



**T.C.
ALTINBAS UNIVERSITY
INFORMATION TECHNOLOGY**

**LIBYAN PROGRAM FOR INTEGRATION AND DEVELOPMENT
ASSESSMENT USING ARTIFICIAL NEURAL NETWORK
CLASSIFIER**

GAFFALA ISAA ALI ABORISHA

Master's Thesis

SUPERVISOR:

Asst. Prof. Dr. Dogu Cagdas ATILLA

ISTANBUL, 2018

**LIBYAN PROGRAM FOR INTEGRATION AND DEVELOPMENT
ASSESSMENT USING ARTIFICIAL NEURAL NETWORK CLASSIFIER**

By

GAFFALLA ISAA ALI ABORISHA

Information Technology

Submitted to the Graduate School of Science and Engineering
in partial fulfillment of the requirements for the degree of
Master of Science

ALTINBAŞ UNIVERSITY

2018

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of

Academic Title Name SURNAME
Co-Supervisor

Academic Title Name SURNAME
Supervisor

Examining Committee Members (first name belongs to the chairperson of the jury and the second name belongs to supervisor)

Academic Title Name SURNAME Faculty, University _____

Academic Title Name SURNAME Faculty, University _____

Academic Title Name SURNAME Faculty, University _____

Academic Title Name SURNAME Faculty, University _____

Academic Title Name SURNAME Faculty, University _____

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

Academic Title Name SURNAME
Head of Department

Approval Date of Graduate School of
Science and Engineering: ____/____/____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

GAFFALLA ISAA ALI ABORISHA

ACKNOWLEDGEMENTS

First and foremost, all praises be to Allah, the most merciful, the lord of the worlds, who taught man what he knew not. I would like to thank him for bestowing upon me the chance, strength and ability to complete this work. Second, I would like to express the deepest appreciation to Dr Dogu Cagdas ATILLA without him ,this thesis would not be possible .Lastly, but certainly not the least, I would like to thank my father ,my mother , my husband and My children for their support and their prayers for me which have been the driving force that enabled me to finish this thesis.



ABSTRACT

LIBYAN PROGRAM FOR INTEGRATION AND DEVELOPMENT ASSESSMENT USING ARTIFICIAL NEURAL NETWORK CLASSIFIER

Gaffala Aborisha,

M.S, Information Technology , Altınbaş University,

Supervisor: Dogu Cagdas ATILLA

Co-Supervisor: Cagatay AYDIN

Date: December 2018

Pages:62

Libyan Program For Integration And Development (LPFIAD) is online based services that support students to achieve educational chances in both under and post graduations. This program is introduced by government of Libya to ease students' efforts and ensure fair chances among them. This study is biased on large survey to collect people opinions about this system (to measure of satisfaction of using this services). Survey is designed in such way that make candidates to deeply express their feedbacks after experiencing this system. Survey is designed to be online using online survey platform from SurveyMonkey. As soon as, candidate log in to the survey page, he\she will be on process of answering several questions. Once the answers are obtained, we gathered all the data including the IDs of the candidates and their feedbacks, we applied analysis on this data for assessing the said system. Feed Forward Neural Network (FFNN) is used in this study for learning from the candidates answers and then providing the assessment decision on pre-defined rule. Data are analyzed using Matlab software and results showmen that LPFIAD has scored with 56 %.

Keywords: Online Assessment, Supervision of Education, Public Opinion Surveys, Artificial Neural Networks, Target Modelling .



TABLE OF CONTENTS

	<u>Pages</u>
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS	xii
1 INTRODUCTION	1
1.1 THE IMPORTANCE OF LIBYAN PROGRAM FOR INTEGRATION AND DEVELOPMENT.....	2
1.2 OBJECTIVES.....	2
1.3 PROBLEM STATEMENT.....	2
1.4 THESIS ORGANIZAION.....	3
2 LITERATURE SURVEY	4
2.1 OVERVIEW.....	4
2.2 SURVEY TECHNIQUES.....	4
2.3 SUMMERY AND THESIS STRENGTH.....	12
3 METHODOLOGY	14
3.1 RESEARCH HYPOTHESIS.....	14
3.2 PARTICIPANTS.....	15
3.3 DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS.....	15
3.3.1 Gender.....	15
3.3.2 Educational Background.....	16
3.3.3 Age.....	17
3.4 RESEARCH INSTRUMENT.....	17
3.5 LIBYAN FROGRAM FOR INTEGRATION AND DEVELOPMENT WEB PAGE.....	20
3.6 ANALYTICAL METHOD.....	20
4 PRACTICAL MODEL	22
4.1 SYSTEM DESCRIPTION.....	22

4.1.1	Preprocessing.....	22
4.1.2	Target Preparation	24
4.1.3	Neural Network Training.....	25
4.1.4	Analytical Outcomes	28
4.2	OVERALL SYSTEM DESCRIPTION	33
5	CONCLUSION.....	35
	REFERENCES.....	37
	APPENDIX.....	40



LIST OF TABLES

	<u>Pages</u>
Table 3.1: The Participants Percent In Male And Female.....	16
Table 3.2: The Education Level Of The Participants	16
Table 3.3: The Age Of The Participants.....	17
Table 3.4: The Questions Five Categories.....	18
Table 4.1: The Data Guide Information	24
Table 4.2: The Parameters That Used To Establish The Neural Network Classifier.....	26
Table 4.3: Interpretation The Results Of Feedback Percentage	29
Table 4.4: The Assessment Of The Questions As Per The Positively Answered Candidates	30
Table 7.1: The Data New Format That Obtained After Passing The Data From The Preprocessing Block	40
Table 7.2: The Performance Of LPFIAD As Per Each Candidate Assessment	44

LIST OF FIGURES

	<u>Pages</u>
Figure 3.1: The Participants Percent In Male And Female	15
Figure 3.2: The Education Level Of The Participants Per The Participants Of The Survey Of This Study.....	16
Figure 3.3: The Age Of The Participants In This Study.....	17
Figure 4.1: Preprocessing Procedure Demonstration	23
Figure 4.2: The Structure Of The Three Layers Feed Forward Neural Network.....	26
Figure 4.3: The Working Strategy Of Neural Network.....	28
Figure 4.4: The Percentage Assessment Of Each Candidate Response	29
Figure 4.5: The First Seven Question In The Survey Score Results	31
Figure 4.6: The Score Of The Following Twenty-Four Questions In The Survey	31
Figure 4.7: Last Question Score In The Survey	32
Figure 4.8: The Whole Processed Of The Proposed Paradigm	34

LIST OF ABBREVIATIONS

AS	Assessment Score
AVG	Average Value
B	Bias
DB	Database
FFNN	Feed Forward Neural Network
IP	Input
IP	IP Address
LPFIAD	Libyan Program For Integration And Development
M	Mean Value
MSE	Mean Square Error
OP	Output
PG	Post-Graduation
UG	Under Graduation
V	Variance Value
W	Weight

1. INTRODUCTION

Information and Communication Technology (ICT) industry and the open doors it offers against the difficulties numerous African nations look in their deliberate endeavors to take an interest completely in the data society and learning economy (Kundishora, 2014). E-administration and the instruction and preparing divisions. It is vital to underscore the requirement for government to be e-proficient to ably oversee and screen the ICT part.

Data and correspondence advancements have turned out to be ordinary elements in all parts of life. Over the previous twenty years the utilization of ICT has in a general sense changed the practices and strategies of about all types of try inside business and administration (Noor-Ul-Amin, 2013). Training is a socially arranged movement and quality instruction has customarily been related with solid educators having high degrees of individual contact with students. The utilization of ICT in training fits more understudy learning settings. Be that as it may, with the world moving quickly into computerized media and data, the part of ICT in instruction is ending up increasingly critical and this significance will proceed to develop and create in the 21st century. ICTs make it possible to implement communication and education strategies to establish new ways of teaching and learning by using advanced management concepts in an increasingly demanding and competitive world where nothing can be left to chance (Desjardins et al., 2001). Data society, developments in ICT have affected nationals' conduct and additionally their coveted data prerequisites by having on a very basic level changed the way how individuals function and impart (Wirtz et al., 2015). This data innovation instigated improvement modifies social and social and business and regulatory structures. Particularly the Internet, which permits different types of data get to, communication openings, and in addition information creation and sharing, has escalated this computerized change. Technology and society have been interwoven from the beginning of history (Howard, 2001). Their relation, some say of interdependence, some of dependence, can be observed in all stages of human civilization. This relationship started with the invention of the simplest tools, and continues today, with computers and the internet.

1.1 THE IMPORTANCE OF LIBYAN PROGRAM FOR INTEGRATION AND DEVELOPMENT

There is a great deal of issues that face the Libyan citizens and Libyan students their identity considering abroad, for example, (economy; marriage; scholastic educating and expert preparing and so forth.) (Ahmad and Gao, 2004). In this way, because these issues and conventional organization dangers; Libyan Program for Integration and Development Website come as an ideal answer for every Libyan citizens (Ali and Camp, 1995). Libyan Program for Integration and Development Website identity to help Libyan citizens, for example, improve their education level and high qualification skills of Libyan citizens. Additionally, the connection of Libyan Program for Integration and Development.

1.2 OBJECTIVES

This study aimed to relieve the attitude of the Libyan citizens who they are interesting on study abroad and using the digital services in Libyan Program for Integration and Development. The purpose of this study to investigate on students' perspective, and observe the barriers that students encounter when utilizing the electronic services in Libyan Program for Integration and Development. This study, aimed to answer the following research questions:

RQ1:What is the students attitude about Libyan Program for Integration and Development Website?

RQ2: How far is Libyan Program for Integration and Development Website performance from different phases?

RQ3: What are the main advantages and disadvantages of using Libyan Program for Integration and Development Website from the students attitude?

RQ4:What the barriers that students encounter when utilizing the Libyan Program for Integration and Development Website?

1.3 PROBLEM STATEMENT

Alarge number of Libyan people who they are fighting to catch their necessity has been increased sharply in the last decade.Libyans who they are intersting in Libyan Program for Integration and Development seeking for high level of transaction in short time and try to increase their education level as well as improve their qualification skills. This sample of Libyan students all over Libya already using Libyan Program for Integration

and Development website to reap the benefits of this website. This study conducted to evaluate the performance and student attitudes as well as students' perception who they are using this website.

1.4 THESIS ORGANIZATION

- **Chapter one:** introduction, the importance of Libyan Program for Integration and Development, background and motivation, thesis aim, research questions, The problem statements, Thesis Structure.
- **Chapter two:** Literature review.
- **Chapter three** is about the research methodology, descriptive research, the sample, instruments, data collection.
- **Chapter four:** Practical model and coding work.
- **Chapter five:** results and discussion.

Conclusion and future work are listed at the end of the thesis with the references and all important data are tabled in the appendix

2. LITERATURE SURVEY

2.1 OVERVIEW

It has been noted that online surveys are most consistence way to collect the data for determining the level of impact in different applications and researches. This chapter if focused on reviewing the methods that used to establish assessment studies of various applications. The chapter may approach the impact of survey studies on data collection for medical purposes such as health risk classifications using data collected from some sensors, another topic of the same interest is the chronic patients post clinical treatment for obtaining the right diagnosis which happened by merging the online health data and patient testimony. And agriculture related matters such as obtaining the level of moisture in the soil and their impact on food productivity. Form the other hands, studies such as hospital assessment is reviewed in hereafter, the assessment of web services such as the classical internet quality and mobile biased internet is also reviewed.

2.2 SURVEY TECHNIQUES

At [2], HRAS is a health risk analysis system that introduced by [2] to provide a nursing information for caring the disables persons with chronic diseases such as paralyze. However, the HRAS is a server-based system that is running on web servers and used to gather nursing information from the particulars. This software service can gather the information related to health risks such as physical health risks, aspect of social health and mental health risks; to collect of such details, questionnaire-based survey can be done through this server and then all the information can be processed to create the proper health assessment. In such phase of process, as data are being collected by online (web) survey and transmitted into the remote server, the time comes to make decision by applying of classification methods. Risk analysis classifier (RAC) can be used to classify the collected health data. This classifier is implemented by using a rule-based classifier and risk classifying algorithm as well as cross validation of K-fold. This approach is used the neural network classifier as well to perform the health data classification and results found a 90% accuracy with this classifier over the others which make it the optimum classifier to perform health data classification in this study, the author said that neural network classifier is the most suitable classifier for collecting the user experience and performing the decisions accordingly.

In [3], another software system called NASA-SMAP is used to provide information about croplands where the moisture of soil can be measured. The assessment of soil moisture is critical to the vegetables production depending on the season time. The data provided by SMAP (the soil moisture active and passive information) is being segregated in this study [3] for the reason to enhance the decision reliability of soil moisture assessment system. Furthermore, study involves a comparison among three resources of soil moisture data such as NOAA (National Oceanic Atmospheric Administration), SMAP (the soil moisture active and passive information) and NASS (National Agricultural Statistics Services). Data are gathered from those platforms about the period of late September. However, this study is depending on gathering the information from several surveys as SMAP, NASS and NOAA about the soil moisture status during a particular period (season) to measure the impact of the soil moisture on agriculture productions. Results found strong correlation between NASS and SMAP data where SMAP is found to be the more reliable platform to assess the soil moisture. A particular called Veg Scape is developed by American Agriculture department as a web platform to provide information about croplands status, this platform is feed with data by NASA (the national American space administrative), this program is useful for providing those information that vital to agriculture stands.

At [4], another area of interest has been illustrated which is about web network and quality of the provided services. Since web applications have been widely expanded, network testing is important for maintaining the planning quality. Author said that quality of web services is one of challenged points. The adaptation of web service have gained great attention in business where business sectors are keen on populating their work to the costumers in an accepted and presentable way. Hence, for each business and interest there are different criteria to be assured to meet the required goals. This study was about defining a certain criteria and gather the questionnaire and survey information about the way to satisfy them for ensuring the best quality of service in web network. Three questions are made by the authors and web-based survey is established for answering the questions, What tests to be done on web network for assuring the quality?, how web network can be maintained for same quality?, how quality of web network can be enhanced?. However, online surveys are initialized for covering the above questionnaire; datasets form a well-known organizations are referred such as IEEE Xplore, ACM digital library and science direct.

At [5], author said position of any nation on Cyberspace can consider as key point of the cultural level of this nation and also can be a measure of political activity of this nation. This study employs the record (data) of united nations e-government to obtain the rank of Nigeria on cyberspace. Study refers the data from the said organization where the percentage of internet users in Africa is gained, between the years 2000 through 2014, the study discovered that internet users has been increased from 200,000 to 70,101,452 and the penetration level is also increased from 0.1 percent to 45 percent. The addressed several matters with efforts to evaluate the percentage of electronic government utilizing in the country of Nigeria, however, some factors are studied based on the provided data alike: web measure index, the human capital index and telecommunication and web infrastructure index with all aim to find out what services that country is providing on online.

At [6], traditionally, the clinical and psychology studies are relying on face to face questionnaire for understanding the case of patients and level of recovery. However, this found non-accurate in terms of exact monitoring of chronic cases recovery levels; for that mAAS system is been introduced in this study. This technology relies on collecting data in various ambulation conditions by using of mobile phone where all patient mobility can be recorded and uploaded in to remote server. The system involves a wearable sensor to be interfaced with smart phone and detect the data from patients in daily life and then transmit the data to the server where it can be processed and analysed to reach the real and accurate monitoring for the said chronic case and then decide the right treatment. The wearable device is about dressing up with top suit that providing a lot of sensors to detect the required signal from the body and send it into smart phone by means of Bluetooth, the software availability in this phone has a task to gather those signals and process it in terms of features extraction and then sending them across to the remote server.

At [7], in contrast with other research studies to evaluate the quality of using the web network, this study is also made to evaluate the level of quality experience QoE and the quality of service QoS. However, in terms of web world, the common matters related to quality assessment can be anything like network traffic based classifier where the decision or quality metrics can be obtained base on network traffic status. The service provided by web can be described as those process which enable the client-server in one application to be working as server-client at the other application. The study resulted that quality of service in web network can be fall in couple of groups alike the

experiment quality of service in active and passive network traffic analysis another group that is used to evaluate the quality of service can be deploying a more complex strategy to measure the performance of network such as using the trace model. Another aspects are found to be implicitly impacting the web quality of service apart from the metrics of performance; the end user satisfaction is the main condition of QoS. This study involves assessment of web QoS using the data that is gathered from network statistical with help of metric models alike formal model and trace model.

At [8], the impact of web service lies on electronic government where many cooperation department can perform the services for their citizen in online means; hence the strength of any country is lying on the ability to integrate more service and facilities to the cyberspace. Within this study, author was conducting a survey by putting some questionnaires and aimed to find out their answers in country of Pakistan in the domain of e-government assessment. Firstly the author approaches the concept of the electronic government by defining it as means to simplify peoples life by allowing services like official documents to be processed from online portal at client comfort. Furthermore, electronic government lies on services alike: e-tax payment, e-billing, e-education, e-documents, e-meetings and extra. The study is about quantitative approach which relies on twenty six indicators on sex sectors to evaluate the most ongoing trends in e-government, also the study considered a the answers of those citizens with internet connection and computers who are frequently using the governments website for completing their required works. The relations among the e-government in three sectors are identified such as the global service of electronic government, the local service of e-government, the internal service that happens between the e government entities internally. The research questionnaires relies on the availability of professionals IT people and the quality of webpages (web portal), the policy of government in such services and finally the infrastructure of those systems.

At [9], another approach to assess the quality of web network, this is a new turn that evaluate the quality by firstly setting up some criteria to be achieved for assuring the required level of web performance. Two directions are been decided by the author over this study, the very first phase of the study may lie in the direction that finding the targeted web page quality level, in other word, the first direction deals with quality prediction of the target website. Furthermore, the second direction is about verification process which involve the validation of the predicted level of quality. In order to provide the information about the first direction, an quantitative approach is found most

consistence which involves the quality criteria that is recognizable by human eye. Now, the validation process may take place by comparing the results of human recognized quality with some database measuring the quality which is available on some web sites (third party website that keen on quality assessment of other web pages). The practical implementation of this study lies on hiring a 132 participants for recognizing the quality of web pages by giving them a task of several question and asking them to obtain the answers of the same. The study dealt with some quality criteria such as checking the spelling error of a web pages, obtaining the complexity level of web page, determining the functions and services provided by this web site and many other points. Eventually, data from both candidates observations and third party are been treated by classification algorithm to find the validation level for accurate web assessment.

At [10], assessment of internet that is running on mobile phone is done in this study with efforts to set the criteria of mobile internet costumers satisfaction. the mobile network is been referred in this approach for specifying the internet quality within this complex network, hence it is known that mobile network was undergoing several generation where generations are identified from first (1st G: the very first mobile communication network) through the fifth (5th generation which is ongoing technology at the time this thesis was written). The internet speed and quality is obviously varying among all the networks generations where the speed of 4th generation has largely enhanced with the deployment of Long Term Evaluation (LTE) network.

The study involves a survey on the mobile users to collect the data about their satisfactions with internet service, the survey include an questionnaires to be answered by mobile users such as whither the user is aware about his data plan or not. For judgment of internet quality, this study involves two data sources which are primary data that is collected by the online survey (questionnaire kind of survey) that evaluate the strength of mobile network internet. The secondary data source is considered for validation purpose where it relies on literature survey that keen on the same objectives.

At [11]; learning management system is a way to move all traditional classrooms into web-based classroom. This technology is trying to implement all functionalities of normal learning process (traditional) in the web based system. In other word, activities such as conduction of lectures, laboratory sessions, quizzes and exams, student activity and more likely any function feasible in traditional classroom can be moved on the online learning system. However, this study is took place to create online tool for assessment of this learning management system. The proposed approach was to track of

students activity by collection of their scores in the online quizzes and also monitoring their performance of submission the homework or assignments. Another task has been illustrated in this study, the chines educational online system assessment is another challenge to be addressed for enhancement the or its performance. For improving the said learning management system, study proposed a survey conduction for evaluation the challenges of this system from the students point of view. A group of candidate are asked to use the learning management system instead of traditional classroom and after completion of the online sessions, a course of questionnaire are established to find the candidates interest level of using this new system. Two steps are been adopted for assessment of this system, firstly questionnaire which sent to each candidate and secondly, the answers are validated with the online tool statistical results which may reveal the activity log of the candidates and how they were behaving while using the system.

At [12], a damage level assessment is done, Japan is a country where earth quick is frequently occurring and causing a large crisis. However, for assessment the damages of buildings, responsibilities may conduct a survey and normally this survey is done in manual fashion and physically presence of data collector person. The damage assessment data is found less accurate with manual way of data collection with more time consumption to assess all the damages of buildings. The damage assessment is led to obtaining a victim certificate for those particulars of interest. Online system is developed using the inputs of two crises which actually happened in Japan, the first crises was due to heavy rain that affected the town of Oshima and led to water level increment of the surrounding river with caused a flood that make some blooding to be collapsed. For each crises, this study proposed a survey by number of responders where they can calculate the level of damage in each building and then upload the data into the online system which in turn apply its own approximation to implement the final decision based on the provided data.

At [13], engineering schools may adopt what is so called accreditation criteria or EC2000 in which ensure the level of excellence in the engineering programs. In this study, a new software tool is developed for connecting engineering schools together through one portal and examine the accreditation criteria 2000 within each; the developed survey is called “Pitt students online survey”. The author declared that around five colleges of engineering have adopted this survey by spring 2000 academic sessions. The aim of this study was to establish a system to ensure the required level of

accreditation criteria in each engineering program. The motivation of this study was due to the large deployment of engineering schools in the country and since such programs are very vital to people lives, the need came to start such activity. This approach involves questionnaire survey which set by department of industrial engineering and circulated to all other departments, in this survey college can track the students activity during several phases of their academic life, the primary stage that contains the freshmen which followed by junior students assessment, senior students assessment. The semester prior to the graduation, the senior student will be taken a survey of senior exit survey. The first (primary) survey is applied on freshmen students for getting knowledge about their attitude at the beginning and end of engineering course of first year and the motivations behind their decision to join engineering colleges. This survey is achieved by online system (web based monitoring) by adding the required questions and demanding the answers from the students in college wised. The gained data is being processed for evaluation of student performance and improve the accreditation criteria level on the college if required.

At [14], collection of data for different nature of studies is reported as tough task, said by the author. Mobile sensors are being used by many technological interest to gather data from various sources, this technology is forming a challenge for the researchers due to their far costly budget. Likely, the sensors (wireless) are utilized by big verity of researches like health and community studies. A new system is developed here to mitigate the cost of using sensor networks called as TigerAware. This application (TigerAware) is general purpose software to collect data from various field, it involves re-setting of it by changing some pieces of code to match the application of interest. Survey based mobile device is the beginning stage of this approach, in this point, data are collected by mobile users through online surveys at their handsets. System include several databases to store different information types where each question in the survey may require to be answered as “yes” or “No”. Data from different types for various researches can be gathered and uploaded on the system cloud where it can be used by any terminal computer if needed.

At [15], a large population of internet users are being searching for health related information on the cyberspace. Due to health information demand increment, this study aimed to provide the internet pioneers with that information by creating a web portal. Software tool called Semantics is in turn used to provide health care information and this this study is aimed to integrate this tool with web portal to deploy more health

information for the interested parties like patients and health specialists. The portal of proposal is about gathering all information about doctors in state of Virginia such as clinic locations, hospitals location. Also it includes answering the patients who are potentially visiting (using) this portal about the queries alike which is perfectional doctor in particular specialization. Each hospital assessment process is achieved by the visitors feedback also validated by the centralized database of hospitals classifications. Portal involve another information such as hospital classifications from geographical location point of view such as urban and rural hospitals. Statistical calculations such as random and linear regression are applied on patient feedbacks on the hospital assessment for producing the most accurate assessment.

At [16], chronic pain rehabilitation program is found costly according to the author, the need of post clinic treatment is must for those patients with chronic pain. However, the doctors or instructors may demand information from the patient about the injury status on post-surgery or clinical intervention, those queries such as how frequent pain is exist and where is the exact point of pain and extra may be answered by the patient accurately to help the instructor for initiation the proper treatment to subsite the pain. The observations of this study found that information obtained from the patient is not always accurate, in other word, patient may fail to realize the exact position of pain and any wrong information or miss guidance may lead to deal the healing of that body. For that point, this study proposed another alternative of gathering the data on post clinical treatment by using of sensors in form of wearable suite to detect the body activity during all monitoring period, the monitoring time may last for twenty four hours at minimum or even seven days to one month. The information from the suit is taken by attached modem and then shared (uploaded) to the cloud where it can be accessed by doctors at any anytime for helping them to make right diagnoses. The information from the online portal helped by questionnaire answers of the patients will work together for making the right assessment of the disease (case).

At [17], a study to evaluate the website assessment of college library, this study aims to conduct a survey to find out the level of performance in university website. It works by developing online assessment index that depends of some principle levels of performance to judge any website. The data are gathered from large survey which made by participation of sixty percent of library expert staff (who are in service and the retired people can also participate) with thirty percent of teachers in university and ten percent of students. The result of data from this survey can be either simple, moderated,

complex assessment. The study utilize the neural network to perform the classifications on the biases of obtained data. Artificial neural network is an application of artificial intelligence applications, it consists of many neurons to be updated with particular weight and bias. The task of those neurons is to connect (direct) the input with the proper output (target), it done by using training task to update the weight and bias periodically. The error of this application can be calculated by several techniques (methods) such as MSE (the mean square error), the difference between the result of neural network and the target is termed to the error value and this can be squared and rooted for obtaining the mean square error. The MSE can be minimized with help of optimization technology that elect the best weight and bias for the said network to produce the output with minimum error.

At [18], study involve the use of learning management system assessment by collecting the results from students experience. The students are been asked to fill in an electronic survey about their experience of using a remote learning system. This study is one of many in this regards which is aiming to pave the road in front of online learning environments. In order to completely move into on-cloud learning style, it is important to study the learning management system in deep, many companies are providing an open access learning management system for their clients where no fees are need to be paid. Since the LMS platforms are mainly allowing online classroom participations, they are also providing activity log information about the participants which helps the teacher of assessing the students individually. The assessment of online candidate is quite difficult task as no face to face interaction as it was in traditional classes. For that, special statistical are found to be helpful for assessing the students with fair, those facilities are provided in learning management system. Another point is demotivating the students and individual to get the online education, for promoting the LMS, good survey can be helpful for addressing the points are critical for LMS population form the students and educators points of view.

2.3 SUMMERY AND THESIS STREANGTH

Literature shows multiple iteration to analysis performances of systems more likely, literature included a studies of performance analysis of following:

1. Health care website assessment as stated in [2] [15] [14];
2. Library pioneers' impressions and feed-back aiming to enhance the library services [17];

3. Learning management system performance assessment by sending quires to the participants alike students and teachers by several ways alike emails or direct face to face interviews as in [18].
4. To be sued by doctors or physiotherapist to assess the patients injuries information by sensor detection (wearable devices) system is described in [16];
5. Students skill assessment before admission in college of engineering, the system may exam the students by several quizzes to evaluate their level of skills in order to prepare them for engineering college admissions, the system is described in [13].
6. Many studies were seen in literature that derive the performance metrics of the internet by queries initiation and invitation of internet users to give their feedbacks as in [15].

Our proposed system strength lies in its ability to address the programs alike LPFIAD in terms of its worthiness in service providing to the candidates, the survey is designed to capture the data from the candidates in efficient way using the survey websites i.e. SurveyMonkey.

However, data are analyzed using artificial intelligence technology i.e. Feed Forward Neural Network (FFNN). Using of this approach is making this proposal more effective in time consumption and required efforts to take the decision.

3. METHODOLOGY

Accurate information is the foundation of all strategy and performance development of the education framework; both local besides national levels need to study an education information framework and the extent to which the impact of usability besides interest expected. The importance of training involved in the preparation of information management and control of data security besides retrieve, there are no national policies or guidelines on data collection and management. The purpose of this study describes the opinion question, perception questions, attitude, empowerment, performance of the education providers towards the Libyan Program for integration and Development Web page, determined which critical categories that have the significant impact on training program besides finding the relationships with demographic and higher education and qualification skills. Participants were Libyan soldier's providers, who worked in public/private government. The total number of participants was 216, with (16.20%, 35) percent female besides (83.80%, 181) percent male. Most participants ranged in age from 35-44. The level of education was almost Master Degree, (42.08%, 93) from the total of participants. There were roles at the practice which include the training of the Libyan students who their education is low as Diploma, doctors were response rate (15.84%, 35) besides different categories of Libyan Program for integration and Development Web page.

3.1 RESEARCH HYPOTHESIS

This study describes the opinion question, perception questions, attitude, empowerment, performance of the Libyan Program for integration and Development Web page via using survey, the hypotheses were examined participation besides training to utilize Libyan Program for integration and Development Web page usage. The study attempts to answer the following hypotheses:

H01: There is no significant difference between (students' training) and (Libyan Program for integration and Development Web page usage).

From the previous major hypothesis come (three) sub-hypotheses, can be summarized as follows:

H01-1: There is no significant difference between (Students opinion and Students perception) and (Libyan Program for integration and Development Web page usage).

H01-2: There is no significant difference between (Students Empowerment and Students Attitude) and (Libyan Program for integration and Development Web page usage).

H01-3: There is no significant difference between (Students Performance and Students Empowerment) and (Libyan Program for integration and Development Web page usage).

H01-4: There is no significant difference between the demographics (Gender, Age, Education) and (Libyan Program for integration and Development Web page usage).

3.2 PARTICIPANTS

This study was examining education training providers in Libyan Program for integration and Development Web page usage, previously the study utilized an online survey besides received 216 responses from Libyans who they are interested on using Libyan Program for integration and Development Web page usage of which were 35 females and 181males. The study throughout Libyan Program for integration and Development Web page varied education levels including diploma, bachelor, master degree besides doctoral degree. The demographic characteristics analyzed in this study include as below.

3.3 DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

Table 3.1 reveals that females represent 35 and males represent 181 above 80% of the respondents are under the age of 35 years old. The majority is of Higher education besides above, 42.08%Master degree. The high number of percentage presented in the age group 35-44 of the respondents.

3.3.1 Gender

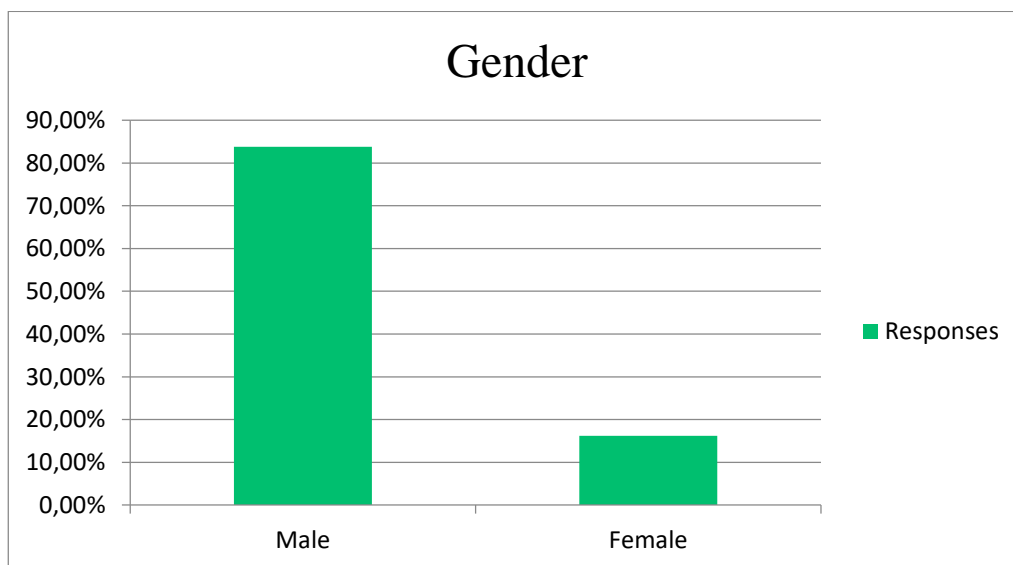


Figure 3.1: The participants percent in male and female.

Table 3.1: The participants percent in male and female.

Answer Choices	Responses	
Male	83.80%	181
Female	16.20%	35
	Answered	216
	Skipped	5

3.3.2 Educational Background

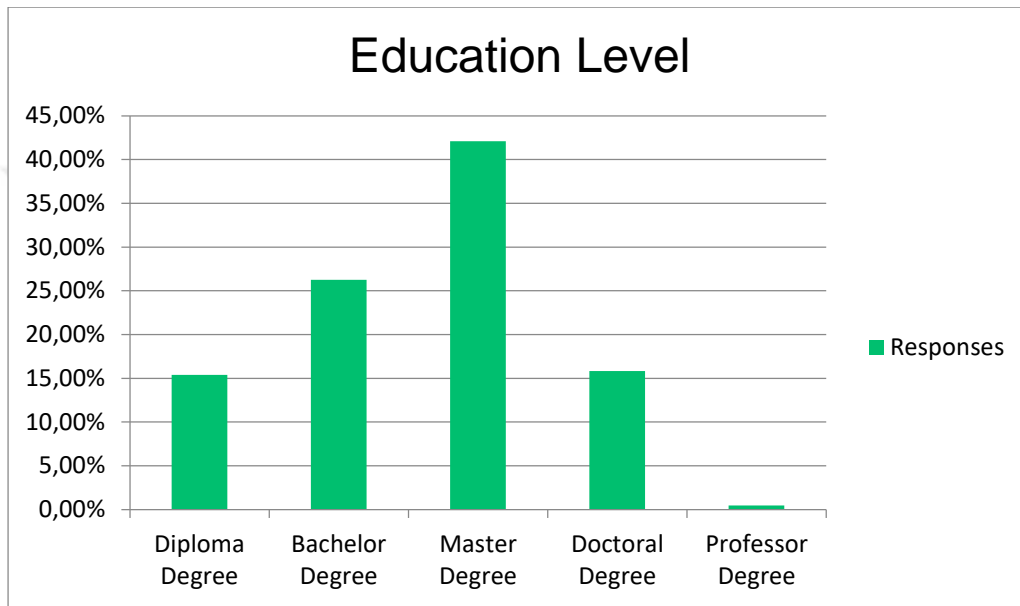


Figure 3.2: The education level of the participants per the participants of the survey of this study.

Table 3.2: The education level of the participants.

Education Level		
Answer Choices	Responses	
Diploma Degree	15.38%	34
Bachelor Degree	26.24%	58
Master Degree	42.08%	93
Doctoral Degree	15.84%	35
Professor Degree	0.45%	1

3.3.3 Age

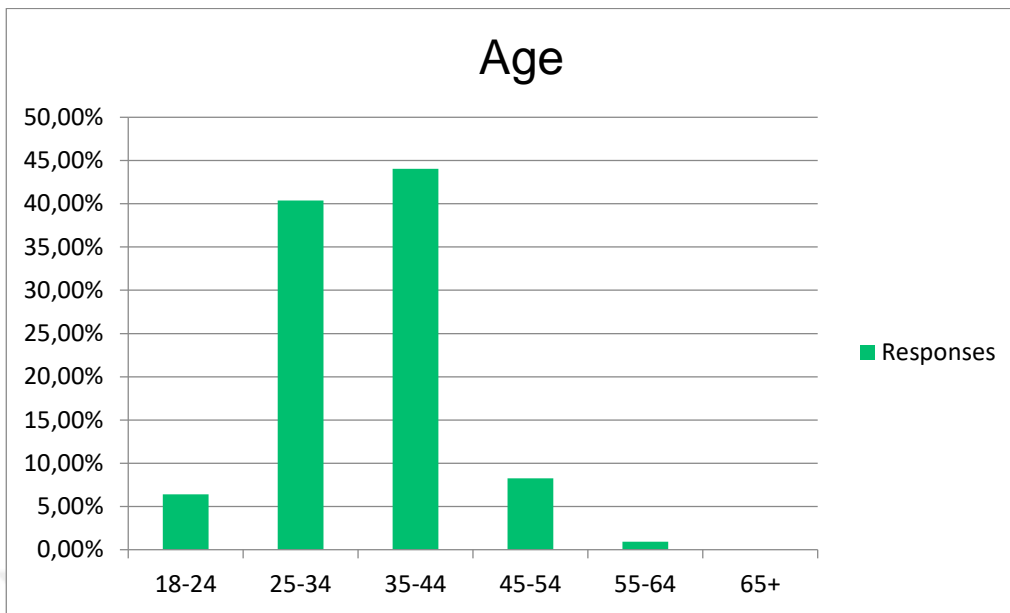


Figure 3.3: The age of the participants in this study.

Table 3.3: The age of the participants.

Q2. Age		
Answer Choices	Response Percent	Responses
18-24	6.42%	14
25-34	40.37%	88
35-44	44.04%	96
45-54	8.26%	18
55-64	0.92%	2
65+	0.00%	0

3.4 RESEARCH INSTRUMENT

The research instrument that was used to collect data for this study is a survey which consist of 46 questions which were grouped into three categories as students' opinion question, perception questions, attitude, empowerment, performance. The opinion question was used to answer the fifth research question, the thirteen perception questions were used to answer the second research question, and the attitude questions were used to answer the twenty-one-research question. And the first three were some demographical questions. The responses of the survey questions were collected, and used to answer the research questions mentioned in Table 3.4. below.

Table 3.4: The questions five categories.

Question category	Questions
Opinion question	<p>1. Do you have an experience on using Web site services?</p> <p>2. Do you trust in management of Libyan Program for Integration and Development Website?</p> <p>3. Do you think using this Website reduces the physical visits to government offices?</p> <p>4. Do you think this Website will enhance the management procedures of the government?</p> <p>5. Do you think E-service in next years will replace traditional service?</p> <p>6.The Libyan Program for Integration and Development Website will remove non- educational in Libyan future</p> <p>7.With this Web Site There is no need to traditional services of Libyan Program for Integration and Development?</p>
Perception	<p>23.With this Web Site There is no need to the government offices of Libyan Program for Integration and Development?</p> <p>26.The Libyan Program for Integration and Development Website improve Libyan student’s qualifications skills.</p> <p>28.The Libyan Program for Integration and Development Website interduce a new communication between the Libyan students and government.</p> <p>32.The Libyan Program for Integration and Development Website will give the ability to Libyan students to get a high level of education.</p> <p>36.The Libyan Program for integration and Development Web page is an optimal solution for this kind of Libyan students.</p> <p>46.Students classified in this category are represented by meetings, seminars and workshops through the page.</p> <p>45.The integration and development program on this page includes an age group of students.</p> <p>37.The Libyan Program for integration and Development Web page Provide services, guidance and all guidance related to the development program</p> <p>29.The Libyan Program for Integration and Development Website interduce a new educational perspective to the Libyan students</p> <p>39.This page is classified as a new type of education and upgrading the education program under a framework</p> <p>35.The Libyan Program for Integration and Development Web site will replace traditional educational services in Libya</p> <p>33.The Libyan Program for Integration and Development Web site can be integrated to another area of education</p> <p>27.The Libyan Program for Integration and Development Website interduce a new perspective of education to the Libyan students.</p>

Attitude	<p>21.The Web site provide high level of services quality for Libyan Program for Integration and Development?</p> <p>22.The Web site will reduce the physical visited to the government offices of Libyan Program for Integration and Development?</p> <p>43.The site will follow up the collection of each student to know his level of study</p> <p>20.Are you satisfied with the outcome of Libyan Program for Integration and Development Website?</p> <p>44.On the page there are links to specific universities to study in different fields</p> <p>31.The Libyan Program for Integration and Development Website enhanced government economic statue</p> <p>18.Are you satisfied with the usage of Libyan Program for Integration and Development Web Site?</p>
Empowerment	<p>11. Management supports will provide training that I need to use Libyan Program for integration and Development Web page effectively.</p> <p>42.The site nominates links to benefit the student</p> <p>41.The site provides information on students from this category</p> <p>15.What is your motivation to use the Website? you can choose more than one option</p> <p>10. Management support will do some effective services during the implementation processes of Libyan Program for integration and Development Web page</p> <p>34.The Libyan Program for Integration and Development Web site support Libyan educational issue.</p>
Performance	<p>9. The Web page performance of Libyan Program for Integration and Development will be introduced to me effectively</p> <p>38. What is the classification of this page as a new type of education and human development in Libya. High quality and performance</p> <p>17. How do you evaluate the performance of Libyan Program for Integration and Development Website?</p> <p>7. Please give information about availability of internet connection in your life?</p> <p>4. Which type of services do you have?</p>

3.5 LIBYAN PROGRAM FOR INTEGRATION AND DEVELOPMENT WEB PAGE

The Libyan Program for integration and Development Web page is mostly used by Libyan students who they are looking for improve their qualification skills. Therefore, in this study, this website was taken into consideration to understand students` opinion question, perception questions, attitude, empowerment, performance in the usage of Libyan Program for integration and Development Web page. The Website nation has faced many challenges since the end of the revolution in 2011. It was at this point we made the decision to establish the Libyan Programmed for integration and Development. The understand that state-building comes from bringing together a nation`s citizens, rehabilitating them, and taking them forward to be the future protectors and builders of the country.

The Libyan Program for integration and Development Web page was established in 2011 and used to utilize online in December around the same period. This website is a framework for Libyan students who have been interested on improving their education degree regarding to the Ministry of Higher Education in Libya. The Libyan students would track can interchanges sent to them by the Embassy through the mail of the Website. The site gives many services, for example, news, declarations about their studying, extended the duration of study and modify the social status such as marital state etc., Libyan Program for integration and Development Web page provide many services to all the Libyan students especially Libyan student who they are studying outside of their country. Libyan Program for integration and Development Web page is a modern interface system which utilize to reduce the lack of transactions and procedures and improve the performance and productivity (<https://lprd.gov.ly/en/>).

3.6 ANALYTICAL METHOD

A software is designed by Matlab was adopted as one of the best environments for developing the classification methods for such studies. The distribution of questionnaires was Libyan students who they are using Libyan Program for integration and Development Web page. The main objective of this study is what are the effect of the Libyan Program for integration and Development Web page five categories on the opinion question, perception questions, attitude, empowerment, performance on Libyan Program for integration and Development Web page as well as the impact of demographic besides educational training after collecting data that can be subject to

descriptive research methods besides inductive statistics. This study will analyze the relevant statistics using the data collected via an online survey to explain the opinion question, perception questions, attitude, empowerment, performance of the website provider. Accordingly, a questionnaire has utilized form previous studies.



4. PRACTICAL MODEL

In this chapter, we will run through the practical model and simulation stages which is done for analyzing the survey results. However, Feed Forward Neural Network (FFNN) is implemented to learn from candidate's response in the survey and make the decision accordingly. The aim of this paradigm is to find the consistency of the Libyan Program for Integration and Development (LPFIAD). The survey data are obtained from the MonkeySurvey where all candidates are promoted to access the questions and response to the same according to their own prospections and depending on their personal experience in the Libyan Program for Integration and Development (LPFIAD).

4.1 SYSTEM DESCRIPTION

In order to make use from the survey's data, preprocessing is initiating firstly. Whole processes are implemented in Matlab environments and is started with reading the data file downloaded from MonkeySurvey web system. Data is going through several process alike preprocessing, encoding, target preparation, Neural network training and results plotting. These five steps are leading to a decision generation which provides the percentage of success to Libyan Program for Integration and Development (LPFIAD).

4.1.1 Preprocessing

Data is downloaded from the said survey web system in excel sheet format and was seen as different categories alike seven question were as "Yes" and "No" oriented question and rest twenty four question were about multichoice oriented questions that include answering in one of the following choices: Neutral, Agree, Strongly agree, Disagree and Strongly disagree. Another question type is decided to be used as reliability measure of the candidate that states as: How long have you been in Libyan Program for Integration and Development web page? hence the answers are varying between four answers which are: 1-2, 2-3, 3-4, 4-5. However, the candidate of longer period of LPFIAD experience is considered more trusted to judge the system and give assessment. As per the provided sheet of whole responses from MonkeySurvey system, some candidates are actually login into the survey but not given any answer or published any reviews so we had filtered such content from the data and ignored the null candidates, Fig (4.1) demonstrating the preprocessing procedure.

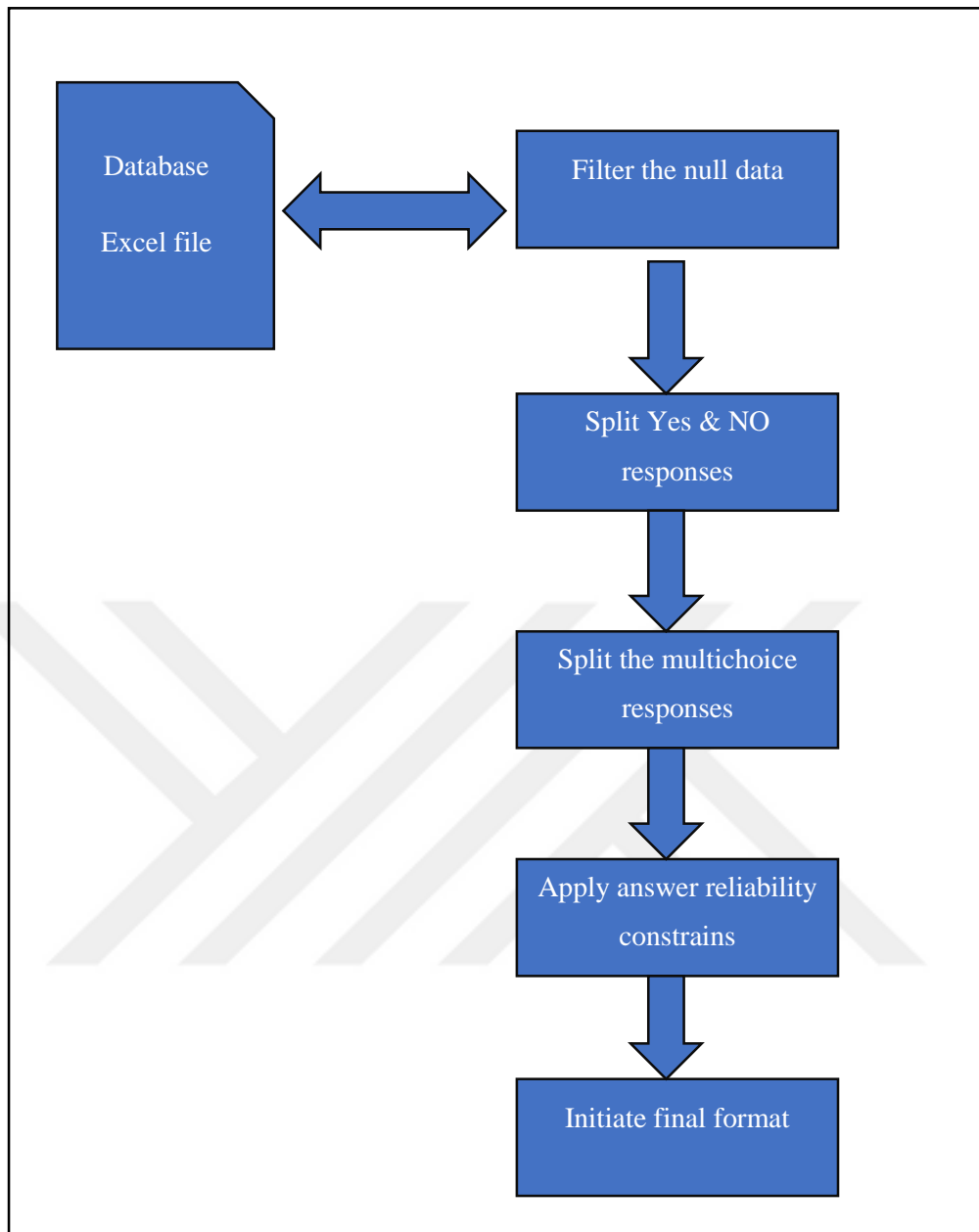


Figure 4.1: Preprocessing procedure demonstration.

In data encoding step we have translated the alphabetical answers into numerical format which are important to evaluate the overall candidates and state the further process to generate the results. In order to analyze the data, it was necessary to convert all the predefined groups into numerical scores. During this process the following table is used for generating the new form of data.

Table 4.1: The data guide information.

Answer group	Given score
Yes	1
No	0
Strongly disagree	-2
Disagree	-1
Agree	1
Strongly agree	2
Neutral	0
Experience 1-2 year	1
Experience 2-3 year	2
Experience 3-4 year	3
Experience 4-5 year	4

However, all answers that is obtained from candidates are now encoded with the respected number as per the judgment table above. It is obvious from this table that some answers are having negative impact and others are positives, the both categories are effecting the decision in different levels according to the meaning of the answer so that such cases are holding codes like (-1,-1,0,1,2). Other fact in this process is the dependency of the answer which is derived from the question of “years of experience in this program”, accordingly we relied on those who are spent more time in this program perhaps the others are given decreased relevant value.

4.1.2 Target Preparation

The main player in data analysis is derived from the percentage formula of each candidate assessment with reference to the maximum expected score of the same candidate assessment. As stated in the previous sections, the maximum scores for first seven questions which is about “yes” and “no” responses is set to be 7, this is followed by next twenty four questions which are about the satisfactions of program and other features that have maximum expected score of 24. The last assessment question is about the program experience period that can produce 4 scores as maximum. However, the total maximum score from all questions calculated for each candidate is of $(48+4+7=59)$. For each candidate, in order to find the assessment percentage, the Eq. (5-2) must be applied.

$$AS\% = \frac{Ms - ms}{Ms} * 100\% \quad (4.1)$$

One more useful formula which is used for analyzing the data is the mean or average as below.

$$\text{mean} = \frac{\sum i}{l} \quad (4.2)$$

Where “i” is the scores value for every individual candidate and “l” is the total number of candidates.

As per the given scores for each answer in the survey, the table in (appendix table 1) is produced accordingly and used for target calculations. The result from each candidate is now obtained by scores summation from each answer, whereas, each column in the (appendix table 2) is representing the question number and each row is representing the candidate number. Target will be produced by summing the numbers in row wise fashion. The first seven questions can produce 7 scores as maximum results when situation of all question of this type are answered by “yes” whereas the following twenty-four questions can produce forty-eight as maximum value if the situation of all this kind of question are answered by “strongly agreed”. However, the summation of each row is obtained also the reference value (maximum expected score) for each row will be summation of first seven question maximum score which is “seven” and the following twenty four question score which is (24*2=48) and the last question which represents the period of experience in this program which hold maximum expected score of 4, however, each row maximum score (maximum positive feedback from each candidate) can be (48+4+7=59).

4.1.3 Neural Network Training

As very essential step in this project, neural network is developed to produce these results from any kind of response of the same questions. Using the target of previous step, a Feed Forward Neural Network is designed in two layers as per the Table (4.2) which including the design parameters of this paradigm. Learning of any kind of response to the similar questions after passing the data from preprocessing step can lead to perfect results by letting the neural network doing the same.

Table 4.2: The parameters that used to establish the Neural Network classifier.

Parameter	Value
Number of layers	3
First layer neurons	30
Second layer neurons	10
Maximum variance	1e-31

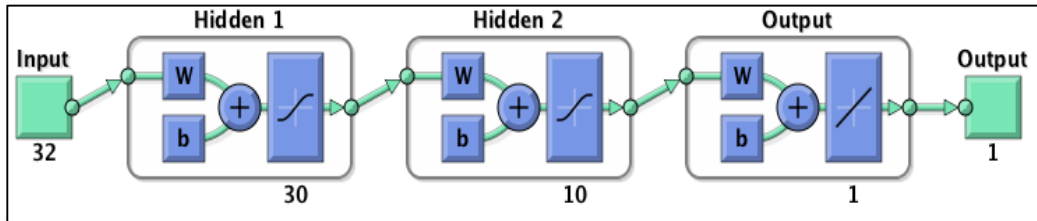


Figure 4.2: The structure of the three layers feed forward neural network.

The resultant training performance of this network are measured using the mean square error (mse) formula Eq. (5-1).

$$mse = (\sqrt{I - O})^2 \quad (4.3)$$

Where “I” is the input vector of data and “O” is the output of the neural network. Further the resulted mse is lesser than 1*e-31 which means very small error in the training is resulted from this network and hereby the performance of the same is good. Neural network algorithm is implemented to learn over the survey in order to get a way for the performance measure; however, the said neural network are following the herein points:

- a. Firstly, data is preprocessed and null responses are omitted from the said database so that only the useful data can be remained for next processing stage.
- b. In order to filter the said data, digitization is done where data are converted from the alphabetic form into number form.
- c. The data resulted from point (b.) are treated in analytical methods with intention to produce assessment value from all candidates individually. This value is reflecting a percentage of LPFIAD success from each candidate’s vision; hereafter, the average value of all results may be taken in order to produce

overall average performance that reflect the average percentage of LPFIAD success that obtained by all the candidates.

- d. Neural network is selected to be feed forward neural network and constructed from two layers. These layers are contained of 30 neurons at the input layer and 10 neurons at the output layer. However, the target that reflects the individually obtained performance from all candidates based on their answers to survey questions, is given to the neural network along with all questions for preparing the algorithm to the learning mode. In other word, neural network (Feed Forward neural network) is working in two modes more likely, learning mode and prediction mode. In learning mode of Feed Forward neural network (FFNN), two input vectors are required to be given to the said network i.e. target and response vector; where the network will take each candidates response for every question and the resulted performance for this particular response (the response result to be taken from the target vector).
- e. In learning mode: neural network may need to study that particular response values for every question in from single candidate is leading to the respective target value. The same concept is applied for all candidates. Learning mode is working on bias and weight values, in other word, figure below is showing two sides vector (left and right) the left vector is reflecting the response of each question in candidate wise and the right vector is reflecting the target for each candidate that is previously obtained, the intermediate station is reflecting the neurons that connecting the both sides (tying each candidate responses with their particular target) those neurons are simulated in practical as two values (weight (W) and bias(B)). Learning mode is about how to obtain the lesser error value of W and B. Usually, learning functions are defined in Matlab which are designed to obtain the proper less errored values for the data where in our case we had used the LEARNLM function and we obtained the performance of error (mean square error) $< 10 e (-30)$.

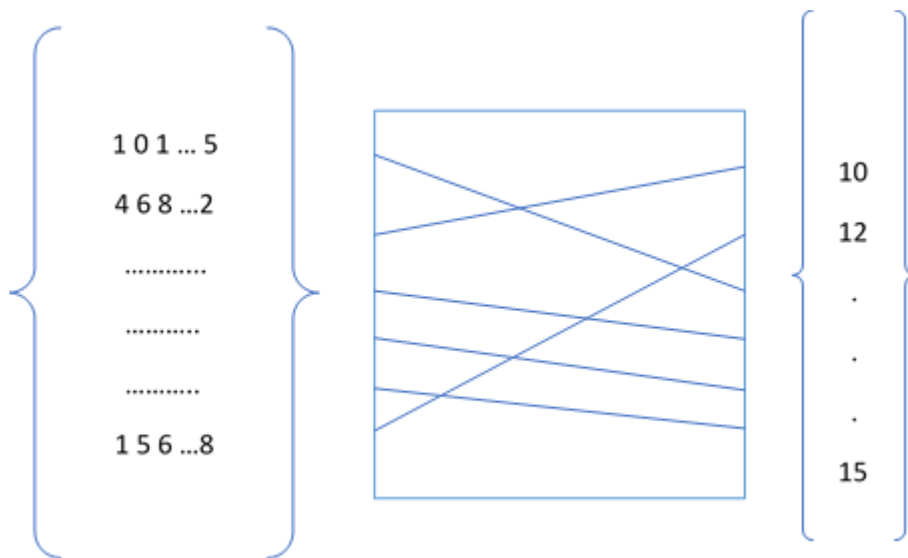


Figure 4.3: The working strategy of neural network.

- f. In prediction mode: neural network will need only one input which is the response only where it can predict the target for the provided input base on learning stage.
- g. Finally, neural network is used over this project to replace the affrontive procedures that may be taken to calculate the performance with different responses where new calculations may be needed.
- h. This is termed as artificial intelligence application as only single step is required that to feed the data to the neural network and last is producing the final figure directly without needing to obtain any statics.

4.1.4 Analytical Outcomes

The analysis of responses data begins as we converted the responses to numerical forms where each question is equivalent to score from zero to five. Adding all the number per candidate will produce the total score that given by each candidate. We had obtained percentage of each candidate feedback with reference to the maximum score of each candidate i.e. 59 by applying of Eq. (5-2). However, the figure of Fig. (4-3) is demonstrating the performance of LPFIAD in percentage which is taken from every candidate of this survey.

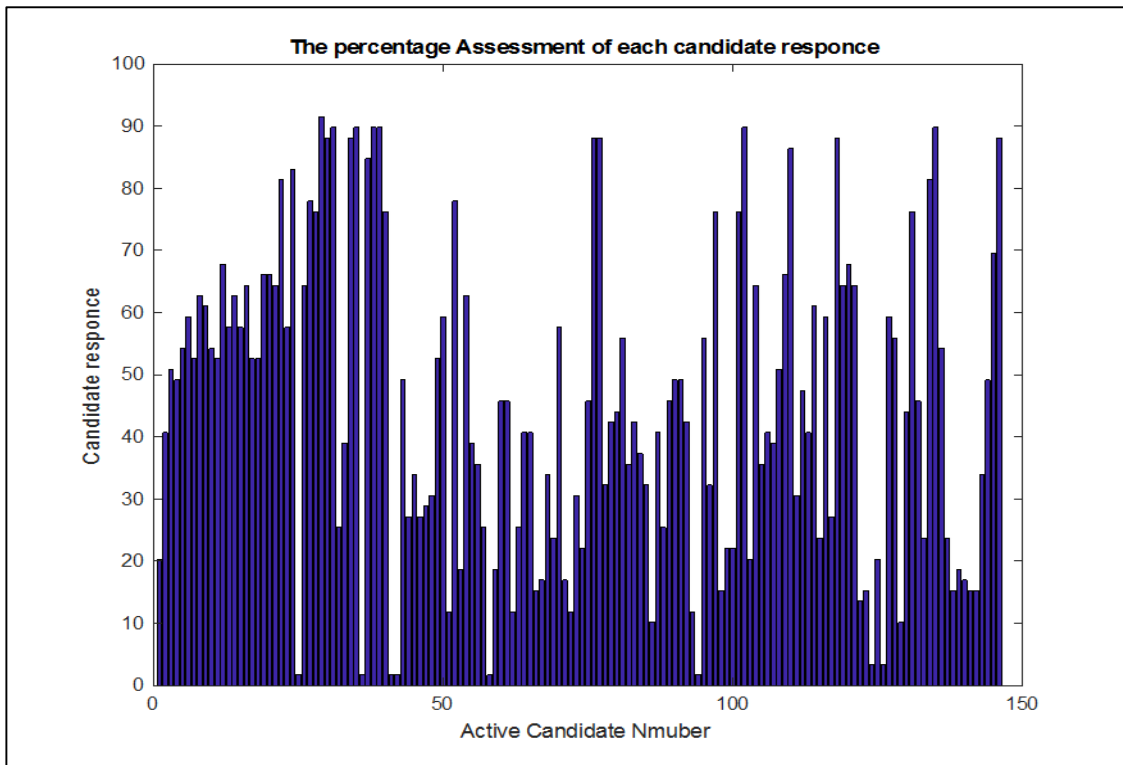


Figure 4.4: The percentage assessment of each candidate response.

Figure shows the percentage score from each candidate according to the feedbacks collected from them by the survey. The x axis is representing the candidate number and y axis is representing the percentage response of every candidate. The details value that taken to plot the above figure is tableted at appendix. The minimum feedback was given by some candidates was equal to 1.69 % whereas the maximum feedback was equal to 91.5 %. We can summarize the results of the above figure in the following table.

Table 4.3: Interpretation the results of feedback percentage.

Term	Details
Total number of subscribers excluding the null ones	146
The number of subscribers who have given > 50 % assessment to LPFIAD	63
The number of subscribers who have given > 90 % assessment to LPFIAD	1
The number of subscribers who have given < 50 % assessment to LPFIAD	83
The number of subscribers who have given > 60 % assessment to LPFIAD	42
The number of subscribers who have given > 70 % assessment to LPFIAD	25
The number of subscribers who have given > 80 % assessment to LPFIAD	18

The mean value of the total candidate percentage is found equal to 53.6575% which means that Libyan Program For Integration and development (LPFIAD) is moderately fulfilling the users demands, for this we have studied the response of each question individually and emphasized the norms that need to be adopted by this program for improvement purposes and make it more useful to society.

Question wise analysis can be seen in the Fig (4.3) where it is demonstrating the first seven questions that can be answered with “yes” and “no”, the first question which is states: are you having experience of using the internet (web)? The figure shows that more than 90% of the candidates are experiencing using the web network and it sounds that all are using the internet in their life routine. The table below is demonstrating the first seven question scores as per the candidate’s response.

Table 4.4: The assessment of the questions as per the positively answered candidates.

Question number	Question contents	Score that equivalent to number of candidates how are answered positively
1	Do you have an experience on using Web site services?	135
2	Do you trust in management of Libyan Program for Integration and Development Website?	115
3	The students classified in this category are represented by meetings, seminars and workshops through the page	120
4	Do you think this Website will enhance the management procedures of the government	112
5	The site will follow up the collection of each student to know his level of study	106
6	The site nominates links to benefit the student	105
7	What is the classification of this page as a new type of education and human development in Libya High quality and performance	126

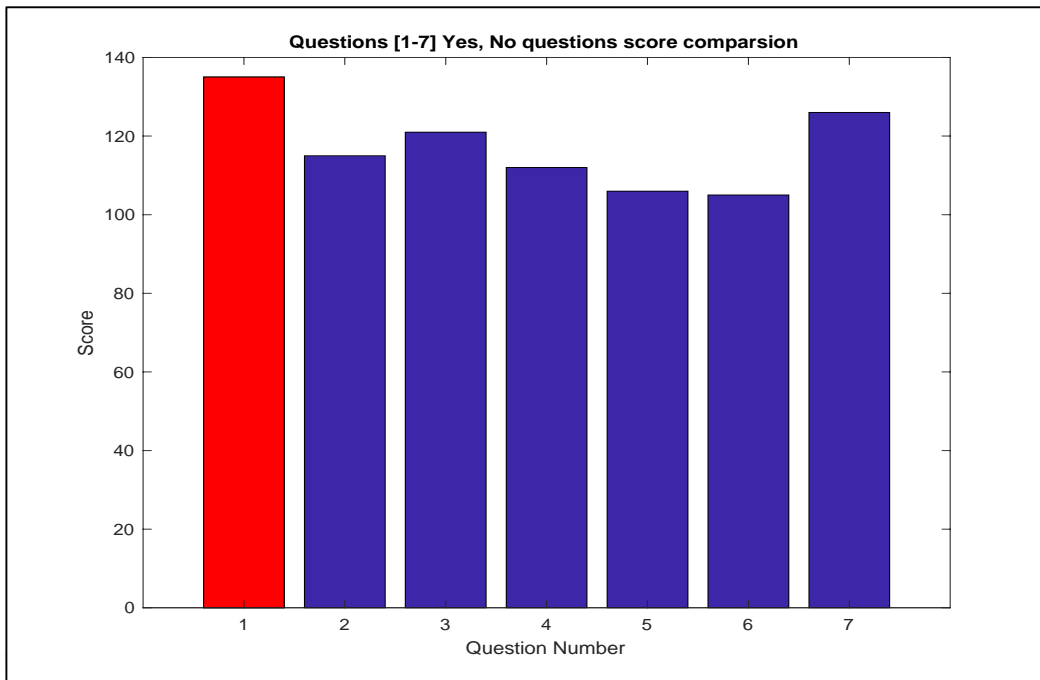


Figure 4.5: The first seven question in the survey score results.

From the results above we realized that the large most candidates of this survey are trusting the program and feeling that it is helpful according to yes and no questions. Actually, this kind of questions are good for initial assessment of this system whereas these questions are unable to explain the opinion or self-experience of each candidate in details so that, they can't be reliable for final judgment of the Libyan Program for Integration and Development (LPFIAD).

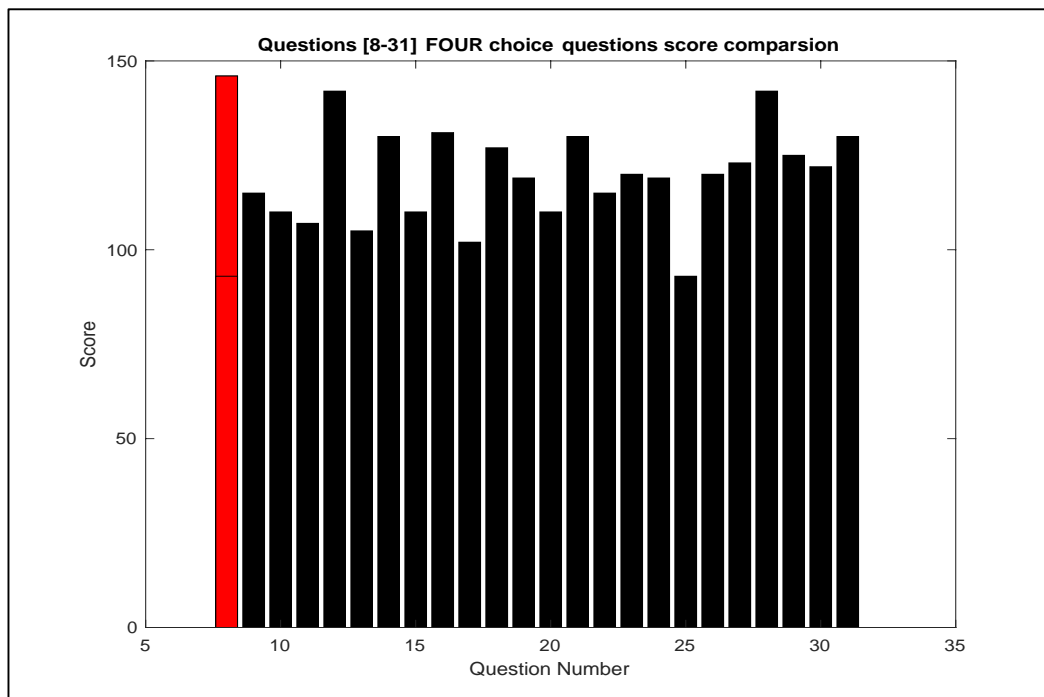


Figure 4.6: The score of the following twenty-four questions in the survey.

The remaining twenty-four questions of the survey can give the voters more freedom to give their feedback are these questions are made to have scores from minus through zero thorough plus i.e. (-2, -1,0,1,2). Candidates can express his experience with LPFIAD in options of good, very good, not ready to answer this particular question, bad and very bad. The question that states: Do you think E-service in next years will replace traditional service? Has been answered as positively by almost whole candidates, the same is red labeled in the figure above as question number eight. Another question states: The Libyan Program for Integration and Development Website will remove non- educational in Libyan future? Are answered positively by 110 users in the survey. Generally, twenty-three questions of those twenty-four were answered positively with more that 90 scores. The question of minimum score has got 93 score by the candidates is satiating that: Students have a good chance to complete their education with this Web site.

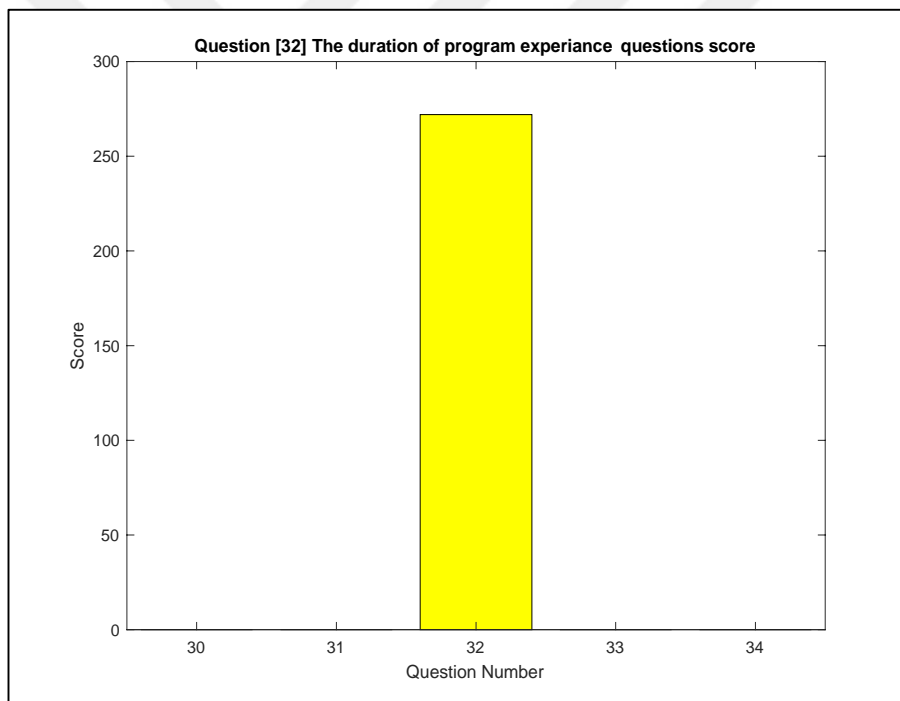


Figure 4.7: Last question score in the survey.

As per the figure above, the question that asked in the survey to find out the duration which spent by the candidate in the LPFIAD I years, the answer to this question may be 1-2, 2-3, 3-4, 4-5 years, according to the mentioned inputs, this question won 272 scores which means most of the candidates are actually used the LPFIAD and have past long-term experience with it.

4.2 OVERALL SYSTEM DESCRIPTION

As mentioned in previous sections, data is obtained after starting a survey on the internet and hence candidate's opinion about LPFIAD system is gathered. It is important to highlight the system we had implemented here for data classification. First of all, the goal of this work was for derivation the exact assessment of the LPFIAD system as first software from its type in state of Libya. The procedure to predict the decision is started with the idea of automation when we let the computer program to classify the inputs automatically depending on the way it was trained more likely, to train some staff in software doing an activity. Feed Forward Neural Network is used in our paradigm for classification job, in order to provide the input with suitable format to the said neural network, preprocessing is initiated so that all alphabetic words from the survey are getting convert into numerical scores from minus two through plus two (-2, -1, 0, 1, 2). It was found that some candidates are voted with nothing but the system i.e. SurveyMonkey has considered them in the database file as null inputs, the experiment has shown that such inputs are degrading the performance of the results but negatively effecting the program decision and resulting error; for this reason, we had eliminated them from the database file. Further process was to train the neural network for classifying. Figure below is demonstrating all the process of our paradigm.

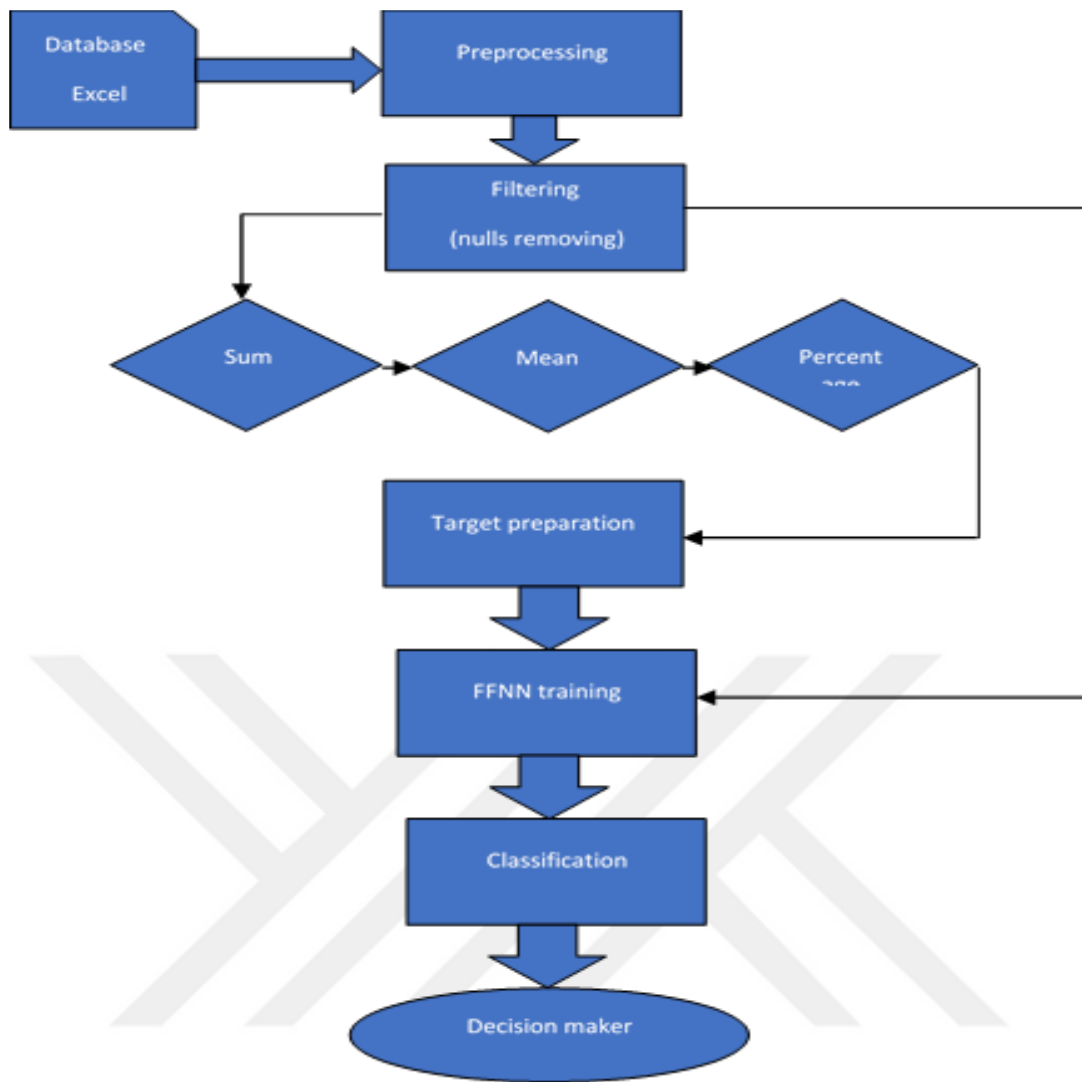


Figure 4.8: The whole processed of the proposed paradigm.

5. CONCLUSION

At the very beginning stage of the process, questions are prepared to gauge the accurate impressions from users, mainly, two kinds of questions are relied in our study: yes and no related survey and multichoice related survey. The yes and no question are helped us to understand the common and general image about the program whereas the other questions (24 question) are used to decide the final judgment of the said program. After getting the data from the SurveyMonkey website, Matlab is used to process the said data in multi-steps alike preprocessing and filtering. In order to analyze the data, we converted the answers into scores using the Matlab and then data are filtered to remove the effects of null users who are entered the survey but not actually participated with their feedbacks so that all such users are ignored and omitted from the data. Data is made in such form to evaluate the LPFIAD performance with percentage value; hence every candidate have undergone the calculation of performance percentage. The total average performance of all the candidates are found 56 %. This study included a smart way to learn the responses and take the decision automatically, Feed Forward Neural Network is used to perform this function. The study shows that some candidates are not totally realizing that LPFIAD can ensure the same chances for all candidates, this can be due their mind sets and not actually real as this program is new and need some more time for getting users trust, on the contrary, other candidates are satisfied with the program functionality. The reason made the survey response in boundary of 56 % (moderated) not a high acceptability by the candidates may be the stringent norms used by this study to evaluate the survey responses as we relied on each candidate on his back ground and his knowledge of using internet and e-government staff. We realized that for success of this program, different departments need to work together as it seen that internet is not available in most of the time also the electricity bleeding is one of the reasons. Furthermore, the management of LPFIAD may need to educate people about their service and convince their transparency and equality to their users (society).

This study is conducted to validate the efficiency of Libyan Program For Integration And Development (LPFIAD); this platform is developed by Libyan government to help people to reach their higher education easily. However, this program is expected to take the education opportunity a step forward facilitating the classical procedures that used to be done with physically approaching the authorities and going through a lot of paper work and time. As new experiment to Libyan society, people are promoted to use this program and many of them reaches their goals after going through this experience. This

study is initiated for collecting of users experience of the system and then states the suggestion for enhancing the said program for future developments. Data are collected from a big survey which is started on the internet with help f SurveyMonkey website. And results shown that LPFIAD had achieved 57 % of acceptance as per the survey candidates. However, this work can be repeated after a year to find out the changes in LPFIAD performance and re-study the response for fresh assessment.



REFERENCES

- [1] Catherine Pocknee & Diane Robbie, “*Surveyor: A Case Study Of A Web-Based Survey Tool For Academics*”, Educational Development Advisors Swinburne Institute of Technology, AUSTRALIA.
- [2] Chalaruk Kritsanaphuti, “*Health Risk Analysis System for Family Caregiver of Disabled Person*”, 2017 2nd International Conference on Information Technology (INCIT).
- [3] Lei Hu, Rick Mueller, “*Smop Data For Cropland Soil Moisture Assessment*”, IEEE, 2017.
- [4] Gulshan Saleem, Farooque Azam, “*Quality Assurance of Web Services: A Systematic Literature Review*”, 2016 2nd IEEE International Conference on Computer and Communications.
- [5] U. M. Mbanaso, G. A. Chukwudebe, “*A Critical Assessment of Nigeria’s Presence on the Cyberspace*”, 2015 INTERNATIONAL CONFERENCE ON CYBERSPACE GOVERNANCE (CYBER-ABUJA).
- [6] Ruiqi Shi, Zhang Chen, Haidong Wang, Peng Sun, Timothy Trull, “*mAAS - A Mobile Ambulatory Assessment System for Alcohol Craving Studies*”, 2015 IEEE 39th Annual International Computers, Software & Applications Conference.
- [7] Olga Kondratyeva, Ana Cavalli, “*Evaluating Quality of Web Services: a Short Survey*”, 2013 IEEE 20th International Conference on Web Services.
- [8] Syed Nayyer Abbas Kazmi, “*FACTORS INFLUENCING E- GOVERNANCE IMPLEMENTATION: ISSUES AND CHALLENGES IN PAKISTAN*”, 978-1-4244-7571-1/10/\$26.00 ©2010 IEEE.
- [9] Milly Kc, Markus Hagenbuchner, “*Quality Information Retrieval for the World Wide Web*”, 2008 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology.
- [10] Edy Budiman, Sitti Nur Alam, “*User Perceptions of Mobile Internet Services Performance in Borneo*”, dept. of computer science and information technology universitas mulawarman, Samarinda, Indonesia, 2016.

- [11] Henry Chong, Gredion Prajena, “*ChinaLatex: Web-Based Assessment System for Ubiquitous Chinese Education*”, 978-1-5090-3352-2/16/\$31.00 ©2016 IEEE.
- [12] Munenari Inoguchi, Kei Horie, “*Implementation of Web-based System for Building Damage Assessment on Online Network*”, 978-1-4799-5230-4/14/\$31.00 c 2014 IEEE.
- [13] Raymond Hoare, Mary Besteiseld-Sacre, Larry Shuman, Robert Shields and Troy Johnson, “*CROSS-INSTITUTIONALASSESSMENTWITH A CUSTOMIZEDWEB-BASED SURVEY SYSTEM*”, 0-78034669-7/01/%10.000 2001 IEEE.
- [14] William Morrison, Luke Guerdan, Jayanth Kanugo, and Yi Shang, “*TigerAware: An Innovative Mobile Survey and Sensor Data Collection and Analytics System*”, 2018 IEEE Third International Conference on Data Science in Cyberspace.
- [15] Claire Baker, Jeannie Blackwood, Casey Hartless, Jeanne Pirro, and Abigail A. Flower, “*Healthcare Analytics and Visualization Using SEMantic Open Source Software (SEMOSS)*”, 978-1-5386-1848-6/17/\$31.00 ©2017 IEEE.
- [16] Sergio Felipe¹, Aneesha Singh¹, Caroline Bradley, Amanda CdeC Williams, Nadia Bianchi-Berthouze, “*Roles for Personal Informatics in Chronic Pain*”, international conference on pervasive computing technologies for health care, 2015.
- [17] Sun Yanhua, “*An assessment method for college library web site based on neural network*”, 978-0-7695-4608-7/121 \$26.00 © 20112 IEEE.
- [18] Lisa Soon, “*Student experiences: Collaboration for group assignment in distance education*”, 2010 2nd International Conference on Education Technology and Computer (ICETC).
- [19] Scott McCoy, “*Electronic Versus Paper Surveys: Analysis of Potential Psychometric Biases*”, Proceedings of the 37th Hawaii International Conference on System Sciences, 2004.
- [20] Fatih Altındaş, Bülent Yılmaz, “*Feature Extraction and Classification in A Two-State Brain-Computer Interface*”, 978-1-5090-2386-8/16/\$31.00 ©2016 IEEE.
- [21] Yuge Sun, Ning Ye, Jie Yang, “*An Asynchronous MI-BCI System Based on Master-slave Features*”, 978-1-5090-3710-0/16/\$31.00 ©2016 IEEE.

- [22] Choi, I., **Bond, K., *Nam, C. s., “A Hybrid BCI-Controlled FES System for Hand- Wrist Motor Function”, 978-1-5090-1897-0/16/\$31.00 ©2016 IEEE.
- [23] Kristóf Várszegi, “Comparison of Algorithms for Detecting Hand Movement from EEG signals”, 978-1-5090-1897-0/16/\$31.00 ©2016 IEEE.
- [24] Ayman Elgharabawy, Manal Abdel Wahed, “Decoding Of Finger Movement Using Kinematic Model Classification And Regression Model Switching”, 978-1-5090-2987-7/16/\$31.00 ©2016 IEEE.
- [25] Atanu Dey, Sourav Bhattacharjee, Debasis Samanta, “Recognition of Motor Imagery Left and Right Hand Movement using EEG”, 978-1-5090-0774-5/16/\$31.00 © 2016 IEEE.
- [26] Yijun Wang, Bo Hong*, Xiaorong Gao, and Shangkai Gao, “Phase Synchrony Measurement in Motor Cortex for Classifying Single-trial EEG during Motor Imagery”, 1-4244-0033-3/06/\$20.00 ©2006 IEEE.
- [27] Danut C. Irimia, Marian S. Poboroniuc, Florin Serea, Alina Baciuc, Radu Olaru, “Controlling a FES-EXOSKELETON Rehabilitation System by Means of Brain-Computer Interface”, 978-1-5090-6129-7/16/\$31.00 ©2016 European Union.
- [28] Nicoladie Tam, “Decoding Movement Direction using Phase-Space Analysis of Hemodynamic Responses to Arm Movements based on Functional Near-Infrared Spectroscopy”, 978-1-4577-0220-4/16/\$31.00 ©2016 IEEE.

APPENDIX

Table 7.1: The data new format that obtained after passing the data from the preprocessing block.

Q c	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	
C	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	1	0	1		
C	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	2	2		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	2	2		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	2	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	2	2	2	2	2	2	2	2		
C	1	1	1	1	1	1	1	0	2	0	1	1	2	2	0	1	1	1	1	1	2	1	1	1	0	1	0	2	2	2	1	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	0	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	0	2	2	1	2	1	1	1	
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
C	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C	1	1	0	0	0	1	0	-1	0	0	0	0	0	0	-1	-1	0	0	0	1	1	1	0	0	1	0	1	0	0	0	1	0	0	0	0	1	4	
C	1	1	1	0	1	1	0	2	1	0	0	1	1	1	-1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
C	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	0	2	2	2	2	2	2	2
C	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

C	1	1	1	1	1	1	1	2	2	1	1	1	1	1	2	2	2	2	2	2	2	2	2	0	2	2	2	1	2	2				
C	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	2	3				
C	1	1	1	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	0	2	3				
C	1	1	1	1	1	1	1	2	1	2	2	2	2	1	1	1	2	1	1	2	2	2	1	2	2	0	1	2	2	1	2			
C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
C	1	1	1	1	1	1	1	1	1	-1	1	1	0	0	0	1	1	0	1	1	2	2	0	1	1	0	1	2	2	1	1	3		
C	1	1	1	1	1	1	1	1	1	1	-1	-1	1	-1	-1	-1	-1	1	1	-1	2	-1	-1	2	1	0	-1	2	2	1	1	2		
C	1	1	1	0	1	0	1	1	1	-2	1	1	1	1	1	-2	1	1	1	-2	1	1	2	1	0	-2	1	1	1	1	2			
C	1	0	1	1	1	1	1	0	1	0	-1	1	0	1	1	-1	1	-1	0	-1	2	1	1	0	-2	0	1	1	0	1	1	3		
C	1	0	1	1	1	1	1	-1	1	-1	-1	1	1	-1	1	1	-1	1	-1	1	-1	1	1	1	-1	0	1	1	-1	-1	1	3		
C	1	1	1	1	1	1	1	-1	1	0	-1	0	0	1	0	1	0	-1	1	1	0	1	1	0	1	0	1	1	0	1	1	2		
C	1	0	1	1	1	1	1	2	0	0	2	2	2	2	2	2	0	0	2	-1	2	2	2	2	0	0	0	0	2	2	2	1		
C	1	0	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4		
C	0	0	1	0	0	0	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
C	0	1	0	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	2	2	0	2	1	
C	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
C	1	1	1	1	1	1	1	0	0	0	0	1	1	2	1	2	2	1	2	1	2	1	2	2	1	0	2	2	2	1	1	1		
C	1	1	1	1	1	1	1	2	1	-1	0	2	-1	1	1	2	0	1	2	-1	0	1	1	1	1	0	0	0	1	1	1	4		
C	1	1	1	1	1	1	1	1	1	1	1	1	1	0	-2	1	1	1	1	-1	1	1	1	1	-1	0	1	1	-2	1	1	2		
C	1	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
C	1	1	1	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
C	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1	1
C	1	1	1	1	1	1	1	0	1	1	0	2	2	1	1	-1	1	1	0	0	2	0	1	1	0	0	1	2	0	1	1	2		
C	1	1	0	1	1	1	1	1	1	-1	1	2	1	-1	-1	-1	1	1	-1	-1	-2	-2	-1	-1	1	0	-1	1	2	2	0	4		
C	1	0	1	1	1	1	1	0	-1	-1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	3		
C	0	0	0	1	1	0	0	1	0	1	0	1	0	2	2	2	2	1	1	1	1	2	1	0	1	0	1	0	0	0	1	1		
C	1	1	1	0	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	-1	0	0	1	0	0	1	1		
C	1	1	1	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
C	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	-1	0	1	1	1	1	1	1	1	1	0	-1	1	0	1	-2	1	
C	1	0	0	1	0	1	1	2	1	1	0	1	1	1	1	1	0	0	0	1	1	0	1	0	-1	0	0	1	0	2	1	1		
C	1	1	0	1	0	0	0	2	1	1	2	0	0	0	0	0	0	0	0	1	1	-2	0	0	0	0	0	0	0	0	0	1		
C	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2		
C	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
C	1	1	1	1	1	1	1	1	1	-1	1	0	1	1	-1	-1	-1	1	-1	-1	1	-1	-1	-1	-1	1	0	1	1	1	1	1	1	
C	0	0	1	1	1	1	1	2	0	0	2	-1	2	1	1	1	1	0	-1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	
C	1	0	1	1	1	0	1	1	1	-1	-2	-1	1	0	-2	1	1	1	1	1	1	1	1	-1	-1	0	-1	1	1	1	2	1		
C	1	1	1	1	1	1	1	-1	1	0	1	2	1	0	1	2	0	1	1	1	1	2	1	1	0	0	1	1	0	1	1	1	1	
C	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	
C	1	1	1	1	1	1	1	2	1	2	1	2	2	2	1	2	1	2	2	2	2	2	2	2	2	2	1	0	2	2	2	2	2	
C	1	1	1	1	1	1	1	1	1	0	1	0	-1	-1	-1	0	0	1	0	1	1	1	1	1	1	0	0	0	1	1	1	2		
C	1	0	1	1	1	0	1	1	1	2	0	1	0	0	-1	-2	-2	0	0	2	0	2	0	2	0	0	1	2	1	-2	1	2		

C	1	1	0	1	1	1	1	1	1	1	-1	-1	1	0	1	1	2	1	1	1	0	2	1	0	0	1	0	-1	2	2	1	2	2		
C	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	4		
C	1	1	1	1	0	1	1	0	1	1	1	1	1	0	-1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	2	1	3		
C	1	1	1	1	1	1	1	2	1	1	0	1	1	1	1	2	-1	2	-2	1	1	1	1	1	1	1	0	1	1	1	1	1	1		
C	1	0	1	1	1	0	1	1	1	1	1	-1	0	2	-2	0	2	2	-2	1	1	0	1	2	-2	0	2	1	1	0	2	3			
C	1	0	1	1	1	1	1	1	1	0	0	1	-1	1	1	1	2	2	1	0	0	1	1	1	-1	0	1	1	1	1	1	1			
C	1	0	1	1	0	1	1	1	-2	1	-2	1	-1	1	-2	2	-2	1	1	1	-2	-2	1	-2	0	0	2	1	-1	2	1	1			
C	1	1	0	1	1	1	1	0	0	1	1	2	0	1	2	0	-1	1	1	2	2	0	1	0	1	0	2	0	1	1	0	2			
C	1	1	1	1	0	0	1	0	0	-1	1	1	0	0	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
C	1	1	1	1	1	1	1	1	0	1	-1	2	0	1	1	2	1	1	2	0	2	2	0	2	0	0	1	1	1	1	1	3			
C	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1			
C	1	1	1	1	1	1	1	2	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2		
C	1	1	1	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1		
C	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
C	1	1	0	1	0	1	1	2	1	-1	0	1	-1	1	2	2	2	1	0	1	1	1	0	1	0	0	0	1	1	1	1	1	1		
C	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
C	0	1	1	1	0	1	1	1	1	1	1	2	1	2	2	2	2	2	2	1	2	2	0	0	0	0	0	2	1	2	2	1			
C	1	1	1	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
C	1	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
C	1	1	1	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
C	1	1	1	1	1	1	1	2	1	1	1	2	2	1	2	1	1	1	1	2	2	2	2	2	1	0	2	2	2	2	2	2	2		
C	1	1	1	1	1	1	1	2	1	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	0	2	2	2	2	2		
C	1	1	0	1	1	1	1	0	0	1	1	0	1	1	1	0	0	1	0	-2	-1	0	0	1	0	0	1	1	1	0	1	2			
C	1	0	1	1	1	0	1	2	1	1	0	2	1	2	1	2	1	2	2	1	1	2	2	2	0	0	2	1	1	2	1	1			
C	1	1	1	1	1	1	1	-1	0	0	1	0	2	1	1	1	1	1	-1	0	0	0	1	1	0	1	1	0	1	1	1	1			
C	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	-1	1	1	1	1		
C	1	1	1	1	1	1	1	1	0	1	2	-1	0	0	1	-1	-2	2	1	0	2	-1	0	0	1	0	2	1	-1	0	0	2			
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	2	1		
C	1	1	1	1	1	1	1	1	1	2	2	0	2	2	2	2	2	1	2	1	1	0	1	2	0	0	0	2	2	2	2	4			
C	1	1	1	1	1	1	1	2	2	2	1	2	2	2	2	2	2	2	1	2	2	2	2	2	0	2	2	2	2	2	2	1			
C	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	2	1	1	-1	-1	2
C	1	1	1	1	1	1	1	0	1	1	1	0	1	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	2		
C	1	1	0	0	0	1	0	1	1	1	-1	2	0	2	2	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	0	4			
C	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	2	2	1	1	2	1	1	2	1	1	1	1	0	1	1	1	1	1		
C	1	1	1	0	0	0	1	2	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
C	1	1	1	1	1	1	1	1	1	1	0	2	2	2	0	2	2	2	2	0	1	1	0	1	1	0	1	1	2	1	0	2			
C	1	1	1	1	1	1	0	2	0	1	0	2	1	-1	1	1	-2	0	-2	0	1	0	2	2	1	0	0	0	2	1	1	1			
C	1	1	1	1	1	1	1	2	2	2	2	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	2	3			
C	0	0	1	1	1	1	1	1	1	1	-1	1	1	2	1	2	1	1	1	2	1	1	1	1	0	1	1	1	1	1	1	3			
C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	0	2	2	2	2	3	
C	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	2	2	0	2	2	2	1	1	3		
C	0	1	0	0	0	0	1	-1	-1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		

C	0	1	0	0	0	0	1	2	0	2	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
C	1	0	1	0	0	0	1	-1	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
C	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
C	1	1	0	0	0	0	0	0	0	-1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
C	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1		
C	1	1	1	1	1	1	1	1	1	0	2	1	2	1	1	2	0	1	1	2	2	1	2	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
C	1	1	1	1	1	0	1	1	0	0	1	1	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
C	1	1	1	1	1	1	1	1	2	1	2	2	2	1	2	2	1	2	2	2	2	2	2	2	1	2	0	0	1	2	2	1	1	2	2	1	1	2	2	1	1	2	2	1	2
C	0	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	
C	1	0	1	0	0	0	1	2	2	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
C	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	0	2	1	1	0	1	2	1	1	2	1	1	2	4	4	
C	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	
C	1	0	1	1	1	1	1	-1	0	1	2	1	2	2	2	0	1	1	1	1	1	0	1	1	2	0	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	
C	1	0	0	1	1	1	0	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
C	1	1	1	0	0	0	1	0	-2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
C	1	1	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
C	1	1	1	1	0	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
C	1	1	0	0	0	0	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
C	1	0	0	1	0	0	0	0	-1	0	1	-1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	-1	0	0	-1	0	-1	0	-1	0	-1	0	-1	0	0	4	4			
C	1	0	0	1	0	1	0	0	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
C	1	1	1	0	1	1	1	0	1	1	0	2	0	2	-1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	2	1	1	2	1	1	3	3	3	3	3	3	3
C	1	1	1	1	0	1	1	1	2	1	1	1	1	1	1	1	2	2	0	1	2	2	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	
C	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	

Table 7.2: The performance of LPFIAD as per each candidate assessment.

Candidate	Feedback (percentage assessment) %
1	13
2	22
3	28
4	30
5	37
6	37
7	33
8	39
9	35
10	33
11	32
12	40
13	38
14	38
15	33
16	39
17	32
18	33
19	38
20	42
21	39
22	55
23	42
24	51
25	1
26	40
27	51
28	48
29	54
30	54
31	56
32	16
33	29
34	54

35	56
36	1
37	54
38	55
39	52
40	47
41	1
42	1
43	27
44	17
45	11
46	17
47	-1
48	18
49	30
50	36
51	7
52	28
53	7
54	39
55	40
56	20
57	17
58	1
59	10
60	27
61	28
62	29
63	14
64	24
65	16
66	9
67	26
68	21
69	13
70	36

71	10
72	20
73	33
74	12
75	24
76	55
77	52
78	19
79	-3
80	27
81	34
82	33
83	28
84	24
85	34
86	8
87	36
88	15
89	33
90	30
91	30
92	15
93	0
94	1
95	31
96	19
97	27
98	9
99	18
100	13
101	48
102	54
103	21
104	40
105	20
106	23

107	25
108	30
109	53
110	53
111	19
112	25
113	30
114	36
115	25
116	37
117	27
118	54
119	35
120	42
121	40
122	-5
123	-7
124	2
125	9
126	2
127	38
128	33
129	-9
130	27
131	45
132	34
133	23
134	49
135	56
136	33
137	24
138	9
139	3
140	10
141	9
142	13

143	40
144	29
145	47
146	54



MATLAB CODE

```
locationplace=['/Volumes/D/Projects/survey Liybain education/Libyan
Program for Integration and Development.xlsx'];
%yes no
[~,~,M] = xlsread(locationplace,'Sheet','M3:M223');
x1=strcmp(M(:),'Yes');

[~,~,O] = xlsread(locationplace,'Sheet','O3:O223');
x2=strcmp(O(:),'Yes');
[~,~,P] = xlsread(locationplace,'Sheet','P3:P223');
x3=strcmp(P(:),'Yes');
[~,~,AJ] = xlsread(locationplace,'Sheet','AJ3:AJ223');
x4=strcmp(AJ(:),'Yes');
[~,~,AR] = xlsread(locationplace,'Sheet','AR3:AR223');
x5=strcmp(AR(:),'Yes');
[~,~,AX] = xlsread(locationplace,'Sheet','AX3:AX223');
x6=strcmp(AX(:),'Yes');
%Yes, it is enhance government management procedures.
%No, it is not improve the government management procedures.
[~,~,Q] = xlsread(locationplace,'Sheet','Q3:Q223');
x7=strcmp(Q(:),'Yes, it is enhance government management
procedures.');
```

%SEVEN COLOUMNS --> max score from these responses =7*1

%Neutral, Agree, Strongly agree, Disagree, -+Strongly disagree

```
[~,~,R] = xlsread(locationplace,'Sheet','R3:R223');

[~,~,T] = xlsread(locationplace,'Sheet','T3:T223');
[~,~,U] = xlsread(locationplace,'Sheet','U3:U223');
[~,~,V] = xlsread(locationplace,'Sheet','V3:V223');
[~,~,W] = xlsread(locationplace,'Sheet','W3:W223');
[~,~,X] = xlsread(locationplace,'Sheet','X3:X223');
[~,~,Y] = xlsread(locationplace,'Sheet','Y3:Y223');
[~,~,Z] = xlsread(locationplace,'Sheet','Z3:Z223');
[~,~,AA] = xlsread(locationplace,'Sheet','AA3:AA223');
[~,~,AB] = xlsread(locationplace,'Sheet','AB3:AB223');
[~,~,AC] = xlsread(locationplace,'Sheet','AC3:AC223');
[~,~,AD] = xlsread(locationplace,'Sheet','AD3:AD223');

[~,~,AF] = xlsread(locationplace,'Sheet','AF3:AF223');
[~,~,AG] = xlsread(locationplace,'Sheet','AG3:AG223');
[~,~,AH] = xlsread(locationplace,'Sheet','AH3:AH223');

[~,~,AK] = xlsread(locationplace,'Sheet','AK3:AK223');
[~,~,AL] = xlsread(locationplace,'Sheet','AL3:AL223');
[~,~,AM] = xlsread(locationplace,'Sheet','AM3:AM223');

[~,~,AP] = xlsread(locationplace,'Sheet','AP3:AP223');
[~,~,AQ] = xlsread(locationplace,'Sheet','AQ3:AQ223');
[~,~,AS] = xlsread(locationplace,'Sheet','AS3:AS223');

[~,~,AT] = xlsread(locationplace,'Sheet','AT3:AT223');
[~,~,AV] = xlsread(locationplace,'Sheet','AV3:AV223');

[~,~,BA] = xlsread(locationplace,'Sheet','BA3:BA223');
```

%24 COLOUMNS--> max response score 24*2=48

```
fe=[R,T,U,V,W,X,Y,Z,AA,AB,AC,AD,AF,AG,AH,AK,AL,AM,AP,AQ,AS,AT,AV,BA]
```

```

xx=zeros (length (x1),31);
fee=zeros (size (fe));
for j=1:length (fe(:,1))
for i=1:length (fe(1,:))

    if strcmp (fe (j,i), 'Strongly disagree')==1 ||
strcmp (fe (j,i), 'Strongly dissatisfied')==1
        fee (j,i)= -2;
elseif strcmp (fe (j,i), 'Disagree')==1 ||
strcmp (fe (j,i), 'Dissatisfied')==1
        fee (j,i)= -1;
        elseif strcmp (fe (j,i), 'Agree')==1 ||strcmp (fe (j,i), 'Satisfied')==1
            fee (j,i)= 1;
        elseif strcmp (fe (j,i), 'Strongly agree')==1 ||
strcmp (fe (j,i), 'Strongly satisfied')==1
            fee (j,i)= 2;
        elseif strcmp (fe (j,i), 'Neutral')==1
            fee (j,i)= 0;
        end
end
end
end
fee;

feee=zeros (221, (24+7));
feee (:,1:7)=[x1,x2,x3,x4,x5,x6,x7];
feee (:,8:31)=fee (:,:);

%%%Reliablitiy of the responses
% N
[~,~,N] = xlsread(locationplace, 'Sheet', 'N3:N223');

NM1=zeros (length (N),1);
x1='1-2';
x2='2-3';
x3='3-4';
x4='4-5';
for i=1:length (NM1)
if strcmp (N(i),x1)==1
    NM1(i)=1;
elseif strcmp (N(i),x2)==1
    NM1(i)=2;

    elseif strcmp (N(i),x3)==1
        NM1(i)=3;
        elseif strcmp (N(i),x4)==1
            NM1(i)=4;

end
end

% max response scores expected from each candidate =7+48+4=59
feef=zeros (221,32);
feef (:,1:31)=feee (:,:);
feef (:,32)=NM1;

%remove the un nessessary responses
st=1;
feev=zeros (221,32);
for i=1:221
if sum (feef (i,:))~=0

```

```

        feev(st,:)=feef(i,:);
        st=st+1;
end
end

feev=feev(1:146,:);

%prepare the Target
Tar=zeros(146,1);
for i=1:146
    Tar(i)=sum(feev(i,:));
end

% ress=sum(Tar(:,:))/(146*50);
% performace=ress*100
%
%
% % plotting the results
%
% figure (1)
%
% bar(1:146,Tar/(59*.01))
% title('The percentage Assessment of each candidate responce');
% xlabel ('Active Candidate Nmuber')
% ylabel ('Candidate responce')

```