Chapter1: Introduction

1-1 Background

Social networking emerged as one of the second generation technologies and tools of the Internet, which began to evolve dramatically, until it became a technological revolution in its own right, the networks began to develop themselves in terms of content, not only to communicate with others, but also to allow the content to be added in its various forms of text, images, video, sound, graphics and animation, making large segments of society attracted to it because of the capabilities and possibilities to help provide family atmosphere and communicate across the net in which everyone finds it suitable his interests.

through the diversity of these social media network and applications, the diversity of content and impact on the different segments of society was to find tools to improve in terms of quality of information technology and in our modern era a lot of quality assessment models, most famous model "ISO 20000", It has been used since its inception to improve the quality of information technology. (2013, Ellison and bayod)

1-2 Problem statement

There is a need to provide an integrated model the takes into consideration the different factor that quality of social network systems.

1-3 Objectives

1-3-1 General Objectives

Proposing a model for evaluating the quality of Social Network Systems (SNS).

1-3-2 Specific Objectives

1- Analyze the various models and theories used for the evaluation of SNS.
2- Propose the model and evaluate.
3- Determine the attributes used for evaluating the quality of SNS.
4- Verify the model and the attributes.

1-4 Research Methodology

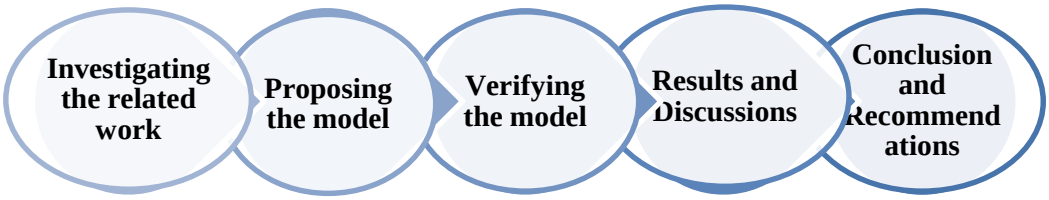

Figure (1:1): Research Methodology steps

1-5 Research scope

This study focus on building a model for evaluating the quality of Social Network Systems in Sudan.

1-6 Research Organization

The thesis includes five chapters:
Chapter one: introduction, this chapter describes the whole idea behind the theses. Defines the problem statement, objectives and scope research. **Chapter two**: literature review, it is divided into two sections. First one about the major concept about topic and the second one related works. **Chapter Three**: methodology, equality assessment model for social networking systems was proposed **Chapter four:** data collection and data analysis. **chapter five**: results and discussion, **chapter six**: conclusions and recommendations.

Chapter 2: Literature Review

2-1 Introduction

This chapter is divided into two parts. The first section provides a general description of social networks and quality. Section II describes the 2.3 Related Works.

2-2 Theoretical Background

2-2-1 Social media network System

Social media has become an important part of communication in modern society. Social networking sites have become an important platform which people communicate. Among them, micro-blogging is growing rapidly. The micro blogging phenomenon began in 2006, and now millions of users' micro blogs generate massive content every day. Through micro blogging people know the latest news, learn new knowledge, and share their lives. Twit-ter is a well-known implementation of micro-blogging that started in April 2006. Twitter messages, called tweets, have a maximum length of 140 characters. Relationships between people with a Twitter account are unidirectional, meaning that one user can follow another, but the user who is followed does not need to follow back that user. All tweets are public by default, and interesting tweets can be rewetted so that the original tweet can reach a wider audience. Through those data and content, the scientists can analyze human behavior or emotions. (Hoffman,2014)

2-2-2 Quality Attribute

2-2-2-1 Modifiability

Modifiability determines how many common changes need to be made to the system to make changes to each individual item. Ideal is the case where each change affects only one element.

2-2-2-2 Performance

Performance shows the response of the system to performing certain actions for a certain period of time.

There **are two ways how to measure performance**:

- **Latency:** Time spent on responding to an event
- **Channel capacity**. The number of events that occur at a certain point in time.

In practice, **the possible performance indicators** include, for example:

- Average/maximum number of system users per time unit.
- Average page load time.
- Average method execution time.

Performance issues very often grow into problems that can affect everything, from the server's capacity or the ways in which you develop your front-end to the efficiency of database queries or the capacity of communication channels.

Performance is always included in the list of key quality attributes. (2010, Gollmann)

2-2-2-3 Usability

Usability is one of the most important attributes, because, unlike in cases with other attributes, users can see directly how well this attribute of the system is worked out. One of the key problems of usability is too much interaction or too many actions necessary to accomplish a task. Incorrect sequences of steps in multistage interfaces are also a problem of usability. Data elements and controls may be designed not according to the accepted patterns of user experience, which also complicates the interaction. For example, if you are developing an iOS application, then it is important to use the guidelines from Apple, or the guidelines from Microsoft—for Windows desktop applications.

Examples of important indicators for this attribute are:

- List of supported devices, OS versions, screen resolutions, and browsers and their versions.
- Elements that accelerate user interaction, such as “hot keys”, “lists of suggestions”, and so on.
- Average time a user needs to perform individual actions.
- Support of accessibility for people with disabilities. (2006, Hornbæk)

2-2-2-4 Reliability

Reliability is an attribute of the system responsible for the ability to continue to operate under predefined conditions. Most often, the system fails due to the inaccessibility of external elements, such as databases, systems, and network connections. (2012, Motowidlo)

2-2-2-5 Security

Security is responsible for the ability of the system to reduce the likelihood of malicious or accidental actions as well as the possibility of theft or loss of information. There are a number of measures that are used to protect systems: authentication, encryption, audit, and others.

Examples of this attribute in the work of the system are:

- The ability of the system to detect DDoS attacks and respond to them.
- Restrictions of user access in accordance with authentication/authorization**.**
- Prevention of SQL injection.
- Encryption of passwords and content.
- Secure connection. (2015, Lin)

2-3 Related Works

2-3-1 Service quality and social media

- The four authors (Guoshuai Zhao, Xueming Qian, Xiaojiang Lei, Tao Mei) proposed a model conducts service quality evaluation by improving overall rating of services using an empirical methodology. The authors use the concept of user rating’s confidence, which denotes the trustworthiness of user ratings. First, entropy is utilized to calculate user ratings’ confidence. Second, further explore spatial-temporal features and review sentimental features of user ratings to constrain their

confidences. Third, fuse them into a unified model to calculate an overall confidence, which is utilized to perform service quality evaluation. And extensive experiments implemented on Yelp and Douban Movie datasets demonstrate the effectiveness of our model. (2016, Zhao and Lei)

- The author aims to a comprehensive review of 19 existing CQ assessment related models for social media in addition to proposing directions for model improvements[1]. The assessment of content quality (CQ) in social media adds a layer of complexity over traditional information quality assessment models. Challenges arise in accurately evaluating the quality of content that has been created by users from different backgrounds, for different domains and consumed by users with different requirements. (Kevin Chai,2009)

- The author aims to collected 54,484 answers from a crowd-powered question-and-answer website, Quora, and then used active learning to build a classifier that labeled 28,320 answers as stories. The model predicts the number of up votes without the use of social network features. Create neural networks that model textual regions and the interdependence among regions, which serve as strong benchmarks for future research. To best knowledge. (Wang,2017)

- The authors (Brandon Phillips, Prybutok) Sayed This research develops and tests a new quality construct, SNS quality, and introduces SNSQUAL, a social networking site (SNS) quality model. To capture significant product features of SNSs, SNSQUAL contains five independent dimensions that positively correlate with social media quality and its continued use intention. Findings indicate that SNS quality is influenced by the perceived ease of use, trustworthiness, personalization, integration, and reliability of the SNS, SNS quality positively influences the continued use intention of the SNS. (2017, Phillips)

2-3-2 Evaluation for social network

- The authors Sayed model was developed for Facebook, the most successful social networking website. An online brainstorming with influential bloggers and experienced web designers. The classification and integration of the evaluation characteristics and criteria. To test the applicability of the model, the author performed an exploratory study on selected Facebook pages of small hotels in Italy and submitted them to a user evaluation. The results validated our model and highlighted that hotels can implement the model to optimize their pages in a number of ways to better exploit their Facebook presence. (2015, Luisa Mich and Rodolfo Baggio)

- The authors aim to success of social networks depends on the level of trust that social group members enjoy with each other as well as with social service providers. Therefore, the evaluation of trust in social networks becomes an important issue that has attracted special attention. Comprehensive criteria have been proposed with nine aspects of confidence assessment. (2016, Sihui zhoa and Zheng yan)

2-4 summary of related works

Table (2:1): summary of related works

no	Title	Date of publication	author	Method
1	In Service Quality Evaluation by Exploring Social Users' Contextual Information	2016	1.Guoshuai Zhao 2.Xueming Qian 3.Xiaojiang Lei 4.Tao Mei	The model conducts service quality evaluation by improving overall rating of services using an empirical methodology It depends on people satisfied and what they likes
2	In Content Quality Assessment Related Models for Social Media	2009	Kevin Chai	Evaluate for content quality for social media
3	in Predicting the Quality of Short Narratives from Social Media	2017	1. Tong Wang, 2. Ping Chen, 3. Boyang Li	votes in social media as an approximate measure for story quality.
4	A Social Networking Site Quality Model	2017	4. Phillips 5. Prybutok	trustworthiness, personalization, integration, and reliability
5	In Evaluating Facebook pages for small hotels	2015	1. Luisa Mich 2. Rodolfo Baggio	The form was developed in the Facebook pages
6	Trust Evaluation in Social Networking	2016	1. Sihui zhoa 2. Zheng yan	Evaluation of Trust between people

Chapter 3: Research Methodology

3-1 Introduction

This chapter represents the methodology including the relevant work investigation and building the proposed model.

3-2 Methodology

3-2-1Investigating the related work

After investigating the related work, it was found that most of the scientific work with a model to evaluate the performance of the social network in term of security, enhancement, profile content and customization; the idea from this work overviewed most of the models used to evaluate the quality of the social network system.

3-2-2proposing a model for evaluating of the quality SNS

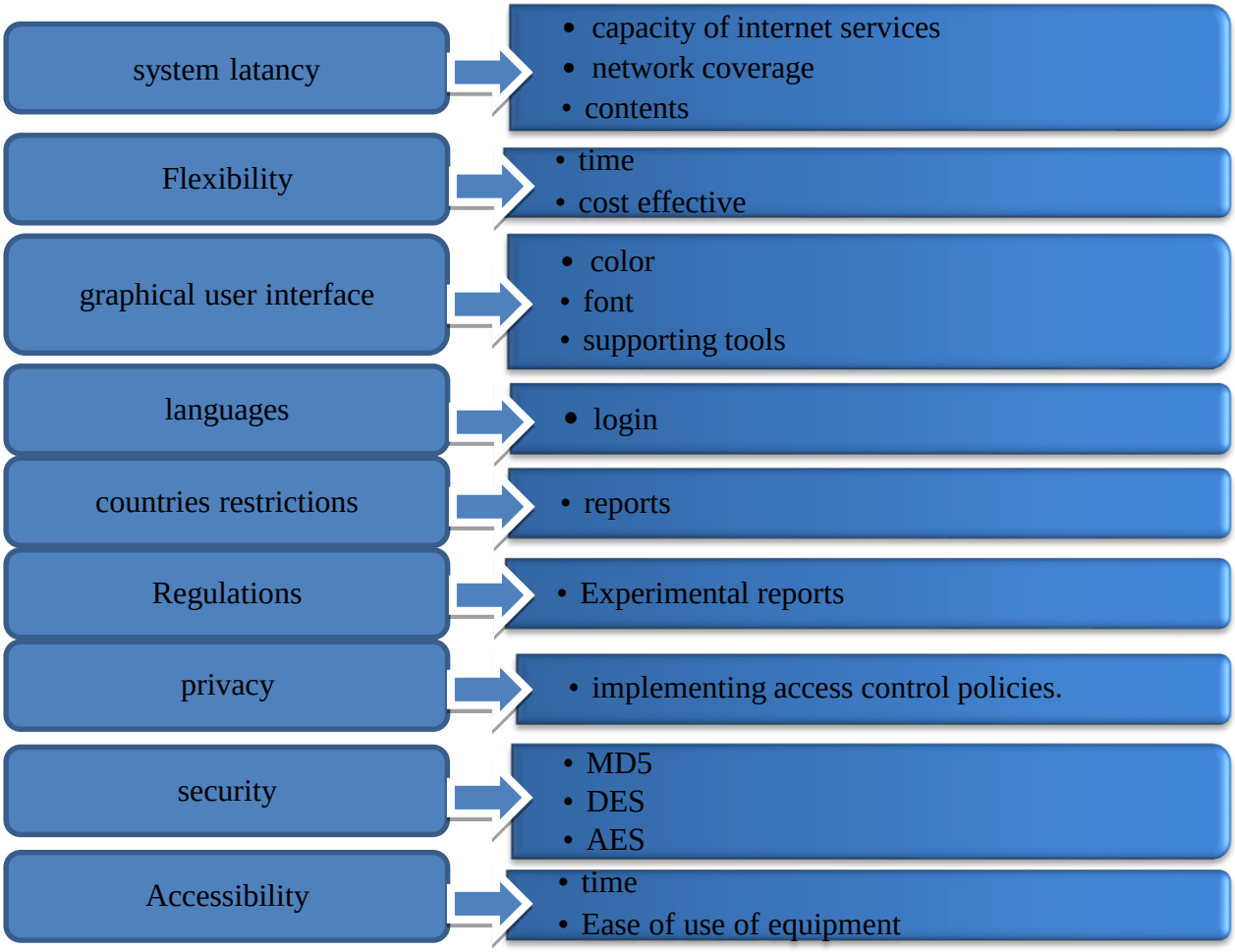

Figure 3.1 proposed model for evaluating of the quality SNS

Attributes of the model

3-2-2-1 System Latency

Graphics, the type of images, the type of video clips, and other activities can affect the latency of Facebook pages, depending on the network and the user's device, and all of this can be measured by the network coverage in the region, the capacity of Internet services and the content available in specific social media.

3-2-2-2 Flexibility

System flexibility is a feature that indicates the ease with which a system is adopted or responsive to internal or external changes within a specified time frame and in a cost-effective manner.

The measures to achieve flexibility depend on Facebook accepting all changes (such as modifying, updating, deleting), serving all ages, and supporting all user needs such as entertainment tools, advertising pages, and educational platforms.

3-2-2-3 Graphical User Interface

Designing a graphic user interface (GUI) in Facebook is a major process within the software development life cycle, because the GUI is a part of the interface that will have direct contact with the end user.

The GUI evaluation metrics are color, font attributes, and supporting tools.

3-2-2-4Supported Languages

The number of supported languages is one of the factors that used to evaluate the overall social network quality since the supported language allow more subscribers from different regions and languages to engage with the social network.

The supported languages are analyzed using experiment method, by login into Face book account and count the number of languages inside the drop down list.

3-2-2-5Regulations

The rules and regulations are one of the problems that a social media platform may face, especially Facebook, because the regulations on the network can prevent some activities that are considered bad, penetrating or illegal compared to the standard regulation of each country such as video violence and image violence and politics activities.

3-2-2-6Countries Restrictions

Some of the social network does not supported in country and it is considered as a blocked service such as snap chat.

Bangladesh

China (not including Hong Kong or Macau)

Iran

North Korea

The mentioned countries are taken from Facebook report of countries.

3-2-2-7Privacy

Privacy is the ability of an individual or group to protect them, or information from others, while making sure that the right people can in fact get it, we can achieve privacy by making close talk and close group.

The privacy could by measure by implementing access control policies.

3-2-2-8 Securing information

All of the networks require a secure transmission, receiving and storing of information. Many algorithms are used to encrypt data online but increasing the security can end with delay time on transmission and receiving of data.

There are many standard Algorithms use for securing information (encryption) in social media like AES, DES and MD5.

3-2-2-9Accessibility

Accessibility allows user's access to system functionality like Font attributes voice command in special cases like disabilities.

Easy to access to social media platform regardless of time and equipment.

3-2-3 verifying the model

To verging proposed model made questionnaire and I chose different community with different age after analyzed the result which is gave acceptable result according to the model.

Model's steps used to check all attributes which is covered by the questionnaire and reflect user’s experience:

1. Determine and identify the SNS and check the following attributes.
2. Flexibility (accommodate new things, contents update period, provide member's needs, accommodate age groups).
3. System Latency (load speed, Media content "images, Sounds, Videos, Text files" and all SNS contents affect the speed.
4. Graphical User Interface (well design, use different colors in user interface design ease of use; the design affects the extent of user acceptance).
5. Supported Languages (supported languages, understand of written language, Classy of the language used).
6. Regulations (availability in regions, compatibility with the different countries, compatibility with multiculturalism)

7. Religions (following Islamic guidance, compatibility with Islamic guidance, helps to preserve religious teachings)

8. Privacy (maintains user privacy, Privacy impact on the quality, The availability of privacy).

9. Securing information (maintain the confidentiality of information, confidentiality affects the number of users' access to social media, confidence to use Social network).

10. Provide a status report about the SNS result of attributes as check listed.

11. Recommendation should be extracted from the check list which SNS failed to pass it.

CHAPTER 4: Data collection and Data analysis

4-1 Data collection

After discussing how the model was built, here we concern about the data collection and its analysis to prove that each attributes can be a criterion to evaluate the quality of SNS such as (System latency, Flexibility, Graphical user interface, Language, Regional, Religion, Privacy, Security).

The total questionnaire number of the sample was (150) members and only (136) was valid and complete, the data collected during November2018 using simple random sample, this chapter offer the methodology of Descriptive to describe the sample and analysis to analyze all responses.

4-1-1 Gender:

The sample of questionnaire includes male and females.

Table 4 -1

	Frequency	Percent
Male	67	49.3
female	69	50.7
Total	136	100.0

Table (4-1) shows the frequency and percent of the member's questionnaire. however, the female (50.7%) is to some extent larger the male (49.3%) and the different is not signification.

We observe this percentage can be taken advantage of. This means that women use social media more than men, interact in scientific groups, and exchange knowledge more than women. It also means that they have more sitting and interacting with computers than women.

The same data was represented by figure(4-1).

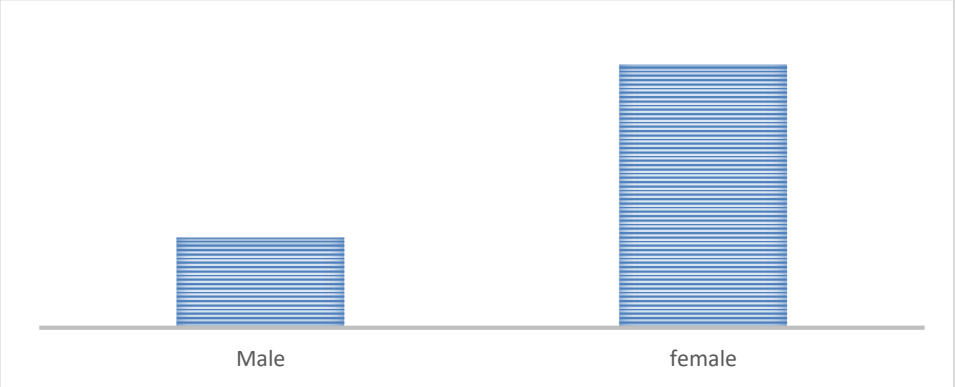

Figure (4-1)

Age group:

Table 3-3

	Frequency	Percent
less than 25	23	16.9
from 25 to 35	95	69.9
above 35	18	13.2
Total	136	100.0

This confirms that the target group (middle-aged people) were responds compared to the showed in Table 3-3and Figure 3-3.

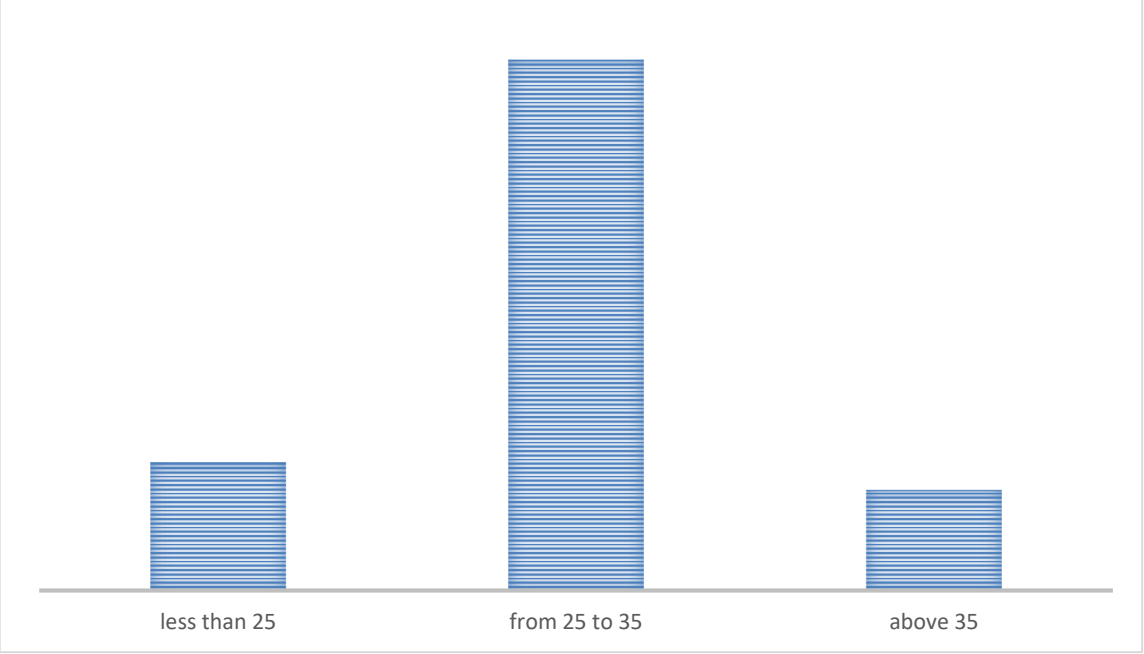

Figure (3-3)

4-1-2 Address:

Table 3-4

	Frequency	Percent
center Khartoum	105	77.2
Sub-urban Khartoum	31	22.8
Total	136	100.0

Response to the sub-urban Khartoum people is not as efficient as to the people in center Khartoum

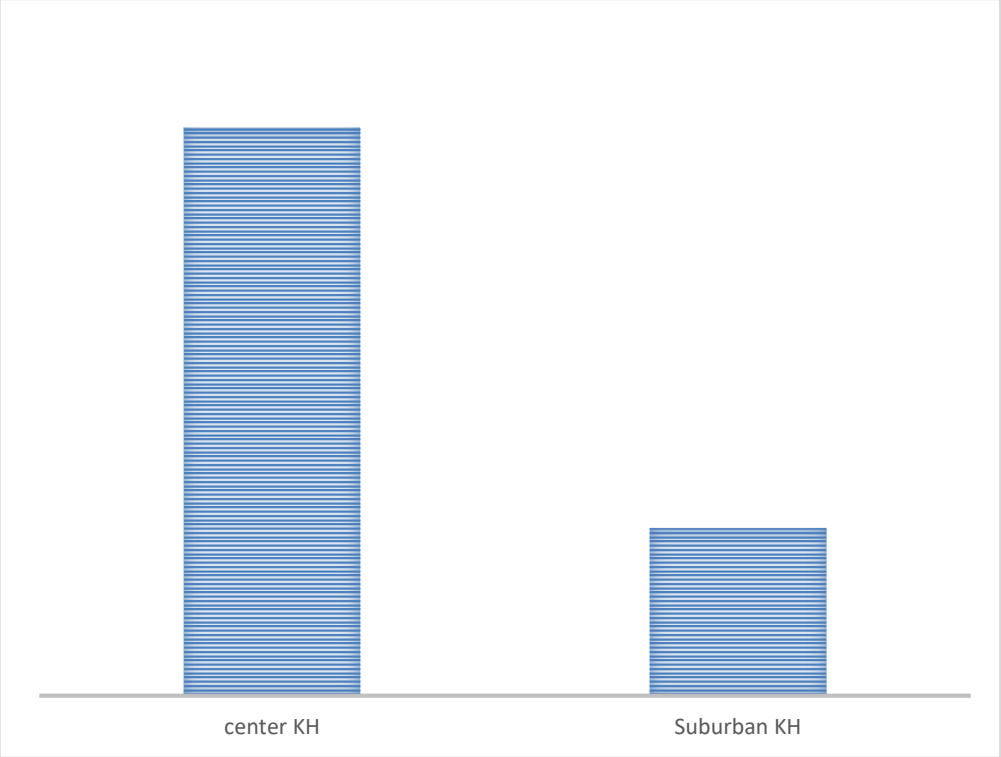

Figure (3-4)

3-2-4-4 the application load speed affects how good it is

Table 3-5

	Frequency	Percent
strongly disagree	7	5.1
disagree	16	11.8
neutral	13	9.6
Agree	49	36.0
strongly agree	51	37.5
Total	136	100.0

Table 3-5 and Figure 3-5we showed that 73% of the sample confirmed that the application load speed affects the quality.

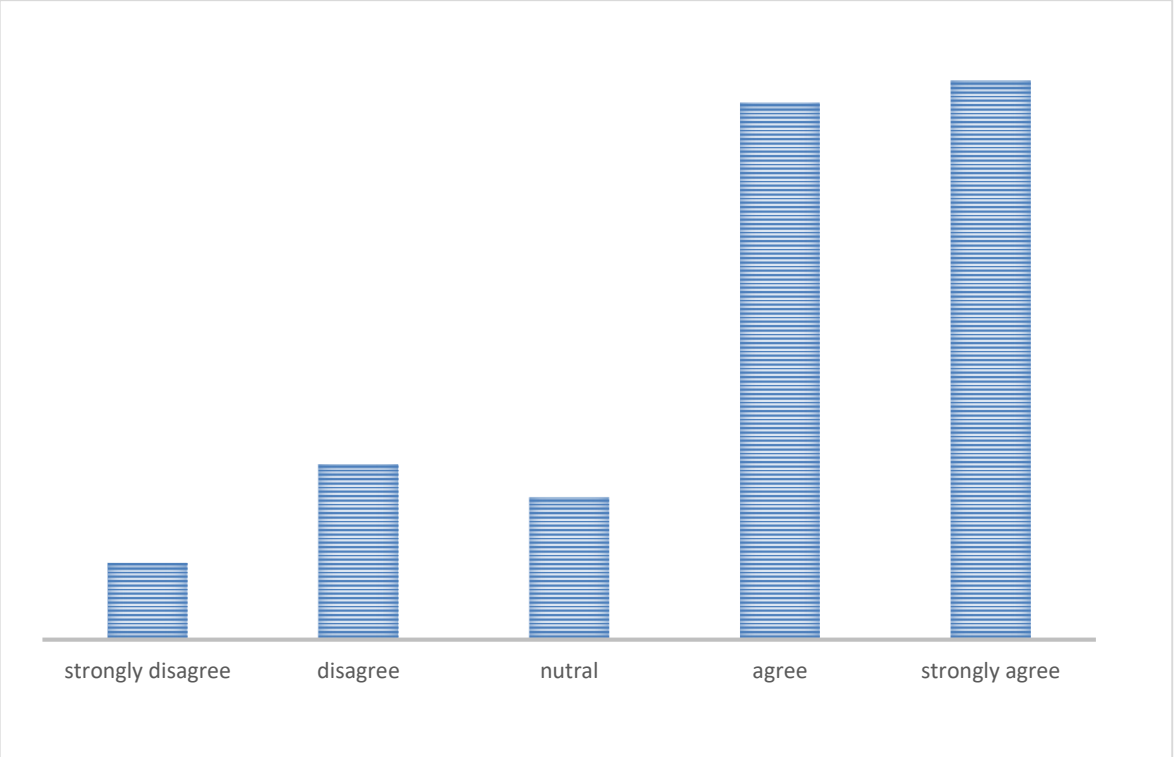

Figure (3-5)

3-2-4-5 Sound or Audio Media affects the speed of social networks:

Table 3-6

	Frequency	Percent
strongly disagree	7	5.1
Disagree	26	19.1
Neutral	24	17.6
Agree	52	38.2
strongly agree	27	19.9
Total	136	100.0

Table3-6&figure3-6we observed that 58% of sample confirmed that Sound or Audio Media affects the speed of social networks.

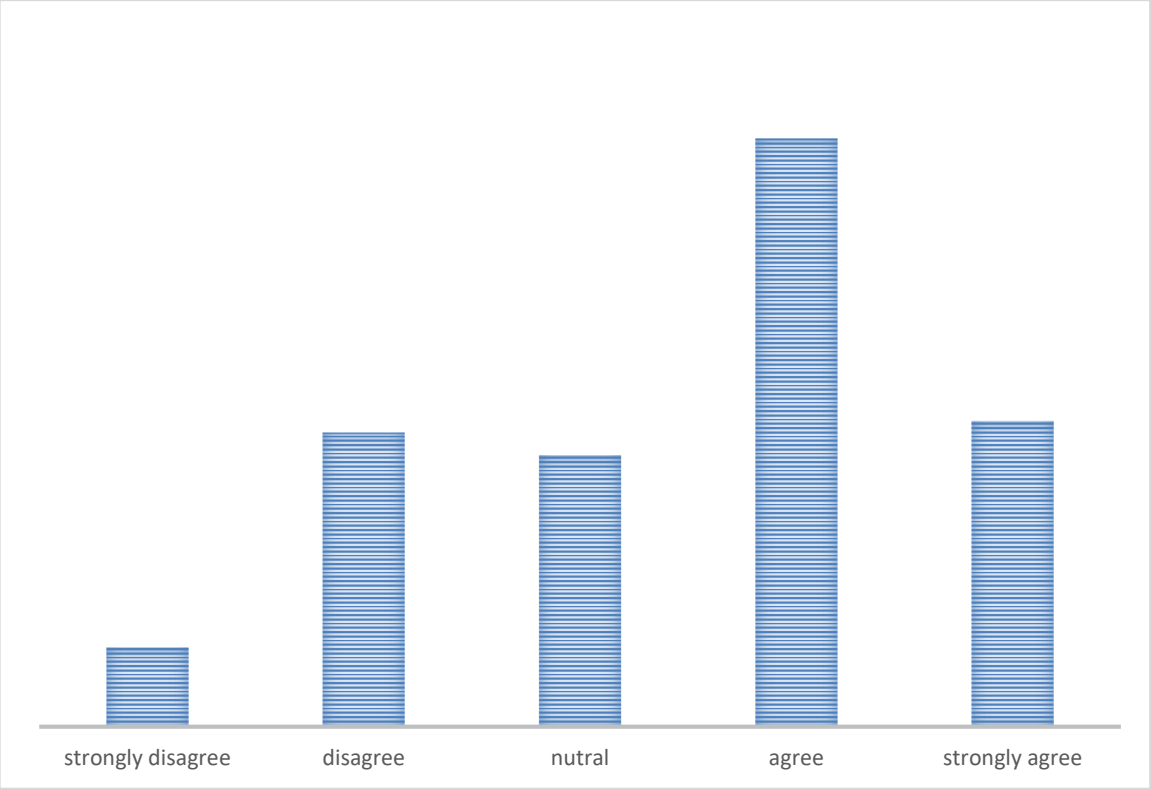

Figure (3-6)

3-2-4-6 Videos affect the speed of social networks:

Table 3-7

	Frequency	Percent
Disagree	14	10.3
Neutral	14	10.3
Agree	48	35.3
strongly agree	60	44.1
Total	136	100.0

Table3-7&figure3-7 we observed that 79% of sample confirmed that videos affect the speed of social networks.

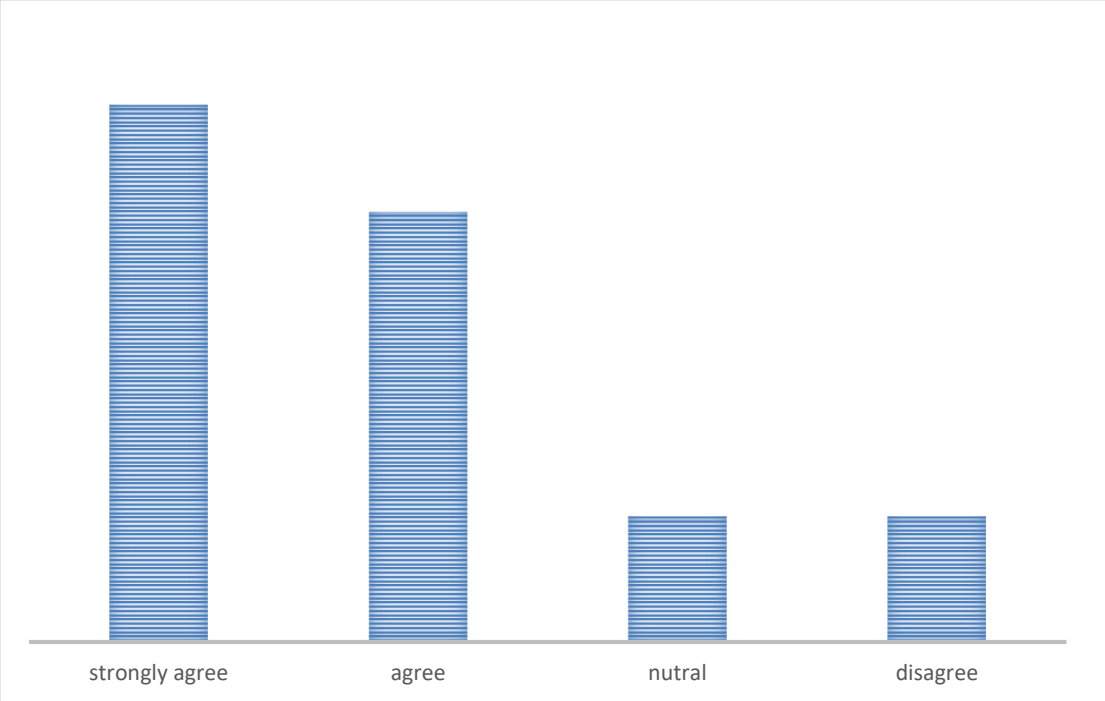

Figure (3-7)

3-2-4-7 Images affect the speed of social networks:

Table 3-8

	Frequency	Percent
strongly disagree	3	2.2
Disagree	28	20.6
Neutral	21	15.4
Agree	58	42.6
strongly agree	26	19.1
Total	136	100.0

Table3-8&figure3-8we observed that 61% of sample confirmed that Images affect the speed of social networks.

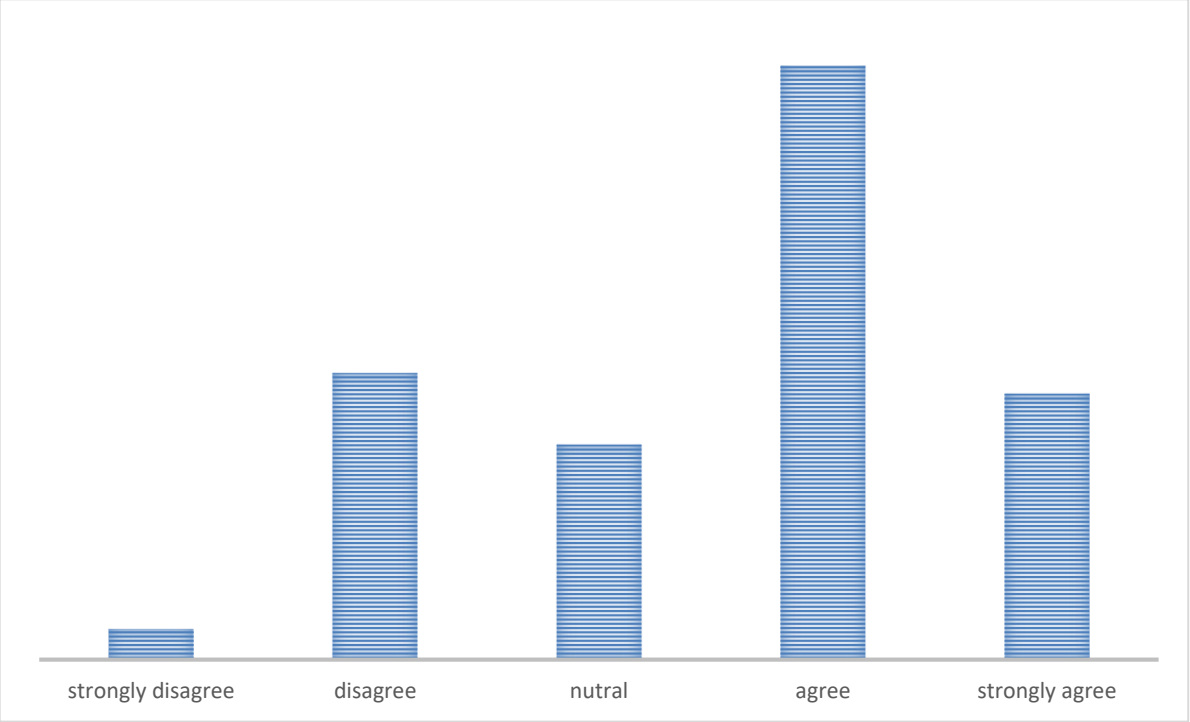

Figure (3-8)

3-2-4-8 Application's contents affect their speed:

Table 3-9

	Frequency	Percent
strongly disagree	1	.7
Disagree	9	6.6
Neutral	11	8.1
Agree	61	44.9
strongly agree	54	39.7
Total	136	100.0

Table3-9 &figure3-9 we observed that 83% of sample confirmed that Application’s contents affect their speed.

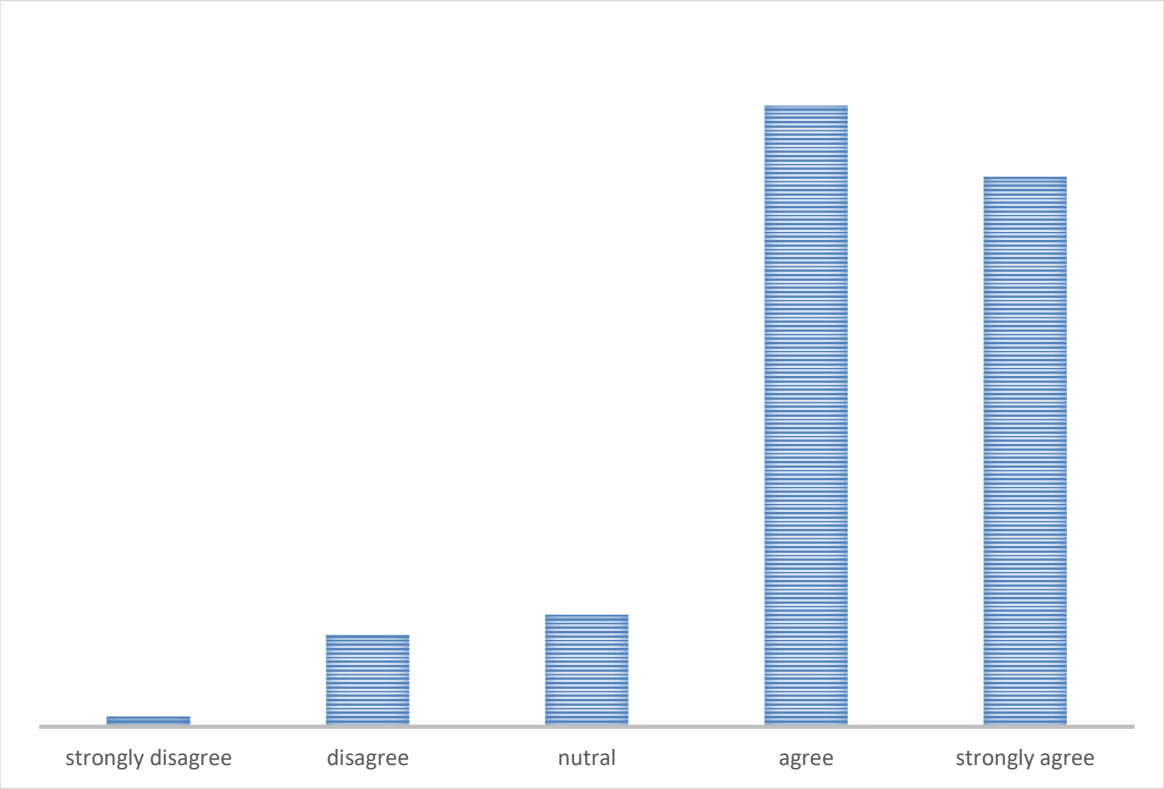

Figure (3-9)

3-2-4-9 Network applications accommodate all new things:

Table 3-10

	Frequency	Percent
strongly disagree	5	3.7
Disagree	18	13.2
Neutral	19	14.0
Agree	63	46.3
strongly agree	31	22.8
Total	136	100.0

Table3-10&figure3-10we observe that 69% of sample confirmed that Network applications accommodate all new things which means it is updated with new.

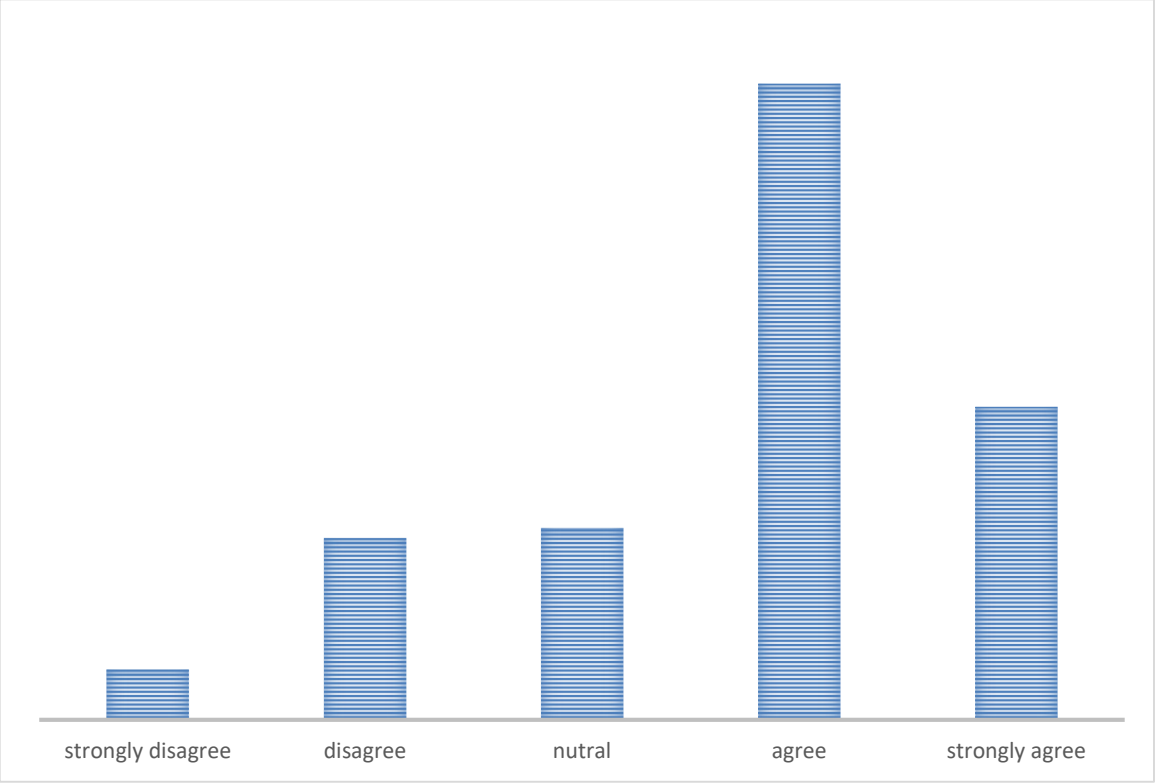

Figure (3-10)

3-2-4-10 Network updated periodically:

Table 3-11

	Frequency	Percent
strongly disagree	6	4.4
disagree	10	7.4
neutral	25	18.4
agree	69	50.7
strongly agree	26	19.1
Total	136	100.0

Table 3-11and Table 3-11showed that 69% of the sample confirmed that the network is periodically updated.

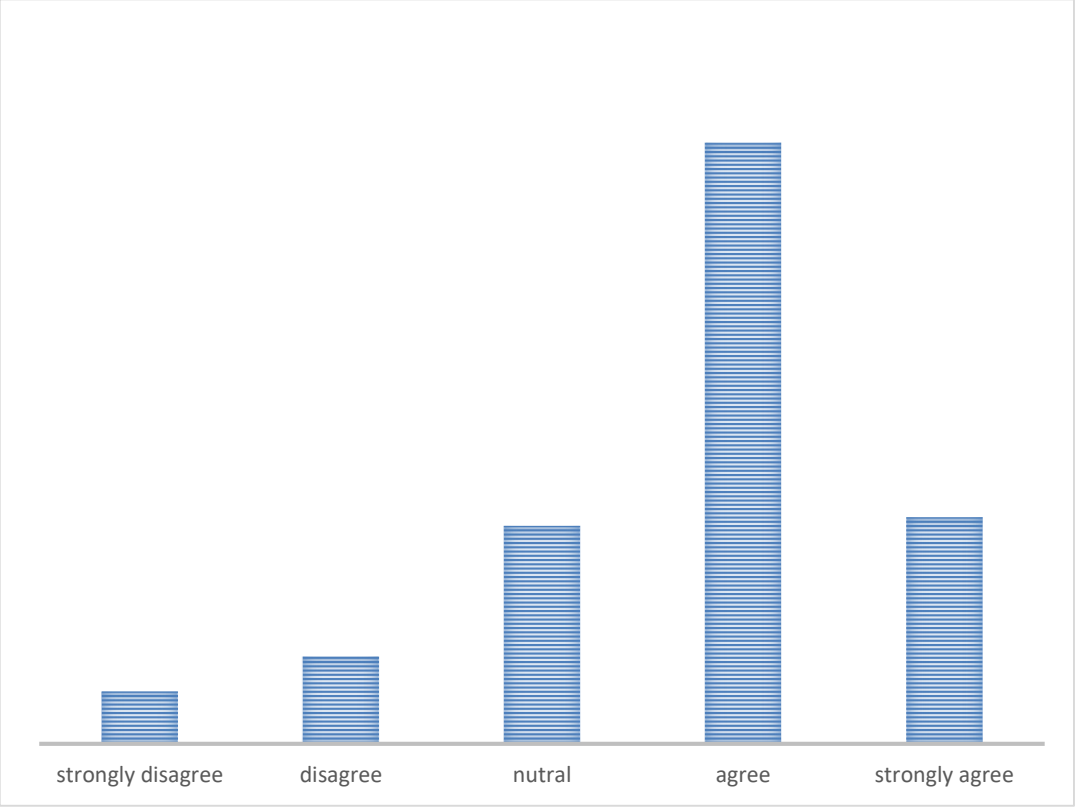

Figure (3-11)

3-2-4-11Networks provide all the member's needs:

Table 3-12

	Frequency	Percent
strongly disagree	7	5.1
Disagree	35	25.7
Neutral	37	27.2
Agree	40	29.4
strongly agree	17	12.5
Total	136	100.0

From table 3-12&figure3-12we observe that 41% of sample confirmed that Networks provide all the member's needs.

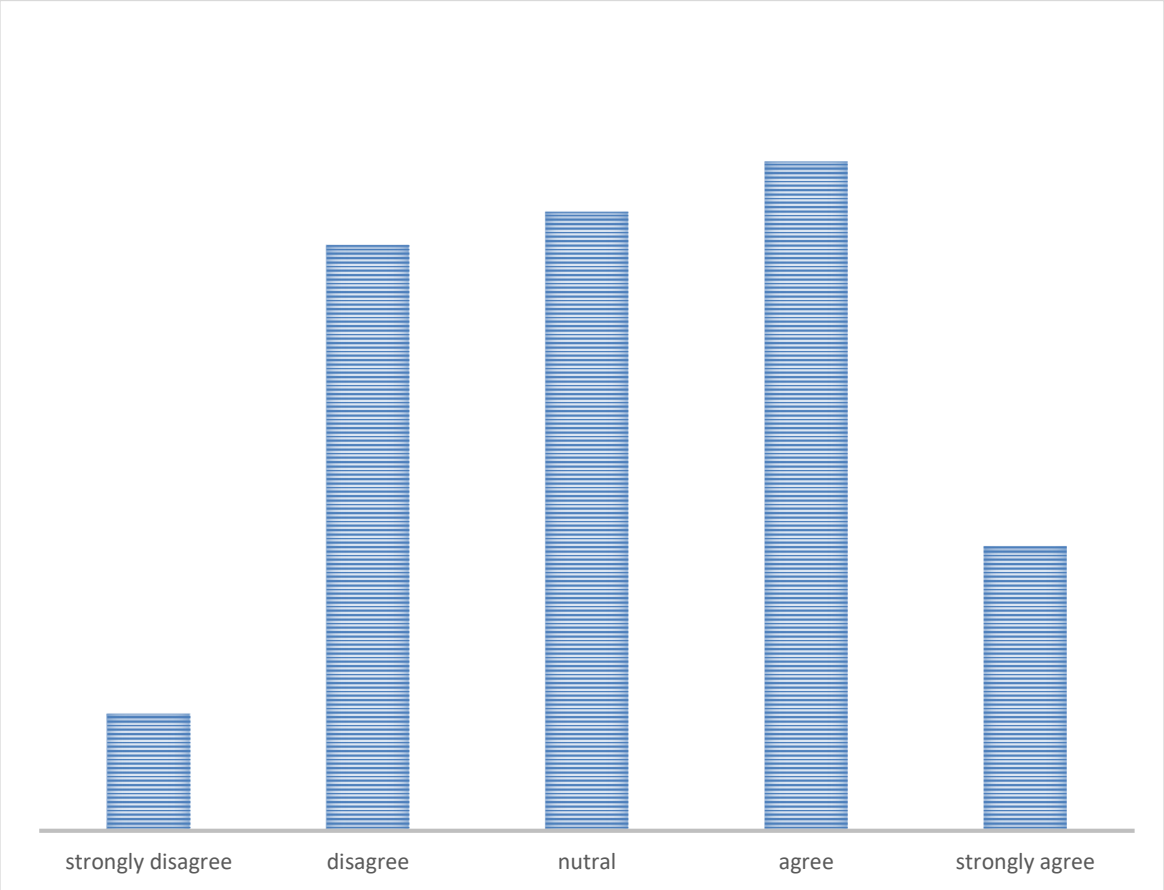

Figure (3-12)

3-2-4-12Networks accommodate all age groups:

Table 3-13

	Frequency	Percent
strongly disagree	8	5.9
Disagree	30	22.1
Neutral	16	11.8
Agree	54	39.7
strongly agree	28	20.6
Total	136	100.0

Table3-13&figure3-13we observed that 60% of sample confirmed that Networks accommodate all age groups.

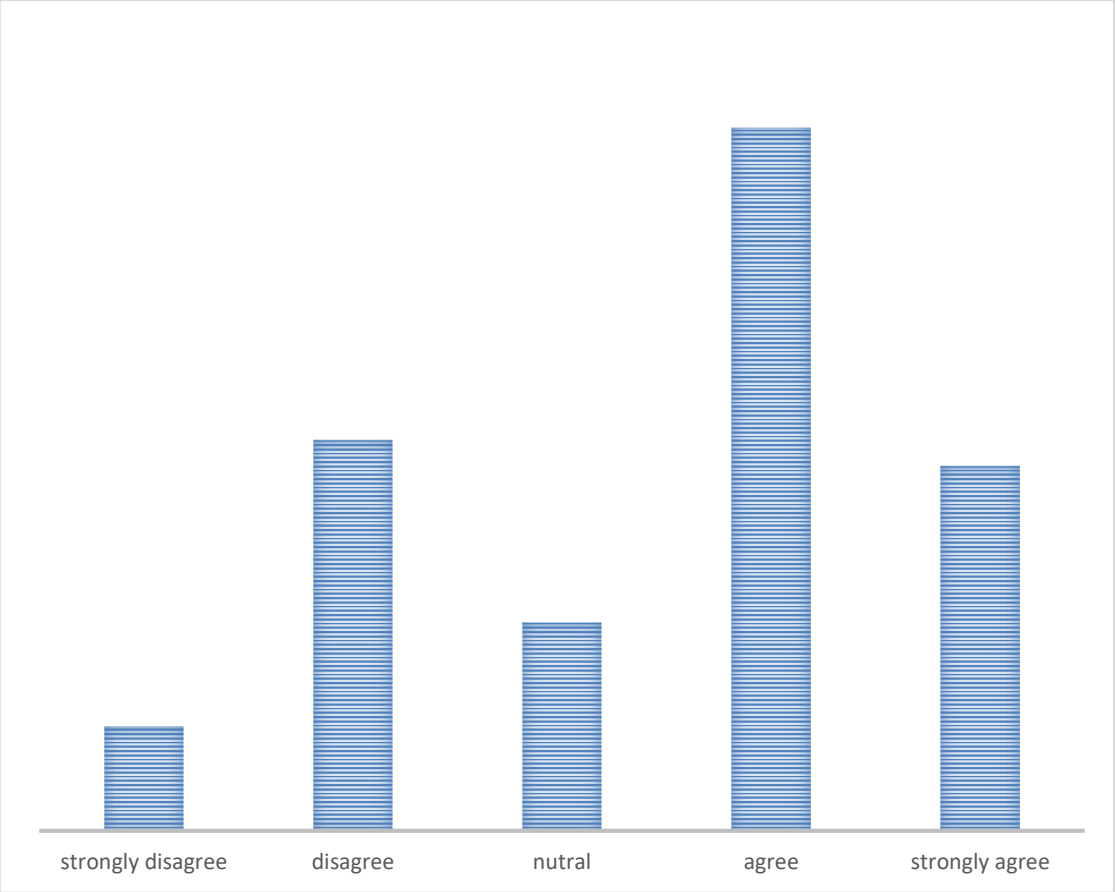

Figure (3-13)

3-2-4-13 Social media are well designed

Table 3-14

	Frequency	Percent
strongly disagree	1	.7
Disagree	3	2.2
Neutral	24	17.6
Agree	77	56.6
strongly agree	31	22.8
Total	136	100.0

Table3-14 &figure3-14 we observed that 79% of sample confirmed that Social media are well designed.

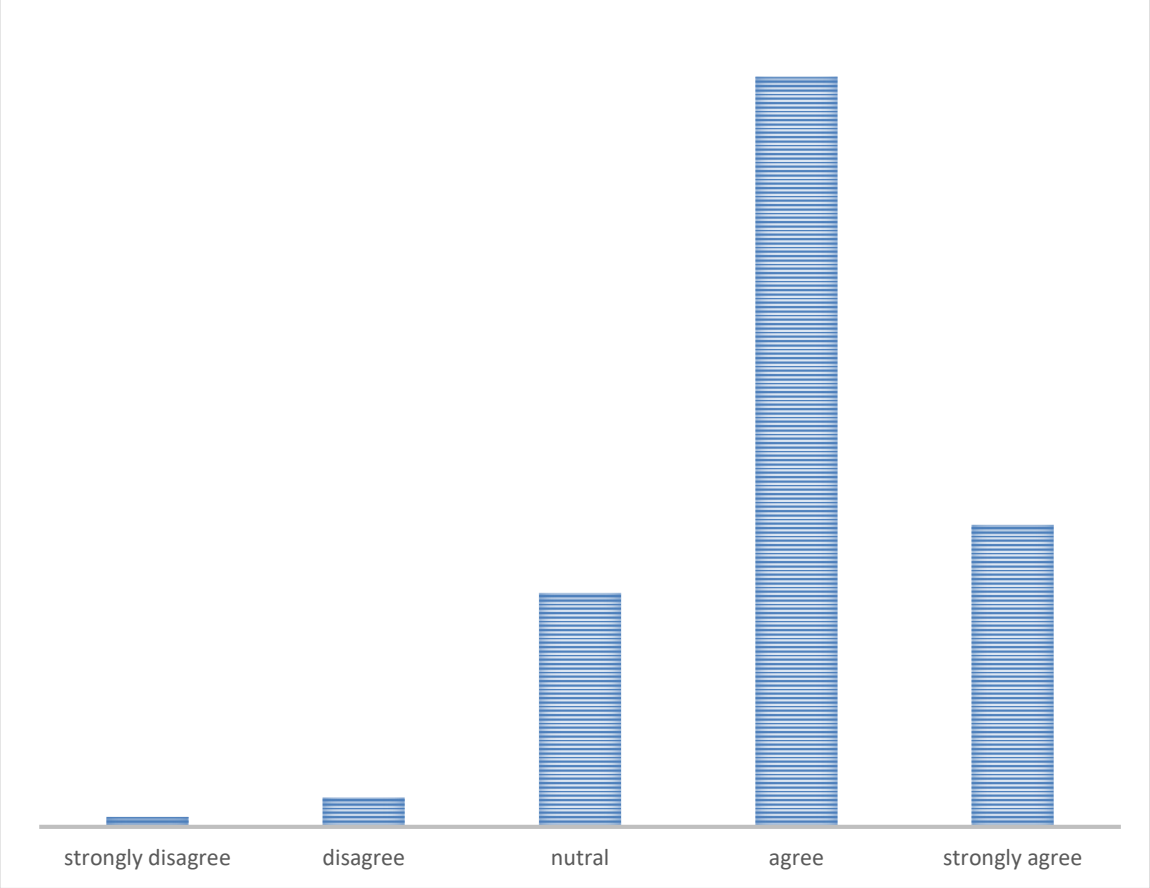

Figure (3-14)

3-2-4-14Networks use different colors in user interface design:

Table 3-15

	Frequency	Percent
strongly disagree	3	2.2
Disagree	4	2.9
Neutral	20	14.7
Agree	81	59.6
strongly agree	28	20.6
Total	136	100.0

Table3-15&figure3-15we observed that 80% of sample confirmed that Networks use different colors in user interface design.

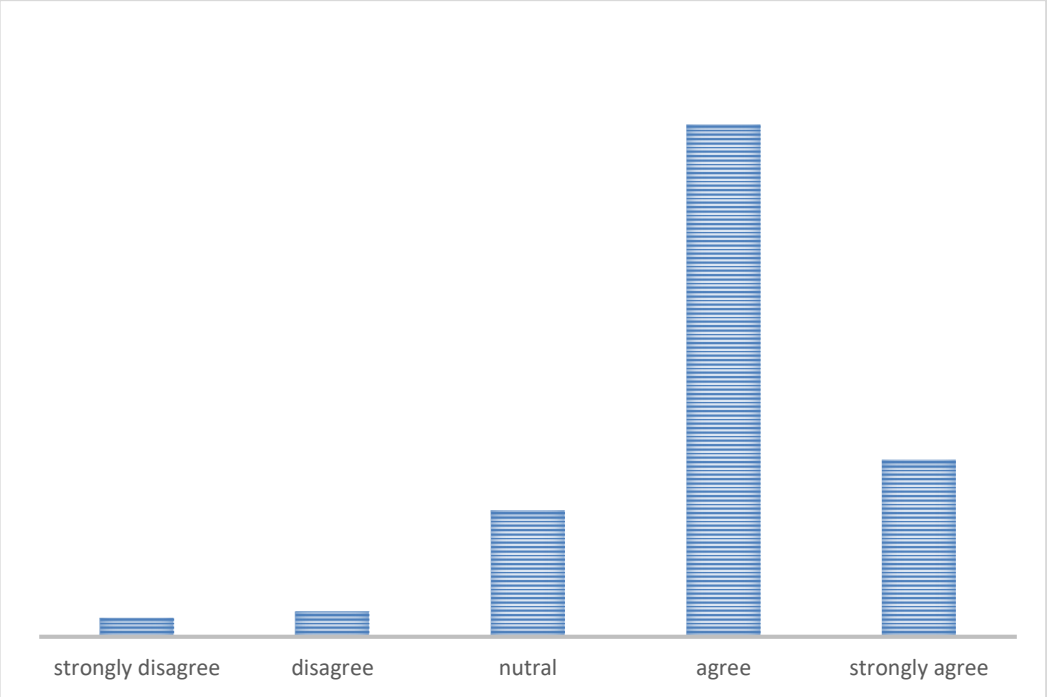

Figure (3-15)

3-2-4-15 Social media are easy to use

Table 3-16

	Frequency	Percent
strongly disagree	1	.7
Disagree	5	3.7
Neutral	11	8.1
Agree	80	58.8
strongly agree	39	28.7
Total	136	100.0

Table3-16&figure3-16we observed that 87% of sample confirmed that Social media are easy to use.

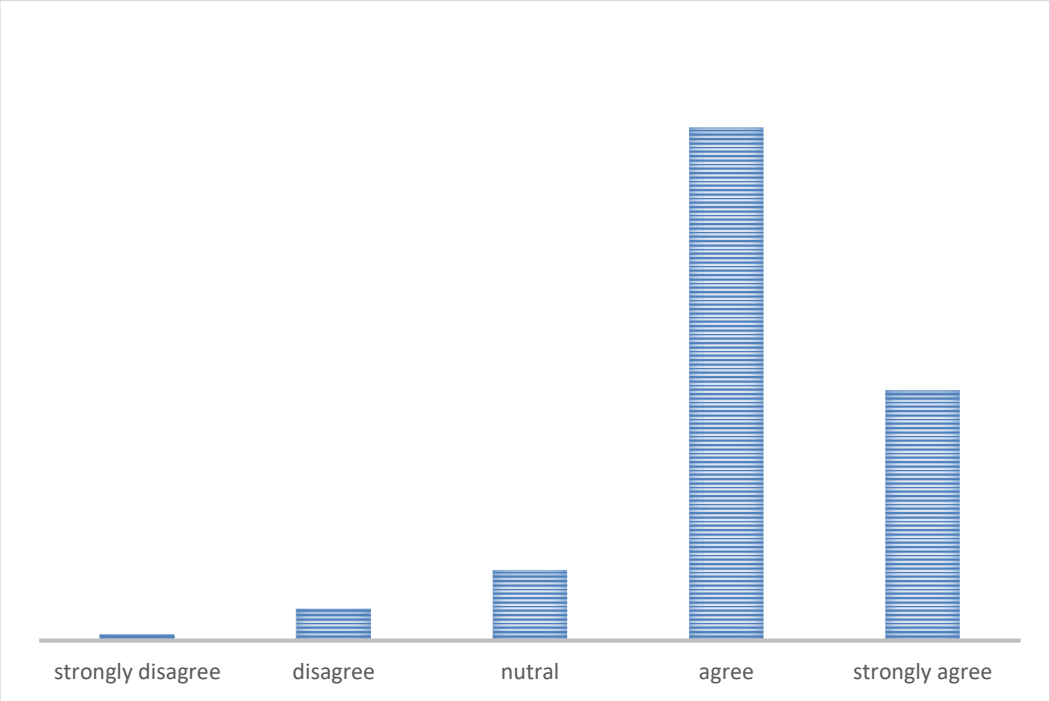

Figure (3-16)

3-2-4-16 The design of social networking applications affects the extent of user acceptance

Table 3-17

	Frequency	Percent
strongly disagree	1	.7
Disagree	4	2.9
Neutral	12	8.8
Agree	56	41.2
strongly agree	63	46.3
Total	136	100.0

Table3-17&figure3-17we observed that 87% of sample confirmed that the design of social networking applications affects the extent of user acceptance.

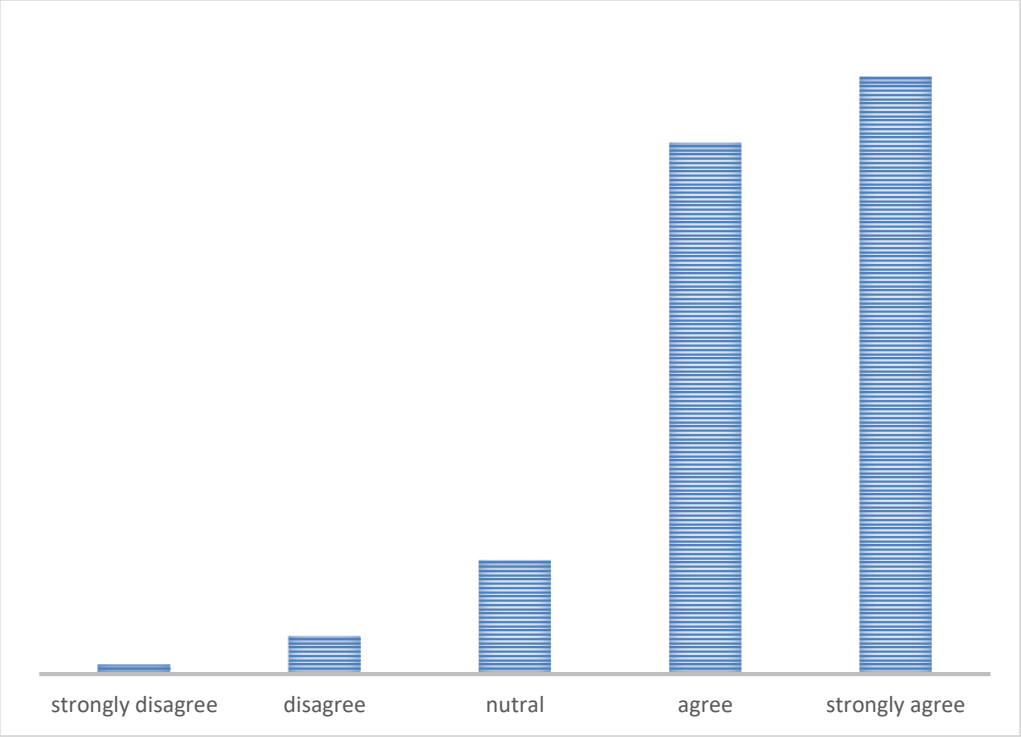

Figure (3-17)

3-2-4-17 Social media supports all languages

Table 3-18

	Frequency	Percent
strongly disagree	1	.7
Disagree	17	12.5
Neutral	25	18.4
Agree	62	45.6
strongly agree	31	22.8
Total	136	100.0

Table3-18&figure3-18we observed that 68% of sample, confirmed that Social media supports all languages**.**

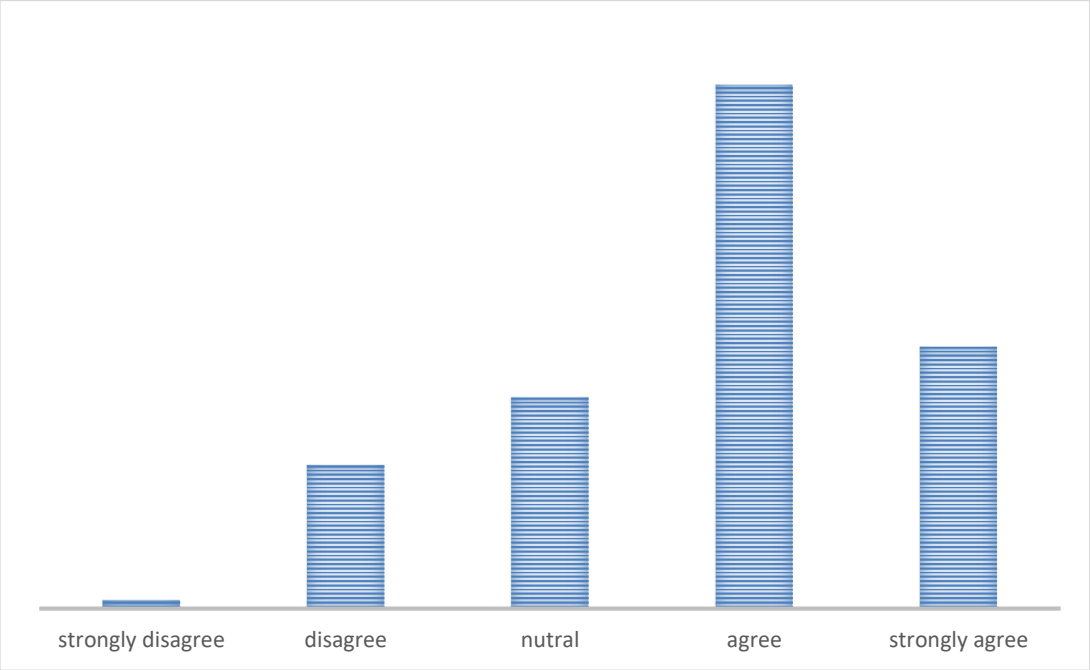

Figure (3-18)

3-2-4-18 The written language is understandable

Table 3-19

	Frequency	Percent
strongly disagree	3	2.2
disagree	3	2.2
neutral	9	6.6
agree	79	58.1
strongly agree	42	30.9
Total	136	100.0

Table3-19&figure3-19we observed that 89% of sample, confirmed that The written language is understandable.

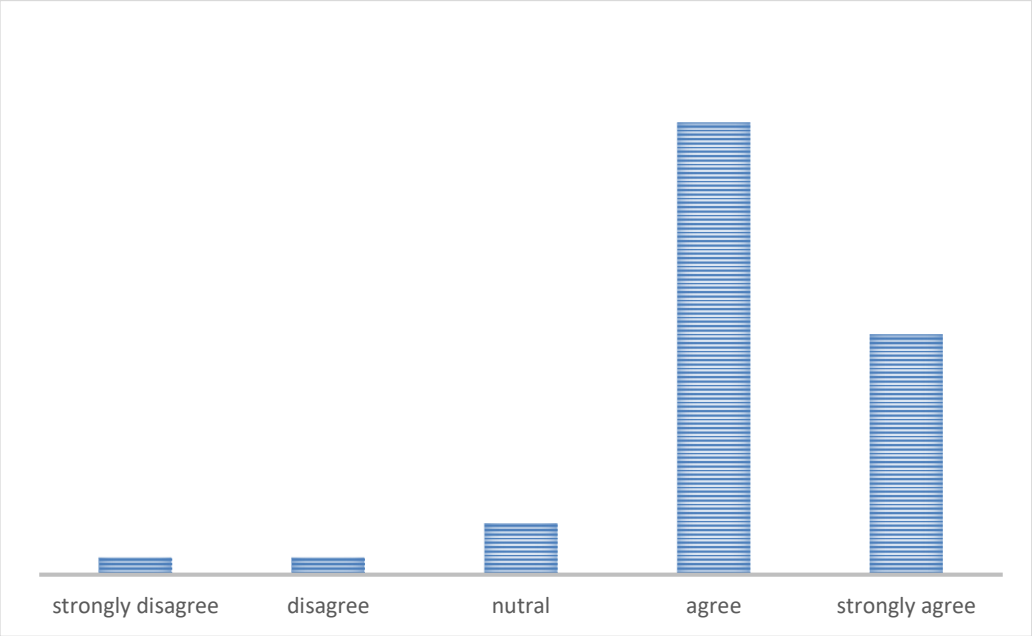

Figure (3-19)

3-2-4-19 The language used is Classy

Table 3-20

	Frequency	Percent
strongly disagree	3	2.2
disagree	8	5.9
neutral	38	27.9
agree	71	52.2
strongly agree	16	11.8
Total	136	100.0

Table3-20 &figure3-20 we observed that 64% of sample, confirmed that the language used is Classy.

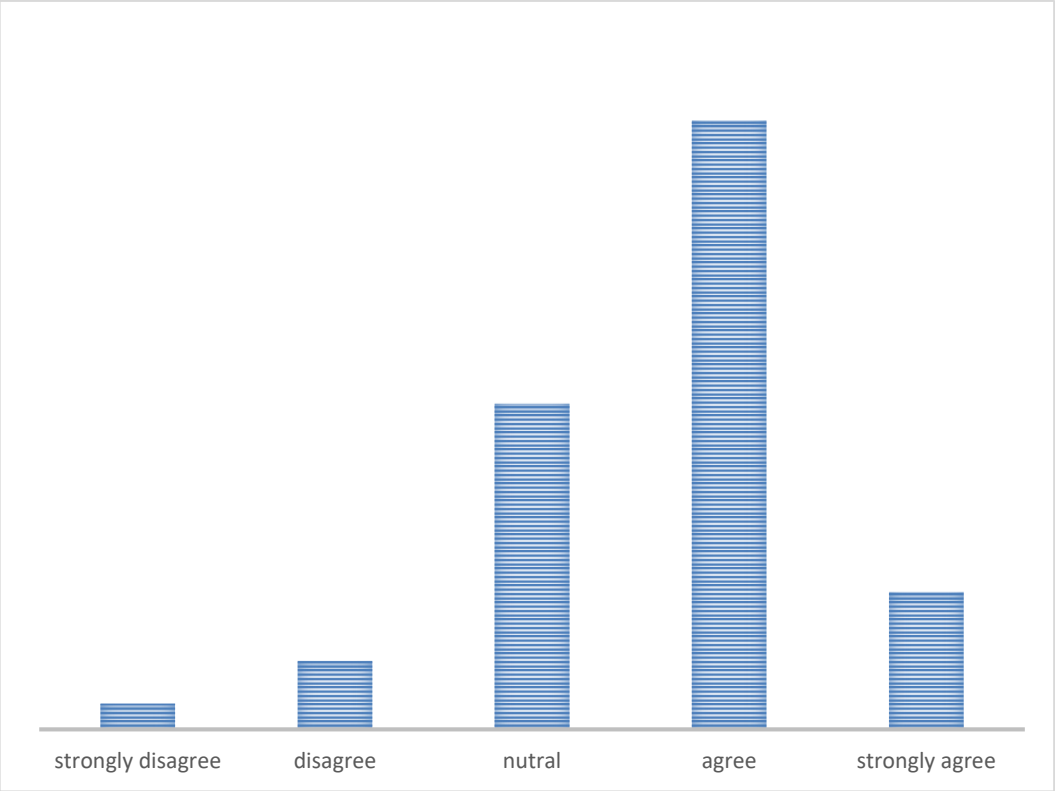

Figure (3-20)

3-2-4-20 Social media are available in all regions

Table 3-21

	Frequency	Percent
strongly disagree	4	2.9
Disagree	21	15.4
Neutral	30	22.1
Agree	55	40.4
strongly agree	26	19.1
Total	136	100.0

Table3-21&figure3-21we observed that 59% of sample, confirmed that Social media are available in all regions.

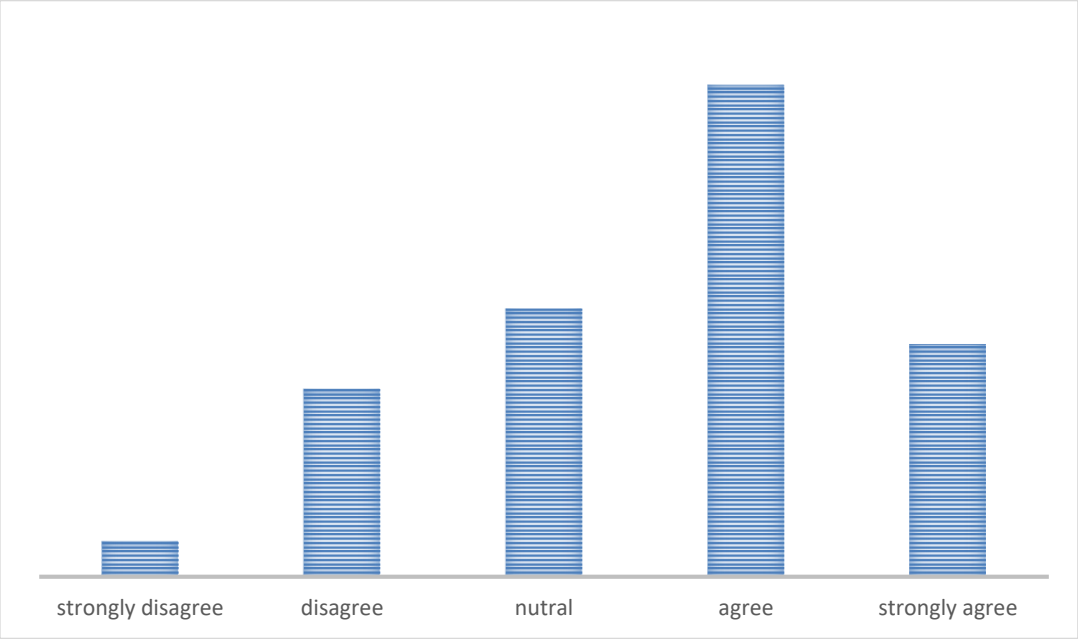

Figure (3-21)

3-2-4-21Social Networks are compatible with the different countries

Table 3-22

	Frequency	Percent
strongly disagree	4	2.9
disagree	18	13.2
neutral	34	25.0
agree	59	43.4
strongly agree	21	15.4
Total	136	100.0

Table3-22 &figure3-22 we observed that 58% of sample, confirmed that Social Networks are compatible with the different countries**.**

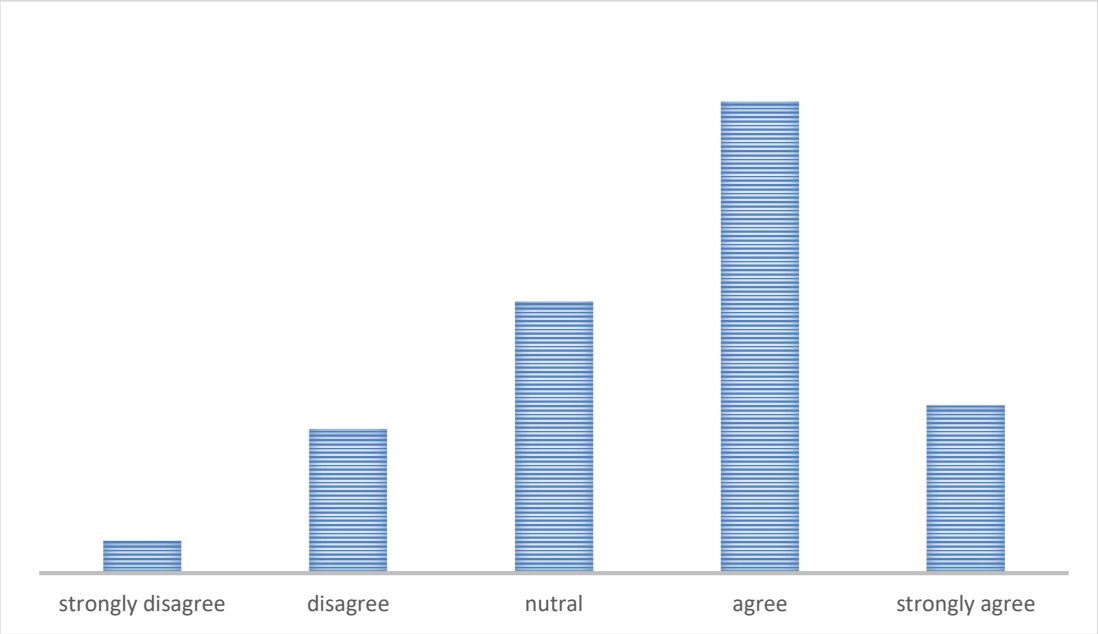

Figure (3-22)

3-2-4-22 Social Network is compatible with multiculturalism

Table 3-23

	Frequency	Percent
strongly disagree	4	2.9
disagree	25	18.4
neutral	27	19.9
agree	56	41.2
strongly agree	24	17.6
Total	136	100.0

Table3-23&figure3-23we observed that 58% of sample, confirmed that Social Networks are compatible with multiculturalism.

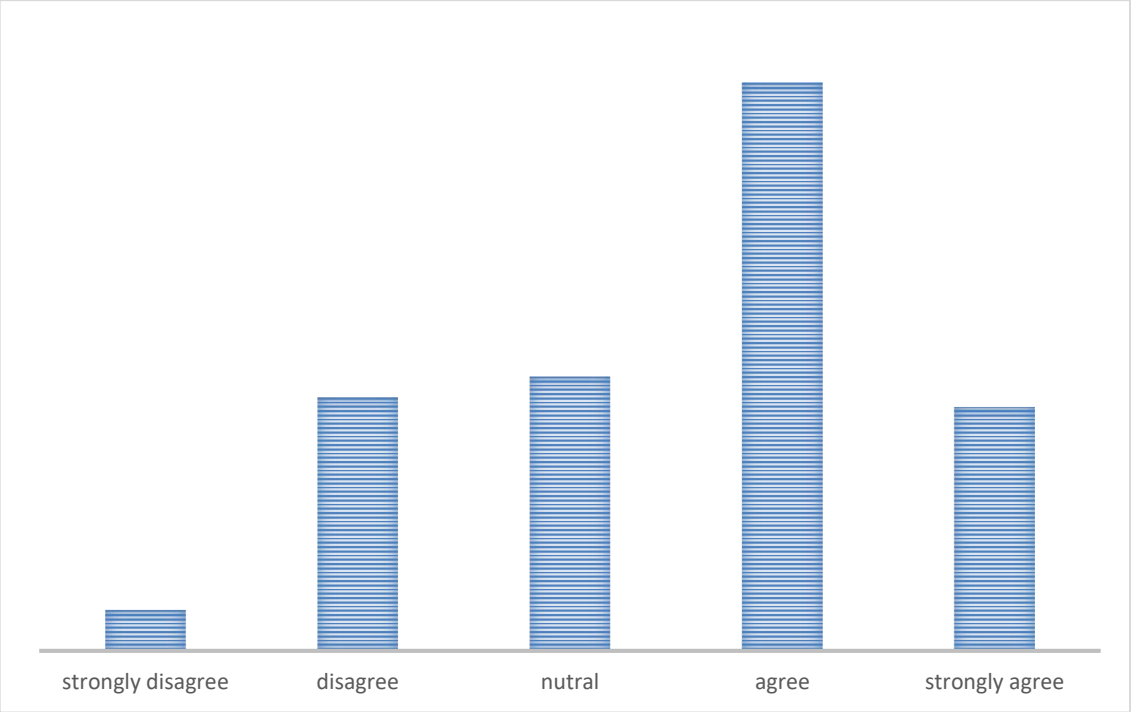

Figure (3-23)

3-2-4-23 Social Network follows guidance of Islam

Table 3-24

	Frequency	Percent
strongly disagree	16	11.8
disagree	45	33.1
neutral	45	33.1
agree	22	16.2
strongly agree	8	5.9
Total	136	100.0

Table3-24&figure3-24we observed that 22% of sample, confirmed that Social Networks follows guidance of Islam.

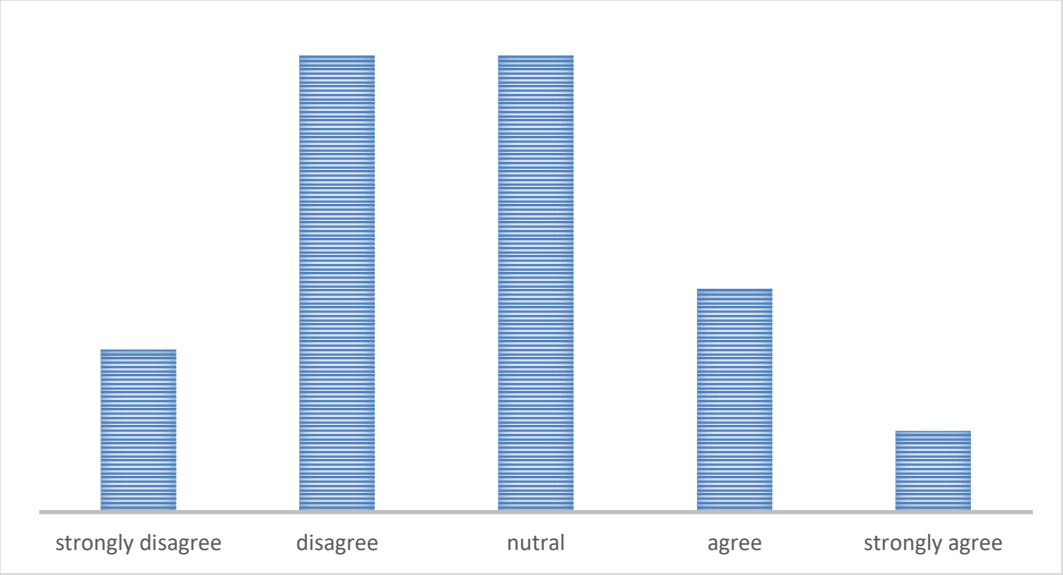

Figure (3-24)

3-2-4-24 The contents of the social Network are compatible with Islamic guidance

Table 3-25

	Frequency	Percent
strongly disagree	18	13.2
disagree	38	27.9
neutral	60	44.1
agree	12	8.8
strongly agree	8	5.9
Total	136	100.0

Table3-25&figure3-25we observe that 14% of sample, confirmed that The contents of the social Network are compatible with Islamic guidance**.**

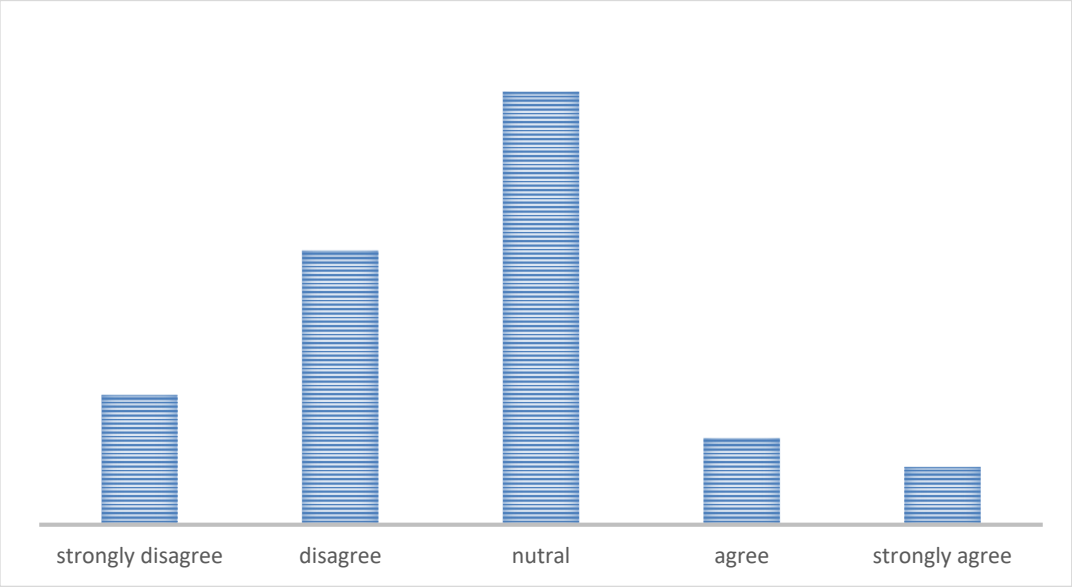

Figure (3-25)

3-2-4-25 Social Network helps to preserve religious teachings

Table 3-26

	Frequency	Percent
strongly disagree	14	10.3
Disagree	35	25.7
Neutral	52	38.2
Agree	28	20.6
strongly agree	7	5.1
Total	136	100.0

Table3-26 &figure3-26 we observed that 25% of sample, confirmed that Social Network helps to preserve religious teachings.

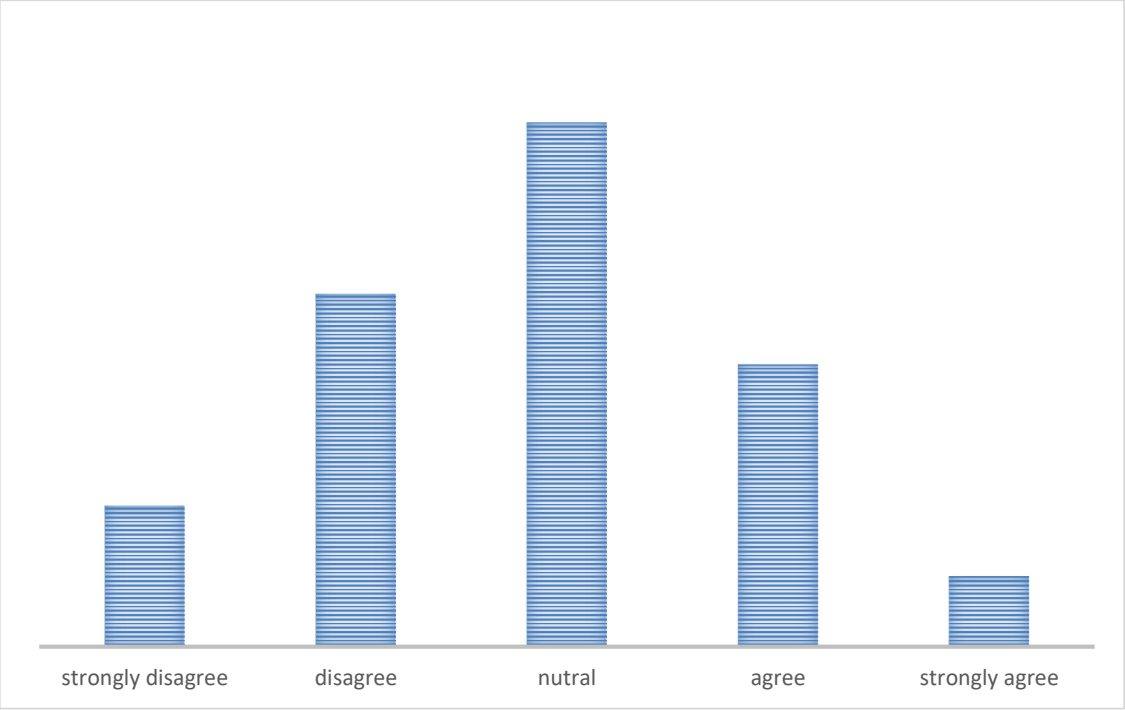

Figure (3-26)

3-2-4-26 Social media maintains user privacy

Table 3-27

	Frequency	Percent
strongly disagree	11	8.1
disagree	31	22.8
neutral	37	27.2
agree	37	27.2
strongly agree	20	14.7
Total	136	100.0

Table3-27&figure3-27we observe that 41% of sample, confirmed that Social media maintains user privacy.

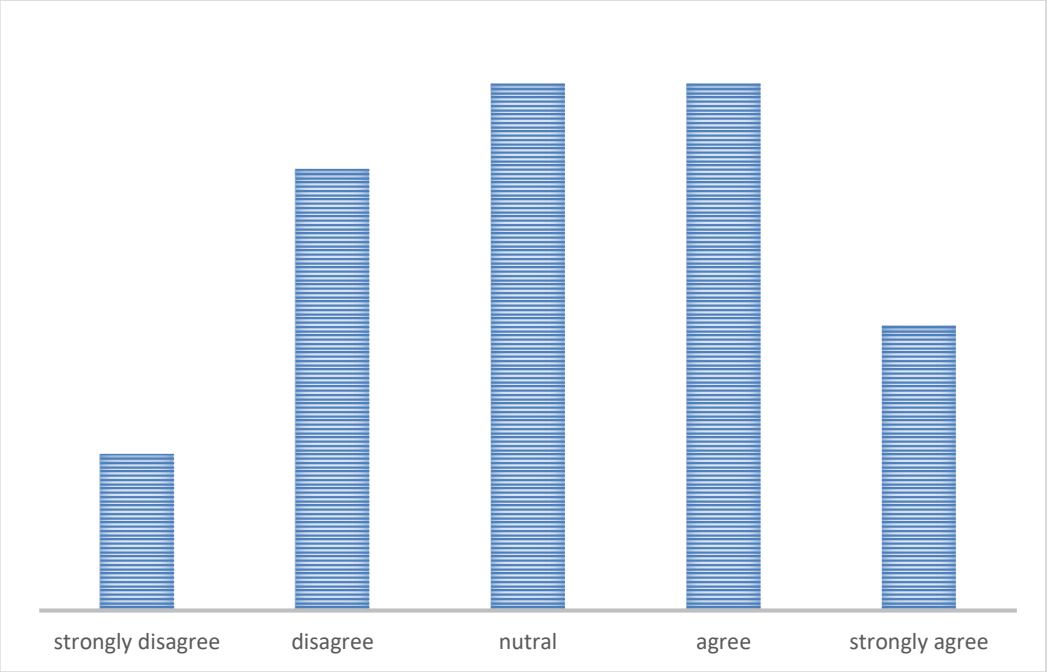

Figure (3-27)

3-2-4-27 Privacy provides a positive impact on the quality of social media applications

Table 3-28

	Frequency	Percent
disagree	11	8.1
neutral	15	11.0
agree	61	44.9
strongly agree	49	36.0
Total	136	100.0

Table3-28&figure3-28we observed that 80% of sample, confirmed that Privacy provides a positive impact on the quality of social media applications**.**

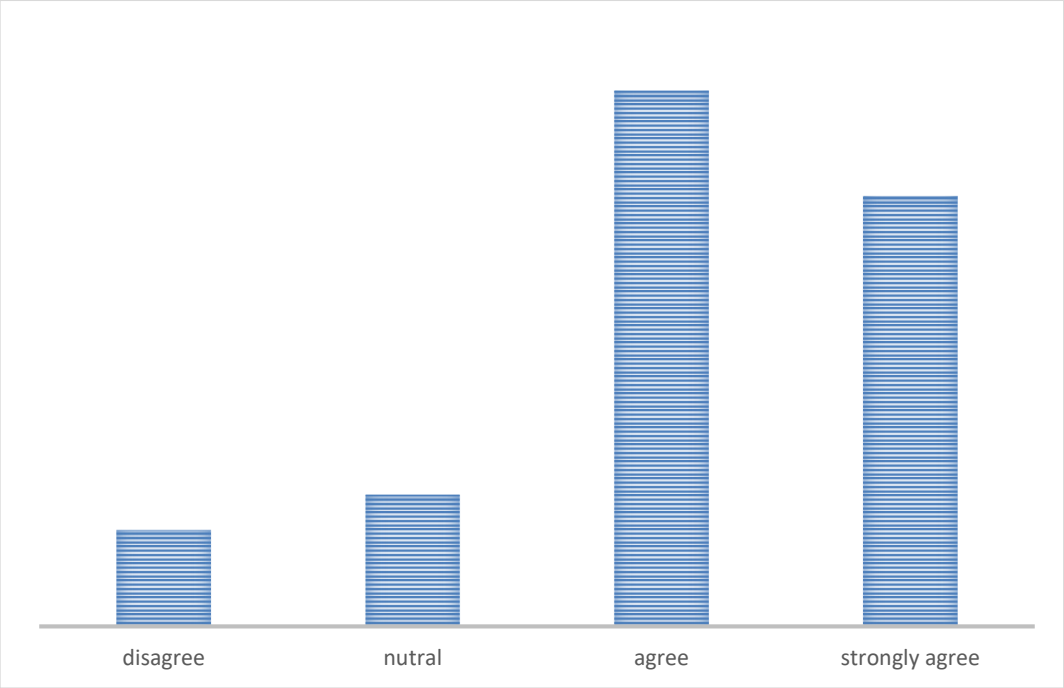

Figure (3-28)

3-2-4-28 the availability of privacy encourages the use of social media

Table 3-29

	Frequency	Percent
strongly disagree	1	.7
disagree	7	5.1
neutral	15	11.0
agree	52	38.2
strongly agree	61	44.9
Total	136	100.0

Table3-29&figure3-29 we observed that 83% of sample, confirmed that The availability of privacy encourages the use of social media.

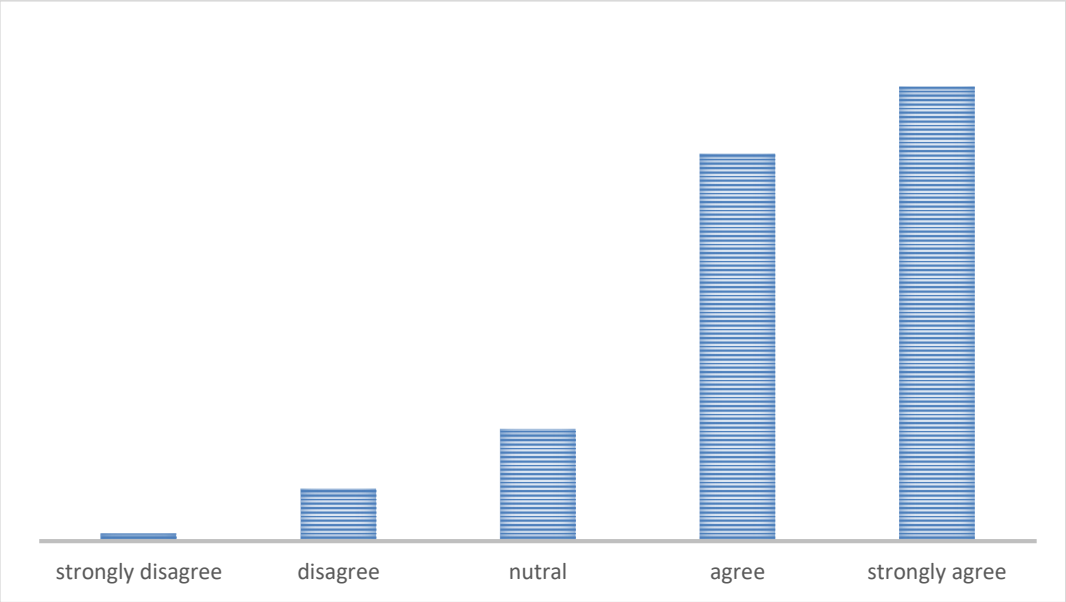

Figure (3-29)

3-2-4-29 Social media maintain the confidentiality of information

Table 3-30

	Frequency	Percent
strongly disagree	8	5.9
Disagree	36	26.5
Neutral	44	32.4
Agree	30	22.1
strongly agree	18	13.2
Total	136	100.0

Table3-30&figure3-30we observe that 35% of sample confirmed that Social media maintain the confidentiality of information.

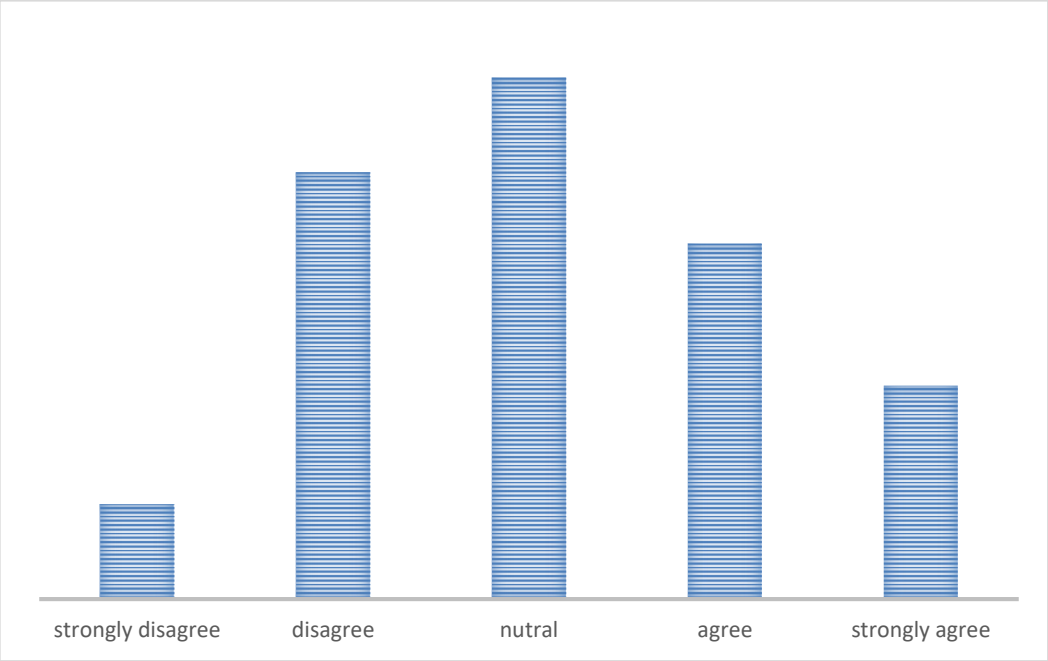

Figure (3-30)

3-2-4-30The confidentiality of information positively affects the number of Users' access to social media

Table 3-31

	Frequency	Percent
Disagree	2	1.5
Neutral	21	15.4
Agree	59	43.4
strongly agree	54	39.7
Total	136	100.0

Table3-31&figure3-31we observed that 83% of sample, confirmed that the confidentiality of information positively affects the number of
Users' access to social media

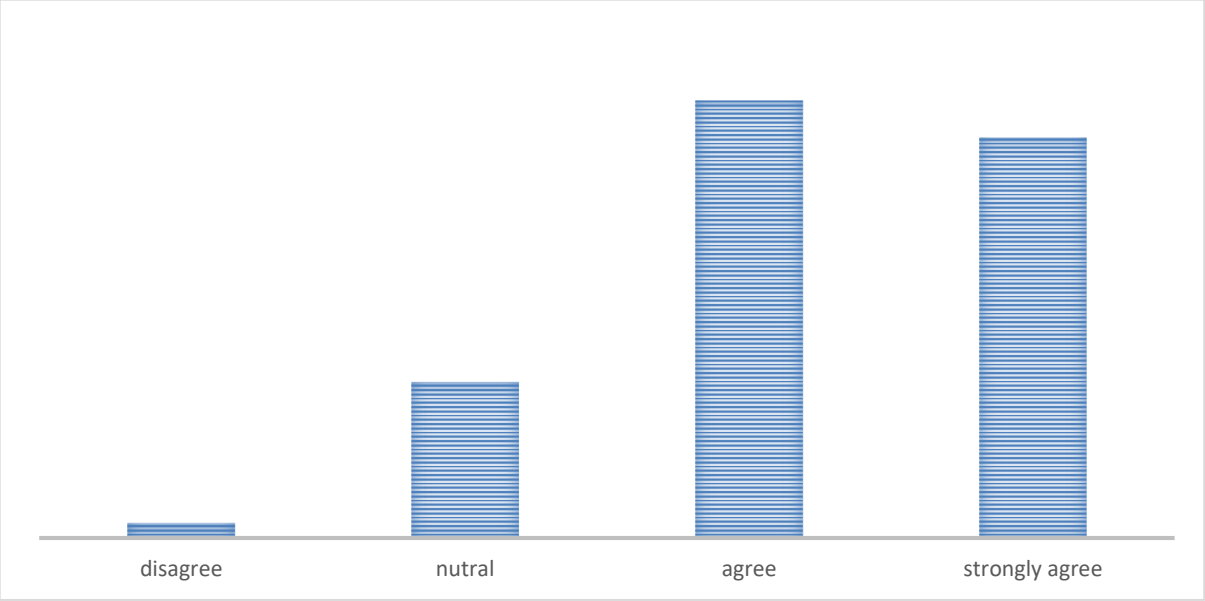

Figure (3-31)

3-2-4-31 Users have the confidence in Social network

Table 3-32

	Frequency	Percent
strongly disagree	3	2.2
disagree	19	14.0
neutral	48	35.3
agree	49	36.0
strongly agree	17	12.5
Total	136	100.0

Table3-32 &figure3-32 we observe that 48% of sample confirmed that the confidentiality of information positively affects the number of users' access to social media.

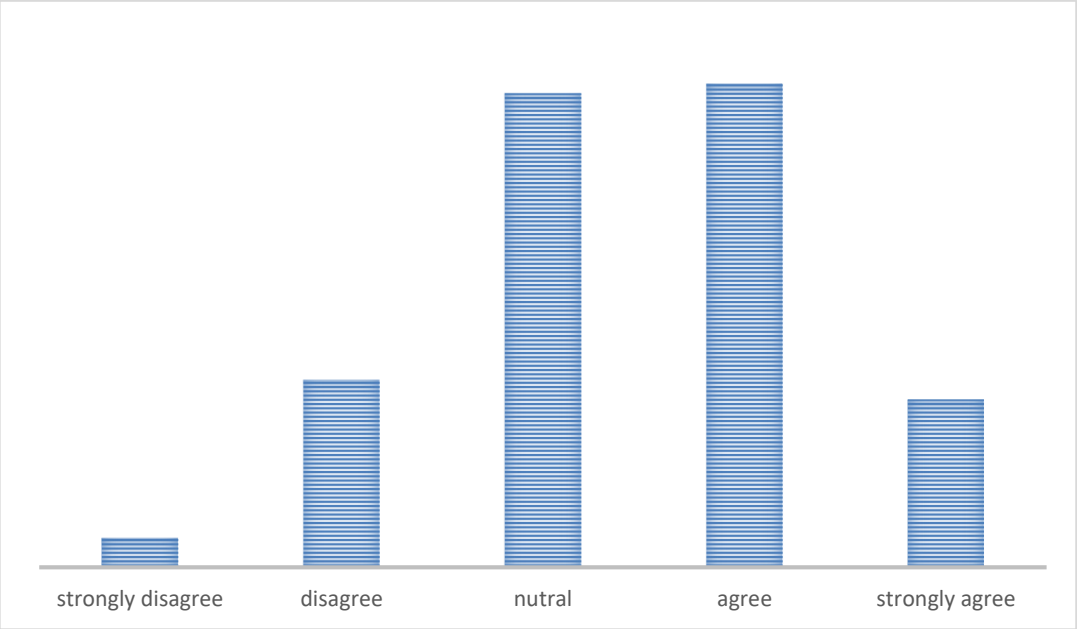

Figure (3-32)

4-2 Data analysis:

In this part of the chapter all attributes had been analysed using Likert scale which is the most widely used approach to scaling responses in survey research, such that the term (or more accurately the Likert-type scale) is often used. Interchangeably with rating scale, although there are other types of rating scales. The scale named after its inventor, psychologist Resins Likert.

In this research, we used Likert 5 – point scale (Strongly Agree, Agree, neutral Disagree and Strongly Disagree), and the weight of each category is (5, 4, 3, 2 and 1) respectively, the means of this category is calculated by the formula:

Mean = ((5*Strongly Agree+4*Agree +3*neutral +2*Disagree+ 1*Strongly Disagree)/ (total responses))
And as the category weighted the percent column represent the means we calculated before for 100%, the range for it is shown as:

- 100% – 80% strongly agree.
- <80% - 60% Agree.
- <60% - 40% Neutral.
- <40% - 20 Disagree.
- <20% - 0% Strongly Disagree.

3-2-4-32System latency attributes:

The First attributes are System latency and here we focus on if the speed and the content of the application are important criteria and must be checked. In addition, good indicator of well Performance:

Table 3-33

#	Phrase	Strongly Agree		Agree		neutral		Disagree		Strongly Disagree		Means	%	Indicato
		#	%	#	%	#	%	#	%	#	%			
1	The application load speed affects how good it is	52	38	50	36	13	9	16	12	7	5	4	100	Strongly Agree
2	Sound or Audio Media affects the speed of social networks	27	20	52	38	24	17	27	20	8	6	3	75	Agree
3	Videos affect the speed of social networks	60	43	49	36	14	10	15	11	0	0	4	100	Strongly Agree
4	images affects the speed of social networks	27	20	58	42	21	15	29	21	3	2	4	100	Strongly Agree
5	Application's contents affect their speed	56	41	61	44	11	8	9	7	1	1	4	100	Strongly Agree
	Total	222	32	270	39	83	12	96	14	19	3	4	100	Strongly Agree

Table (3-33) represent the respond of sample members for each phrase and from the indicator column, we can say that “Strongly Agree” with 100% that the general thought refer to speed and content of social media are very important as an attributes.

3-2-4-33Flexibility attributes:

Second attribute is Flexibility and here we focus on if social media application is elastic and meet all needs, so it is important criteria and must be check.

Table 3-34

#	Phrase	Strongly Agree		Agree		neutral		Disagree		Strongly Disagree		Means	%	Indicato
		#	%	#	%	#	%	#	%	#	%			
1	Network applications accommodate all new things	32	23	64	46	19	14	18	13	5	4	4	100	Strongly Agree
2	Networks are updated periodically	27	20	69	50	25	18	11	8	6	4	4	100	Strongly Agree
3	Networks provide all the members needs	18	13	41	30	37	27	35	25	7	5	3	75	Agree
4	Networks accommodate all age groups	30	22	54	39	16	12	30	22	8	6	3	75	Agree
	Total	107	19	228	41	97	18	94	17	26	5	4	100	Strongly Agree

Table (3-34) represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that social media application elastic and meet all needs, so it is important as an attributes.

3-2-4-34Graphical user interface:

Table3-35

#	Phrase	Strongly Agree		Agree		neutral		Disagree		Strongly Disagree		Means	%	Indicator
		#	%	#	%	#	%	#	%	#	%			
1	Social media are well designed	32	23	78	57	24	17	3	2	1	1	4	100	Strongly Agree
2	Networks use different colors in user interface design	28	20	82	59	21	15	4	3	3	2	4	100	Strongly Agree
3	Social media are easy to use	41	30	80	58	11	8	5	4	1	1	4	100	Strongly Agree
4	The design of social networking applications affects the extent of user acceptance	64	46	56	41	12	9	5	4	1	1	4	100	Strongly Agree
	Total	165	30	296	54	68	12	17	3	6	1	4	100	Strongly Agree

Table (3-35) represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that the graphical user interface of social media application has affect how users attract to it, so it is important as an attributes.

3-2-4-35Language attributes:

Table 3-36

#	Phrase	Strongly Agree		Agree		neutral		Disagree		Strongly Disagree		Means	%	Indicato
		#	%	#	%	#	%	#	%	#	%			
1	Social media supports all languages	33	24	62	45	25	18	17	12	1	1	4	100	Strongly Agree
2	The written language is understandable	44	32	79	57	9	7	3	2	3	2	4	100	Strongly Agree
3	The language used is Classy	17	12	72	52	38	28	8	6	3	2	4	100	Strongly Agree
	Total	94	23	213	51	72	17	28	7	7	2	4	100	Strongly Agree

Table (3-36) represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that the accurate of social media application's Languages has affect how users are attract to it, so it is important as an attributes.

3-2-4-36Regional attribute:

Table 3-37

#	Phrase	Strongly Agree		Agree		neutral		Disagree		Strongly Disagree		Means	Percent	Indicato
		#	%	#	%	#	%	#	%	#	%			
1	Social media are available in all regions	27	20	55	40	30	22	22	16	4	3	4	100	Strongly Agree
2	social Network are compatible with the different countries	22	16	60	43	34	25	18	13	4	3	4	100	Strongly Agree
3	Social Network are compatible with multiculturalism	25	18	57	41	27	20	25	18	4	3	4	100	Strongly Agree
	Total	74	18	172	42	91	22	65	16	12	3	4	100	Strongly Agree

Table (3-37) represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that social media applications covered all regional place, so regional availability on social media is considered as important attributes.

3-2-4-37Religion attributes:

Table 3-38

#	Phrase	Strongly Agree		Agree		neutral		Disagree		Strongly Disagree		Means	%	Indicato
		#	%	#	%	#	%	#	%	#	%			
1	Social Network follows guidance of Islam	8	6	22	16	45	33	47	34	16	12	3	75	Agree
2	The contents of the social Network are compatible with Islamic guidance	8	6	12	9	60	43	40	29	18	13	3	75	Agree
3	Social Network helps to preserve religious teachings	7	5	29	21	52	38	36	26	14	10	3	75	Agree
	Total	23	6	63	15	157	38	123	30	48	12	3	75	Agree

Table (3-38) represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Agree” with 75% that social media applications suitable to all religions, so religious observance on social media is considered as important attributes.

3-2-4-38Privacyattributes:

Table 3-39

#	Phrase	Strongly Agree		Agree		neutral		Disagree		Strongly Disagree		Means	%	Indicato
		#	%	#	%	#	%	#	%	#	%			
1	Social media maintains user privacy	20	14	37	27	37	27	33	24	11	8	3	75	Agree
2	Privacy provides a positive impact on the quality of social media applications	51	37	61	44	15	11	11	8	0	0	4	100	Strongly Agree
3	The availability of privacy encourages the use of social media	62	45	53	38	15	11	7	5	1	1	4	100	Strongly Agree
	Total	133	32	151	36	67	16	51	12	12	3	4	100	Strongly Agree

Table (3-39) represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that Privacy of social media applications is affect if user attract to it, so Privacy on social media applications is considered as important attributes.

3-2-4-39Security attributes:

Table 3-40

#	Phrase	Strongly Agree		Agree		neutral		Disagree		Strongly Disagree		Mean	%	Indicato
		#	%	#	%	#	%	#	%	#	%			
1	Social media maintain the confidentiality of information	18	13	30	22	44	32	38	28	8	6	3	75	Agree
2	The confidentiality of information positively affects the number of users' access to social media	55	40	60	43	21	15	2	1	0	0	4	100	Strongly Agree
3	users have the confidence in Social network	268	69	51	13	48	12	19	5	3	1	4	100	Strongly Agree
	Total	268	45	141	24	113	19	59	10	11	2	4	100	Strongly Agree

Table (3-40) represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that security of social media applications is affect if user trust it or not, so Security level on social media applications is considered as important attributes.

CHAPTER 5: Result and Discussions

5-1 Result

- System latency attributes represent the respond of sample members for each phrase and from the indicator column, we can say that “Strongly Agree” with 100% that the general thought refer to speed and content of social media are very important as an attributes>
- Graphical user interface represents the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that the graphical user interface of social media application has affect how users attract to it, so it is important as an attributes.
- Language attributes Table (3-36) represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that the accurate of social media application's Languages has affect how users are attract to it, so it is important as an attributes.

- Flexibility attributes represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that social media application elastic and meet all needs, so it is important as an attributes.
- Regional attribute represents the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that social media applications covered all regional place, so regional availability on social media is considered as important attributes.
- Religion attributes represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Agree” with 75% that social media applications suitable to all religions, so religious observance on social media is considered as important attributes.
- Privacy attributes represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that Privacy of social media applications is affect if user attract to it, so Privacy on social media applications is considered as important attributes.
- Security attributes represent the total respond of sample members for each phrase and from the indicator column, we can say that the general thought refers that “Strongly Agree” with 100% that security of social media applications is affect if user trust it or not, so Security level on social media applications is considered as important attributes.

CHAPTER 6: Conclusion and Recommendations

6-1 Conclusion:

- After analysing each attribute and determining its impact and importance, we find that the current assumptions are realized. This means that the quality evaluation model of social networks can be relied upon in quality assessment according to the characteristics whose effectiveness has been tested.
- There is no doubt that these attributes are effective and must be adopted as criteria when evaluating.

6-2 Recommendations:

1. System latency has to be one of the attributes in the model.
2. Flexibility has to be one of the attributes in the model.
3. Graphical user interface (GUI) has to be one of the attributes in the model.
4. The accuracy of social network systems rises it as one of the important attributes to be considered in the model
5. Regional availability on social media should be one of the important attributes.
6. Religious observance on social media should be considered important attributes.
7. Privacy on social network systems must be considered as important attributes.
8. Security on social network systems must be considered as important attributes.
9. Social network systems (SNS) Model should be used as a quality tools to treat social media application quality.
10. Apply this model to systems other than social networks.

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Appendex:

Qutionair for:

Proposing A model for Evaluating the Quality of Social Network Systems

نموذج مقترح لتقييم جودة أنظمة شبكات التواصل الاجتماعي

Gender: - ☐ Male ☐ Female

Age group: - ☐ less than 25 ☐ 25 to 35 ☐ more than 35

Address: - ☐ central Khartoum ☐ suburban Khartoum

#	Title	Strongly Agree	Agree	neutral	Disagree	Strongly Disagree
1.	The application load speed affects how good it is					
2.	Sound or Audio Media affects the speed of social networks					
3.	Videos affect the speed of social networks					
4.	images affects the speed of social networks					
5.	Application's contents affect their speed					
6.	Network applications accommodate all new things					
7.	Networks are updated periodically					
8.	Networks provide all the members needs					
9.	Networks accommodate all age groups					
10.	Social media are well disgned					
11.	Networks use different colors in user interface design					
12.	Social media are easy to use					
13.	The design of social networking applications affects the extent of user acceptance					

14.	Social media supports all languages					
15.	The written language is understandable					
16.	The language used is Classy					
17.	Social media are available in all regions					
18.	social Network are compatible with the different countries					
19.	Social Network are compatible with multiculturalism					
20.	Social Network follows guidance of Islam					
21.	The contents of the social Network are compatible with Islamic guidance					
22.	Social Network helps to preserve religious teachings					
23.	Social media maintains user privacy					
24.	Privacy provides a positive impact on the quality of social media applications					
25.	The availability of privacy encourages the use of social media					
26.	Social media maintain the confidentiality of information					
27.	The confidentiality of information positively affects the number of users' access to social media					
28.	users have the confidence in Social network					