

**KWARA STATE POLYTECHNIC, ILORIN
INSTITUTE OF INFORMATION AND COMMUNICATION
TECHNOLOGY
DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE**

**PERCEPTION OF UNIVERSITY STUDENTS ON THE DIFFUSION OF
FAKE NEWS ON SOCIAL MEDIA: A CASE OF THE UNIVERSITY
OF ILORIN**

BY

OLAITAN KAOSARA AYOMIDE

ND/23/LIS/FT/0011

**A PROJECT SUBMITTED IN FULFILMENT OF THE
REQUIREMENTS FOR NATIONAL DIPLOMA IN LIBRARY AND
INFORMATION SCIENCE**

SUPERVISOR:

MR. AREMU, B. A.

JUNE, 2025

CERTIFICATION

This is to certify that the research project titled “*Perception Of University Students On The Diffusion Of Fake News On Social Media: A Case Of The University Of Ilorin*” was carried out by Kaosara Ayomide Olaitan. The project has been read and approved as meeting the requirements for the award of National Diploma (ND) Degree in Library and Information Science in the Department of Library and Information Science, Institute of Information and Communication Technology, Kwara State Polytechnic, Ilorin.

HEAD OF DEPARTMENT

DATE

PROJECT COORDINATOR

DATE

SUPERVISOR

DATE

EXTERNAL SUPERVISOR

DATE

DEDICATION

This project is dedicated to Allah (SWT) for being my ultimate source of strength and inspiration. In Him, I derived all powers needed to live, weather the storms and become an embodiment of hope to myself and the people around me.

ACKNOWLEDGEMENTS

The completion of this study was made possible by the involvement and encouragements of various people. I would like to firstly thank God who made everything possible. Secondly, I would like to extend my gratitude to my parents, Mr and Mrs Olaitan, who are always there for me.

My sincere gratitude goes to my supervisor, Mr Aremu, B. A., it was a privilege to work with him. I sincerely appreciate every correction I received from him because they contributed to my academic growth. The guidance, support and encouragement I received constantly from him made the process much easier and more instructive; and I will forever be grateful.

Last but definitely not least, a big thanks to my siblings for the support they have given me during this study, especially during the hard times. To my friends Mercy and Ajarat, I could not have asked for anyone better to work alongside with. Thank you so very much.

TABLE OF CONTENTS

FRONT PAGE	
TITLE PAGE	
DECLARATION	
CERTIFICATION	
DEDICATION	
ACKNOWLEDGEMENTS	
TABLE OF CONTENTS	
LIST OF TABLES	
ABSTRACT	
CHAPTER ONE: INTRODUCTION	
1.1 Background to the study	
1.2 Statement of the problem	
1.3 Research objectives	
1.4 Research questions	
1.5 Significance of the study	
1.6 Scope and limitations of the study	
1.7 Operational definition of terms	
CHAPTER TWO: REVIEW OF RELATED LITERATURE	
2.1 Introduction	
2.2 History of Fake News	
2.3 Internet and Fake News	
2.4 Social Media and Fake News	
2.5 Students and Fake News	
2.6 Detection of Fake News	
2.7 Ways to Stop the Spread of Fake News	
2.8 Conclusion	
CHAPTER THREE: RESEARCH METHODOLOGY	
3.1 Research Design	
3.2 Population of the Study	
3.3 Sampling Technique and Sample Size	
3.4 Instrument for Data Collection	
3.5 Reliability and Validity of Instruments	
3.6 Procedure for Data Collection	

3.7 Procedure for Data Analysis

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, DISCUSSION AND INTERPRETATIONS

4.1 Presentation of the Result

4.2 Demographic Information of Respondent

4.3 Discussion of findings

CHAPTER FIVE: SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of findings

5.2 Conclusion

5.3 Recommendations

REFERENCES

APPENDIX

ABSTRACT

Fake news is a digital but also ethical issue and it has been one of the challenges of the media for the past decade. However, it is uncertain as to what extent university students in Nigeria are aware of the concept of fake news being disguised as real news and diffused on social media. This study adopted descriptive design and quantitative methodology to collect and analyze data. Questionnaires were distributed to a total of 370 students, but only 362 questionnaires were valid to be analyzed. The analysis was carried out using the Statistical Package for the Social Sciences (SPSS). The results showed that the students indicated that they trust their social media platforms as news sources. They also indicated that they can recommend them to their friends, but also that they can consider acquiring news from social media if they friends or family recommended them. Findings of this study also showed that students indicated that they trust the news they acquire from social media. Some of the respondents indicated that they would share news on social media if they were convinced of the credibility of the news. However, some of the respondents indicated that they would share interesting news on social media even if they are not sure of the credibility of the news. The perspective that students have on the security of social media applications is also presented in this study.

DVYUWVIVY

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In recent years, the term ‘fake news’ have been a topic for important media discussions. Before, fake news was used to make the news interesting so as to sell copies. But nowadays, fake news has turned into a significant internet phenomenon. Whether, defined as simple gossip, misrepresentations, alternative facts, post truths or just lies, these facts are published on internet sites and spread through social media to influence the opinion of the audience. Since the taking of office in January 2017, the administration of Donald Trump has called reports made by the American Broadcasting Company (ABC), the Colombia Broadcasting System (CBS), the National Broadcasting Company (NBC), the Cable News Network (CNN), BuzzFeed, the New York Times, and the Washington Post ‘fake news.’

In the last couple of months, politicians and some public figures have redefined the meaning of the concept fake news. They have used it to refer to the undesirable reports made by the traditional news media in reference to them (Klein & Wueller, 2017). It is important to give an example of fake news, as well as a brief explanation of how fake news publishers work, before a definition of fake news can be given. Before the 2016 US elections, a group of news publishers in Macedonia released a false story that the former first lady, secretary of State, and candidate for Presidency Hillary Clinton and other political figures from the Democratic Party were involved with child trafficking. This publication did not only go viral on Facebook, it was also directing readers to other web sites containing adverts so that the publisher could generate funds for advertisement (Klein & Wueller, 2017). This example illustrates one of the major components of fake news publications and it is falsity.

The facts contained in fake news articles are knowingly made up and false. Most of the fake news articles are either about public figures or about the debatable events that are happening in the moment. They are shared on social media with a goal of going viral. Another goal might be to generate revenue. Many fake news publishers gain money from web traffic. They connect the posts on social media with web pages containing adverts. A successful fake news post can receive up to a million shares and therefore produce a lot of money advertisement funds (Staffers & Hackett, 2017).

The concept of fake news is not new in news diffusion history. Research shows that political parties were using the earliest American newspapers to propagate lies about opposing parties. This trend was conducted until the 20th century, when the standard for professional news outlets became objectivity and accuracy (Stoffers, 2017). In the past few years, the standards for professional news outlets became inadequate due the growth and easy accessibility of the internet, but more importantly social media. Targeting viewers with news that are politically biased or designed to catch the public attention has become easy (McGrew et al. 2017b).

Though the concept of fake news has been around many years, the way it is being shared on social media, especially Facebook and Twitter, is making it an epidemic (Burkhardt, 2017). In addition to this, the fact that anonymity is provided by the internet gives everyone with access to a computerized device to come up with a site and give it a look and feel of sites that broadcast appropriate and accurate news. This includes a person with the intention of harming a candidate in a political context, or a blogger in a social context, or just with simple intentions of making money by posting paid adverts on their fake news site (Stoffers, 2017).

According to Allcott and Gentzkow (2017) fake news is defined as being news articles that are purposely false and are designed to deceive readers. Fake news was used, for a long time, by parties to turn the population against other opposing parties (Alvarez, 2016). For a long time, Russia has used hackers, media outlets, twitter bots and bloggers to diffuse false information in order to provide support for the country and destabilize the enemies outside of the country (Reston, 2017). But since the 2016 American elections, the amount of fake news disseminated by Russia has doubled and most of the stories are twisted from real stories and with the goal of favoring the Russians.

Nowadays the internet is playing an important part in the broadcast of news, and is a danger to individuals and societies due to the fact that it is a perfect platform for propagating false information. The fact that the internet can provide anonymity to its users along with the fact that people are always attracted to shocking headlines make it easier for anyone to make up a story and people will still believe it (Haire, 2017). As 2016 came to an end, the concept of fake news was already popular. It was widely reported and investigations were conducted to understand how false stories about political were being accepted by the readers. The false stories that were diffused in 2016 were well made up to the extent that they were hard to differentiate from facts (Haire, 2017).

However, a long time before President Trump came up with the name fake news, studies had already shown that people in America had lost trust in media. According to Gallup, Pew and other pollsters, 70 percent of Americans do not trust the traditional sources of news and are now using social media as their primary news source, but also other alternative sources of news on the internet (Jasper, 2017). Most of the adults in the United States of America use social media as their news source where most of the fake news stories are being shared. The disappointing fact is that most of the people reading fake news have claimed to have believed them (Allcott & Gentzkow, 2017).

However, Hamm (2017) states that social media should not be blamed for the increase in the production of fake news. Traditional media has become a marketing tool for international corporations, politicians and rich families. This is proved to be true by the fact that the fake news label is being put on online social media. In other words, traditional media's original duties were to diffuse news. However, nowadays traditional media has become a tool to market international corporations and to portray the lives of people who are living luxuriously. Thus, being one of the reasons why social media has turned into a trustworthy source of news for many people, making social media a suitable platform for fake news diffusion.

The epidemic of fake news is big and complex and fake news is hard to detect (Staffers & Hackett, 2017). Though social media platforms have many opportunities to expose their users to fake news, it is uncertain of how often an individual falls for the false information that they are reading on social media (Borel, 2018). Additionally, it is not known how students in South Africa perceive the concept of news diffusion on social media platforms. For this reason, it was important to conduct a study that aimed to find the students' level of trust about the news that they read on social media, and the security measures that are implemented on their social media applications. This study also aimed to find the perceptions that students have on the concepts of fake news diffusion on social media platform.

1.2 Statement of the Problem

After constant consumption of fake news, people gradually believe them. Once an individual becomes convinced with fake news, it becomes virtually impossible to reverse their perspective. Literature has revealed that people will still hold to their beliefs about fake news even when presented with strong facts that contradict the fake news (Parry,

2017). The presentation of contradictory facts can go to an extent that creates an effect called backfire effect. The backfire effect simply implies that people become even more convinced of their beliefs than they were before (Uscinski, 2017).

Literature has also depicted that even if a media channel has a reputation of reporting fake news, people will continue to acquire news from it and believe its claims due to the human spontaneous decision-making system. Humans make irrational decisions just because they do not take time to think properly. A lot of people are still struggling with logical reasoning. They trust everything they read just because it is in conformity with their prior beliefs or they just do not want to challenge themselves by taking time to think more about what they are reading (Kumbhar, 2017).

False information is broadcasted with the aim of creating a significant amount of confusing facts, which are always in line with the obvious ("Faked Out," 2017). Results from a study by the Stanford History Education Group have shown that students are developing an inability to differentiate between paid advertisements from real news reporting. They also have a tendency of overlooking clear evidence about the bias claims they acquire on social media (Banks, 2017). The accessibility to social media becoming cheaper, as well as the fact that most of young adults are now considering social media as their primary news source has increased the consumption of fake news (McGrew et al., 2017b).

Furthermore, a huge amount of diffused false information on social media get viral and become credible to the people that consume them due to the fact that they receive many likes, comments and shares. As a consequence, they are likely to appear on users' pages more than once (Olson, 2017). Nyangeni, du Rand, and van Rooyen (2015) stated that social media is growing fast and has been the main channel of communication in Nigeria, especially for students. Kumbhar (2017) further stated that the more people or sites a user follows, the more information they are exposed to and the more likely they are to interact with fake news.

However, it is uncertain as to what extent university students in Nigeria are conscious of the amount of fake news being diffused on social media platforms, as well as the dangers that it presents to them in terms of their education and the development of the country since they hold the future of the country in their hands. To address this uncertainty, the study will aim to find the perception of students in Nigeria on using social media as their news source, Facebook and Twitter in particular, bearing in mind that a huge amount of fake news

stories are being diffused on social media and that social media has become the primary source of news for the young adults today. This study also investigates the attitudes of students in Nigeria with respect to the news that they receive from social media.

1.3 Research objectives

The main objective of this study is to examine the perceptions of university students on the diffusion of fake news on social media: a case of the University of Ilorin.

The specific objectives are to:

1. understand the perception that students in University of Ilorin hold on the diffusion of news on social media;
2. discover the level to which they consider social media platforms as a reliable source for news acquisition;
3. discover the level of trust that students put in the news that they acquire from social media platforms;
4. uncover the behaviour that students in University of Ilorin present towards the news that they acquire from social media;

1.4 Research questions

This study will seek to answer the following questions:

1. What are the perceptions that students in University of Ilorin hold on the diffusion of news on social media?
2. What is the level to which students in University of Ilorin consider social media platforms as a reliable source for news acquisition?
3. What is the level of trust that students in University of Ilorin put in the news that they acquire from social media platforms?
4. What is the behaviour that students in University of Ilorin present towards the news that they acquire from social media?

1.5 Significance of the study

Conducting this study is very significant as the results drawn from this study will be of a great contribution to the body of knowledge. The study will give an insight on the how students in University of Ilorin perceive the acquisition of news from social media platforms, and the trust that they put on the news that they get from social media. In addition, the study will aim to find the attitude that students present after reading news from social media and gave a perspective on the importance that students put on the security of their social media applications. This knowledge could be useful in advising students and therefore make them aware of their exposure to fake news by considering getting news from social media.

1.6 Scope of the Study

This study focuses on perceptions of university students on the diffusion of fake news on social media: a case of the University of Ilorin. Its population is students of University of Ilorin.

1.7 Operational Definition of Terms

Perceptions: this is the ability to see or the way diffusion of fake news on social media is understood or interpreted among students of University of Ilorin

University students: these are individuals who are enrolled in University of Ilorin where perceptions of fake news on social media will be examined.

Diffusion of fake news: these are false stories, misleading content and malicious news on social media which perception of university students is expected to be examined in University of Ilorin.

Social media: these are social networking sites, websites, platforms and applications which students are expected to engage in fake news in University of Ilorin.

University of Ilorin: this is a degree-awarding institution of teaching and learning in Ilorin, Kwara State, Nigeria where the students perception are expected to impact the diffusion of fake news on social media.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Fake news propagation is an ethical issue and it has been one of the challenges of the media for the past decade. It violates the privacy, trust, fundamental human rights, safety and security of the victims. It also creates an opportunity to manipulate, discriminate, to create inequality, racism, violence, and a lot more (Burkhardt, 2017). Luciano Floridi, who is a professor of Philosophy and ethics of Information at the University of Oxford, according to McGrew et al. (2017b), stated that the world is now going through what he calls a 'post-truth crisis'. Post-truth crisis, as he explains, is the hunger for stories that sounds like the truth even though they are not true as long as they are pleasing to the consumers. The problem then resides in the fact that this crisis is fed with the internet, particularly social media.

The review of the literature on the evolution of fake news is presented in this chapter. The chapter also presents the review on fake news prior to internet, fake news during the internet era and in the current era of social media. The chapter also presents the challenges that people face in identifying fake news, but also various ways that can help people to uncover fake news. The different measures that social media companies are taking against the spread of fake news are also presented in this chapter.

2.2 History of Fake News

False information has been used by governments as a tool to promote the propaganda that was used to manipulate the general public's opinion (Reid & Gibson, 2014). In fact, hundreds of years ago, in the US, a number of the very first newspaper publishers created controversial stories so that more copies could be sold, but also to create controversy between different political groups (Howard, Kollanyi, Bradshaw, & Neudert, 2018). It was only in the 20th century that the accuracy of stories became the main focus of the news diffusion industry. However, instead of using more reliable news outlets, people have turned to their social media platforms to get information. Unfortunately, the news found on social media platforms is not always reliable due to the fact that these news are either from biased sources that fabricate stories or are recklessly published unchecked news (Banks, 2017).

Fake news is the new term that is being used to designate a certain kind of false information. It has been defined by Reid and Gibson (2014) and Allcott and Gentzkow (2017) as being a statement or declaration that is knowingly false or made with reckless disregard for its truth or falsity. However not all false information can be called fake news. According to Allcott and Gentzkow (2017), fake news has got cousins. In other words, other types of false information that is not fake news but very close to fake news. They are the following: 1) Reporting mistakes that are unintentional. 2) Gossips whose origins cannot be found. 3) Theories of conspiracy. Their veracity is hard to verify, but they come from people who believe that they are true. 4) Mockery that is not likely to be misunderstood as truthful. 5) Made up statement by politicians. 6) Misleading reports that not false but do not expose the whole truth.

2.3 Internet and Fake News

The fact that the internet provides anonymity has given anyone owning a laptop the ability to launch a site and make it look authentic. This includes anyone with the intent to cause harm to a political party, a candidate, or a blogger. It can also be someone trying to generate income from paid adverts that appear on their fake news sites (Staffers & Hackett, 2017). According to Himma- Kadakas (2017), fake news is created either by people or generated by algorithms. However, whether it is created by a person or an algorithm, fake news aims to generate financial interest, and that is the reason why it spreads successfully on social media.

In the era of printed media, readers were told that just because something is written in the newspaper, it does not make it accurate. And nowadays, readers should be warned about what they read on the internet. These days, fake news is created for the same reasons that it was created in the past. The economic incentives of the twenty-first century have motivated people to increase even more the production of fake news. Governments no longer fund the internet, it is now funded by advertisers (Klein & Wueller, 2017). Advertisers are in business to reach as many people as possible so that their products can be known. They pay websites owners to allow the appearance of their advertising material on their pages. With the aid of computing power, it is possible to count the number of visits a website receives. The more visits a website has the more attracted are advertisers to it.

The higher the number of people exposed to the product advertisers wants to sell, the higher the possibility to make more sales (Staffers & Hackett, 2017). The fees that owners of websites receive from adverts published on their pages motivate them to fabricate more content to attract

more people to visit their sites, hence an increase in the creation of alarming claims. Research shows that there is a higher chance for people to be interested in reading and later remember negative headlines even after it has been flagged as suspect by a fact checker. For this reason, a good number of websites have been created over the past several years (Burkhardt, 2017). Advertisers only have interest in the number of times people visit these sites and not in the accuracy of the news they publish. Unfortunately, these types of sites are very popular. Some advertisers will take initiative of paying the writers of these websites without much care for the accuracy of the content that they produce. This is how funds are generated from fake news on the internet (Schäfer, Evert, & Heinrich, 2017).

The technological advancement has played a significant role in the increase of the diffusion of information and its consumption. This has a benefit because news can be accessed instantly. The dissemination of news allows ideas to be shared and the inaccessible regions to be reached. However, the internet is an unregulated place governed by adverts (Burkhardt, 2017). The focus is more on generating funds than in producing accurate stories. This then leading to the increase in the production of untrue information. Even though fake news is not a new concept, it has been enhanced by technology and its spread has increased like never before. Fake news as well as real news exist on the internet, but the challenge resides in the fact that they are hard to differentiate (Nigam, Dambanemuya, Joshi, & Chawla, 2017).

2.4 Social Media and Fake News

Social media, particularly Facebook and Twitter, has contributed majorly in the circulation of online news and acquisition. Social media simplifies and facilitates the sharing of news; considering its convenience and tools that are easy to use when posting content for individuals or even for media organizations. One example of how this is achieved is by the use of buttons whose functions are to share news that is on a news site, or by reposting the links that direct to the news that is on a fan page on Facebook or a twitter feed of a friend. These referrals are important to online news sites. They increase their web traffic as well as their article views but most importantly their economic success. In the US all newspapers that have an average circulation of 100,000 copies in a day, use social media to add the distribution of their online content (Kümpel, Karnowski, & Keyling, 2015).

Social media has grown rapidly in recent years and is now becoming the main channel of communication, especially for young adults. This is due to its convenience and cost

effectiveness. Social media is convenient because users can communicate with others with no limitation (Nyangeni et al., 2015). However, social media is no longer being used just for communication or sharing pictures and updates of status, it is now considered as a form of a news source. Nowadays social media is more favored as news source as opposed to reading newspapers or watching the news channels (Alvarez, 2016).

However, research shows that social media plays an important role in the flow of ideas about political events (Woolley & Howard, 2017). Reports from a study by the Pew Research Center indicated that 62 percent of adults are getting news from social media (Banks, 2017), which is an increase from the 49 percent reported in 2012. Furthermore, in 2016, it was reported that 40 percent of young adults in the USA were getting news from social media, mostly Facebook (Burkhardt, 2017). The above mentioned shows how consumption of news has changed in just a few years (Alvarez, 2016).

According to Chen (2017), an individual subscribed to a social media platform is likely to have witnessed fake news headlines. Social media, in particular Facebook and Twitter, exposes some people to news that they could not have seen otherwise (Kümpel et al., 2015). Social media platforms are groups of applications that are internet based and developed from the technological and ideological foundations of Web 2.0. They allow users to create, generate and exchange content. They play a huge role in the manipulation of populations using fake news (Woolley & Howard, 2017).

At the Oxford Internet Institute (OII), a research was done for three months about social media activities in the United States. This was right before Donald Trump's January 2018 State of Union Address. The result showed that on Twitter, there is a network of people, supporting president Trump, who have been circulating junk news, and the junk news that they circulate is larger than that of all other political groups combined (Neudert, 2018). In this case, junk news is defined as incorrect information about politics, economics or culture. It gives the impression to be true and its purpose is to cloud the judgment of its readers. It includes conspiratorial materials, extremists' and sensationalists' contents, and fake news.

Social media platforms, Facebook for example, are structured differently from traditional media technologies. News can be shared among readers without any third party editorial judgement or fact checking. A person with no reputation has the ability to compete in terms of the number of readers against CNN, New York Times and Fox News (Allcott & Gentzkow,

2017). A huge amount of fake news and other forms of false information have been distributed on social media platforms during sensitive periods of public life. However, most social media platforms hide the actual amount of fake news that has been shared and the impact that it has on the readers. It was found by previous research that social media users favor shocking information regardless of its credibility or its source (Howard, Bradshaw, Kollanyi, & Bolsolver, 2017; Howard et al., 2018).

Fake news sites diffuse news that are misleading, untrue, and with the purpose to act as real news. This is done so that there can be economic, political or cultural gain generated. The role of social media in the circulation of the information about politics is major (Howard et al., 2018). Most of the times, fake news sites rely on social media to attract users who will engage with them. Nowadays, the concern is not only the media outlets that are propagating fake news but also the automated algorithms called bots. They help fake news to go viral on social media before fact checkers can uncover them (Shuster & McDonald-gibson, 2017). Governments and political personalities all over the world, use people and social media bots to shape the public life. Fake news and social media bots have a goal to influence the conversations happening in public life, to demobilize opposition but also generate false support (Howard et al., 2018).

2.4.1 Social media security

2.4.1.1 Social Bots

Social bots are automated scripts that generate information using social media platforms and then create a communication with users (Forelle, Howard, Monroy-Hernández, & Savage, 2015). They are pieces of software with the intention to perform repeatedly robotic tasks (Howard et al., 2018). According to Woolley and Howard (2017), they are used to improve virtually the capacity of humans to get more work done online. Woolley and Howard (2017) proceed in defining social bots and say that they are accounts with automated identities. They have the capability to perform mundane tasks such as collecting information and communicating with people as well as systems, all while acting like real people.

According to Burkhardt (2017), Grimme et al. (2017), Stukal et al. (2017), and Woolley and Howard (2017) there are various types of social bots:

Chat bots: they are the most popular type of social bots. They are software systems that can

have conversations with human users in a natural language, like for instance English. They find their origin in the Loebner Prize Competition, where the challenge was to find the program that act most like humans. However, these software systems' intelligence is limited to their scripts. They are developed to act in specific topics.

Spam bots: while chat bots focus on one to one communications, spam bots focus on one to many communications. Spam bots are created to reach many people at once. Their goal is to diffuse information, adverts, fishing links, or spam malware. They are used by companies, groups of people or individuals.

Political bots: these are basically social bots that are used by political groups to manipulate people. They can, in addition, possess characteristics of chats and spam bots. The human like political bots that act on Twitter and Facebook have the potential to influence other users. Especially if they are working in a network with other bots. It was found that during the 2016 US elections, 19% of the posts related to the elections on Twitter were sent by social bots.

Mobile phone assistants: for example, Siri from Apple phones. They were developed to manage human to machine conversations using natural languages as input and output. They make it possible for almost any functionality of the mobile to be used with just voice commands. They translate human languages to the mobile phone with the support of keywords identifications, voice recognition, and voice synthesis.

According to Grimme et al. (2017) there exist other bots that are not considered to be social bots Content management bots, otherwise known as curator bots.

Content management bots collect information and present it to humans in an easy to digest manner. They are different from social bots in a way that they do not communicate with humans. An example of this type of bots is Wikipedia bots. They help users with the presentation of articles. They delete unnecessary whitespaces, generate links related to the articles and correct typos.

Games bots: they assist their users in being successful in computer games. Their tasks vary according to the game they are being used in. Game bots can be used as opponents to help navigate the game as well as to train their users. Contrary to social bots, game bots do not focus on interacting with humans but on exclusively substituting users by imitation.

Service Level Agreement (SLA) negotiators: these bots focus on the communication between machines. They are developed to handle service level agreements autonomously. There is no human communication involved with this type of bots, which makes them different from social bots.

An individual or a small number of people can deploy an army of bots on twitter to create an impression of a huge scale consensus. On social media, bots are used to deliver news, real news but also fake news. They perform activities like hate speech, spamming and harassment, which are malicious activities. They can also duplicate themselves, send messages and act like real people. Bots are simply a malign way of distributing fake news over the social media pages of users' followers (Howard et al., 2018).

According to Burkhardt (2017), bots are programmed algorithms used to search for information on the internet that is similar to what a social media user has already interacted with, in other words information that the user has clicked on, liked or shared. Bots will then inject the information found into what appears on the user's home page. So, instead of seeing a variety of news headlines, the bots will find headlines similar to what a user has already interacted with (Burkhardt, 2017). Using the following links between accounts, bots can also send the information to the friends of a user, but only chose to send the headlines that are related to what the friends have interacted with. There are two types of bots: legitimate and malicious bots. Legitimate bots generate a large number of tweets that deliver news and update feeds. Malicious bots deliver appealing information containing links directing to malicious content (Forelle et al., 2015).

Bots are also called botnets, which derives from the words robot and network. They describe a set of programs, which are in communication through several devices and their purpose is to perform a given task (Burkhardt, 2017). The task performed by bots can be simple, for example the generation of spam, or it can be aggressive and malicious, for example launching denial of service attacks. Bots are not developed to perform only political tasks. Some of them are developed just for fun or for support to criminal enterprises, but all bots have the following properties as a common trend, the abilities to deploy messages and to replicate themselves.

Some of the other reasons behind the creation of botnets are the following: DDoS attacks (Distributed Denial Of Service attacks), theft of confidential information, cyber sabotage, cyber warfare and click fraud (Stukal et al., 2017). Governments around the world have been

emphasizing on increasing the strength of their cyberwarfare capabilities to defend themselves but also for offence when needed. In addition, political actors and governments all over the world have been using bots to manipulate the opinion of the public (Howard, Bolsover, Kollanyi, Bradshaw, & Neudert, 2017).

Social bots are dominant particularly on twitter. They generate tweet information of their own accord. Most of the times, they have profiles lacking in basic account information, for example name or a display picture. Those accounts are called ‘twitter eggs’ since the default display picture on twitter is an egg (Burkhardt, 2017). Bots are of a versatile nature; their production is cheap, and they are forever evolving. They are located on cloud servers that are never switched off; they grow fast by the day. They have become the primary applications used to perform denial of service and virus attacks, and to collect emails and steal information (Forelle et al., 2015).

2.4.1.1 Bots and botnets detection

Bots and botnets are implanted to perform specific tasks, and after the completion of that task, their accounts are destroyed. Detecting them before they can finish their task is important so that they can be shut down. Unfortunately, the means for bots’ detection and shut down are still in their primary stage of development. There is a multitude of accounts driven by bots but not enough means to eliminate them (Burkhardt, 2017).

According to Burkhardt (2017) and Stukal et al. (2017) the following elements are the areas where bots infiltrate social media:

- Social media users create profiles that serve as their identity on social media. Programming bots that can act as ghost profiles and whose purpose is to provide false information is easy. Adding to this is the fact that other social media users’ profiles can be accessed, makes it easier to target a specific set of people.
- Most of the time, people tend to trust information that have been repeated by multiple sources. Social media users do not have much options, and that makes it easier for bots to pass for real people. On Twitter, it is not hard to imitate a human; the texts are not long, and grammar is not taken seriously. The concept of ‘popularity scores’ is a problem (popularity scores are basically measures of how popular people are on Twitter). Making them private, optional or even absent can increase the resistance of

users to bots' attacks.

- Popularity is important on social media and it is achieved by having many followers. This can lead to users accepting requests of friendship to unknown individuals. Social bots send requests to many users, accumulate a huge following and then become significant in their friend groups.
- The influence of a topic on social media is boosted by the number of emoticons and likes that it receives. The collection of emoticons and likes is used by bots to spread stories to other sets of users. This has an influence on the topics that trend on twitter, and it creates an impression that people are interested in certain topics, moving the attention away from other topics.

2.5 Students and Fake News

Young people's lives are dominated by the internet. According to S. McGrew, T. Ortega, J. Breakstone, and S. Wineburg (2017a), young adults spend an average of 9 hours online and students have a high chance of learning about the world through their social media platforms than through traditional media sources. It is important that students know how to make a difference between false and true information from the flashy contents that appear on their screens. From a study conducted at the Stanford History Education Group, it was demonstrated that students have a hard time making a difference between real news and fabricated news (Staffers & Hackett, 2017). The study included students from middle school, high school and college students from 12 states of the United States of America. These students were presented information from articles, tweets and comments. A total of 7804 responses was collected (McGrew et al., 2017a). Domonoske (2016) stated that a shocking observation was made by the researchers, of the failure that students presented to distinguish real news from false news and how consistent the responses were.

The majority of middle school students (80%) believed that sponsored contents were real news. The researchers said that many people assume that because young people spend a large amount of their time on social media, they might have more knowledge on what they find there, but this was contradicted by the results they got from their study. Another observation made by the researchers was that an "about" section of a web page, if well-presented and polished, was able to persuade the students that the site was legitimate and they would tend to naïvely believe the content without any supporting evidence (Domonoske, 2016).

Many of the high school students were unable to differentiate real from fake news on Facebook. Two posts about the announcement of Donald Trump candidacy for president were presented to the students. One post was from the Fox News account and it had a blue checkmark to indicate that it was verified. The other post was from an account that looked similar to Fox News, but was a fake account. Only 25% of the students recognized and explained the meaning of the blue checkmark. More than 30% of the students claimed that the fake account was more truthful (Wineburg & McGrew, 2016).

A link to a tweet from a source called MoveOn about gun owners' feelings on background checks was sent to undergraduate students. They were asked to evaluate the tweet and state the reason why it might or might not be a decent data source. Few students noticed that it was based on a poll done by a professional polling firm, therefore increasing its chance of being a decent source. Less than a third of the students mentioned that the source had political agenda behind the tweet, and that is reason enough to consider the source as unreliable. More than half of the students did not consider checking the links contained in the tweet before they could evaluate the worth of the data (McGrew et al., 2017a).

At Stanford, undergraduate students were asked to evaluate articles from two organizations' sites. One organization is the American Academy of Pediatrics (AAP), which publishes the journal *Pediatrics*, has a following of 65,000 members and started in 1930. The other organization is the American College of Pediatricians (ACPed). It separated from AAP in 2002, is against the parenting of same-sex couples and claims that homosexuality has a link with pedophilia. The Southern Poverty Law Center has classified it as a hate group and its following include 200 members. The students spent up to 10 minutes to evaluate the articles from the two organizations and were not restricted to access anything they wished online. The results from this exercise showed that more than half of the students came to a conclusion that the article from ACPeds was more trustworthy. And the students who preferred the article from AAP, were unable to find the difference between the two organizations (McGrew et al., 2017b).

2.5.1 Strategies to News Consumption

According to McGrew et al. (2017a), schools have not yet understood the way information is influencing students on a daily basis. Some schools have got filters that direct students to valid sources. Unfortunately, this does not help students to learn how to evaluate news sources for

themselves. Students should be taught how to read news online like facts checkers.

The following are according to McGrew et al. (2017a), Wineburg and McGrew (2016) and Domonoske (2016) some of the powerful strategies employed by facts checkers that educators can adapt to help students become knowledgeable web users.

Reading laterally

Students approach web pages with a checklist-like behavior. In other words, when reading news, students scan web pages from top to bottom, commenting on the page's design and logos, and examining the references at the bottom of a web article. They spend time reading the article, evaluating the logic of its content and how it fits with what they already know. Unfortunately, since all of this is done without knowing how reliable the source is, all the efforts made result in a complete waste of time. Unfamiliar content are approached by facts checkers differently. Facts checkers read laterally. They jump from unfamiliar sites almost instantly, to investigate outside of the site and learn more about the site. They establish the reliability of the site before they can consider getting news from it.

Making smart selections from search results

In an open search, the first site clicked matters. The first choice clicked can direct to other links, which might be the only source consulted if in a hurry. Fact checkers also rely on google. But contrarily to the belief that the more reliable results are ranked higher, they understood that results from google can be gamed. They take time to scrutinize the search results' URL and snippets (the brief message that accompanies each result). They scroll down to the bottom of the results page and can even go to the second and third pages before they can click on any result.

Using Wikipedia wisely

Students have been told by educators to avoid using Wikipedia. Wikipedia was the fact checkers' first stop. Instead of telling students what fact checkers found about Wikipedia, it is more suitable for them to learn on their own about Wikipedia's standard of verifiability and learn how to gather entries for links to reliable sources. They should investigate the 'Talk' (the hiding tab next to the 'Article' tab on Wikipedia) pages of sensitive issues, and learn to make Wikipedia a resource for lateral reading. Sometimes fact checkers skip the main article and go

straight to the references, which might be more established and reliable.

One popular approach that is used to teach students the evaluation of online information is to expose them to hoax websites (websites that contain deceiving news). This is done to show students that they can be tricked easily and from that learn to be more knowledgeable news consumers. However, hoaxes are just a small part of what exist on the internet and the digital literacy cannot only be limited to hoaxes because credibility is not established by an either-or decision.

2.6 Detection of fake news

The combination of today's online journalism with the decrease in the readers' skepticism has allowed the uncontrollable spread of fake news (Himma-Kadakas, 2017). It is unsure of how often an individual falls for fake news but there are just many occasions of exposure (Borel, 2018). According to Silverman and Singer-Vine (2016), in America, adults are convinced by fake news headlines 75 percent of the time. In 2016, the Pew Research Center stated that more than two-thirds of adults in America used social media, where there is abundance of fake news, to get their news. In December 2016, a research from Dartmouth College, Princeton University and the University of Exeter stated that one in four people in America accessed a fake news site, and the majority of times through Facebook (Borel, 2018). A study found that, in Germany, 59% of the people stated that they have seen fake news online (Shuster & McDonald-gibson, 2017).

According to Silverman and Singer-Vine (2016) people who consider Facebook as their major source of news have more chances of viewing fake news headlines as being accurate contrarily to those who do not rely much on the platform for news. Knowing the reason why people fall for fake news can help avoid it. A part of the problem resides in the fact that fake news is hard to spot (Staffers & Hackett, 2017). The very first fake news that was published on social media was not hard to spot and it was done as a way of entertaining the public. The key indicators were the language used in the articles, along with the font and the links (Crate, 2017). The results obtained by BBC from social media users in Kenya and Nigeria show that people are fooled with fake news because they overestimate their ability to spot it. Researchers also found that many people understand the consequences of sharing fake news, but their understanding is only abstract. An interviewee, in Nigeria, mentioned that after being touched by the interesting news they read, they feel obligated to share it so that their friends can also

read it. The researchers discovered that Kenya and Nigeria have a lower level of media literacy, particularly in rural areas where Facebook is regarded as the synonym of the internet and everything on it being trustworthy (Overs, 2018).

The fact that news can spread virally on different channels on the internet undermines the process that used to take place by professional journalists to verify the credibility and source of information before public dissemination (Schiefer, 2017). Most of the news on fake news sites are not real, but some of them contain partial truths which makes falsehoods harder to identify (Stoffers, 2017). Fake news sites have names and designs that look professional and they are increasing day by day. Those sites have already started to play a significant role in the big events that are happening in the world (Stoffers, 2017). President Obama, according to Burkhardt (2017), gave his take on the issue of fake news. He goes on to saying that if facts are not taken seriously and if serious arguments cannot be differentiated from propaganda, then that is a serious problem not to be taken lightly. If everything seems to be similar and people cannot make a difference, there is no clue on what to protect or to fight for and a lot can be lost of what has taken years of hard work to build.

Fake news sites are weakening readers' ability to distinguish between fact and fiction. In the meantime, companies like Facebook, Google and other social media companies are having a hard time on how to come up with a solution for fake news. Some people expects social media companies to suddenly return the authority of news diffusion to the traditional media. The CEO of Facebook, Mark Zuckerberg, made an announcement stating that their company is in the search for ways that can allow readers to detect and report fake news. He also said that Facebook is still a platform that allows people to share what they want and whenever they want (Stoffers, 2017). According to Bowman (2017) these elections showed one thing for sure, the traditional media can no longer make declarations about the credibility of things and Facebook, he says, has created a platform for fake news.

However, Bowman (2017) proceeds by saying that even if social media companies, like Facebook, wanted to return authority to the traditional media, they cannot because the authority was lost long ago due to the media's partisanship over the years and also due to the unreliable media that existed before. According to Burkhardt (2017), publishers should take note that the public want accurate and truthful news. Newspapers will always remain the important and most powerful news source and they are the solution to the problem called fake news. There exists a concept called "confirmation bias". It is explained as being the inability to be opened to evidence

that goes against something that is already known to be true.

More so, when people realize that the information they possess is valid, it becomes possible for them to ignore inconsistent information to avoid the stress of having inconsistent thoughts while the information that they hold fits well in the world view (Reid & Gibson, 2014). It has been found that people spend most of their time online in what is called “echo chambers”. Echo chambers are basically environments where everyone shares the same beliefs. They shield people from contracting ideas that go against their beliefs, making it easier for fake news creators to target them if their belief aligns with the fake news they have created. According to Crate (2017), the targets of fake news creators are groups of people whose beliefs are aligned with their news. The simplest reason why people fall for fake news according to Reid and Gibson (2014), is that they are more interesting than real news. In addition, the way social media feeds change constantly makes it even harder for the truth to stand out.

2.6.1 Ways to Detect Fake New

Research has been done on how well people can identify lies and it has been discovered that people can identify lies in writing just a little bit better than they can identify it randomly. In other words, if a social media user gets delivered fake news by bots, that user has slightly better than fifty percent chance of detecting that the news is not true. To increase the probability of detecting fake news, computer experts have been trying to come up with a set of methods that will improve the automatic computerized recognition of fake news (Burkhardt, 2017). Eva and Shea (2018) and Crate (2017) give a few suggestions on how to spot fake news and fake news sites:

1. Check the source: domain names that look strange or web pages that end with the strange syllables, for example Newslo, are signs that can help the readers to be cautious about the news they are reading. Most of the time news sites have supporting sources. Readers should click on the supporting sources provided to see if they are talking about the same thing. If not, then the page might contain fake news.
2. When reading online news: It is necessary to learn more about who the author of the news is and who the sponsors might be. Sponsors have an influence on the news that is being presented.
3. Fake news pages usually use web addresses that make them look like real sites, but they

sometimes end in strange manners like for example ‘.com. co’. It is very important to check the URL.

4. There are visual clues that can help to spot fake news. A sloppy design might be used for fake news sites or even an overuse of all caps.
5. If a story seems to be too alarming that it makes the readers angry, there is need to consult other news pages or simply to perform fact check using various fact checking pages available on the internet.
6. People need to read beyond headlines before they can think of sharing stories. Headlines can be outrageous in the quest for clicks. Readers need to get the whole story. According to Burkhardt (2017), one of the reasons why fake news goes viral is because people share news without reading beyond the headlines, without thinking about the content of the message. Headlines are designed to capture the attention of the readers and they are usually written to incite strong reactions.
7. People also need to make use of their browsers. An installation of a browser plugin to help flag fake news might be of great help in the task of spotting fake news.
8. Another tip is to consider the time and place where the news was published. There is a unique set of problems that come along with detecting lies from written text. On one hand, structured text, with an example of insurance claim forms, use known and limited language. On the other hand, unstructured text, like text found on websites, use unlimited language, which can be used in many contexts. This presents a problem when searching for methods to automate the detection of fake news (Burkhardt, 2017).

2.6.2 Network Approach

Words or phrases indicating deception are identified by human classifiers, then compiled in a database. A database of known facts from reliable sources is also created. Linking these two databases, new information can then be compared to the already classified knowledge to establish the level of disagreement between facts. Using multiple reference points, the behavior of social network can help the owners of social media platforms to identify fake news. The location coordination of messages can indicate the personal understanding of a given event. The verification of who the author is can be done using the internet metadata. The exclusion or

inclusion of hyperlinks can demonstrate the trustworthiness of news sources such as TweetCred (Burkhardt, 2017).

According to Meier (2015) TweetCred is a software and browser plugin. It assigns a credibility score to tweets in real time, taking in consideration the content of the tweet, the characteristics of the author and the external URLs. The appearance of images, their number, and their relationships and importance to the content of the tweet can also be compared with known standards to indicate the veracity of the message. It is ironic that this can be achieved using bots.

2.7 Ways to Stop the Spread of Fake News

2.7.1 Fact check

There are several sites whose duty is to fact check. These sites make it their priority to find the truthiness of stories, captions or headlines. People should adopt a habit of consulting fact checking sites and see what they say about a story before they can share it. Here is a list of some fact checking sites: Snopes, PolitiFact, Hoax-Slayer, StopFake, FactCheck, Factmata, LazyTruth, and SciCheck (Burkhardt, 2017). Facebook and Twitter are making attempts to use fact checking organizations so that they can help them to detect fake news and, maybe, identify bots that are actively spreading fake news on their platforms. If people make it a habit to consult fact checking sites before they can share news between themselves on social media, the spread of fake news can decrease significantly (Batchelor, 2018).

2.7.2 Others measures against Fake News

In November 2018, BBC launched a project, named Beyond Fake News, which is an international initiative to investigate how and why fake news are created and shared. The initiative has been launched in Kenya, Nigeria and India. The project aims to fight back against the fake news that is causing social and political damage around the world. It is mainly focused on the global media literacy, panel debates in Kenya and India, and a number of hackathon events in which various solutions to the issue of fake news can be explored. A number of documentaries and special reports are to be featured on the BBC's international television, radio and online channels. Workshops on media literacy are already being hosted in Kenya and India. Similar workshops are being hosted in some of the schools in the United Kingdoms (Tobitt, 2018).

As part of the project, a website named CrossCheck Nigeria has already been launched to fight fake news before the Nigerian elections of February 2019 can take place. This will allow journalists around the country to work together in investigating and debunking rumors, especially the ones circulating on social media. The site will feature completed investigations' reports (Ekpu, 2018). Facts checkers and some journalists have tried to show facts but have been defeated by the increasingly huge amount of fake news that is out there (Borel, 2018). One simple way to put an end to the spread of fake news is to stop sharing them. The number of times a story get likes, shares and comments influences its positions on the rankings of search engines. And the higher a story is on the search engines' rankings, the more visible it is and the more credible it looks (Banks, 2017).

In Germany, there has been a law that imposes Facebook and other social media to pay a fine of 59 million dollars if there is appearance of fake news or any other form of misinformation on their platforms. The European Union opened an office whose responsibility is to expose fake news as well as Russian propaganda. In the Czech Republic, the police have a responsibility to scan social media platforms for fake news and other types of false information (Shuster & McDonald-gibson, 2017). After the American presidential election in 2016, many readers went after social media companies for them to stop fake news sites from publishing news on their platforms. Some companies, including Facebook and Google, promised to stop them, and they have started to make efforts to remediate the situation (Stoffers, 2017).

The social media platforms and search engines have made efforts to help spot and flag fake news. An immune system has been created by Facebook to prevent bots from infecting it. Google announced that it would increase its regulations of adverts as well as the websites linked to it. Facebook implemented a feature in some parts of Europe called 'Related Articles'. This feature gives readers access to see fact checking results of the original stories. Google Digital News Initiative created programs that would help users to verify news on their own with Factmata. Factmata is a webpage for fact checking that is leveraged by artificial intelligence (Burkhardt, 2017).

One of the first approaches that Facebook took against fake news was to go into the news feed of the users and place warning labels next to the alarming content. The idea being not to delete the content but to make users think more about the news they are reading and sharing, and its source. The next step was to outsource fact checking services from people who can scrutinize through a huge number of articles, rumors and various conspiracy theories to expose the truth

(Shuster & McDonald-gibson, 2017). Google appointed 10,000 people to search and point suspicious articles; and to tweak their search algorithm, which is a set of rules that computer programs follow to function. Facebook, then, implemented a tool for fact check but also started to delete accounts that spread fake news (Banks, 2017). There has been a project whose aim is to develop virtual fact checking tools. The budget of the project was of 1.2 million of dollars, of which 200,000 dollars were donated by Facebook. Until now, the tools developed include ClaimBuster; whose purpose is to scan digital news and compare them to known facts stored in a Database (Borel, 2018).

The fight between computer programmers might go on for an indefinite amount of time. On one side, some programmers are developing new ways to manipulate information to mislead and influence people. On the other side, other programmers are looking for ways to counter or at least slow the functioning of the new technologies. And the cycle seems to continue in an endless loop. The use of technology to detect and end the propagation of fake news is a defensive game. There has not been a practical way of eliminating fake news yet. The influence of politics, power and money gives a motivation to various groups of people to create computer driven means to control the human race (Burkhardt, 2017).

Some people have mentioned how artificial intelligence might be the solution to fake news. It is possible to get the best performance out of artificial intelligence if strict rules are defined. Computers can be taught to play chess, but facts are slippery. The concept of fact check can at least work because news is compared to what is already established to be true, but since there is no artificial algorithmic model for truth, artificial intelligent is not the solution for fake news (Borel, 2018).

It will take efforts from both the public and the media to put an end to this issue of misinformation and to reduce the amount of fake news being shared (Staffers & Hackett, 2017). According to Anthony Adornato, a media professor at Ithaca College in New York, the battle against fake news should be a team work. It should not be the task of social media companies to control what their multiple subscribers are reading and sharing. It should be the responsibility of the public along with the media to come up with a solution for fake news. Social media's users need to denounce people who share fake news and journalists should carry on following the professional standards which are objectivity and accuracy (Stoffers, 2017).

However, at the end of the day, the decision to believe online stories must come from the readers. If news readers could develop critical thinking, ask questions about the news they read, and stay open to new information, even if it might be in contradiction to what they already know, they would not only be able to avoid fake news but also become better news consumers (Banks, 2017).

2.7.3 Recommendations to students about news from social media

Students, in today's world, have never been without their devices, cell phones and computers. They have always been surrounded by technology and are always exposed to information. They adapt to technology easily and are always ready to engage with new gadgets (Domonoske, 2016). They are eager to experiment and easily discard anything that is not entertaining or takes long to complete or not in line with their beliefs. They read news on the surface instead of doing a thorough research on the topic. Research has shown that students tend to rely on their social media friends for information, making them vulnerable to manipulations since bots might be part of their social media following (McGrew et al., 2017a).

Students are exposed to information even when not seeking for it. According to Turcotte et al. (2015), a Pew research study conducted in 2014 showed that almost half of the Facebook users (47%) were consuming news from Facebook, but 78% of them reported that they are exposed to the news while doing other things. This shows that sometimes people are exposed to news on social media involuntarily, even the people who would not consider social media as a news source. They are also exposed to the news by simply using their social media applications. Psychology has proven that people tend to believe the first version of information that they hear or read, and the number of times an individual hears something influences their likelihood to remember it even if it is not true (Burkhardt, 2017). Students should be taught skills that will help them navigate the world of information, as well find the answers to their questions (Burkhardt, 2017).

Teaching students to try to find information about certain subjects from experts in those subjects can help them to avoid fake news. The easy access to information on the internet exposes students to information but does not teach them to evaluate the trustworthiness of the source. Students need to understand that information from an expert source is more reliable than the information coming from an unknown source. They need to be provided with guidelines that they can use to identify and select information produced by experts:

- **Awareness about the psychological process of news**

As the old saying goes that ‘knowledge is power.’ If students are aware that they are psychologically programmed to believe the first version of information that they hear, they can learn to insert skepticism into their way of analyzing news. This makes it harder to believe fake news since there will already be an assumption that the news might be fake. It becomes easier to reject the first information knowing that the brain tends to hold to it (Burkhardt, 2017). Explaining to the students the psychological tendencies that can push them to believe fake news and reminding them of those tendencies regularly, can push them to become more cautious of the news they read. Making them aware of the functioning of their brains can improve their performance in the acquisition of news (Banks, 2017).

In higher institutions, students are usually psychologically open to new ideas. This is a critical stage for their learning and it is important to offer them the instruction and reasoning that will allow them to use their critical thinking skills in their learning environment. Skills that concern fake news can be taught at any time because fake news is a big topic even in the non-academic world, and students can apply what they have learned in their personal lives. Tutorials, workshops, YouTube videos and games can be created to teach students skills that will help them to identify fake news, and those skills learned can also be applied in academic issues when necessary (Burkhardt, 2017).

Teaching students the skills to apply in the acquisition of news is very important because those are of great help to them during their academic life but also in the working world. Students need to be informed of the importance that the knowledge they acquire in college about information literacy will hold in their future success in the working world. Students also need to understand that they will not always have access to the information that is available to them at university. Once they are in the working world they will only rely on what they have learned (Himma-Kadakas, 2017).

- **Evaluation of information**

Students need to be taught about the credentials of the author of the news their reading and how they can be evaluated. The author’s credentials simply are the information that informs the reader of the author’s expertise or past work. Academic researchers often use sources that review the authors credentials for them, but those academic sources do not always serve in daily life (Burkhardt, 2017). Most people get their news from social media and the likelihood

of them checking that news against academic databases or any other reliable source is low because it can be time consuming. But the instructions on what constitute an author's credentials, where the evidence of credentials can be found and why it worth the time taken to discover them can be beneficial to students (Allcott & Gentzkow, 2017).

Students should be, in the same way, encouraged to think about favoritism. Everyone has a perspective in which they see the world, and this influences one's interpretation of events. Journalists should aim for objectivity while reporting an event that is controversial, but bias can play a role in reporting the event. Being aware of the point of view of the author can help students to identify biases if present. Students can learn the point of view of the author by reading their biographical information and learning the viewpoint and reputation of the organization that he is working for. Once students are aware of the importance of the author's credentials and how those credentials can inform of the possibility for bias, they can then be informed that anonymous sources are unreliable (Burkhardt, 2017).

- **Information literacy skills and concepts**

Instructors should concentrate on teaching students the various information literacy concepts and skills rather than teaching them how to use a certain tool. Those concepts and skills should be used together with exercises that will allow students to explore various research tools. Instructors can never have enough time to demonstrate on every social media platform. It is more efficient to teach them the functioning of the platforms in general and have them explore on their own and find how the platforms differ from each other. Students have used social media platforms for a long time and they learned how to use them by using a trial and error approach. They should spend time searching content and applying the skills they have learned to the content rather than teaching them how to use a particular platform (Bowman, 2017).

Students are taught to be skeptical about the news they acquire from social media. They should question the veracity of the news they are reading. For them to verify whether the news is fake or real, they should be given tools that can help them to do so. Instead of relying on their social media friends or the popularity of the news, students should be informed of fact checking sites that are available on the internet as well as on the social media pages. Some of the fact checking sites include Snopes (www.snopes.com), PolitiFact (www.politifact.com), and FactCheck (www.factcheck.com). Students should be shown the importance of following up on an article, or link, or citation. An article might appear to be the report of a research experiment

with the format of a legitimate research article, but only become suspicious when the biography or reference list is taken into consideration. A biography might contain articles intended to make the article look serious but are not in line with the content of the article. Similarly, fake news articles may contain links and references to articles that are completely unrelated, or articles containing biased content. Students should be encouraged to follow links and citations in the biography to verify if they support the claims in the news they are reading (Borel, 2018).

Today anyone with a computer and access to the internet can create a website and give it a look and feel of a legitimate website. If a website looks legitimate, it can give an impression that its content is also legitimate. It is important to show students that creating a website is easy, and making its URL look like the URLs of legitimate websites is easy. They can then understand how easy it is to create a fake news site. However, it is important to carefully check the domain names of the websites from which news is acquired. Tiny details, like for example replacing the lower-case letter L with the number 1, can indicate that a site is fake news site or an unreliable source (Brandtzaeg & Folstad, 2017).

Students should be cautious about their privacy on social media platforms. Students are often ready to provide their information on social media when asked before they can perform a given task. Students reveal their information without knowing what happens to it. Though it might seem like a small thing to do, the information supplied by students is sometimes sold to other organizations that use it to create profiles containing private information. This is dangerous because it is done without the knowledge nor permission of the owners of the information. Those profiles created might be social media bots (Calabresi & Miller, 2017).

Literature shows that students spend an average of fifteen seconds on a website, and this might only be enough to read the headline. That is not enough to examine whether the content of the article matches its headline, or to determine who the author might be. Students should be encouraged to take time to evaluate the content of a website before they can think about sharing it with their followers. This way the spread of fake news might decrease and maybe stop (Banks, 2017).

- **Inform the teachers**

Librarians have had knowledge about information literacy for a long time, but teachers have not considered information literacy as a priority. Workshops and instructions on information literacy should be given to teachers and everyone who has an influence on students. This can

help them understand the problems that are connected to the issue of fake news. Cooperating with the teachers in all the subjects can help students to strengthen their information literacy skills and avoid fake news in the process (Alvarez, 2016).

2.8 Conclusion

This chapter presents literature on the concept of fake news. It is important to note that the concept of fake news is not new, and the reason why it was spread in the past remains the same as the one of this era. However, with the presence of the internet and the birth of social media, the techniques to the spread of fake news have changed. Nowadays, the spread of fake news has increased, and it is more brutal than it has ever been. Governments all over the world, along with groups of people, are using bots to help them spread fake news in more intelligent and efficient ways. Furthermore, this chapter presents the difficulties that people have identifying fake news, and various ways in which they can identify fake news. The chapter concludes with the different measures that social media companies, as well as some governments, are taking to reduce and maybe someday stop the spread of fake news.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter gave a presentation of the literature on the concept of fake news, its history and its impact on people, particularly students, through the internet and social media. The chapter also presented a number of measures that are being implemented to reduce the spread of fake news. This chapter presents the methodology that was followed to conduct this study. The chapter also presents the research design and approach that were used, as well as how the selection of the target population was done. Furthermore, the sampling process is also presented in this chapter, along with the way the data collection was conducted. The conceptual framework that was used to frame this study is also presented in this chapter.

3.2 Research Design

This study uses exploratory research. Exploratory research is conducted usually in areas that lack information, areas where more information is needed so that there can be a better understanding of the problem (Bhattacharjee, 2012). Since there has not been much research done on the concept of fake news in University of Ilorin, the exploratory research design was suitable for this study. Exploratory research aims to find the magnitude of the problem at hand, the available information on the problem, and how the problem persists (Bhattacharjee, 2012). The questions and objectives of this study aim to find new information that provide an insight into the perceptions that students in University of Ilorin hold on the concept of news diffusion on social media in this era of fake news.

Research approach

This study will employ quantitative research approach. A quantitative approach involves collecting numeric data that can be used in the explanation of a problem (Lakshman, Sinha, Biswas, Charles, & Arora, 2000). According to Barnham (2015), quantitative research aims to establish a representation of the respondent thoughts. It creates a copy of reality and then tries to find out whether that representation is true or not.

3.3 Population of the Study

Target population according to Lakshman et al. (2000), refers to the total number of people that a researcher wishes to involve in their study. Bhattacharjee (2012) explains it as being every single person from the study site with the probability of being surveyed, and according to Zott, Amit, and Massa (2010), the target population is a set of people who respond to the requirements of the study. This study was conducted at the University of Ilorin, main campus, Ilorin Kwara State. This was a convenient choice determined by the limited timeframe of the research. The criteria for participation in the study is that a student should at least have used one of the social media applications.

3.4 Sampling Technique and Sample Size

Sampling is the selection of a sample from a population with the intention of identifying the characteristics of the entire population (Farhady & Movahedi, 2013). According to the literature, there are two categories of sampling techniques for research studies: Probability and non- probability sampling techniques. Probability sampling techniques use random selections. These techniques give each unit in the target population an equal chance of being selected. But for non- probability sampling techniques, units are selected in a way that the probability of selection of each unit in the population is not known (Bhattacharjee, 2012). Hence, Convenience sampling was adopted for this study. A sample size of 370 students was determined using the Krejcie and Morgan (1970) table.

3.5 Instrument for Data Collection

In this study, the questionnaire method was employed for the collection of data. However, the electronic questionnaire method was not adopted because the respondents for this study are students from University of Ilorin main Campus. Students have a tendency of ignoring emails. According to Kothari (2004), a questionnaire is the most important part of the research and it should be designed with much care. The questionnaire in this study was designed in a way that it would be easy for the respondents to understand and the questions would not be taken out of context.

3.5.1 Questionnaire Design

Questionnaire sections

This study questionnaire has 39 questions which were divided in seven sections. The sections are labelled from A to H.

Section A: Demographic information

This section contains questions that aimed to obtain the demographic information of the respondents. The demographic information includes the age, gender, ethnicity, and faculty of the respondents.

Section B: Information about social media

This section aimed to find the connection between the respondents and their social media, how often they login to their social media applications, and how often they receive news from their social media platforms.

Section C: Level of trust in social media as a source of news

This section contained questions that aimed to find how reliable the respondents think their social media platforms are for the acquisition of news.

Section D: Social influence

This section contains questions that aimed to find how the friends and family of respondents influence them to consider getting news from social media.

Section E: Trust in the news from social media

This section aimed to investigate the level of trust that the respondents have in the news that they acquire from social media.

Section F: Fact check

In this section, the researcher aimed to investigate if the respondents perform fact checking on the news that they acquire from social media.

Section G: Behavior towards news

In this section the behavior of respondents after getting news from social media platforms was interrogated, whether they like it, share it or ignore it.

Section H: Social media security

This section investigated the understanding that the respondents have on the security of their social media applications.

3.6 Validity and Reliability of the Instrument

Validity refers to the degree to which an instrument accurately measures what it intends to measure (Li, 2016). The questionnaire was given to two subject experts for assessment of the quality of presentation of the contents of the property the researcher measured. Their expert opinions were impacted before the questionnaire was presented to the supervisor for assessment and corrections before it was later administered to the respondents.

Reliability, on the other hand refers to the degree to which an instrument yields consistent result. Internal consistency is used to determine the reliability of the instrument for this study because it helps the researcher to get the same results from different parts of the respondents.

3.7 Administration of the Instrument

As mentioned earlier, the target population of this study consisted of students from the University of Ilorin, Main Campus. In order to recruit the participants for the study, appointments were made with the lecturers of some of the modules so that the researcher could be allowed to meet the students after their respective classes. Other students were approached directly in various working areas, such as libraries and laboratories. The researcher also approached other students who might have been outside classrooms waiting for their next classes or done with their daily classes. The questionnaires were given by hand to the respondents and face to face. The respondents were given time to read, understand and respond to the questionnaires.

3.8 Data Analysis Procedure

The descriptive data that will be collected will be presented and analysed in simple percentage, frequency table and mean (\bar{X}) using the IBM SPSS Statistics, 26th edition. The reason for the

choice of simple percentage and frequency tables is because it allows the presentation, analysis and comparison of multiple attitudes, opinions and ideas to enhance easy understanding of tables and the data they contained (Schweigert, 2021), while mean (\bar{X}) will be used to analyse the responses of the respondents on the research questions. The reason for this choice is that it enabled the researcher to calculate the extent to which the values differ from the average (Dudovskiy, 2019).

3.9 Conclusion

This chapter presented the methodology that was followed to conduct this study. It was explained that a descriptive design was followed and a quantitative approach was employed in this study in order to achieve the objectives of the study. A non-probability sampling technique, namely convenience sampling technique, was employed to select the sample and questionnaires were used to collect the data for the study. An overview of the questionnaire used in this study was presented in this chapter, as well as how the bias was handled. The chapter concluded with a discussion on the ethical principles upheld in the study. The next chapter presents the analysis of the data obtained.

CHAPTER FOUR

FINDINGS AND ANALYSIS

4.1. Introduction

The previous chapter gave a presentation of the research methodology that was used to conduct this study. This chapter presents the responses obtained from the respondents, as well as their analysis. The report on how the questionnaire was tested for reliability and consistency is presented in this chapter. The chapter also presents the inferential and descriptive statistics of the data collected. This chapter only presents the results the way they were collected from respondents, more detailed interpretations of the results are presented in chapter five.

4.2. Response rate

As mentioned in chapter three, the targeted population for this study was of 9741 students and the sample size of 370, in conformity with the Krejcie and Morgan (1970) table. The data collection was done over a time period of two weeks. The total number of questionnaires that were distributed to students from Uniorin (main campus) was of 370, but only 362 questionnaires were valid to be used in this study. This leading to a response rate of 97.84% which according to Dillman (2011), is acceptable.

4.3. Descriptive statistics of the study

4.3.1. Age of respondents

Out of the 362 students who participated in this study, 55.5% of the respondents were between the age of 18 to 21, 34.8% of the respondents were between the age of 22 and 25, 6.1% of the respondents were between the age of 26 and 30, and 3.6% of the respondents were 30 or older as shown in Figure 4. 1.

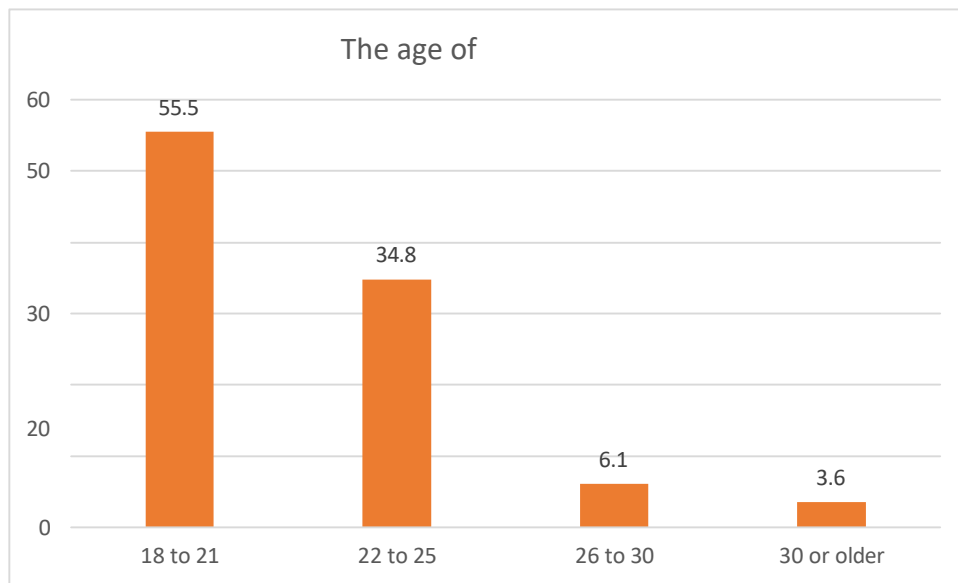


Figure 4. 1: Age range of respondents

4.3.2. Gender of respondents

From the 362 respondents, 41.6% were female and the remaining 58.4% of the respondents were male.

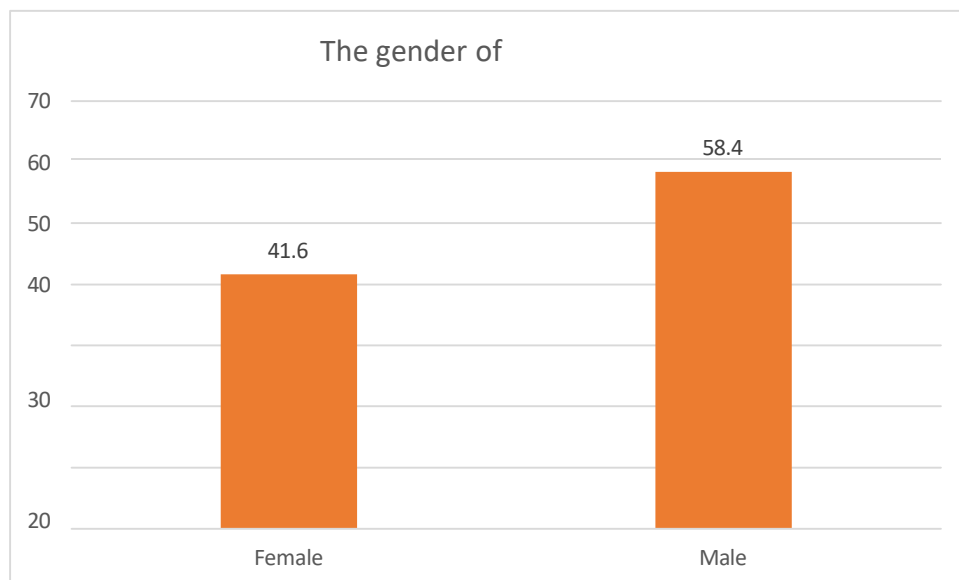


Figure 4. 2: The gender of respondents

4.3.3. Faculties of respondents

The respondents to this study were all the students of Unilorin (main Campus). They were from different faculties: Art/Drama, Health Sciences, Law/Management, Social Sciences and Science/Technology. The statistical results obtained from this study showed that 3.9% of the respondents were from the faculty of Art/Drama, 3.3% of the respondents were from the faculty of Health Sciences, 28.3% of the respondents were from the faculty of Law/Management, 30.7% of the respondents were from the faculty of Social Sciences, and the remaining 33.8% of the respondents were from the faculty of Science/Technology as it is illustrated in Figure 4. 3.

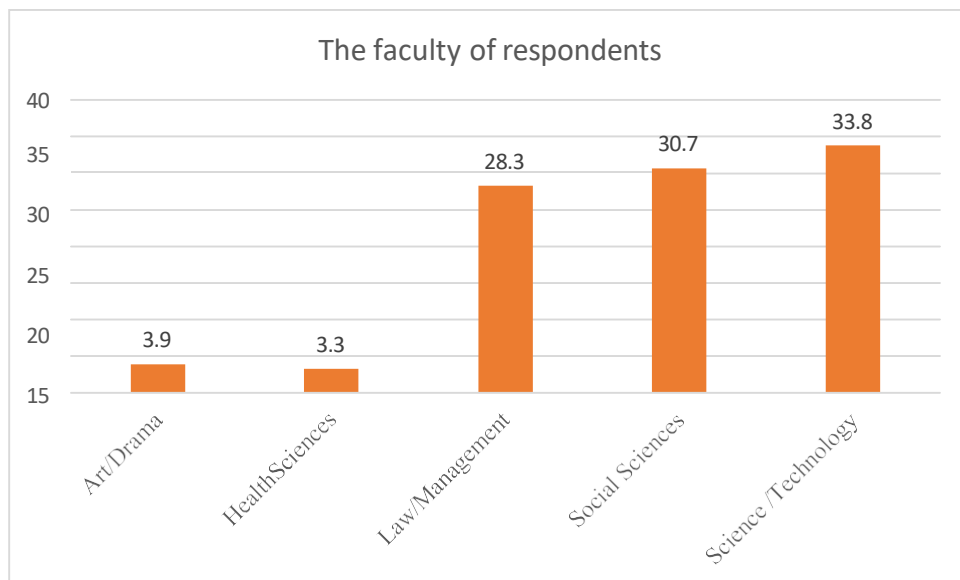
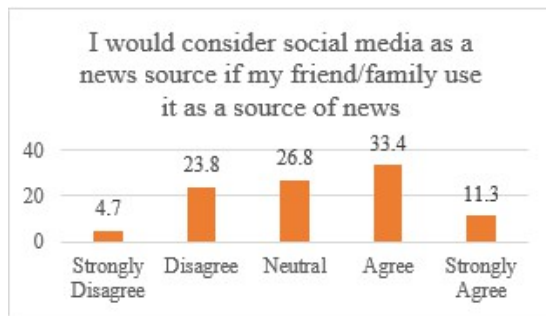


Figure 4. 3: the faculty of respondents

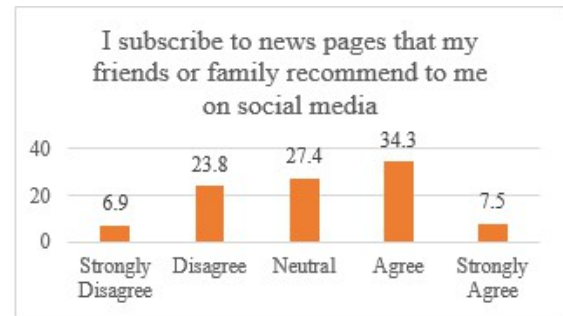
4.3.4. Information about the frequency of social media use

Results from the analysis showed that 44.7% of the respondents indicated that they would consider social media as a news source if their friends or family use it as a source of news. However, 28.5% of the respondents indicated that they would not consider social media as a news source even if their friends or family use it as a source of news (A in Figure 4. 8). The results also showed that 41.8% of the respondents indicated that they subscribe to news pages that their friends or family recommend to them on social media, but 30.7% of the respondents indicated that they do not subscribe to news pages that their friends or family recommend to them on social media (B in Figure 4. 8). The results further show that 46.7% of the respondents indicated that they do repost interesting news that their friends or family have posted on social media while 26.2% of the respondents indicated that they do not repost

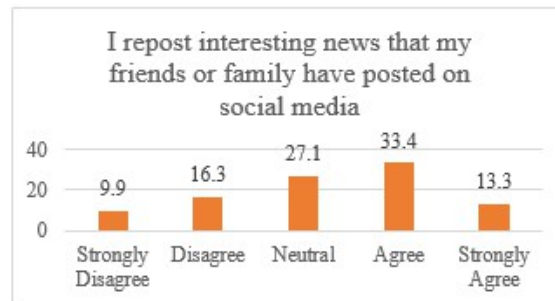
interesting news that their friends or family have posted on social media (C in Figure 4. 8).



A



B



C

5 Figure 4. 8: Social influence

4.3.5 Trust in news from social media

From the responses obtained, 27.3% of the respondents indicated that they do trust any news that they come across on social media, while 20.4% of the respondents indicated that they do not trust any news that they come across on social media (A in Figure 4. 9). In addition to this, 30.4% of the respondents indicated that they trust more the news on social media if more people like and share it, but 37.9% of the respondents indicated even if a news get many likes on social media, they still do not trust it (B in Figure 4. 9). Also, 32.8% of the respondents indicated that their trust in social media news depends on the comments that it receives from other people, and 38.4% of the respondents indicated that their trust in social media news does not depend on the comments that it receives from other people (C in Figure 4. 9).

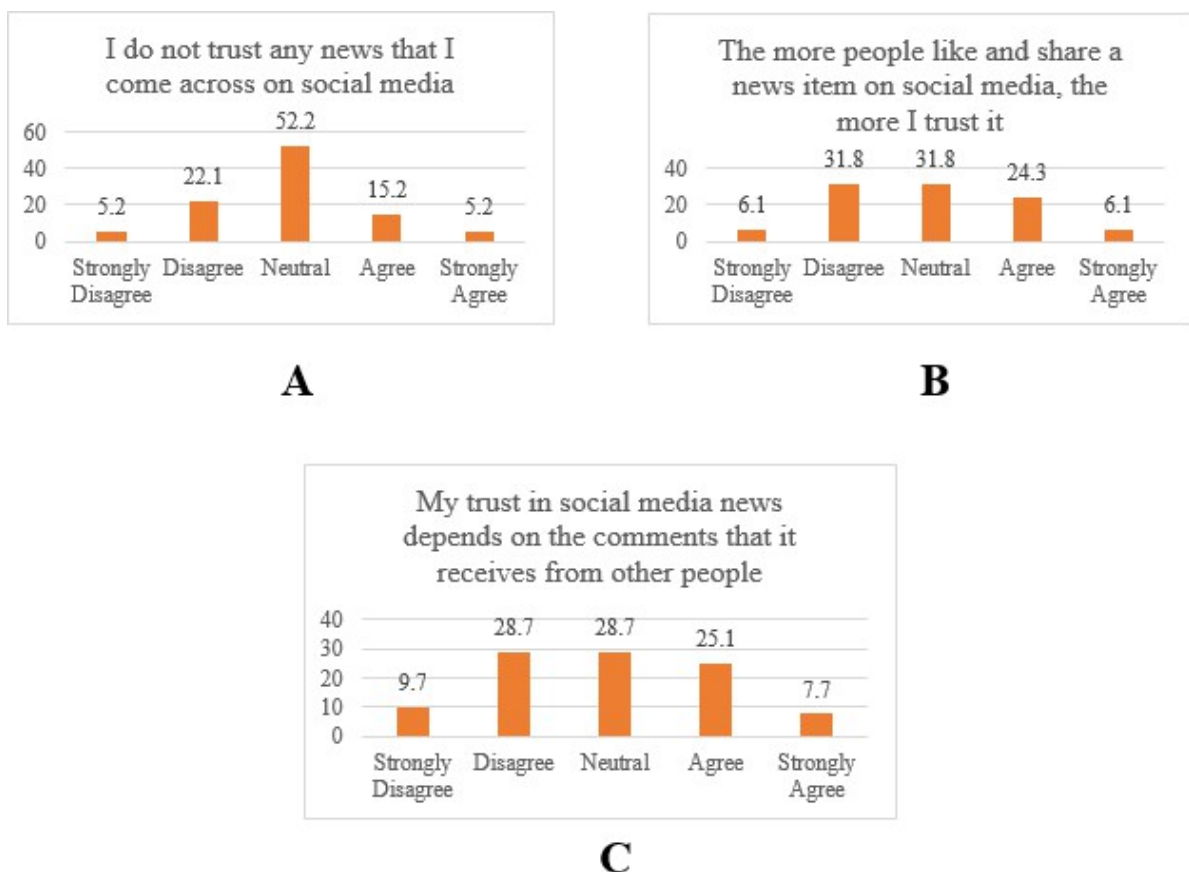


Figure 4. 9: Trust in news from social media

4.3.6 Behavior towards news from social media

Almost half of the respondents (49.7%) indicated that they share the news that they read on social media if they are sure that the news is true, but 25.1% of the respondents indicated that they do not share the news that they read on social media even if they are sure that it is true (A in Figure 4. 11). Also, 25.5% of the respondents indicated that they do share interesting news on social media without checking its veracity. But more than half of the respondents (51.6%) indicated that they do not share interesting news on their social media platforms without checking its veracity (B in Figure 4. 11). In addition, the majority of the respondents (69.1%) indicated that they would not share news, no matter how interesting it is, if they think that it is fake. But 12.5% of the respondents indicated that they would share interesting news even if they think that it is fake (C in Figure 4. 11). Furthermore, 30.4% of the respondents indicated that they do not share news on social media even if they are convinced that it is true. But 42.8% of the respondents indicated that if they are convinced that some news is true, they share it on social media (D in Figure 4. 11).

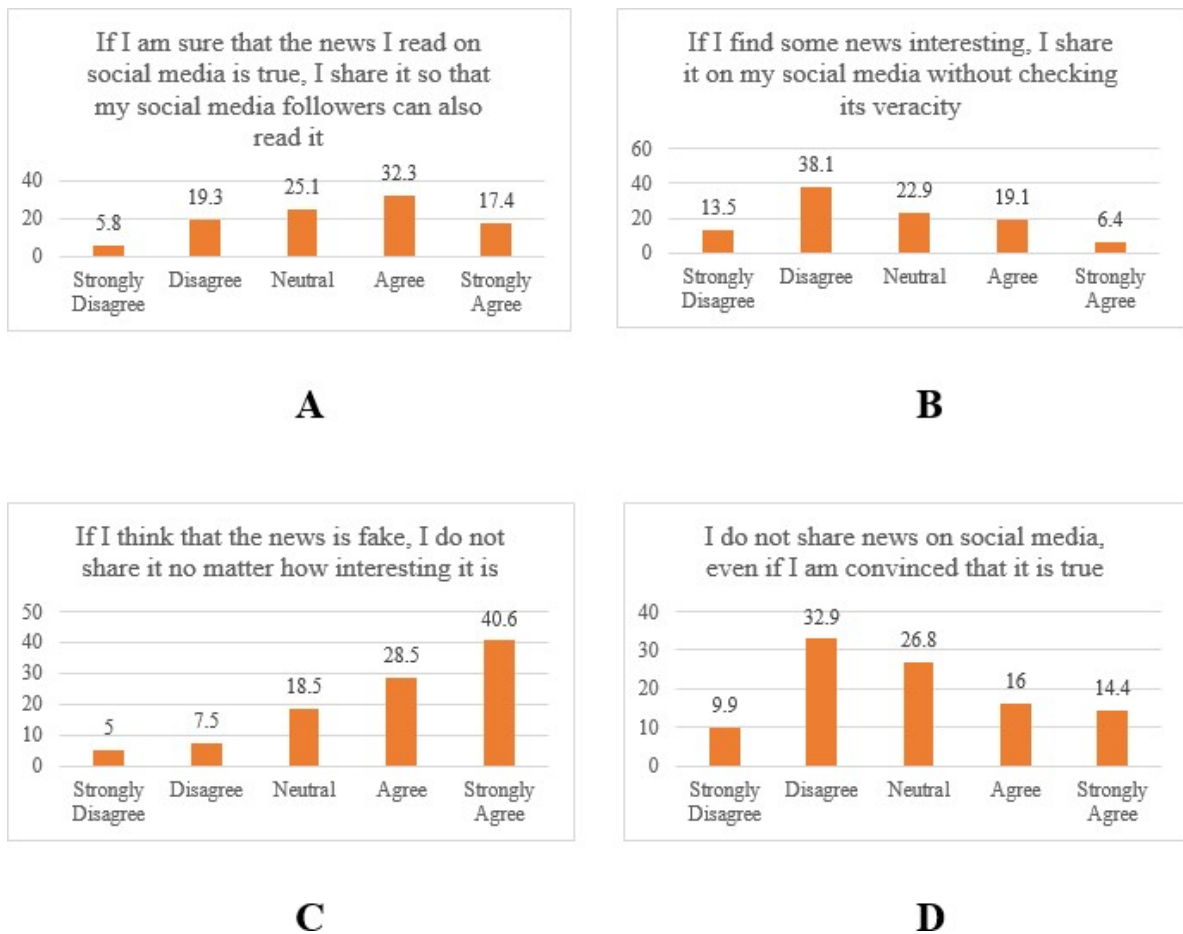


Figure 4. 11: Behavior towards news from social media

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The previous chapter gave a presentation of the results that were obtained from the answers of the respondents with reference to the objectives of the study and the literature. This chapter concludes this study from the results obtained and the discussions made. The summary of the major results obtained in this study as well as the summary of how the objectives were achieved are presented in this chapter. The chapter also presents the recommendations to academic institutions and professional.

5.2 Summary of the findings

The results acquired from the analysis of the responses from the respondents showed that a big number of students indicated that they use social media applications to acquire their news. A large number of the respondents indicated that they consider social media to be a trustworthy source of news and that they would recommend it to their friends and family. Furthermore, a large number of the respondents indicated that they trust in the news from social media is influenced by their friends and family, but also by the feedback that the news receives on social media.

In addition to this, some of the respondents indicated that their trust in the news from social media is strengthened by the results they get from performing fact check after reading news on social media. The behavior of the majority of the respondents, as they indicated, after acquiring news from social media is determined whether they believe the news to be true or not. However, some of the respondents indicated that they share news on social media whether they believe it to be true or not, and a small number of students indicated that they do not share news on social media even if they are convinced that it is true.

A descriptive approach was employed in this study and quantitative data was collected from the students using questionnaires. To analyze the data, SPSS was used; and descriptive and inferential results were obtained. The results of this study showed that most of the students use social media platforms to acquire news. Not only they acquire news from their social media platforms, they also believe that the social media platforms are reliable sources for news acquisition and that the news they acquire is trustworthy.

Furthermore, most (52.7%) of the students indicated that they trust their social media platforms to be reliable sources of news to the extent that they can recommend their friends

and family to use it as well. The results also showed that a big number (44.7%) of the respondents indicated that they would consider social media platforms as reliable news sources if their friends or family use them as news source.

As regards the perceptions of Unilorin students on the verification of the news acquired from social media platforms, the majority of students indicated that they often check other news channels to verify the news that they get from their social media pages. A considerable number of the students indicated that they only share news on social media if they are sure that the news is true, but some other students admitted to sharing news on social media even if they are not sure that the news is trustworthy. The results further showed that a considerable number of students indicated that they would not share news on social media even if they were convinced that the news is trustworthy.

Furthermore, it has been found that students are confused and do not understand the concept of social bots. This then making them more exposed to fake news and more active in its spread on their social media platforms. However, most of them indicated that they are aware of the security measures available on their social media applications. They indicated that they learn more about them before they can implement them, as well as their importance. They also indicated that they have security measures implemented on their social media applications.

5.3 Recommendations

1. Academic institutions should organize workshops for students and lecturers so that they can learn about information literacy.
2. Government is advised to organize documentary series as well as campaigns to inform people of this issue and provide them with information that can help them be more cautious about the news they are getting from social media. This can help reduce the spread of fake news on social media platforms.

Reference

- Allcott, H., & Gentzkow, M. (2017). Social Media and Fake News in the 2016 Election. *Journal of Economic Perspectives*, 31(2), 211-236. doi:10.1257/jep.31.2.211
- Alvarez, B. b. a. a. g. c. (2016). Public Libraries in the Age of Fake News. *Public Libraries*, 55(6), 24-27. Bahige, N. (2019). Attitude towards news from social media.
- Banks, M. (2017). Fighting Fake News. *American Libraries*, 48(3/4), 18.
- Barnham, C. (2015). Quantitative and qualitative research. *International Journal of Market Research*, 57(6), 837-854. doi:10.2501/IJMR-2015-070
- Batchelor, J. (2018). Fighting fake news. *Science World*, 74(10), 14.
- Beauchamp, T. L., & Childress, J. F. (2001). *Principles of biomedical ethics*: Oxford University Press, USA.
- Bhattacharjee, A. (2012). Social science research: Principles, methods, and practices. *Big data*, 5(4), 310-324.
- Borel, B. (2018). Last year there were 8,164 fake news stories. *Popular Science*, 290(2), 64-124.
- Bowman, J. (2017). Faking it and making it. *New Criterion*, 35(5), 75.
- Brandtzaeg, P. B., & Folstad, A. (2017). Trust and Distrust in Online Fact-Checking Services.
- Bryman, A., & Cramer, D. (2012). *Quantitative data analysis with IBM SPSS 17, 18 & 19: A guide for social scientists*: Routledge.
- Burkhardt, J. M. (2017). Combating Fake News in the Digital Age. *Library Technology Reports*, 53(8), 5- 33.
- Calabresi, M., & Miller, Z. J. (2017). The Troublemaker. *Time*, 189(3), 22-27.
- Chan Yein, T., Safii, N. S., & Chan Wen, L. I. (2017). Social and Multimedia Influence on Endurance Athletes' Preferred Snack Choices. *Pengaruh Sosial dan Multimedia terhadap Pilihan Snek Kegemaran Atlet Ketahanan.*, 15, 145-151. doi:10.17576/JSKM-2017-1502-20
- Chen, A. (2017). The fake-news fallacy. *New Yorker*, 93(26), 78.

- Ciampaglia, G. L., Shiralkar, P., Rocha, L. M., Bollen, J., Menczer, F., & Flammini, A. (2015). Computational Fact Checking from Knowledge Networks. *PLoS ONE*, 10(6), 1-13. doi:10.1371/journal.pone.0128193
- Cramer, J. A., Roy, A., Burrell, A., Fairchild, C. J., Fuldeore, M. J., Ollendorf, D. A., & Wong, P. K. (2008). Medication Compliance and Persistence: Terminology and Definitions. *Value in Health*, 11(1), 44-
- Dillman, D. A. (2011). *Mail and Internet surveys: The tailored design method--2007 Update with new Internet, visual, and mixed-mode guide*: John Wiley & Sons.
- Domonoske, C. (2016). Students have “dismaying” inability to tell fake news from real, study finds.
- Durand, R., & Kremp, P.-A. (2016). Classical deviation: organizational and individual status as antecedent of conformity. *Academy of Management Journal*, 59(1), 65-89. doi:10.5465/amj.2013.0767
- Ekpu, G. (2018). Nigerian media launch anti-fake news site. *Beyond Fake News*.
- Eva, N. n. e. u. c., & Shea, E. e. f. o. (2018). Marketing Libraries in an Era of “Fake News”. *Reference & User Services Quarterly*, 57(3), 168-171.
- Faked Out. (2017). Editorial. *School Library Journal*, pp. 6-6. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=120477395&site=ehost-live>
- Farhady, A., & Movahedi, Y. (2013). *The effect of mindfulness cognitive therapy on reducing the stress and depression of heart coronary patients*. Paper presented at the Proceedings of the fifth psychosomatic congress, Shahrekord, Iran. Medical Sciences Journal.
- Forelle, M., Howard, P., Monroy-Hernández, A., & Savage, S. (2015). Political bots and the manipulation of public opinion in Venezuela. *arXiv preprint arXiv:1507.07109*.
- Gartung, D. L., Edholm, Y. H., Edholm, K.-M., McNall, K. N., & Lew, K. M. (2001). Cross tab analysis and reporting method: Google Patents.
- Grimme, C., Preuss, M., Adam, L., & Trautmann, H. (2017). Social Bots: Human-Like by Means of Human Control? *Big data*, 5(4), 279-293.
- Haire, B. (2017). "Fake news" has long history. *Southeast Farm Press*, 44(2), 4.
- Hamm, M. (2017). Don't Blame Social Media for the Rise of Fake News. *Editor & Publisher*, 6-6. Himma-Kadakas, M. (2017). Alternative facts and fake news entering journalistic content production cycle.

- Howard, P. N., Bolsover, G., Kollanyi, B., Bradshaw, S., & Neudert, L.-M. (2017). Junk news and bots during the US election: What were Michigan voters sharing over Twitter. *Computational Propaganda Research Project, Oxford Internet Institute, Data Memo*(2017.1).
- Howard, P. N., Bradshaw, S., Kollanyi, B., & Bolsolver, G. (2017). Junk News and Bots during the French Presidential Election: What Are French Voters Sharing Over Twitter In Round Two? : Computational Propaganda Research Project, University of Oxford. <http://comprop.oii.ox.ac.uk/wp-content/uploads/sites/89/2017/04/What-Are-French-Voters-Sharing-Over-Twitter-v10.pdf>.
- Howard, P. N., Kollanyi, B., Bradshaw, S., & Neudert, L.-M. (2018). Social Media, News and Political Information during the US Election: Was Polarizing Content Concentrated in Swing States? *arXiv preprint arXiv:1802.03573*.
- Jasper, W. F. (2017). Finding fake news. *New American* (08856540), 33(9), 23-23.
- Klein, D. O., & Wueller, J. R. (2017). Fake news: A legal perspective. *Journal of Internet Law*, 20(10), 1- 13.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*: New Age International.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Kumbhar, K. (2017). The Science Behind Why People Believe Fake News.
- Kümpel, A. S., Karnowski, V., & Keyling, T. (2015). News sharing in social media: A review of current research on news sharing users, content, and networks. *Social media+ society*, 1(2), 2056305115610141.
- Lakshman, M., Sinha, L., Biswas, M., Charles, M., & Arora, N. (2000). Quantitative vs qualitative research methods. *The indian journal of pediatrics*, 67(5), 369-377.
- Liu, Y.-L., & Chang, H.-T. (2016). The role of effortful control in the relationships among parental control, intentional self-regulation, and adolescent obedience. *Journal of Child and Family Studies*, 25(8), 2435-2446. doi:10.1007/s10826-016-0405-x
- McGrew, S., Ortega, T., Breakstone, J., & Wineburg, S. (2017a). The Challenge That's Bigger than Fake News: Civic Reasoning in a Social Media Environment. *American Educator*, 41(3), 4-9.
- McGrew, S., Ortega, T., Breakstone, J., & Wineburg, S. A. M. (2017b). The Challenge That's Bigger Than Fake News: Civic Reasoning in a Social Media Environment. *American Educator*, 41(3), 4-39.

- Meier, A. G. P. K. C. C. P. (2015). TweetCred: Real-Time Credibility Assessment of Content on Twitter.
- Messing, S., & Westwood, S. J. (2014). Selective exposure in the age of social media: Endorsements trump partisan source affiliation when selecting news online. *Communication Research*, 41(8), 1042- 1063.
- Miller, L. E., & Smith, K. L. (1983). Handling nonresponse issues. *Journal of extension*, 21, 45-50. Neudert, L.-M. (2018). Trump supporters and extreme right 'share widest range of junk news'. *News &*
- Nigam, A., Dambanemuya, H. K., Joshi, M., & Chawla, N. V. (2017). Harvesting social signals to inform peace processes implementation and monitoring. *Big data*, 5(4), 337-355.
- Nunnally, J. C., & Bernstein, I. H. (1967). *Psychometric theory* (Vol. 226): McGraw-Hill New York.
- Nyangeni, T., du Rand, S., & van Rooyen, D. (2015). Perceptions of nursing students regarding responsible use of social media in the Eastern Cape. *Curationis*, 38(2), 1-9. doi:10.4102/curationis.v38i2.1496
- Olson, P. (2017). Why Your Brain May Be Wired To Believe Fake News. *Forbes.com*, 23-23.
- Overs, J. (2018). BBC to 'fight back' against disinformation with Beyond Fake News project. *Beyond Fake News*.
- Pallant, J. (2013). *SPSS survival manual*: McGraw-Hill Education (UK).
- Parry, S. (2017). Warning: may contain fake news. *New Internationalist*(500), 43.
- Reid, B., & Gibson, S. (2014). Fake News and the First Amendment: A Developing Standard. *Insights to a Changing World Journal*, 2014(3), 3-15.
- Reston, L. (2017). How Russia Weaponizes Fake News. *New Republic*, 248(6), 6-8.
- Romero, D. M., Galuba, W., Asur, S., & Huberman, B. A. (2011). *Influence and passivity in social media*. Paper presented at the Joint European Conference on Machine Learning and Knowledge Discovery in Databases.
- Schäfer, F., Evert, S., & Heinrich, P. (2017). Japan's 2014 General Election: Political Bots, Right-Wing Internet Activism, and Prime Minister Shinzō Abe's Hidden Nationalist Agenda. *Big data*, 5(4), 294-309.
- Schiefer, B. (2017). 'Buyer Beware' for news junkies. (cover story). *Credit Union Magazine*, 83(2), 22.

- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*: John Wiley & Sons.
- Shuster, S., & McDonald-gibson, C. (2017). The Next Fake-News War. *Time*, 190(10/11), 48.
- Silverman, C., & Singer-Vine, J. (2016). Most Americans who see fake news believe it, new survey says.
- Staffers, C., & Hackett, J. (2017). Fake News, Fake Data: How bad data and misleading graphs are fueling fake news. (cover story). *Scholastic Math*, 38(2), 8.
- Statistics, L. (2013). One-way Anova. *Laerd Research Ltd*.
- Stoffers, C. (2017). Fake news fools millions! *Junior Scholastic*, 119(7), 6.
- Stukal, D., Sanovich, S., Bonneau, R., & Tucker, J. A. (2017). Detecting bots on Russian political Twitter.
- Tobitt, C. (2018). BBC launches global Beyond Fake News project with season of programming to 'fight back' against disinformation.
- Turcotte, J., York, C., Irving, J., Scholl, R. M., & Pingree, R. J. (2015). News recommendations from social media opinion leaders: Effects on media trust and information seeking. *Journal of Computer- Mediated Communication*, 20(5), 520-535.
- Uscinski, J. E. (2017). Fake news freakout. *Reason*, 48(10), 54.
- Wineburg, S., & McGrew, S. (2016). Why Students Can't Google Their Way to the Truth. *Education Week*, 36(11), 22-28.
- Woolley, S. C., & Howard, P. N. (2017). Computational propaganda worldwide: Executive summary.
- Zott, C., Amit, R., & Massa, L. (2010). The business model: Theoretical roots, recent developments, and future research. *IESE business school-University of Navarra*, 1-43.

