance at air terminals has become an essential part of the entire airport framework and has taken up a regular topic in airport-related writing [31]. Regarding airport management quality, the five most important elements are [32]

i. Speed in air station systems.
ii. cleanliness of the hall and meeting areas;
iii. determination of managerial and monetary incentive;
iv. Positive experience in dealing;
v. Exceptional customer support.

The air airport administrator establishes a coordinated atmosphere in meeting the needs of the customer and assumptions. Through a different strategy for classifying the information, the air stations decide on the information about it. Different angles: compare data with activity galleries or worry about trips. The nature of air terminal management is generally assessed by providing air passenger ratings [29].

5. HYPOTHETICAL CONCEPT

This part will present each of the applicable hypothetical ideas to answer the proposed research question.

5.1 DEFAULT FRAME

The objective of this part is to present the central ideas of the proposal. current writing

Applies to the topic will be examined, focusing on major discoveries. this part It does not exclude the survey of the topic of the proposal but the general presentation of the hypothesis Focusing on the rules that apply to the test question.

5.1.1. Departments

As described in the sections above, an air terminal is a resource for departments primarily for air travelers and aircraft. As a matter of first importance, a kind of large financial movement,[33] there is no movement of the liability purchased, and Each special help: every time the capacity is created, it cannot have an exact equivalent Adjectives since management fluctuate depending on the supplier, where they are introduced, when and How it is presented.

5.1.2. Customer Experience

The customer contribution that is inferred during the transfer of assistance has consequences at different levels, Reasonable, enthusiastic, physical and profound[25]. Mix of different effects makes the experience[34] . Described the customer experience as Develop the relationship between the organization and the “customer experience starts from A set of aspects of cooperation between a customer and a commodity, an organization, or a part of its association, which induces a response.

The customer experience includes every perspective that the organization presents during the transfer of assistance: it includes management, simplicity of use of management, quality of customer care and customer reliability Endeavors [35] . Customer experience is the result Communications between the organization, its courses, and the departments and personnel that support it Innovation and its client that characterizes the helping vision. These call minutes are They are called management experiences. Help experiences It can be instant when the customer

starts or quirky help when the connection is made Conducted through enterprise imaging experiments [35].The central mission of building an exceptional customer experience is to grow the relationship with customers Executives' Exercises [35] to make it more grounded Relationship with organizations and associations. Five basic features were identified by Payne and Gilmore (1999) [36] about construction Incredible Encounters:

i. make the appropriate theme that appeals to the customer and recognizes the brand every part of the organization.
ii. must line up with the central theme.
iii. To make positive signals.
iv. to output each negative prompt.
v. Linking each of the five colleges to participate with a request for assistance on the central topic.

The main idea of customer experience arose during the 1980s along with writing regarding shopper behavior as a variable in the dynamic [35].

It is in this sense that the new way of dealing with the consideration of use begins all that includes experience that includes, the customer as well as the individual in the totality of his views and in every contact with an element or department of an organization,

5.1.3. Passengers' Satisfaction with Biometrics

Nowadays, the traveler's journey is not simple, no matter whether he uses more Self-service operations. The entire trip is frequently arranged in four phases: Pre-travel: Find the perfect flight, confirm the ticket, pack the luggage. Estimated online registration (within 24 hours before flight), travel to airport: -

i. Air station check-in: appears two or three hours before the domestic flight

Hours before flight for global flight, route finding at air terminal, self-service passenger registration holder, registrations filtering and verification.

ii. Luggage at board stage: self-service gear labeling and lowering stand

Registration baggage.

iii. Security check phase: Monitoring deportation leave, security arrival, security

Screening, entrance load detection, ticket filtering, boarding flight.

The reaction described above can normally take anywhere from (1.5 to 3) hours. In the end, deserved. To huge visa procedures, long queues like excessive reliance on paper Reports make the journey not easy. Air stations around the world need to plan an innovative innovation to improve travelers' journeys. This change of perspective in how traveler adventures are made possible through the use of biometrics in air stations. In addition, the efficiency in the air terminals will make it possible to reconsider the offers of air travel an exceptionally consistent, worry-free and hassle-free experience.[37] . As Mayer and Schwinger[35] characterize consumer loyalty as "the pinnacle of providing customer experience, the net result of the greats in a nutshell Terrible things." Consumer loyalty can be described singly. Consumer satisfaction as an impression after evaluating the use of an item or administration, and while Passengers' satisfaction with biometrics is a reaction to the apparent evaluation, and this is what we will try to reach at the end of the electronic survey.

5.1.4 Design Tracking of Individuals Using Electronic Passports

The design of tracking individuals through electronic passports is a multidisciplinary approach that cannot be explained by a single definition.

Where biometrics represent the physical or behavioral characteristics of an individual It is used to prove discrimination. Natural finger impression designs Form. One of the biometric advances that has been reported or tried by line so far Security organizations, fingerprints and facial recognition are the most common used, and iris filters are generally seen as promising for future applications. Images and biometric estimates are typically digitized and reduced to an A mathematical identifier that interests a particular individual. Biometric parameters they can then be used for two specific purposes, character confirmation and character disclosure. In general, they can answer two queries: Is this person really what he says? Also, who is this individual?[38] The primary thought process behind the use of biometrics in identification was the need To give storage for basic data, for example, fingerprints or iris scans A set of encryption agreements that guarantee the information contained in it Acceptance of the information contained in the visa is guaranteed by the primary authority to accept this encrypted data [39] .

5.1.5 Client Journey Mapping

The client venture planning is a portrayal of the client excursion and experience during a help or then again utilizing a space [40] . The guide underlines and features, from the starting as far as possible, the different stages, steps and contact point a client go through to finish the excursion. The job of Customer Journey Mapping comprises in to comprehend the experience from the client point of view. [40] states that planning the cycle can feature openings, problem areas and calls to activities and includes every one of the pieces of the organization. Three unique segments form the client venture map:

i. In the segment on the left, the touch focuses and prompts. They address each physical connection between the client and the organization or the help maker.
ii. In the flat segment at the top, the various stages the client go through from the starting to the end the excursion.
iii. Beneath the level area, the genuine client's excursion is illustrated. In each cell are drafted every one of the bits of knowledge converged by the match of the variable in the left section and the stages of the level segment.

5.2 WRITING REVIEW

Biometric ID frameworks can be considered a "hotly debated issue" for creators and scholastic specialists. Despite the fact that biometric distinguishing proof frameworks are new innovation and exceptionally discussed somewhat recently, a couple of researchers have centered about how biometric innovations are acknowledged by clients, the effect they can have on consumer loyalty, and there is no writing concerning rate of those imaginative frameworks in the air terminal industry. Underneath, the writing found helpful and appropriate to address to the exploration question is depicted.

5.2.1. Acceptance of Biometric Identification Systems

In 2015, a passenger overview provided by SITA (International Air Navigation Communications Company) examined the feelings of an air traveler together.
To understand what's more awesome is a very terrible second during The Traveler Project. [41]
The overview showed that security checks and border controls are the worst shots The experience. with 36% of the respondents who confirmed negative feelings during this. The

theater. Although the respondent's fulfillment during each trip increases if biometrics are used Self-management arrangements are implemented: 97% of the respondents were achieved using these types of innovations That biometrics is the most famous inside Verification procedures with half of the respondents that they lean towards biometric identity Frameworks to check the character of passwords or different strategies and a large number of respondents You have a perfect biometric assessment. Commonalities between biometric responders Evidence frameworks can be identified as verification progresses within the highest levels. Existing secret phrase. An important notion of recognition of biometric identification frameworks is related to Determining where to implement biometric identity frameworks. that biometric identity administrations may be affected by Limitation of use in correspondence of visible and obvious advantages to clients' opportunities. Also, where there are obvious advantages, there is higher and better appreciation acumen. Essentially[42] customers' recognition of biometrics such as a unique tag identifier is more evident when buyers know and are convinced of its advantages. gives this frame. The view of the ease of identifiable biometric proof frameworks changes by the unique situation Biometrics is the best device where authenticator security, iris scan and unique tag screening are seen as secure authenticator More than 80% of respondents, respondents seem to be more concerned about why Those who initially agreed. Protection does not even address a particularly important issue (32%) of the respondents are concerned about the impact of the fingerprint on protection (27.8%). to filter the iris and estimate the face. Buyer training and innovation awareness are key issues around acknowledgment of Biometric frameworks[42] .Newness can affect the choice and the customer Impression of the distinguishable biometric proof framework. The greater commonalities and understanding of innovation is closely related to the nature of the experience as it is being used, and even less commonalities make innovation work unwise. To acknowledge the innovation of biometrics. Ambiguous data target Obtained from using a biometric identifier framework that addresses core customer concerns.

5.2.2. Ready to Innovate

About the use of new innovations, some feelings appear regularly by customers[43]. for example, fear of technology or passivity of innovation. This is an alternative result Affinity to accept new developments. Distinguishes that the tendency to embrace the new Advancement by individuals as a state of innovation is generally an emotional state that arises due to a perceptual example (known as a gestalt) of inhibitors that characterize a customer's tendency to Cooper

Enthusiasm or availability of innovation depends both on different measures Pros and cons of drivers. Imagination and positive thinking have been thought They are two positive perspectives that drive customers to have a good outlook regarding New mechanical assistance or component. All things being equal, it was anxiety and instability Consider negative metrics that lead the customer to be less willing to embrace the new Help or specialist item.

5.2.3 The State of Innovation and Consumer Loyalty

The relationship between consumer loyalty and the level of the customer's state of innovation must be taken into account to anticipate the customer's vision and practices. For analysts, achievement reveals the good feelings that are identified from the help, and those feelings can be linked to those initiated through the association between shoppers and innovation-based departments: as explained in the previous section regarding the availability of innovation, those feelings can be emphatic (linked confidence and imagination) or passive (associated with distress and instability). In addition, innovation status correlates. With consumer loyalty in light of customers' willingness to embrace the new innovation, with more noteworthy disposition and the ability to benefit from it at a higher rate of innovation status, and fulfillment must be communicated more than other people providing lower innovation status [43]. Another test from the guidance of Son and Han (2011) [44] is based on how the state of innovation influences Social results such as pleasing shoppers. Explain this exploration model.

Visualize the state of innovation as information and fulfillment (and thus, maintenance) as an outcome. Sun and Han think of the ideal and Creativity as a client driver and weakness and uneasiness as client disincentives. In light of what has been found, hope influences the diversity of uses of imagination Capacity. Creativity has consequences for the frequency of use of imagination and assortment

Take advantage of creative abilities. Regarding the inhibitors of innovation availability, the instability has a Negative effect on the rate of use and discomfort affect the frequency of use Core abilities. Finally, [44] experimented with some assumptions about how to use usage designs Positive effect on fulfillment. Find out that all of the usage designs listed above have an extension Positive effect on fulfillment. These checks are useful to explore to show you how to do it The availability of innovation has not only influenced the customization of innovation but also the Conduct results such as consumer loyalty [44] .

6. FINDINGS AND DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

6.1 RESULTS AND DISCUSSION

In this chapter, we review the analysis of the data collected through the electronic survey. Our sample consisted of 274 respondents. The limits of the target sample: The target sample in this study was from various Arab travelers. This analysis revolves around the acceptance and technological readiness for the use of biometrics in Arab airports, represented by biometric identification systems. The first part represents the demographic data that shows an idea of the characteristics of the respondents as follows.

Table 6.1: shows that the majority of the respondents to the questionnaire are aged half of the respondents are within the age range [20-29] which represents youth with 50% while participants are from 30-39 years old 34% and nearly 12% are 40-49 years' old.

Table 6.1 The ages of the respondents

Table 6.1:		Frequency	Percent	Valid Percent	Cumulative Percent
	20-29	138	50.4	50.4	50.4
	30-39	95	34.7	34.7	85.0
	40-49	34	12.4	12.4	97.4
	over 50	7	2.6	2.6	100.0
	Total	274	100.0	100.0	

Demographics Academic Qualification Half of the respondents hold a bachelor's degree, then a master's degree, and then a doctorate graduates

Table 6.2 Education level chart for respondents :

Table 6.2:	Frequency	Percent	Valid Percent	Cumulative Percent
Bachelor's	142	51.8	51.8	51.8
Master's	104	38.0	38.0	89.8
PhD	6	2.2	2.2	92.0
Uneducated	1	.4	.4	92.3
Other	21	7.7	7.7	100.0
Total	274	100.0	100.0	

The main results can be summarized as follows:

Among the 274 respondents who answered the question, what is your level of interest in innovative technology, (43.1%) stated that they have good experience, while 28.5% said they were very good and (22%) stated their level of acceptable as shown in

Table 6.3 Technology interest level chart

Table 6.3:		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	78	28.5	28.5	28.5
	Good	118	43.1	43.1	71.5
	Acceptable	16	5.8	5.8	77.4
	Middle	62	22.6	22.6	100.0
	Total	274	100.0	100.0	

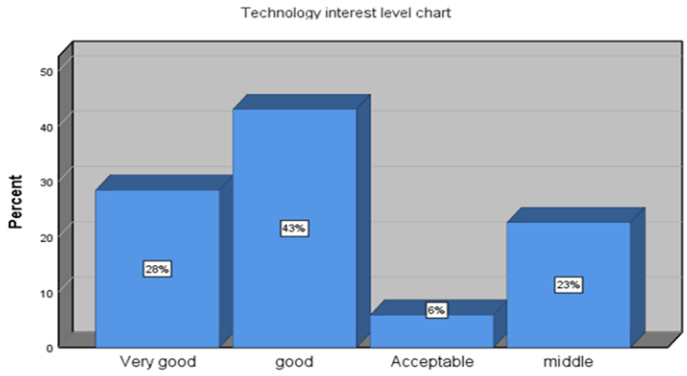

Figure 6.1: Level of interest in innovative technology.

While (53%) of those surveyed out of 274 mentioned that they know the identification system, while (40%) have heard of it but do not know what exactly it is, as shown in

Table 6.4 Extent of knowledge of the identification system

Table 6.4:		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	145	52.9	53.3	53.3
	No	17	6.2	6.3	59.6
	I've heard of it but I don't know what exactly	110	40.1	40.4	100.0
	Total	272	99.3	100.0	
Missing	System	2	7		
Total		274	100.0		

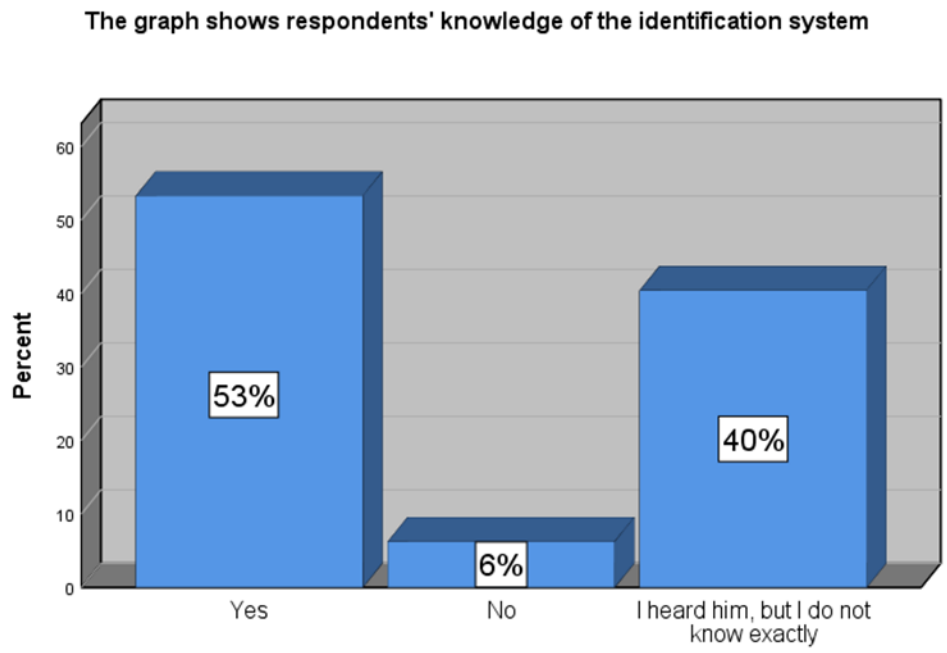

Figure 6.2: know the identification system.

As were the answers to the question, have you ever had direct experience with identification systems (e.g. fingerprint recognition, iris recognition, facial recognition, etc.)

They had no experience before, (35.4%) while the rest of those who answered yes were the percentage (64.6 %) Table 6.5: shows the percentage of responses Previous experience with identification systems.

Table 6.5 Previous experience with identification systems

Table 6.5:		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	177	64.6	64.6	64.6
	Yes	97	35.4	35.4	100.0
	Total	274	100.0	100.0	

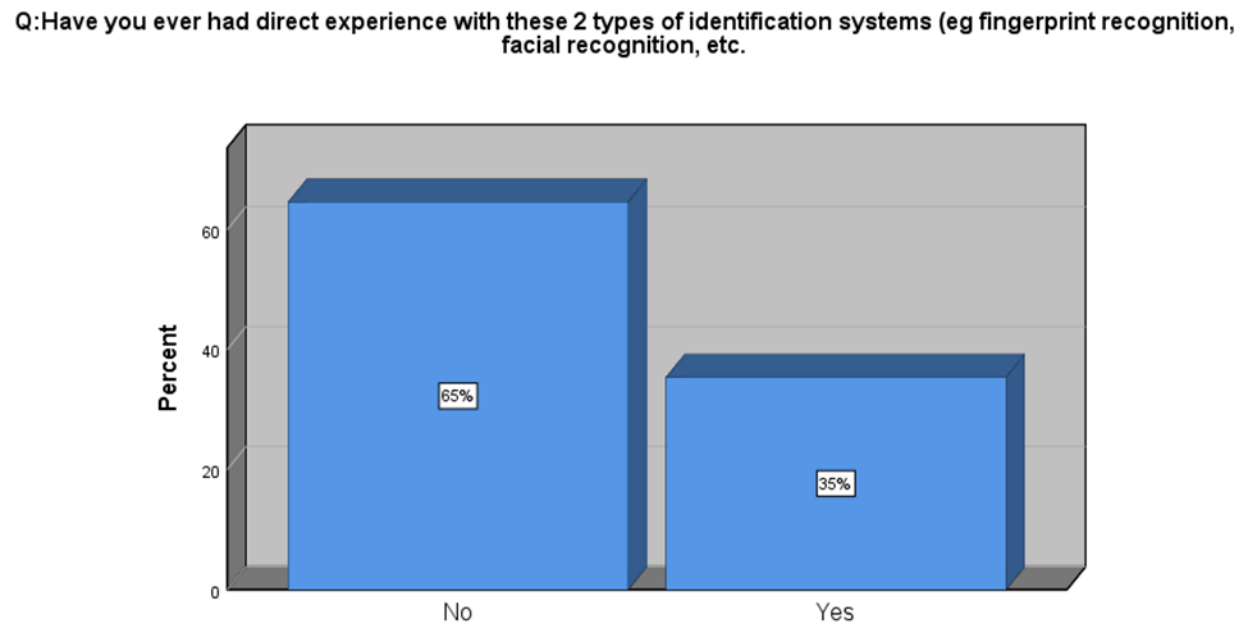

Figure 6.3: Have you ever had first-hand experience with identification systems.

Of the respondents (57%) who had experience using biometrics at airports for a few times, while (43%) of them had no experience as shown in Figure 6.4:

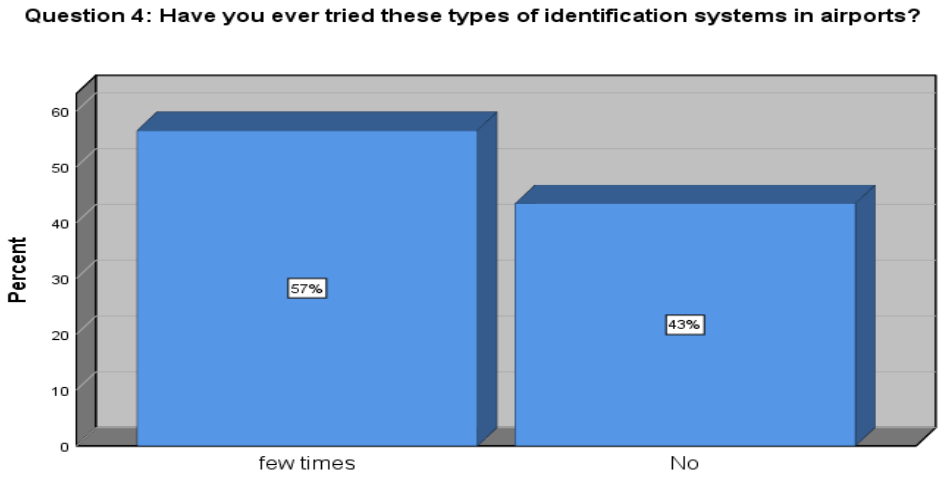

Figure 6.4: When asking about the preferred method of identification, identification.

The percentages were equal between the finger scanning technique and the iris scanning technique with a percentage of (31%), while (18.6%) the preference was found in using face recognition technology and the rest of the biometrics with low percentages.

Table 6.6 shows Preferred Biometric Ratios Using Face Recognition

Table 6.6:		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Finger Scan	86	31.4	31.4	31.4
	Password	39	14.2	14.2	45.6
	Iris Scanning	85	31.0	31.0	76.6
	Face Recognition	51	18.6	18.6	95.3
	Document Paper Copy	2	7	7	96.0
	Digital Certificates	3	1.1	1.1	97.1
	Signature Analysis	2	.7	.7	97.8
	Else	2	.7	.7	98.5
	Voice Recording	4	1.5	1.5	100.0
	Total	274	100.0	100.0	

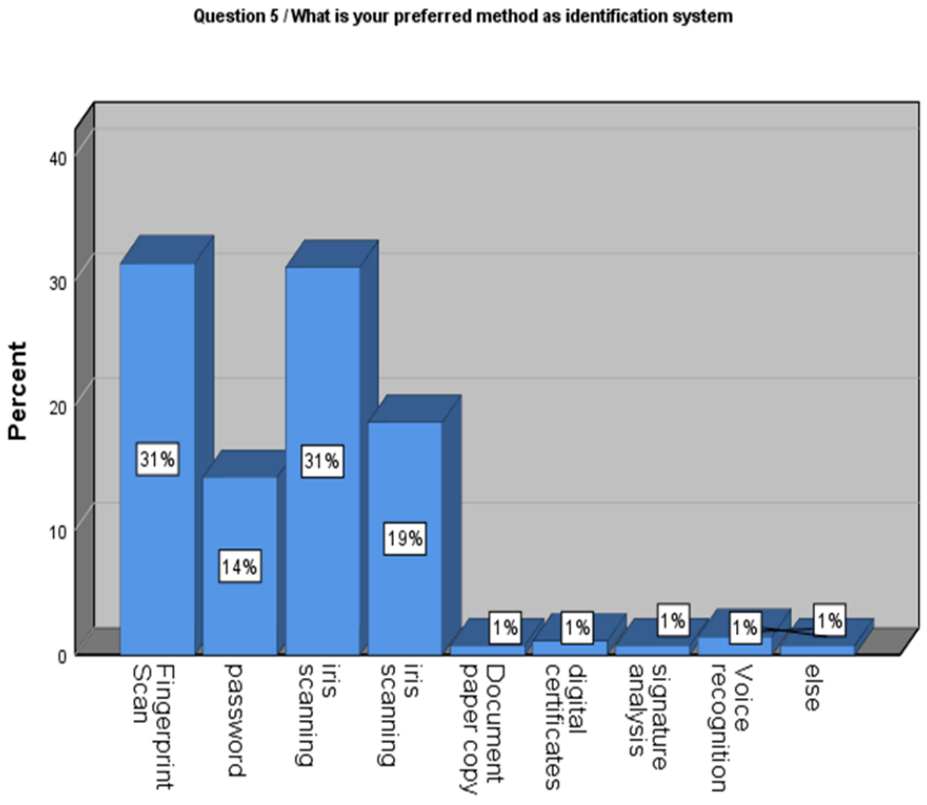

Figure 6.5: Preferred method of identification**.**

While answering a question, what do you think of choosing a password? The large percentage was that they did not know the effectiveness of this technique by (69%), while (17%) found that it might be good as shown in

Table 6.7 Password selection percentage:

Table 6.7:	Frequency	Percent	Valid Percent	Cumulative Percent
Good	49	17.9	17.9	17.9
Not Good	36	13.1	13.1	31.0
I Do Not Know	189	69.0	69.0	100.0
Total	274	100.0	100.0	

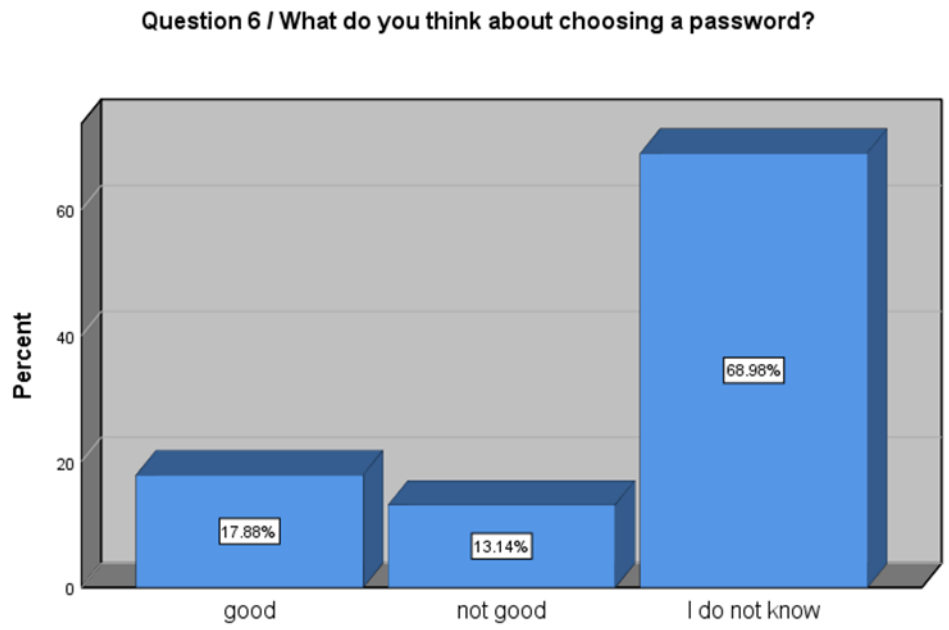

Figure 6.6: Answering the question What do you think of choosing a password.

While the responses to your opinion of choosing to use the fingerprint scanning technique were (82.8%) not knowing its effectiveness in use, and the number of those who answered that it was good was (10.9%) And a percentage (6%) said it is not good

Table 6.8 Percentage of use of fingerprint scanning technology:

Table 6.8:		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	30	10.9	10.9	10.9
	Not Good	17	6.2	6.2	17.2
	I Do Not Know	227	82.8	82.8	100.0
	Total	274	100.0	100.0	

Table 6.9 Signature Analysis Usage Ratio

Table 6.9:		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	85	31.0	31.0	31.0
	Not Good	76	27.7	27.7	58.8
	I Do Not Know	113	41.2	41.2	100.0
	Total	274	100.0	100.0	

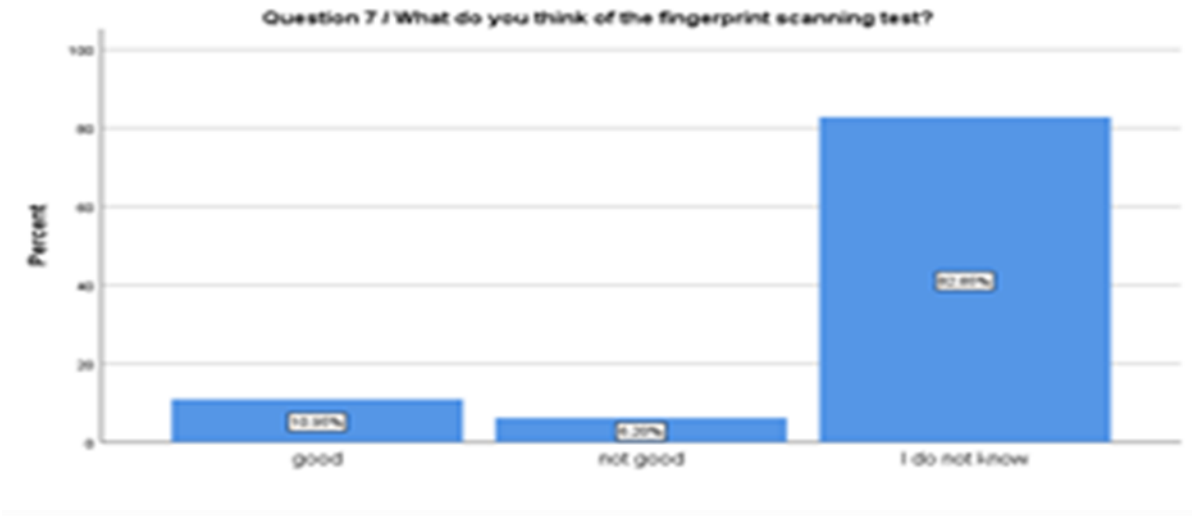

Figure 6.7: Responses to Choosing to Use Fingerprint Scanning Technology.

Biometric respondents, when asked what you think about choosing the signature analysis, stated that they did not know (41.2%) and (31%) that it is good

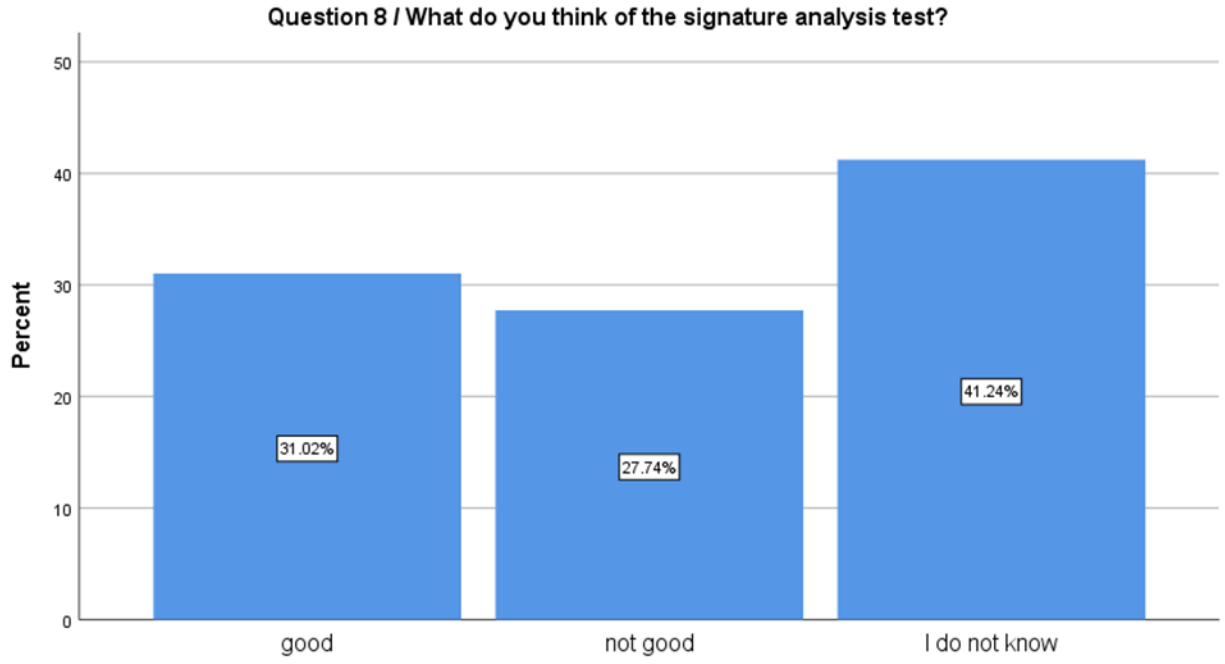

Figure 6.8: Question about choosing signature analysis.

While (50%) answered that they did not know the question, what do you think about the audio test, and (30%) that it is good and (20%) is not good, as shown in

Table 6.10 Voice selection usage percentage:

Table 6.10:	Frequency	Percent	Valid Percent	Cumulative Percent
Good	83	30.3	30.3	30.3
Not Good	54	19.7	19.7	50.0
I Do Not Know	137	50.0	50.0	100.0
Total	274	100.0	100.0	

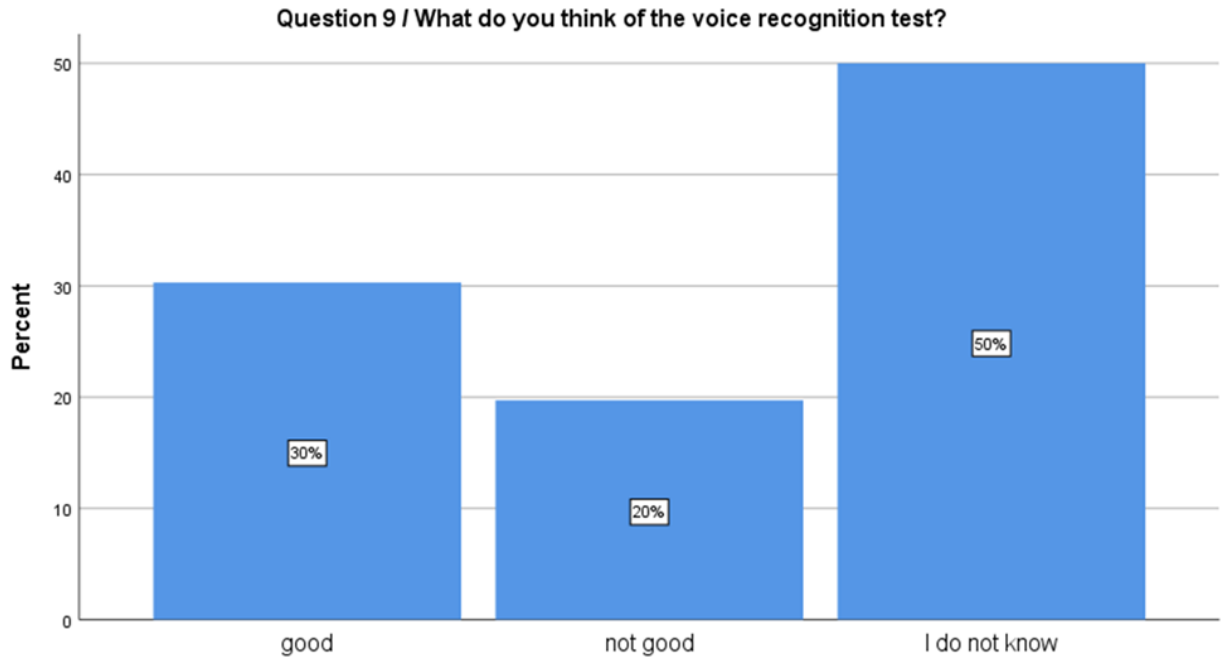

Figure 6.9: Question about sound selection.

As for the answer to the question, what do you think about choosing audio recording with a percentage (42%) of not knowing them, and a percentage (35%) being good, and (23%) stating that it is not good according to Table (6.11) The percentage of usage of the audio recording selection.:

Table 6.11 The percentage of usage of the audio recording selection.

Table 6.11:	Frequency	Percent	Valid Percent	Cumulative Percent
Good	97	35.4	35.4	35.4
Not Good	63	23.0	23.0	58.4
I Do Not Know	114	41.6	41.6	100.0
Total	274	100.0	100.0	

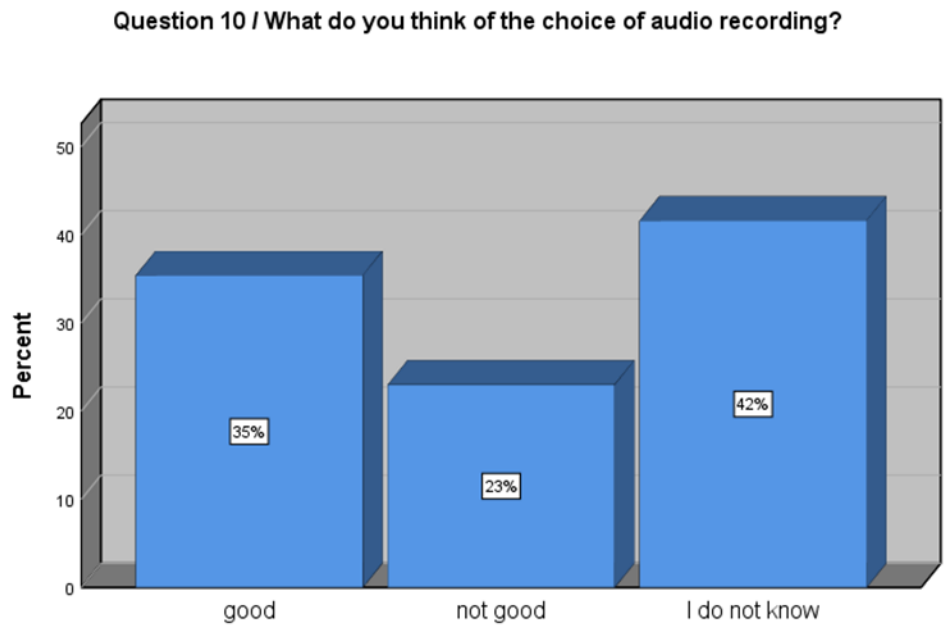

Figure 6.10: An answer to the question about choosing an audio recording.

As for the responses to the question, what do you think about choosing to scan the iris of the eye, a percentage of (84%) do not know them, a percentage of (11.3%) that it is not good, and a percentage (5%) that it is good, as shown in

Table 6.12 Percentage of use of the iris scanner selection.:

Table 6.12:	Frequency	Percent	Valid Percent	Cumulative Percent
Good	14	5.1	5.1	5.1
Not Good	31	11.3	11.3	16.4
I Do Not Know	229	83.6	83.6	100.0
Total	274	100.0	100.0	

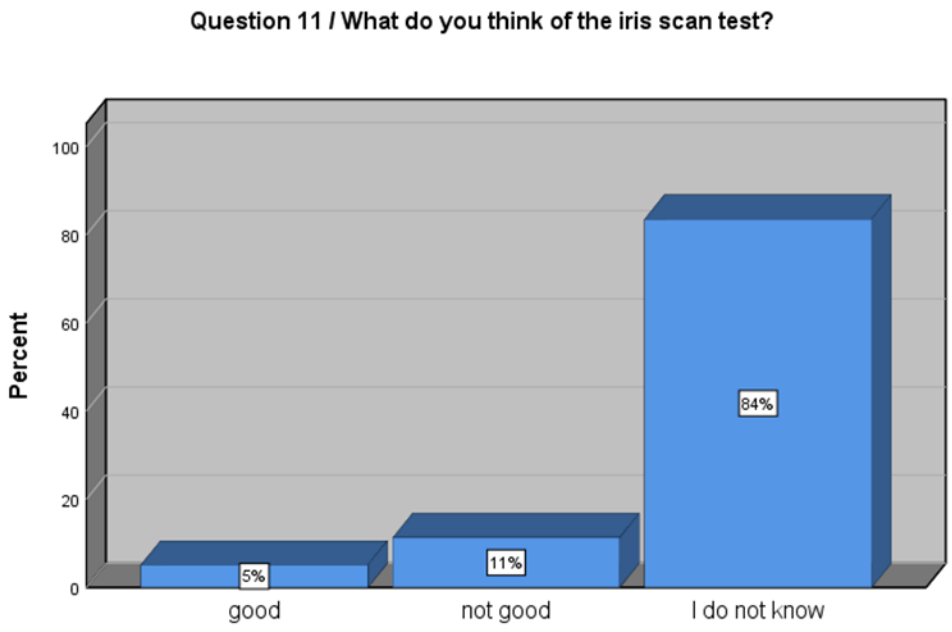

Figure 6.11 Answers to the question What do you think about choosing an iris scan.

The answer to the question about the respondents' opinion on choosing the face recognition technology was (79%) not sure, (10%) not good, and (11%) good.

Table 6.13 The rate of use of facial recognition technology.:

Table 6.13:	Frequency	Percent	Valid Percent	Cumulative Percent
Good	31	11.3	11.3	11.3
Not Good	27	9.9	9.9	21.2
I Do Not Know	216	78.8	78.8	100.0
Total	274	100.0	100.0	

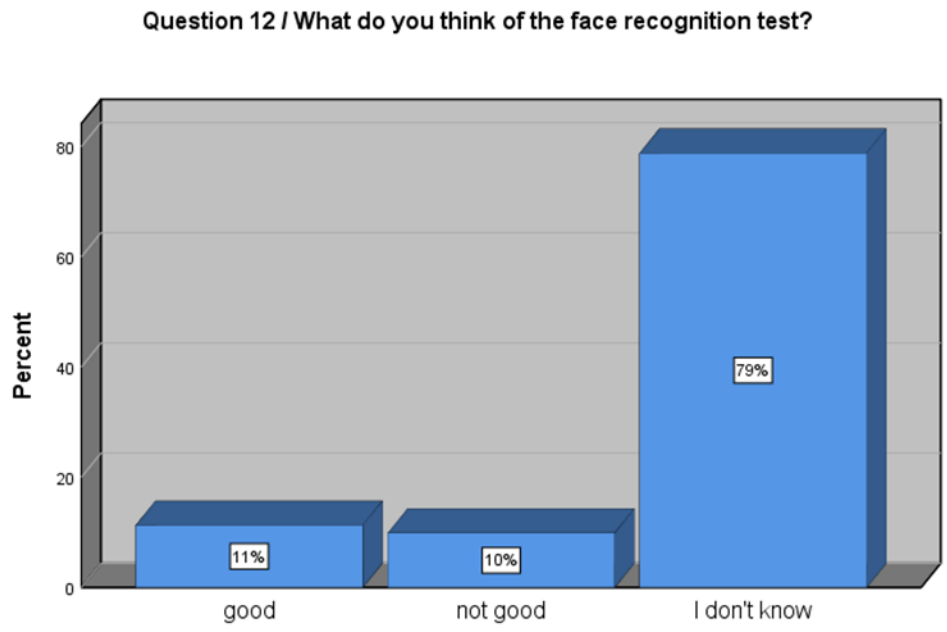

Figure 6.12: Answering the question related to the respondents' opinion on choosing face recognition technology.

As for the respondents' opinion on choosing hard copies, the responses were (36%) not knowing and (30%) not good, while (34%) found that they are good, as shown in

Table 6.14 The percentage of use of the selection of paper copies.:

Table 6.14:	Frequency	Percent	Valid Percent	Cumulative Percent
Good	93	33.9	33.9	33.9
Not Good	81	29.6	29.6	63.5
I Do Not Know	100	36.5	36.5	100.0
Total	274	100.0	100.0	

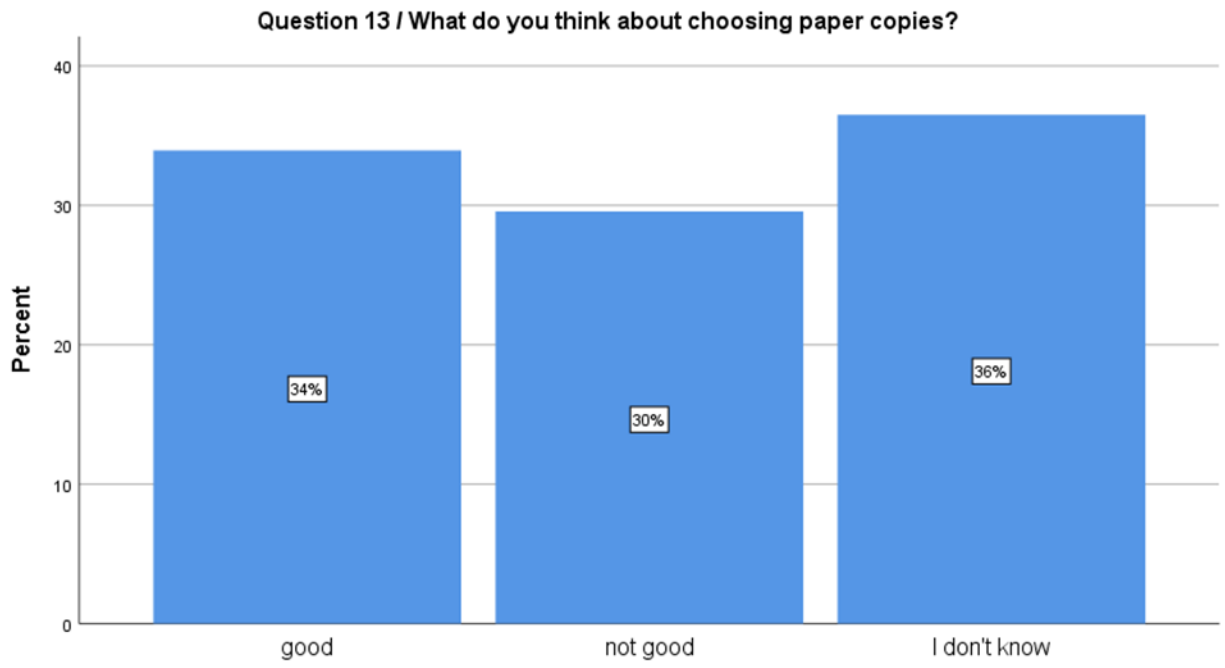

Figure 6.13: The respondents' opinion on the selection of paper copies.

As for the level of comfort in using different biometric systems at airports.

The majority (54%) of respondents found it comfortable to choose a password using biometrics as an authentication system, while (21.9%) found it very convenient and (20.4%) uncomfortable while 3.3% found it very convenient. uncomfortable as shown in

Table 6.15 Satisfaction rate for choosing a password:

Table 6.15:	Frequency	Percent	Valid Percent	Cumulative Percent
Very Uncomfortable	9	3.3	3.3	3.3
Uncomfortable	56	20.4	20.4	23.7
Very Comfortable	60	21.9	21.9	45.6
Relaxing	149	54.4	54.4	100.0
Total	274	100.0	100.0	

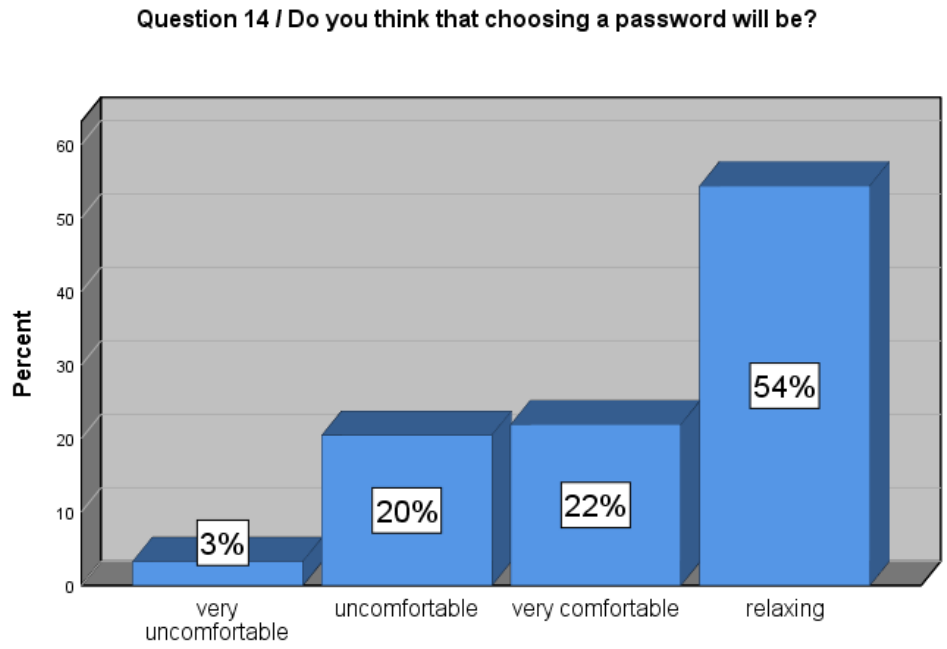

Figure 6.14: Satisfaction with choosing a password.

Among the 274 respondents, (43.8%) stated that the choice of finger swabs would be very comfortable, while (40.1%) were comfortable and (13.5%) were uncomfortable, while (2.6%) stated that they were considered very uncomfortable, as shown in

Table 6.16 Satisfaction rate with finger swabs test.:

Table 6.16	Frequency	Percent	Valid Percent	Cumulative Percent
Very Uncomfortable	7	2.6	2.6	2.6
Uncomfortable	3	13.5	13.5	16.1
Very Comfortable	120	43.8	43.8	59.9
Relaxing	110	40.1	40.1	100.0
Total	274	100.0	100.0	

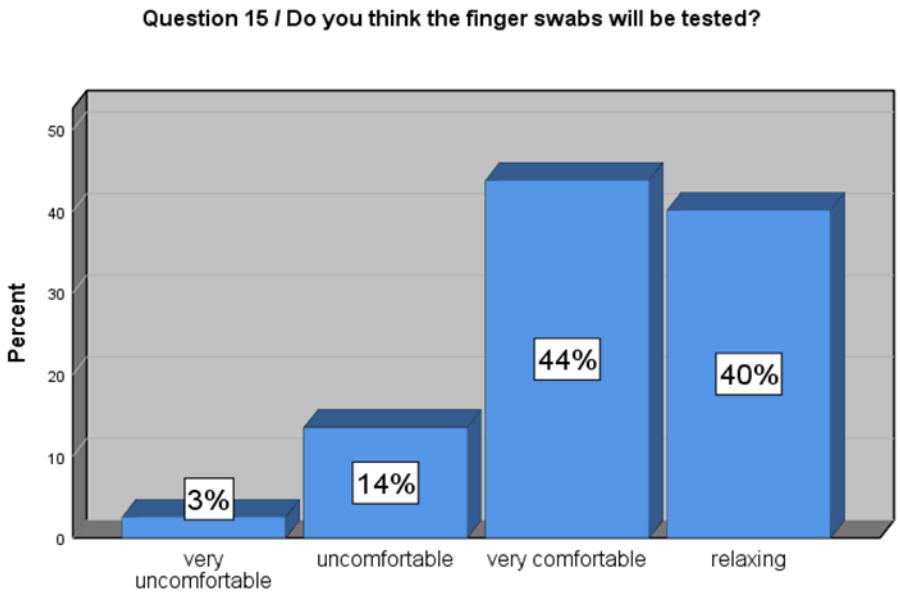

Figure 6.15: Choose finger swabs.

With an average degree of (46.4%) satisfaction with choosing the signature analysis that it will be uncomfortable, followed by the lowest degree (34.7%) because it may be comfortable, while (11.7%) found it very comfortable and (7.3%) found it very uncomfortable as shown in

Table 6.17 Satisfaction rate with signature analysis.:

Table 6.17:		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Uncomfortable	20	7.3	7.3	7.3
	Uncomfortable	127	46.4	46.4	53.6
	Very Comfortable	32	11.7	11.7	65.3
	Relaxing	95	34.7	34.7	100.0
	Total	274	100.0	100.0	

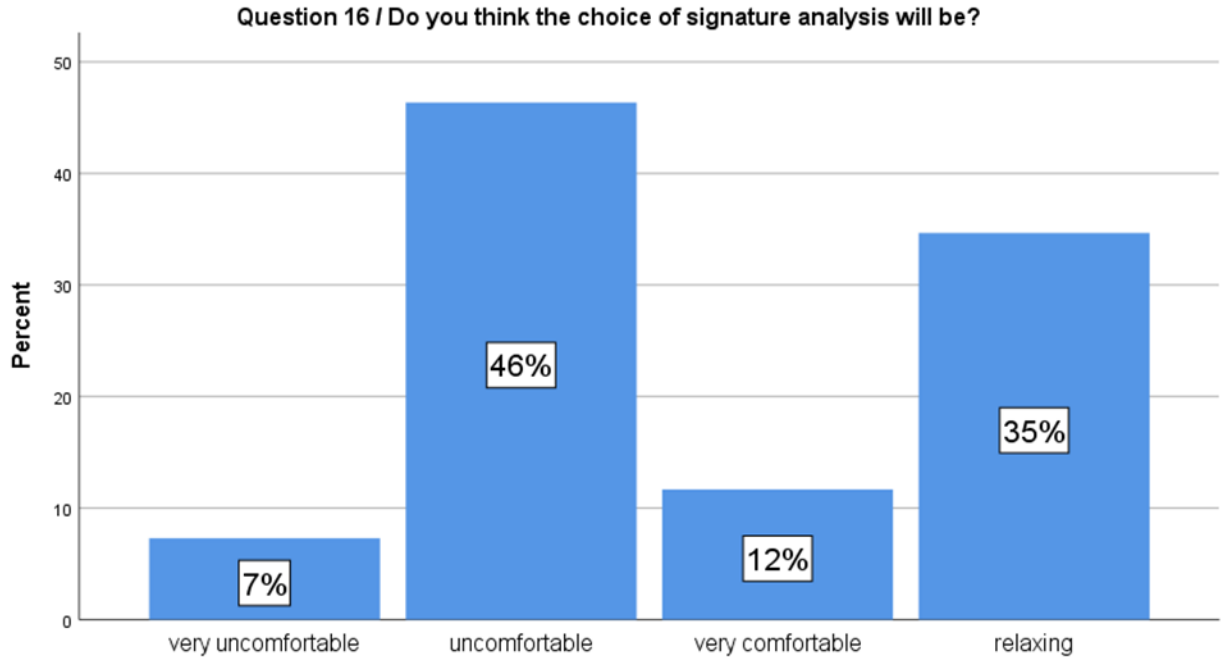

Figure 6.16: Choosing the Signature Analysis.

The answer to the amount of comfort that the traveler will feel in the voice recognition test was 38% that they are comfortable with this scale as shown in Figure 6. 19, but the most comfortable was for the iris scale where the percentage was higher and by 51% Figure 6. 20 while the response of 43% was more comfortable to the scale Face recognition as shown in Figure 6.21, while 41% found that the hard copy scale is inconvenient in identification systems.

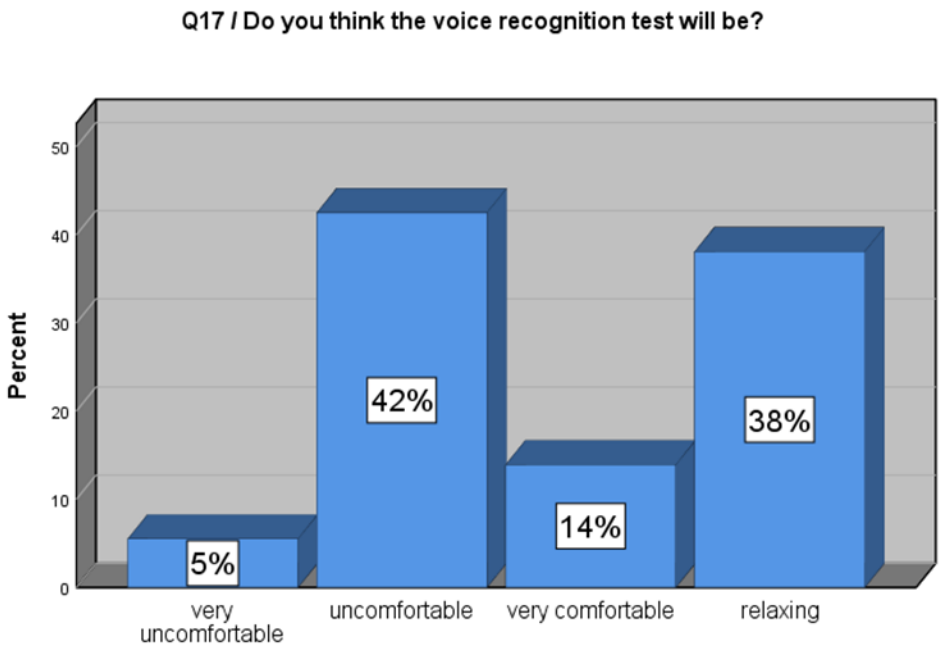

Figure 6.17: Satisfaction rate for voice recognition meter.

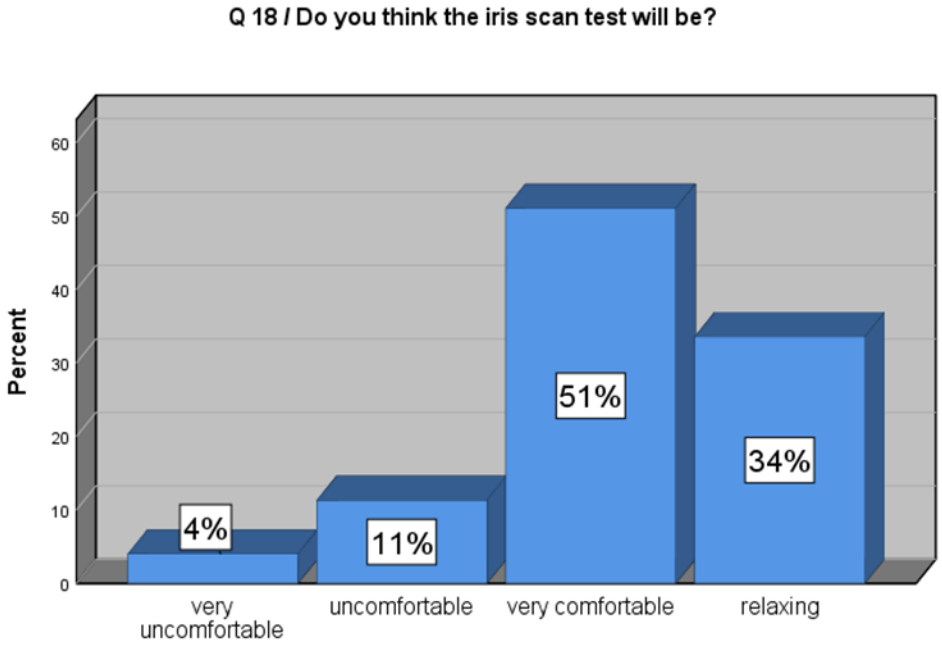

Figure 6.18: Satisfaction rate for iris recognition meter.

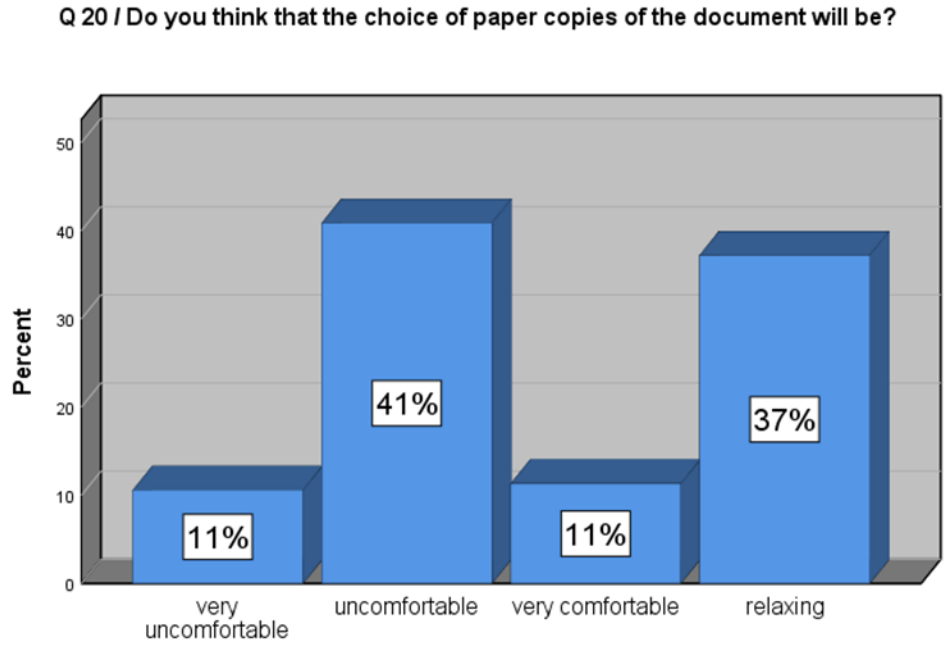

Figure 6.19: Satisfaction rate for hard copy scale**.**

Some questions were included such as Do you think that a human biometric feature (such as iris, fingerprint) could be a reliable source of identity authentication to understand the sample and the percentage was very high in answering this question by forgetting. 95% of the 274 respondents The system was the most reliable for this sample of respondents, and in order from the highest percentage, as follows:

Iris scanning 51%, finger scanning 26%, and facial recognition 10%, as shown in Figure 6.24:

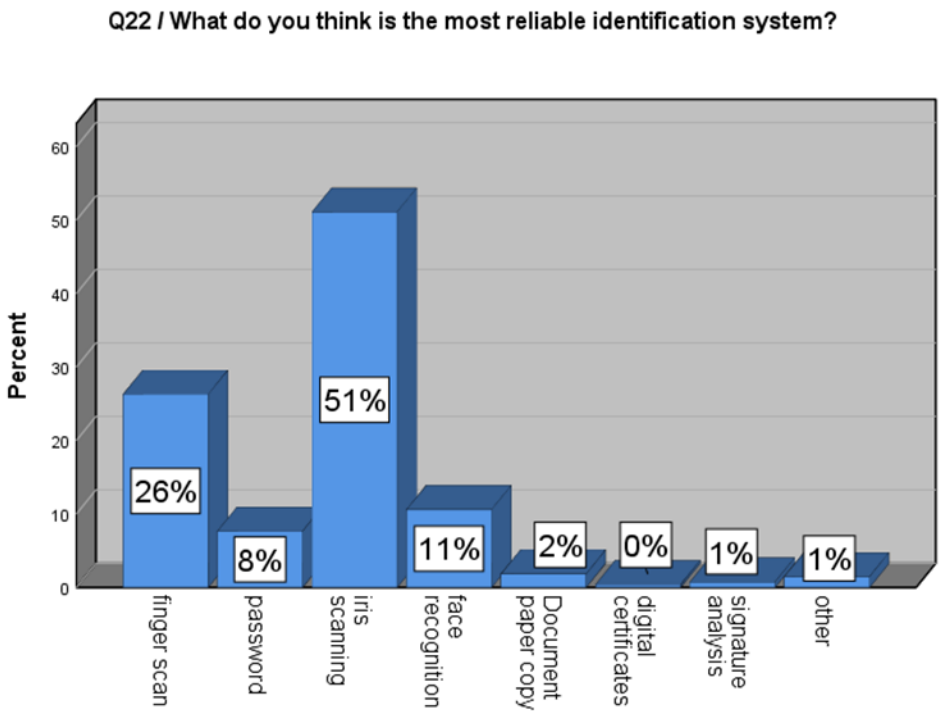

Figure 6.20: The most reliable system.

The majority of the respondents also answered that the identification system is a secure technology tool, and the percentage was 60%. The reason is because they do not believe that the biometric identification system is not a safe tool, because the information is used for fraud by 28%, and because of the lack of control, the percentage was 20% and because the information is used for other purposes. 17% of the respondents also feared that the information would be used for tracking, and 21% of the respondents did not mention a specific reason, as it may be other reasons.

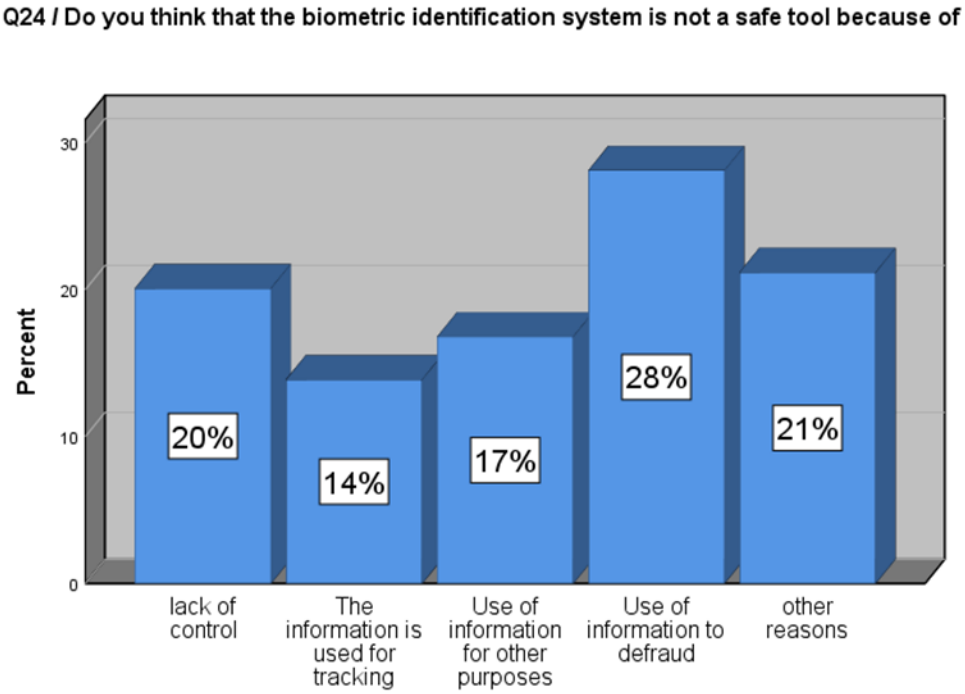

Figure 6.21: Reasons why biometrics are not considered safe.

Respondents to the questionnaire believe that the use of biometric identification systems has an impact on privacy by 31%, while 16% do not find it to have an impact, and the highest percentage was 52% who are not sure of its impact on privacy Respondents to the questionnaire believe that the use of biometric identification systems has an impact on privacy by 31%, while 16% do not find it to have an impact, and the highest percentage was 52% who are not sure of its impact on privacy. The percentage was 26% in its impact on privacy because the use of private biometric information can lead to exposure to danger from an unknown source, and with a similar rate of 27%, the reason was the use of the collected information for different or unknown reasons.

And the difference in determining the effect of using biometric identification systems was the refusal to use the identification system in the event that it affects privacy by 52%.

When asked, would your mind change if you knew that the biometric identification system is used for security matters (such as immigration border control or airport security control)? 49% agreed, 26% rejected, and 24% were unsure.

The limitation of the use of biometric identification systems was emphasized in the question Would you change your mind if you knew that the ultimate purpose of using it was to identify people traveling through airports? The responses were in agreement with 47% and refusal with 30%.

When asked, do you think that using biometric features as an identification system is against your religion? The response of the majority was refusal, 81%, which gives us an idea of the priority of the respondents if the matter affects religion. However, 83% found the use of the identification system to be beneficial. In order to reach the reasons for using biometric identification systems, the question was asked: Why do you want to use the biometric identification system? The highest response rate of 53% was that it can increase security, while the reason was that security procedures such as metal detection or passport examination can be speeded up by 23%.

Among the 274 respondents, 2% said they fly more than 24 times per year, 1% between 12 and 24 Once a year while 8% are between 5 and 12 times a year and the last 88% are less than 5 times every year. These answers give an idea of the experience and level of the respondents. As for the physical transactions, 25% found them to be inappropriate, 46% to be appropriate, and 29% who had no knowledge. The next question was, would you pay an annual fee to use biometric technologies as an airport identification system, which is primarily used to expedite travel and security checks? 54% of the respondents refused to pay, while 46% agreed to pay.

As an estimate of the payment budget, ask how much are you willing to pay? Male 86% less than $50,

12% from $50 to 1004, while 1% is more than $100.

When asked if you find it difficult to switch to the new identification system that uses biometrics? The answer was 52% yes, while 48% were no .question was asked if current methods and procedures are left at airports and the identification system is used, does it cause trouble? 64% responded "No" and 36% "Yes".

Because the questionnaire included a different segment of society, the following question was asked to the respondents

Is it easy to deal with the identification system by different groups of society? 89% answered yes, while 10% found that it is not easy to deal with the identification system by different groups of society.

6.2 CONCLUSIONS

Due to the scarcity of specialized studies in Iraq to study the impact of the use of biometric identification systems in achieving safety in institutions, including airports. This study focused on knowing the extent of satisfaction and acceptance among travelers in particular and the rest of the individuals in general. The practical study was conducted by conducting an electronic survey, the questionnaire tool was used in the survey, where the data was collected and then the data was analyzed using the SPSS application

The conceptual framework of the study depends on enriching administrative knowledge with additional research into the most appropriate ways to use biometric identification systems in developing societies, their importance, types, and approved models that institutions can use to achieve technological progress in important institutions such as international airports. The same is true in bringing added value to the organization and society.

The researcher conducted a survey on a group of travelers and residents / Iraq. The results of the quantitative study were collected and analyzed. The results were tested and showed that they have an effect on Arab societies that lack the application of this modern technology.

Based on the conclusions of the study, the researcher presents the following results:

1. The external environment has a significant impact on the degree of acceptance and satisfaction in the use of biometrics, as the external environment consists of several factors that must be taken into account by institutions, and these factors include: political, social and economic analysis of the environment, Because of the turmoil and uncertainty, organizations must study society well to detect changes, raise awareness, and address pitfalls. This confirms that follow-up analysis of the external environment and examination are very important. Because it will enable organizations to adapt to keep pace with the development that progresses daily. As confirmed by other studies on this. The results of the above survey indicate the great impact on the environment in Iraq for several reasons, including the political crisis, the economic situation, and

the inability to clearly give confidence in the use of biometrics and the breach of information privacy for individuals.

2. It has been found that the passenger who sees modern technology that can be identified using biometrics as an advanced device that works to achieve the comfort and safety of the air traveler is a good step but lacks confidence in using the information for other purposes for emerging countries that may apply this technology using creative innovation and can apply.

3. The use of biometric identification on the experience of passengers and their flight through basic and optional perceptions has an impact on the experience of passengers, as there is a strong relationship between acceptance and age. Younger youth showed more acceptance, and the percentage was higher in accepting the use of biometrics, and since the study was conducted on Arab Muslim societies, the percentage of approval of the biometrics system was acceptable in good proportions in the event that it did not affect their religious belief.

The desire was great to achieve comfort and safety for travelers as a final conclusion: that air travelers are willing to use Identification system that ensures their safety (where security is one of the most important issues for these countries) where biometrics systems can have a very positive and significant impact on the satisfaction of air travelers and through international airports.

6.3 RECOMMENDATIONS

Suggestions for future studies First of all, this study was conducted in the Arab countries and in the air transport sector, specifically international airports, which lack the use of biometric technology, and future studies can conduct a similar study in various sectors and institutions such as companies and factories in order to ensure the credibility of the scale more accurately.

Second: This research deals with only three axes (passengers, technology, impact of technology) to identify the extent of its impact in achieving satisfaction in large institutions such as airports. Studies can be done about taking the rest of the dimensions to see their impact on the use of biometrics, such as procedures during other complementary approaches to improve performance. And sources of information about the environment, evaluation and monitoring of results, and the participation of employees and workers at the airport by conducting direct interviews with them.

Third, another option for future research is to conduct comparative studies in the impact of the use of biometrics on its users by travelers, for example between a developed country and an emerging one, or between an institution that has used this technology and another that does not use biometric technology.

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Academic questionnaire on Biometric Identification Systems in Airports

This questionnaire form is part of the requirements for obtaining a master's degree, and the information resulting from this questionnaire will be a real tributary to the subject of the thesis, because of our confidence in you to deal with the questionnaire's paragraphs correctly. Choosing the appropriate answer for each question is a service for scientific development and producing this message at the required level, assuring you that the information you will provide to us is used only for scientific research only.

1. Name *

2. Age *

- [ ] 20 - 30
- [ ] 30 - 40
- [ ] 40 - 50
- [ ] ovr 50

3. education level *

- [ ] Bachelor
- [ ] master
- [ ] PHD
- [ ] uneducated
- [ ] other

4. Where are you from *

- [ ] Asia
- [ ] Africa
- [ ] Europe

5. What is your level of interest in innovative technology *

- [ ] Acceptable
- [ ] medium
- [ ] good
- [ ] very good

6. Do you know what the identification system is *

- [ ] Yes
- [ ] I heard about it, but I do not know what exactly
- [ ] NO

7. Have you ever had direct experience with these types of identification systems (eg fingerprint recognition, facial recognition, iris scanning, etc.) *

- [ ] Yes, only a few times
- [ ] yes many times
- [ ] NO
- [ ] I do not remember

8. Have you ever tried these types of identification systems in airports *

- [ ] Yes
- [ ] NO

9. What is your preferred method of identification *

- [ ] Fingerprint Scanning
- [ ] password
- [ ] iris scanning
- [ ] face recognition
- [ ] Hard copies of the document
- [ ] digital certificates
- [ ] signature analysis
- [ ] Voice recognition
- [ ] other

10. What do you think about choosing a password *

- [ ] good
- [ ] not good
- [ ] I do not know

11. What do you think about choosing to scan fingerprints *

- [ ] good
- [ ] not good
- [ ] I do not know

12. What do you think of choosing signature analysis *

- [ ] good
- [ ] not good
- [ ] I do not know

13. What do you think of choosing voice recognition *

- [ ] good
- [ ] not good
- [ ] I do not know

14. What do you think about choosing a voice recording *

- [ ] good
- [ ] not good
- [ ] I do not know

15. What do you think about choosing an iris scan *

- [ ] good
- [ ] not good
- [ ] I do not know

16. What do you think of choosing face recognition *

- [ ] good
- [ ] not good
- [ ] I do not know

17. What do you think about choosing paper copies of the document *

- [ ] good
- [ ] not good
- [ ] I do not know

18. Do you think that the choice of password will be *

- [ ] very comfortable
- [ ] comfortable
- [ ] uncomfortable
- [ ] very uncomfortable

4

19. Do you think choice to scan fingerprints will be *

- [ ] very comfortable
- [ ] comfortable
- [ ] uncomfortable
- [ ] very uncomfortable

20. Do you think the choice of signature analysis will be *

- [ ] very comfortable
- [ ] comfortable
- [ ] uncomfortable
- [ ] very uncomfortable

21. Do you think the choice of voice recognition will be *

- [ ] very comfortable
- [ ] comfortable
- [ ] uncomfortable
- [ ] very uncomfortable

22. Do you think choice an iris scan would be *

- [ ] very comfortable
- [ ] comfortable
- [ ] uncomfortable
- [ ] very uncomfortable

23. Do you think the choice of facial recognition will be *

5

- [ ] very comfortable
- [ ] comfortable
- [ ] uncomfortable
- [ ] very uncomfortable

24. Do you think choice hard copies of the document will be *

- [ ] very comfortable
- [ ] comfortable
- [ ] uncomfortable
- [ ] very uncomfortable

25. Do you think a human biometric feature (such as iris, fingerprint) can be a reliable source of identity authentication *

- [ ] very comfortable
- [ ] comfortable
- [ ] uncomfortable
- [ ] very uncomfortable

26. What do you think is the most reliable identification system *

- [ ] iris scanning
- [ ] Fingerprint Scanning
- [ ] face recognition
- [ ] password
- [ ] Hard copies of the document
- [ ] digital certificates
- [ ] Voice recognition
- [ ] signature analysis
- [ ] other

6

27. Do you think that the identification system is a secure technology tool *

- [ ] yes
- [ ] I do not know
- [ ] no
- [ ] It depends on the method

28. You think the biometric identification system is not a safe tool because *

- [ ] lack of control
- [ ] The information will be used for tracking
- [ ] Use of information for other purposes
- [ ] Use of information for fraud
- [ ] other reasons

29. Do you think that the use of biometric identification systems has an impact on your privacy *

- [ ] yes
- [ ] maybe
- [ ] no

30. Do you think that vour personal privacy may be affected by *

- [ ] Use of collected information for various or unknown reasons
- [ ] Use of information by powerful organizations
- [ ] The use of my biometric information can lead to danger from an unknown source
- [ ] The information is very private
- [ ] other reasons

7

31. Do you agree to the use of the identification system if it affects your privacy *

- [ ] yes
- [ ] maybe
- [ ] no

32. Would you change your mind if you knew that biometrics used the identification system for security matters (such as immigration border control or airport security control) *

- [ ] yes
- [ ] maybe
- [ ] no

33. Would your opinion change if you knew that the end purpose of the use was to identify people traveling through airports *

- [ ] yes
- [ ] maybe
- [ ] no

34. Do you think that the use of biometrics features as a system of identification is contrary to your religion *

- [ ] yes
- [ ] no

35. Do you think using an identification system is useful *

- [ ] yes
- [ ] no
- [ ] not sure

8

36. Do you think that entering a restricted area (such as airports, government buildings) is *

- [ ] useful
- [ ] no useful
- [ ] I do not know

37. Do you think that the use of the identification system is an effective technological tool at the airport *

- [ ] yes
- [ ] no
- [ ] not sure

38. Why you might want to use an identification system *

- [ ] It can increase safety
- [ ] Security procedures such as metal detection or passport checks can be speeded up
- [ ] Speeding up immigration controls
- [ ] Speed up procedures for boarding at the gate
- [ ] Check-in speed up
- [ ] other

39. How many trips do you take in a year *

- [ ] Less than 5 times a year
- [ ] 5 to 12 times a year
- [ ] 12 to 24 times a year
- [ ] More than 24 times a year

40. What do you think about physical transactions would they be *

- [ ] useful
- [ ] no useful
- [ ] I do not know

41. Will you pay an annual fee to use biometric technologies as an identification system at the airport, primarily used to expedite travel and security checks *

- [ ] yes
- [ ] no

42. How much are you willing to pay *

- [ ] Less than $50 a year
- [ ] From 50 to 100 $ annually
- [ ] More than $100 per year

43. Do you find it difficult to switch to the new biometric identification system *

- [ ] yes
- [ ] no

44. Will leaving the current methods and procedures in airports and using the identification system cause you a lot of trouble *

- [ ] yes
- [ ] no

10

identification system cause you a lot of trouble *

- [ ] yes
- [ ] no

45. The identification system is easy to handle by different groups of society *

- [ ] yes
- [ ] no

46. Do you think that the identification system saves a lot of time and effort *

- [ ] yes
- [ ] no

You have reached the end of the survey, don't forget to press send

11