

CHAPTER I

INTRODUCTION

1. INTRODUCTION

1.1. Research Background

Information technology is always developing and has very rapid growth. The internet has become an essential online communication tool for many people today. Nowadays, people tend to prefer anything practical, faster, and flexible. Social networking services have become a universal and straightforward concept in the internet environment. There are many social networking sites on the internet, such as Twitter, Instagram, Facebook, Google +, LinkedIn, and Path. People use social networking media to find friends and even exist to run online businesses. Consumers prefer internet media because they do not need to meet directly with service providers in person and deal with the behaviour of other consumers. In the development and number of the internet growing so fast in the recent ten years, also in Libyan User [1].

Twitter is a social media that is still commonly used in recent days. This social media provides several pieces of information about someone's sentiment. The use of Twitter social media is evidenced by the existence of several studies that use Twitter as material to analyze the sentiments of one's opinion. Among them, there is research conducted by Quanzhi Li and the team. In their research, Quanzhi Li and his team used the text feature selection method to support sentiment analysis [16]. In this study also will conduct sentiment analysis of a person's opinion from a tweet they upload on Twitter using text mining. The analysis in question is knowing whether a person's alignments are identified from the radical groups or not [2].

Our study used Artificial Neural Network (ANN) method to enable us to classify document data. This method is an artificial neural network which in general can be used in the classification of various problems with non-linear data [4]. ANN has good performance and is widely used in computer vision problems for pattern recognition. Many researchers do classifications in completing their research using this method. As research conducted by Novitasari, which classifies egg signals in the form of wave data by combining the fuzzy method and the modification method of backpropagation. ANN

can also be used in image classification, such as research conducted by Leavline. Leavline classifies the image of orchids to distinguish plant variations. Besides, the ANN method is used by Wechmongkhonkon and his team in classifying water levels to manage water quality with MLP artificial neural networks in the classification process [3]. Water quality classification has also been done before by Meair & et al., who are more inclined to the water quality security prediction model based on the problem variable. The above-mentioned approach indicates that the classification using the ANN method is considered to give quite good results [5].



Figure 1.1. Twitter User Base and Growth rate Forecast [4]

As illustrated in the graph above, Twitter use is increasing by the year and become more common as the time progresses:[4]



Figure 1.2. Stickiness Problem [4]

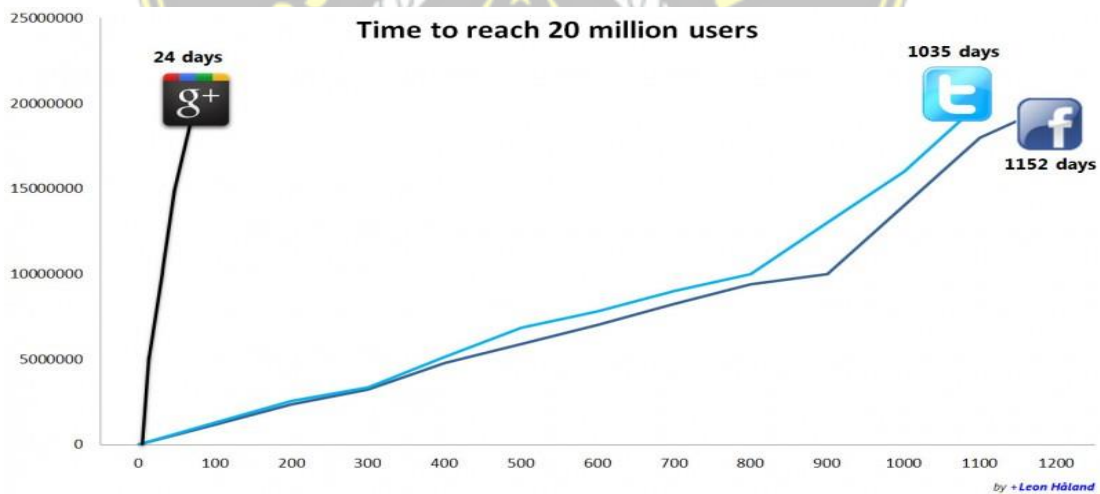


Figure 1.3. Time reaches User [4]

Facebook is the most commonly used media as shown in the chart, that represented a time of 1152 days to reach 20 million users, Twitter won the 20 million users in 1035 days and to be astonished, Google+ in just 24 days reached the 20 million users. In an average of 840 days would be Google+ reaching to Facebook and Twitter in the number of users on the social Network that Google+ has an impressive amount of 800,000 daily users. [4]

Average Happiness for Twitter
All Tweets in Arabic

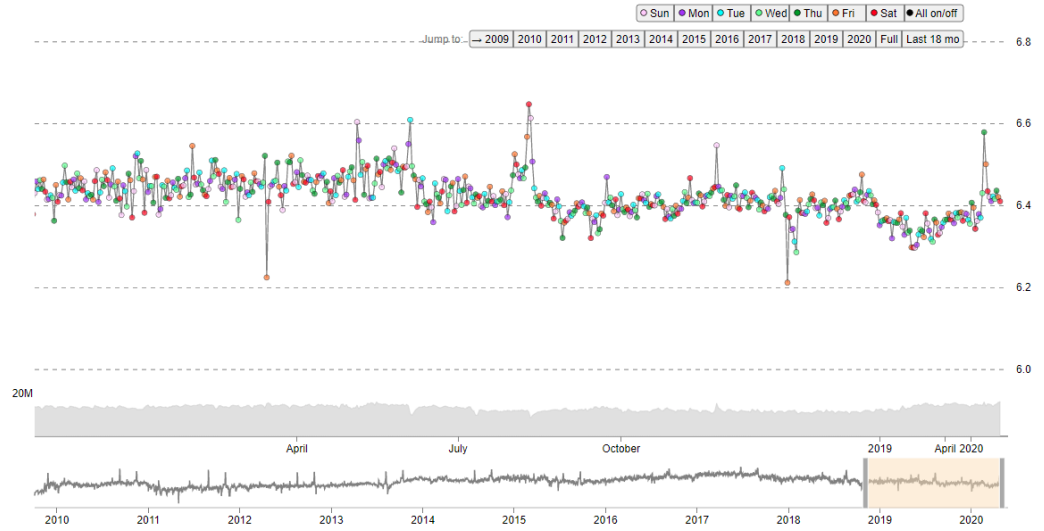


Figure 1.4. Happiness for Libyan People in Twitter [5]

The level of happiness of Libyan people has been illustrated in the graph above, as the data showed a fluctuating level, making this topic very interesting to be analyzed. [5]

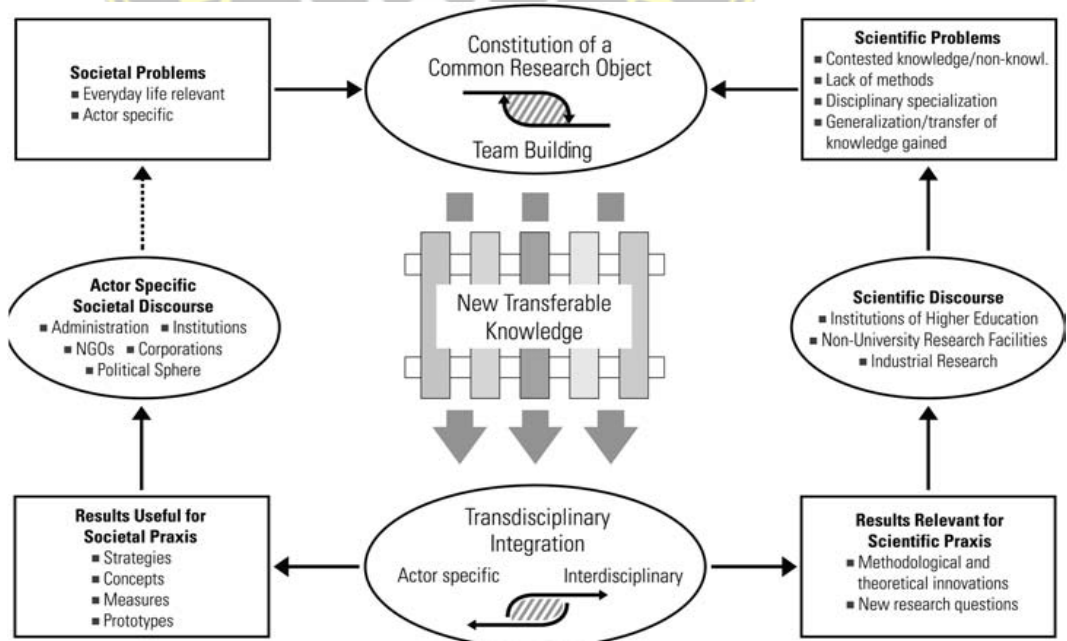


Figure 1.5. Societal Problems New Transferable Knowledge

Because of the social problems, the results can be put in fair use for societal praxis such as strategies, concepts, measures and prototypes. It is needed new transferable knowledge and transdisciplinary integration for actor particular and will result in relevant scientific praxis with new methodological and theoretical innovations.

Libya is a country located in North Africa. In Libya, the year 2011 was the year of the revolution that broken to remove the ruling Figure. Unfortunately, this revolution did not go as planned. Libya became worse than before, there were many wars in many areas of Libya, and there are not many safe areas in Libya. Libya has experienced chronic insecurity since the revolution in 2011. Now there are starting to kill each other in the civil war. Fighting between warring militias continued in several parts of Libya. Even in Tripoli, the fighting has caused the closure of international airports. While Islamist groups also fought against Libyan special forces in the city of Benghazi, eastern Libya [6].

Social problem communication in Libya after the war also arise. Libya, the oil-rich country in northern Africa was once the country with the highest standard of living in Africa. Libyans have experienced free education and free health facilities. However, since the revolution in October 2011, Libya has been plagued by violence and political turmoil and financial crisis. The country in North Africa is now on the verge of a civil war. Libya is now divided between an UN-backed government in power in the capital city of Tripoli in the west and protected by various armed militias. To the east in Benghazi, General Khalifa HList, 75, a loyal Qadafi army, formed his army, the Libyan National Army (LNA) and controlled nearly two-thirds of Libya, including oil fields [7].

Another problem arises such as the limited internet networks access, because of war, so nowadays in Libya also tough to get internet access in a lot of areas and city in there. This makes the public feel insecure and find it difficult to get internet access to the entire world; they feel isolated because of the effects of the war itself [8].

Another effect of war also impacts on the limited economy. The Libyan exchange rate, which previously strengthened against the US dollar, has fallen significantly. Economic growth in these countries will decline, which is estimated to be 3.6 percent in 2019, which in the previous year experienced growth at 4 percent.

The war also affects little works. The war in Libya also affects employment, because there are often wars in Libya, many jobs are closed and none. So many people lost their jobs due to the war, and it is difficult to find decent work in Libya now. This has caused a lot of unemployment and limited employment in Libya. War damages are very significant for limited jobs, al that affected the level of happiness' of Libyans that was in a steady decrease in the period between 2015 to 2020. The graph below represents the mentioned facts [9]:

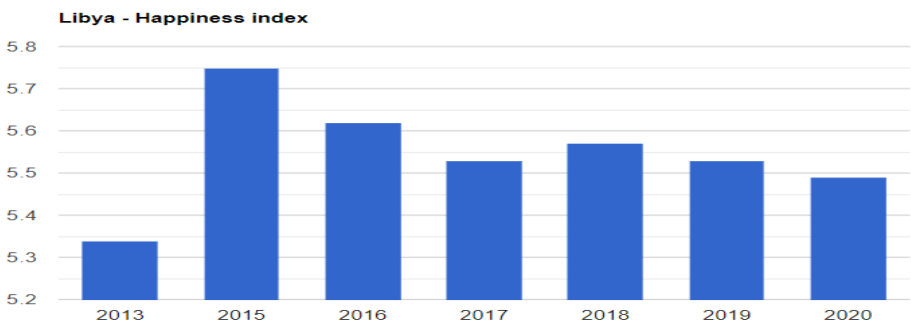


Figure 1.6 Happiness index

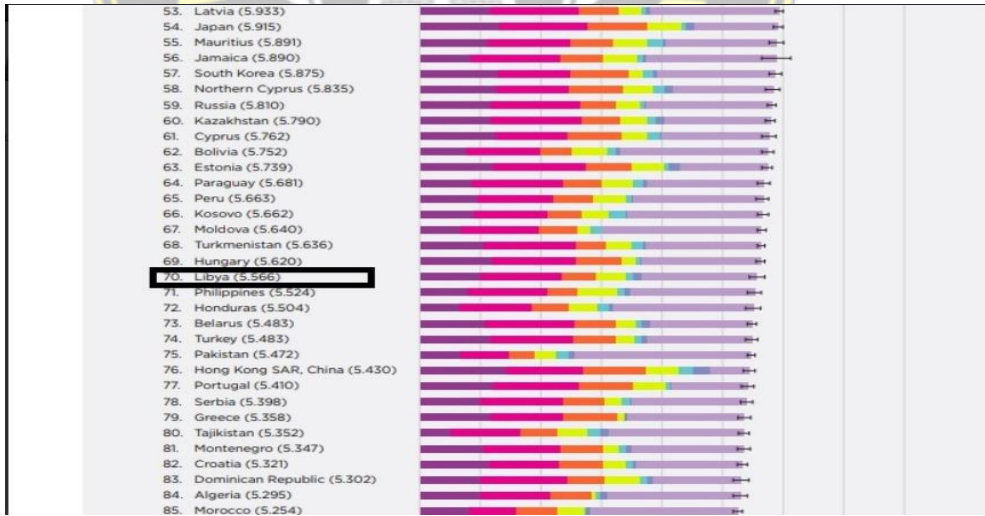


Figure 1.7. World Happiness Report 2018 ranks Libya 70 in happiest countries in the world

An ANN algorithm should measure Libyan happiness because recently, Artificial Neural Networks (ANN) has become a popular method and represents an influential computational intelligence technique applied in the Pattern Recognition Data Mining and Machine Learning. ANN strength presented in its ability to estimate multifaceted and non-linear relationships between input and output data by learning from an instance. Effects produced from each of the network input to network output can be analyzed. These effects provide feedback back about the parameters of which input most significant, a sensitivity analysis was carried out to accomplish the main objective. The sensitivity analysis is an extracting method of cause and effect the correlation amongst both variables presented in the input and output network. This method will reduce the network size and complexity of the model on the training process. During the sensitivity analysis, the network learning function is disabled, so that the weight of the network is not changed. The basic idea is when inputting to the network changed at any time, and changes occur accordingly then output results are reported as a percentage. In this ANN model, the happiness of Libyan people via Twitter will be measured and is considered a design parameter the most significant [10].

Research benefit for the Libyans is to know the level of pleasure in using Twitter. Libya can be benefited by increasing the happiness of the citizens. This research is significant because it can measure the pleasure of Libyans in using Twitter and make Libyans happier, relax, provide entertainment, and provide useful information. [6]

1.2. Research Problems

Text in comments or status on Twitter can indicate that someone is happy or unhappy. So, the research problem is how to identify happiness of Libyan based on Twitter text using artificial neural network.

1.3. Research Questions

Based on the argument above, so research questions as follows:

1. How to analyze happiness of Libyans based on Twitter data using the artificial neural network?

1.4. Purpose of the Study

This study attempts to:

Conduct an analysis of happiness of Libyan people based on Twitter data using artificial neural network.

1.5. Research Benefit

The benefit of this research are:

1. Benefit for Libyan People:

- a) Provide the results of the analysis and evaluation of the optimal neural network structure used for further application development.
- b) The study contributes information for those who are interested in studying this artificial neural network method.
- c) To enrich the science of artificial neural networks in terms of predicting.

2. Benefit for Company (Twitter):

Providing entertainment and information facilities for Libyans

3. Benefit for the country (Libya):

Contribute positively to the country, as well as increase the level of happiness for the citizens

