



Women's Education in Afghanistan: Activist, Taliban, and Ordinary Afghan People Views

Abdu Saboor Hamedi
abdul.hamedi@student.uiii.ac.id

Women's Education in Afghanistan: Activist, Taliban, and Ordinary
Afghan People Views

By:

Abdul Saboor Hamed

A thesis submitted in partial fulfillment of the requirement for the degree of

Master Degree

In

Social Sciences

Indonesian International Islamic University

2023

Approved by

Chairperson of Supervisory Committee

©COPYRIGHT

By

Abdul Saboor Hamedi

Supervisors:

Supervisor 1 : Sirojudin Arif, Ph.D

Supervisor 2 : Nia Deliana, Ph.D

Table of Contents

List of Figures.....	vi
List of Tables	vii
Abstract.....	1
CHAPTER I: INTRODUCTION	2
Research Problem.....	6
Research Question.....	7
Research Objective.....	8
Significant of study	9
CHAPTER II: THEORETICAL FRAMEWORK.....	11
Literature Review	11
Hypothesis.....	17
Argument	19
CHAPTER III: RESEARCH METHODOLOGY	21
Data Collection.....	22
Data Cleaning	24
Labeling Data.....	24
CHAPTER IV: ACTIVISTS', TALIBANS' AND AFGHANISTAN PEOPLE'S VIEWS ON WOMEN'S EDUCATION.....	34
Female Activists Top Frequent Words	44
Male Activists Top Frequent Words.....	48
Women's Education: From an Activist, Taliban and Ordinary People Perceptions.....	51
Analyzing the Frequency of Keywords Regarding Women's Education	80
Taliban Top Frequent Words	82
Female Ordinary People Top Frequent Words	84
CHAPTER V: GENDER AND WOMEN'S EDUCATION: A CLOSER LOOK AT THE ACTIVISTS.....	77
CHAPTER VI : DISCUSSION	78
CHAPTER VII: CONCLUSION	81
References	77

Appendix	102
----------------	-----

List of Figures

Figure 1:Sentiment Distribution (activists).....	35
Figure 2: Sentiment Distribution Male vs Female (activists)	39
Figure 3: Sentiment Distribution on Women Education (activists).....	40
Figure 4: Female Activists Top Frequent Words.....	45
Figure 5: Female Activists Word-Cloud.....	47
Figure 6: Male Activists Top Frequent Words	48
Figure 7: Male Activists Word-Cloud	50
Figure 8: Sentiment Distribution of (activists, taliban, people).....	52
Figure 9: Sentiment Distribution of five Keywords (activists, taliban, people)	53
Figure 10: Sentiment Distribution on Women Education (activists, taliban, people)	77
Figure 11: Percentage Women Education Keyword (activists, taliban, people)	79
Figure 12: Frequency of Five Keywords by Group over Time (activists, taliban, people)	81
Figure 13: Taliban Top Frequent Words	83
Figure 14: Taliban Word-Cloud.....	84
Figure 15: Female Ordinary People Top Frequent Words.....	85
Figure 16: Female Ordinary Word-Cloud.....	85
Figure 17: Male Ordinary Word-Cloud	86

List of Tables

Table 1: Tweets From Activists (Male & Female)	30
Table 2: Tweets From Taliban	31
Table 3: Tweets From Ordinary People (Female)	32
Table 4: Tweets From Ordinary People (Male)	33
Table 5: Sentiment Analysis of Tweets Containing the Keyword (activists)	37
Table 6: Calculate Sentiment for Males and Female on Five Keywords (activists)	38
Table 7: Sentiment Distribution on Women Education (activists)	39
Table 8: Calculate Sentiment Scores for Entire Dataset (activists)	41
Table 9: Calculate Sentiment Scores for Five Keywords (activists)	42
Table 10: Calculate Sentiment Scores for Women Education (activists)	43
Table 11: Frequent Words (female activists)	46
Table 12: Frequent Words (Male activists)	49
Table 13: Sentiment Distribution of (activists, taliban, people)	53
Table 14: Sentiment Analysis of Tweets Containing the Keyword (activists, taliban, people) ...	56
Table 15: Tweets Related to five Keywords (activists, taliban, people)	56
Table 16: Sentiment Distribution on Women Education (activists, taliban, people)	78
Table 17: Percentage and Count on Women Education (activists, taliban, people)	79
Table 18. Fetch tweets by username	102
Table 19. Find related data by keywords	102
Table 20. Remove URL, and mention	103
Table 21. Top 10 Trends	103
Table 22. Remove Hashtags	103
Table 23. Expand Contractions	103
Table 24. Remove ASCII Characters	104
Table 25. Remove Whitespace	104
Table 26. Drop Null Values	104
Table 27. Remove Punctuations	104
Table 28. Contingency Code	104
Table 29. Transforming Textual to numeric	104

Table 30. Evaluate Performance	105
Table 31: Labeling Data.....	105
Table 32: Sentiment Analysis	105
Table 33: Sentiment Distribution.....	106
Table 34: Calculate Positive Tweets.....	106
Table 35: Code Scheme	106
Table 36: Analyzing Five Keywords.....	107
Table 37: Average Sentiment Percentages	107
Table 38: Comparison of Sentiment Whole Tweets	107
Table 39: Comparison of Sentiment Five Keywords.....	108
Table 40: Comparison of Sentiment on Keyword Women Education	108
Table 41: Chi-square Test of Independence	108
Table 42: Cross-Tabulation of Sentiment and Gender	108
Table 43:Frequent Words	109
Table 44:Time Series	109
Table 45: Word-Cloud	110

Abstract

This thesis investigates the topic of women's education in Afghanistan from multiple angles, including those of activists both male and female, ordinary people, and the Taliban officials. In order to examine the amounts and types of support for women's education, the study employs content analysis and sentiment analysis of tweets. To compile this data, we mined Twitter for posts from Afghan activists, Taliban officials, and Afghan people. The results show that the various groups have diverse perspectives and feelings. By actively supporting and promoting equal access to education, activists show their great support for women's education. There is also substantial backing from the people, but to a little smaller amount. In contrast, the Taliban show little interest in or concern for the education of girls and women. To further gender equality in education, the study emphasizes boosting activist voices, addressing societal issues, and advocating legislative reforms. Policymakers, educators, and groups in Afghanistan seeking to better women's education and empower women will get useful insight from the findings.

Keywords: Women, Girl, Education, University, School, Twitter

CHAPTER I: INTRODUCTION

Millions of women, especially without equal educational experiences, skills, or qualifications, women of specific classes and social groups have long been doomed to inferior lives in terms of their capacity to grow personally, their choice of employment, their standing as citizens, and their ability to influence leadership and decisions at the national level that have an impact on their local lives (Weiner, 1986).

Women practically prevent from receiving education around the globe, especially in countries with patriarchal and conservative government forms. Afghanistan is one of those countries where women suffered for decades. Today, women are prevented from educating themselves, or the government has imposed restrictions on their education system. This restriction has a substantial negative impact on women's daily activities. This limits their access to public gatherings, travel, study and other activities.

Studies show that educated women are more likely to have more opportunities, "better educated women that do work are more likely to work in non-farm activities (Anderson, Reynolds, Biscaye, Patwardhan, & Schmidt, 2021, p. 200)." Education for women has been cited as an important factor in the development of feminism by a number of authors. Women's higher education institutions sprung up at the same time as the

first waves of feminism in the United States, as noted by (Plutzer, 1993, p. 149).

The denial of education for women can have severe consequences for society and individuals (Orfan, 2021). Taliban restrictions on women's education in Afghanistan have led to high illiteracy rates among Afghan women, which has limited their participation in society (Mashwani, 2017). The Taliban's return has raised fears that women's rights, including access to education, will be further diminished (Women, 2022). Despite Taliban efforts to limit women's education, evidence shows that there is opposition among Afghans to this action.

A survey by Asia Foundation 2021 showed that 87% believed women should have equal access to education (Rieger, 2019). Hodes' 2019 study found that Afghan women who receive an education are more supportive of gender equality and human rights. This study is necessary because it sheds light on the different views of groups, such as activists, Taliban and ordinary people. And it gives insight into Afghan society's attitudes towards women's education. Further, the researcher examines the tones of the tweets posted by three different groups of people, activists both male and female, the Taliban and ordinary Afghan people. Noteworthy, in the remaining chapters they researcher would only denote all three groups as, (activists, Taliban, and people).

The goal is to analyze the tweets and gauge their level of support for women's education. In this analysis, the study looked at the sentiment distribution across several topics connected to women's education and compute the percentage of positive tweets from women. Descriptive data are included, as well as a chi-square test of independence and a comparison of sentiment ratings across sexes and those between activists, Taliban officials, and ordinary people. The study wraps up with a review of the most popular phrases and terms that were found in the tweets.

The study uses quantitative content analysis to analyze the tweets and test the hypothesis as well as sentiment analysis to access to the tones of each tweet related to women's education (Evans & Clark, 2015; Kitzie & Ghosh, 2016). Twitter operates as a network in which individuals rapidly disseminate and exchange thoughts, it possible for individuals to share their thoughts and feelings openly via the use of various forms of media, including text, photographs, videos, etc. (Karamouzas, Mademlis, & Pitas, 2022, p. 1).

Thus, these mediums can be utilized to track public opinion on a selected topic. Public opinion "represents the views, desires, and wants of the majority of a population concerning a certain issue, whether political, commercial, social, or other (El Barachi, AlKhatib, Mathew, & Oroumchian, 2021, p. 1)" Further, the researcher uses the Python

programming language to analyze the tweets. Python programming language is quickly becoming one of the most widely used for computational science.

It is attractive for algorithm creation and exploratory data analysis because of its high-level interactive character and growing ecosystem of scientific libraries (Pedregosa, 2011, p. 2826). Also, Python is one of the most efficient and compatible programming languages for analyzing data and has thousands of libraries, also, the researcher uses several libraries, such as Pandas and NumPy, scikit-learn, these libraries allow us to understand our data and analyze them based on the study's requirements.

A comprehensive literature analysis addresses the restriction on Afghan women regarding education, cover the historical, cultural backdrop, and the conflict, that impact on women's lives, and the role that gender and ethnicity play in determining views regarding women's educational opportunities. In the following section of the study talks related to the research problem, objective, and significant of the study. The researcher is committed to analyze the ramifications of these results and provide suggestions for further study and policy changes to advance gender equality and women's rights in Afghanistan.

Research Problem

Despite some progress made in recent years, Afghan women still remain significantly away from education with barriers that hinders them from going to school and achieving educations. Understanding and addressing these barriers is crucial for advancing women's education in Afghanistan. One aspect that deserves attention is the differing perspectives among activists, Taliban, and ordinary people regarding women's education.

Activists, both male and female, play a pivotal role in advocating for equal educational opportunities for Afghan women. They recognize the transformative power of education in empowering women, improving their socio-economic prospects, and promoting gender equality. However, it is essential to acknowledge that male and female activists may experience and perceive these challenges differently due to societal expectations and gender roles. Exploring these nuances can provide valuable insights into the specific obstacles faced by both male and female activists and the strategies they employ to overcome them.

The goal is to pay attention on difference in the views of activists, Taliban, and ordinary people, and how gender affect male and female activist views regarding women's education. We seek to understand the complexity of social, cultural, poverty, conflict and political factors that

influences the views of people regarding women's access to education with a focus on the effect of gender norms.

Research Question

The aims to investigate on the difference in perspectives of activists, Taliban and the ordinary Afghan people, and how gender affect male and female activist regarding women's education. The research question to be answered is: "What are the differing views among Activists, Taliban, and Ordinary Afghan People Regarding women's education, and how gender affects activists' views about women's education?" The study uses Twitter data to discover if there are any gender-based trends or inequalities in how people feel about lifting the restriction on women's education. It stresses the necessity of destroying oppressive systems to realize gender equality.

Data was gathered from Twitter, a widely used social media platform, and analyzed using content analysis techniques to see how people feel about the topic. The study attempts to illuminate the complexity of gender and its role in forming attitudes regarding women's education by investigating patterns and trends on three groups, activists, Taliban, and ordinary people. The findings will help educated people and those fighting for gender equality in the classroom better understand Afghan women's obstacles and inequities while trying to get an education.

Research Objective

In recent years, scholars have paid attention to issues that affect women, including access to education, equality, participation in politics, and other aspects of life that women usually face with difficulties. There are a number of reasons behind unequal education, one of the reasons that most of the scholars quote, is that “higher education research has traditionally been framed within a masculine paradigm, often with man participants (Parson, 2020, p. 515)”. Other than masculinity, conflict affects women’s education, especially countries like Afghanistan, which has experienced civil and international wars for decades.

This study aims to explore how gender shapes activists’ views of women access to education, and to find what are the perspectives of activists, Taliban and ordinary Afghan people. The researcher dives into the views and personal experiences of individual Afghan people. Paying attention to how gender shapes their vision or ideas and influences their views on women access to educational opportunities. The study focuses on recognizing various factors that contribute to attitudes toward women’s education in Afghanistan, considering culture, economic, conflict, social aspects. We believe, by examining these factors, readers can gain a deeper understanding of the complexity that prevents women from education in the country.

The study will help better understand Afghan women's difficulties when accessing education. It will also examine the relationship between gender and people's views. The study promotes gender equality, improves women's education access in Afghanistan, and helps promote human rights and social justice in Afghanistan.

Significant of study

The significance of this study lies in its focus on gender as a factor in how people see women's educational opportunities in Afghanistan. Understanding the cultural and societal elements that contribute to gender imbalance in schooling can be gained through the analysis of tweets from Afghan people, and this study aims to do just that. As a result, the study will benefit the academic community by providing new insights into this pressing topic and demonstrating the value of social media as a resource for scholars in Afghanistan and beyond.

Furthermore, this study will be one of the first to extensively investigate the difference on perspectives of activists, Taliban and Afghan people regarding women's access to education through social media. By giving them a stronger voice through social media, this study will help improve conditions for female students in Afghanistan. In doing so, it will shed light on the achievements and challenges faced by Afghan women and inspire future generations of women to pursue education and careers.

The study seeks to shed light on the power of social media to advance gender equality and elevate underrepresented communities' voices. The difficulties Afghan women encounter in gaining access to education can be better understood by studying tweets from Afghans both inside and outside of Afghanistan. These results will provide the foundation for future efforts to advance gender equality in the classroom and beyond. This research acknowledges the special challenges faced by Afghan women and sets out to shine a light on such obstacles in the hopes of inspiring change. By sharing our findings, we want to encourage further discussion about how social media may help advance gender and political equality.

This study holds significant importance as it brings attention to the critical issue of women's education in Afghanistan and the concerning public opinion that tends to hinder their access to education. By employing Twitter as a data collection tool, this research will contribute to the expanding literature on the gender imbalance in education. The resulting findings are expected to inspire further investigations into the intricate relationship between gender dynamics and social media in Afghanistan and other contexts worldwide. By deepening our understanding of these dynamics, we can effectively address the challenges that women face in pursuing education and work towards creating more inclusive educational environments.

CHAPTER II: THEORETICAL FRAMEWORK

Literature Review

This study looks at women's education in Afghanistan from the views of activists, Taliban, and ordinary Afghan people and how gender affects male and female activists views on women's education. While there has been progress in this area, there are still challenges that women in Afghanistan confront when attempting to enhance their education. The lack of resources, including schools, contributes to these issues, as do issues like poverty and cultural norms, as well as war and violence. Studies reveal that educated women have more opportunities and contribute more to non-farming activities, highlighting the value of education in empowering women and fostering gender equality (Anderson, Reynolds, Biscaye, Patwardhan, & Schmidt, 2021).

In exploring activists' perspectives on women's education and their support for gender equality, it is essential to recognize that activism encompasses a range of activities driven by social, political, and personal beliefs. Consumer educators aiming to redefine consumer education approaches can be seen as consumer activists, advocating for the intricate connections between consumers and the marketplace, encompassing political, social, and economic dimensions (McGregor, 2015).

For instance, Laura Lyytikäinen (2013) delves into the construction of activist identity within the Russian opposition movement Oborona. Lyytikäinen's study examines how gender, class, and the civic field influence the complex nature of activist identity. Oborona, founded by young Russians opposing Vladimir Putin's government, has undertaken various actions such as protests, demonstrations, and hunger strikes (Lyytikäinen, 2013). According to Lyytikäinen, most activists within this movement espouse democratic ideas, with well-educated parents who hold professions such as teachers, doctors, and scientists, indicating a solid educational background among the activists. This action of activists shows that they not only stand with women's education but also stands against any inequality that causes harm to individuals. As Carla Luguetti and Kimberly L. Oliver (2020) say, the activist approach can help teacher educators, student teachers, and young people to become conscious of the power structures in society that lead to social inequities (Luguetti & Oliver, 2020).

Similarly, Lauri Johnson (2004) sheds light on women's education from the perspective of activists. African American women teachers in Harlem during the 1930s, 1940s, and 1950s were not only dedicated to providing their students with a high-quality education but also actively engaged in social reform movements, teacher union organizing, and civil rights activities. These activist educators leveraged their influence to drive

broader societal change, improve working conditions for teachers, and expand access to higher education. Their efforts had a transformative impact on the lives of African Americans and paved the way for subsequent generations of activists and educators in Harlem (Johnson, 2004).

Rebecca M. Klenk (2010) talks about how gender shapes activists' views on women's access to education. The activists at Lakshmi Ashram had quite different views on the importance of women's education, depending on their gender. Male activists saw education as a means to advance women's economic standing, with an eye toward creating more and better employment options and greater economic autonomy. They expected that through gaining an education, women would become more self-reliant and make greater contributions to their families and communities.

However, the women activists at Lakshmi Ashram regarded education as a means to combat gender inequity and boost women's agency. They thought getting an education would empower women to break free from societal norms and actively shape their communities (Klenk, 2010). These perspectives shaped male and female campaigners' tactics. Female activists concentrated on changing social norms around women's education to remove impediments to women's education, while male activists focused on financial support. Female campaigners faced family and community

opposition to women's education. Male activists, seen as better social change leaders, were more accepted by policymakers.

Lakshmi Ashram's male and female activists championed women's education despite obstacles. They thought it empowered women and developed communities. They persistently fought for decent education for women. Further, Barbara J. Bank (2007) "activists seeking sex equity and participants in the emerging discipline of women's studies (Bank B. J., 2007)".

To understand the views of the Taliban and ordinary people regarding women's access to education, we must recognize the influence of action resources like knowledge and skills, which empower individuals to shape their own lives. Modernization plays a crucial role in fostering political involvement through economic growth, education, and personal independence. Societal values reflect the impact of industrialization and the ongoing conflict between survival-oriented and self-expression values. Self-expression societies prioritize personal fulfillment, active participation, gender equality, tolerance, trust, civil liberties, democracy, and responsive governance (Welzel & Inglehart, 2008).

To have glance on Afghanistan, it's palce where women's rights oppressed for decades (1992-1996) (Fluri J. L., 2009, p. 260) thus, one must analyze Afghanistan's women's situation within the larger historical context

of Afghanistan, not through the ideological formulation of “before and after” the Taliban. Only such a perspective can ensure that women are seen as essential to rebuilding Afghanistan. In this regard Ruth Ren (2010) has launched a public survey to measure people’s opinion regarding women’s education, by asking “Women should have equal opportunities like men in education” over 87% responded agree with women’s education and 50% “who strongly agree” (Rene, 2010) according to the report only around 11% disagree, report highlights, a higher proportion of women 93% than men 82% support for equal opportunities in education.

When looking to the views of the Taliban regarding women’s education, from 1994 they have disagreed with women’s education and work, as Pia Karlsson & Amir Mansory (2008) say “when the Taliban (students of Islam) entered the arena and installed law and order - at the cost of human rights abuse. In particular women and girls in the cities were denied work and education opportunities” (Karlsson & Mansory, 2008, p. 3).

Saira Inayatullah (2022) also launched a study regarding women's education in 2022 after the collapse of Afghanistan to the Taliban, people express their concern related to women’s education as Inayatullah asks participants, and they said, “now after the Taliban, women education has reached nearly zero and it has turned into a dream we don’t know if it's

achievable or not” (Inayatullah, 2022, p. 28), while the second participant answered, “now the Taliban break every single foundation that was built for women's education”, and the third participants say, “A pre-Taliban Afghanistan was good. We had a comfortable life. Education service was accessible to everyone. Now, the Taliban don't allow girls to go to school.”

Considering all respective scholars' arguments, we believe activists have high support for women's education, and this is not concise on women's education only; their goals are to push for equality, both males and females. They support equality because they want to build a strong community and women self-sufficient. According to Ruth Ren (2010), over 87% of ordinary Afghan people support women's education as long as the Taliban is concerned. According to several studies (Yousaf & Jabarkhail, 2021; Inayatullah, 2022) they have no interest in women's education.

Hypothesis

H1: The Taliban's views regarding women's education will be significantly more restrictive and opposed than those of activists and ordinary Afghan people. This hypothesis can be explained theoretically by the Taliban's ideology and prior behaviour. The Taliban, an Islamic extremist party that ruled Afghanistan from 1996 to 2001, imposed severe Islamic legislation, including limitations on women's education and work. Women were punished for attending school or working outside the home. Fundamentalist Islam and gender roles underpin the Taliban's attitude. Based on their philosophy and past actions, the Taliban's views on women's education are likely to be more restrictive and opposed than those of activists and ordinary Afghans. 1996 that violence against women and girls was a "daily reality throughout the world," and that the Taliban "drastically" curtailed women's rights (Skaine, 2002).

H2: Activists are more likely to demonstrate higher support for women's education compared to both the Taliban and ordinary Afghan people. Women's education holds huge significance and is a matter of ongoing contention. It serves as a vital solution to address numerous issues that affect women's lives. Although steps have been made to promote its expansion, women's education continues to face obstacles stemming from societal customs, entrenched power dynamics, and the failure of

governments and nations to take effective measures (Nussbaum, 2004). To see women's education from the perspective of activists who campaign for women's rights and education will likely see education as a fundamental right for all individuals, regardless of gender. They support the empowerment of women through education and equality.

On the other hand, the Taliban has a history of opposing women's education and viewing it as a threat to traditional gender roles (Telesetskyt, 1998). Ordinary Afghan people may hold varying views towards women's education, depending on factors such as their level of education, religious beliefs, and cultural background. Generally, those who prioritize gender equality and women's rights are more likely to support women's education than those who do not. Hence, it is expected that activists would show higher support for women's education as compared to both the Taliban and ordinary Afghan people.

H3: Female activists are more likely to hold higher sentiments for supporting women's education compared to male activists. Women's education is generally a top priority for female activists since they have a better understanding of the challenges women experience in gaining an education. On the other hand, male campaigners might not place the same value on women's education as their female counterparts do. The perspectives of men and women on education and women's rights may still

be influenced by society standards and gender roles. Gender, according to feminism theory, is a social construction, and gender norms and expectations are internalized via upbringing in a patriarchal society (Lorber, 2001). Therefore, due to their gendered attitudes and ideas, female activists are more inclined to advocate for women's educational opportunities.

Argument

In the realm of women's education, a battleground of ideas and beliefs emerges, where activists, the Taliban, and ordinary Afghan people engage in a theoretical struggle over the significance and role of education in the lives of women. From the activist's view point, grounded in feminist theories, education becomes a powerful tool for emancipation and social change. Activists, driven by their social, political, and personal beliefs, perceive education as a fundamental right, essential for the empowerment of women. In their view, education opens doors to opportunities, enabling women to challenge societal norms, break free from oppressive systems, and actively shape their communities. Guided by feminist frameworks that recognize the intersectionality of gender (Lorber, 2001), class, and civic engagement, these activists strive to remove barriers and advocate for women's educational access.

Conversely, the Taliban's theoretical stance on women's education presents a stark contrast. Driven by an ideology rooted in religious

fundamentalism and traditional gender roles, the Taliban perceives women's education as a threat to their established order. In their worldview, education for women undermines the status quo and challenges the patriarchal structures they seek to uphold. Thus, the Taliban imposes severe limitations on women's access to education, perpetuating oppressive systems and hindering progress towards gender equality (Franks, 2003).

Ordinary Afghan people, each with their own theoretical perspectives shaped by education, religious beliefs, and cultural backgrounds. These perspectives vary across the spectrum, reflecting the complex societal fabric of Afghanistan. Some embrace the ideals put forth by activists, recognizing the transformative power of education and the imperative to ensure equal opportunities for women. Others, influenced by societal norms and traditional values, may hold reservations or even oppose women's education, subscribing to a theoretical framework that reinforces traditional gender roles and norms (Rene, 2010).

CHAPTER III: RESEARCH METHODOLOGY

To test the hypothesis, the study have used content analysis (Evans & Clark, 2015), It is offered here and comprises of a set of methods we created for conducting systematic analyses of texts. Twenty years ago, researchers examined the mental and emotional effects of being unemployed in a longitudinal study (Mayring, 2004). To check the tones of the tweets related to women's education, we use sentiment analysis also, known as opinion mining refers to the study of how individuals feel about certain thing. The entities can be things like goods and services, businesses and people, places and things, ideas and concepts. There is a lot of room for potential issues in this subject. Sentiment analysis encompasses a wide range of activities formerly performed under several titles, such as opinion mining, opinion analysis, opinion extraction, subjectivity analysis, affect analysis, emotion analysis, and review mining (Liu, 2015).

Alos, chi-square used, which evaluates the consistency between an observed percentage and theoretical predictions; test for statistical significance between two variables often representing nominal or ordinal levels of measurement (Lewis & Burke, 1949), also, it is common practice to use cross tabulation (crosstab) as an analysis method to compare the outcomes of one or more variables with those of another.

Data Collection

Data collection began between December, 01, 2022, and March, 30, 2023, the used free Twitter application programming interface (API), this API allows individual to retrieve up to 3200 maximum rows from a single account (Kitzie & Ghosh, 2016). The researcher in this study analyzes three different groups of tweets, namely: Activists, both male and female; Taliban officials, since there is no female on the Taliban's cabinet, thus the study only focuses on the male side, last but not least, ordinary Afghan people, male and female, not by gender but in general, even though there are an equal amount of sample for both.

Researcher have individually collected the tweets, and there are three different approaches to recognizing the activists, to fetch their tweets. First, the we have joined the Afghan Twitter spaces, to recognize activists from there. The second approach, finding Afghan activists through google. The third approach is, activists have been frequently invited by Afghanistan's TV, there are several TV channels which has hundreds of followers and views inviting activists in daily bases. E.g., [TOLONews](#), [ArianaNews](#).

For the Taliban officials, there is a single approach, which is [Zabehulah M33](#), and "Official Twitter Account of the Spokesman of Islamic Emirate of Afghanistan, Zabihullah Mujahid". This is the official

account of the Taliban spokesman, and Zabihullah has followed other officials; it provides an easy way to recognize the officials and fetch their tweets.

The researcher have done the same approachn on [mobeenkhan1231](#). Mobeen is a famous person on social media. He is an active member of the Taliban, most of the Taliban has followed him on Twitter, this gives us more ability to access Taliban officials to access to their tweets.

Related to the ordinary people, the researcher have implemented the same approach but this time, on Tolo News and Ariana News “[TOLONews](#), [ArianaNews](#)”. It gives us ability to recognize Afghan people from their followers or on the comment section, because mostly people use either Pashtu or Persian (Dari) language to comment on a post. To analyze the data researcher has taken a sample which consists of 54 different Twitter users, whether its activists are the Taliban, but the number of tweets could be different, dependent on the users and how active they are. The duration of data collection starts from 2021, December, 01 to 2023, March, 30.

Data Cleaning

It's the procedure of finding wrong information, fixing it by eliminating unnecessary bits, and re-entering the right ones. Data cleansing include eliminating mistakes and verifying information. Cross-checking data is a viable option for fixing this problem. Problems usually disappear after data is checked for accuracy.

The obtained dataset is cleaned up before analysis to reduce time and effort. All the information is changed to lowercase and any slang or unnecessary terms are eliminated. URLs and textual references are also omitted since they are unnecessary for analysis.

Eliminating frequent, brief function words (such as pronouns, prepositions, conjunctions, abbreviations, interjections, etc.) that are still essential to language syntax is known as "removing stopwords" from a corpus. Is, but, and, which, on, any, and some are all examples of stopwords. A text file containing a list of stopwords may be used to remove them from any language written in the Latin script (Domagoj Margan, 2015).

Labeling Data

Labeling the tweets gives us more access to those tweets which talks related to women's education. In another word, one can differentiate which tweets are related to education which are not. The researcher have labeled data using five different keywords. As our depedent variables are women

and education, and we have also selected “girls” which is referred as “women” as well, and the three other keywords frequently appear on our tweets and mostly people use those keywords to talk about women’s education on Twitter, especially in the case of our study. The keywords are as follows: “Education,” “School,” “University,” “Women,” and “Girl”.

These keywords are labeled as one (1) which means the tweet related to education, while zero (0) means the tweets are neutral or not talking about education. Also, tweets like “beautiful women”, or “good school” have been removed from the dataset, unless tweets that talk about the current study, such as “women banned from education”, or “girls cannot go to school”, and other tweets which talk related to education. Further, the dataset is labeled through machine learning using Python Programming Language.

The keyword: “Women Education”. This is a single keyword that consists of two words, this exactly focusing on women’s education, by breaking down the data into a small piece and analyzing only those tweets which have the keyword of “Women Education”. Overall, the data analysis method shed light on the three different groups: Activists, the Taliban and people in Afghanistan their patterns of behavior over the course of the study’s three-month duration. Interesting trends and patterns, as well as connections between the various groups, were uncovered by the investigation

Male		Female	
Unclean	Clean	Unclean	Clean
remember world let taliban get away completely banning women education five years one hundred ninety nine	remember world let taliban get away completely banning women education five years	Please support women education Afghanistan	please support women education afghanistan
Women in Afghanistan after the return of the Dark ages—Taliban rule.	women afghanistan return dark ages taliban rule	Almost one Month since surrender Kabul Taliban banned women girl, work, media, sports, and Music Public	almost one month since surrender kabul taliban banned women girl work media sports music public
"The Taliban banned women's education in Afghanistan on the order of Pakistan," claims Hamid Karzai.	Taliban banned women education afghanistan order pakistan claims hamid Karzai	Unfortunately current problem women education work country serious sad twenty first century	unfortunately current problem women education work country serious sad twenty first century
The Taliban are afraid of women's education because they don't want a bright future for Afghanistan	Taliban afraid women education want bright future afghanistan	Today, all universities reopened in Afghanistan after winter break, but ONLY for men. These brave young women are peacefully protesting outside Kabul University against Taliban BAN on women going to university. Let us amplify their voices!	today university reopened afghanistan winter break men brave young women peacefully protesting outside kabul university taliban ban women going university let us amplify voices
Taliban banned girls' education in Afghanistan while many Taliban leaders send their daughters to study abroad	taliban banned girl education afghanistan many taliban leaders send daughters study abroad	Taliban ban Afghan Women Education Basic Human Right Least World Could Ban Taliban	taliban ban afghan women education basic human rights least world could ban taliban

Table 1:Tweets From Activists (Male & Female)

Tweets from both male and female activists have been collected in Table 1. The table differentiates between processed and unprocessed tweets and offers a qualitative description of each. Several methods, already detailed, were used to get the purified tweets. The dedication displayed by these activists in their fight to advance women's education is symbolized by the table. It highlights their individual insights and contributions to the continuing debates on this topic.

Unclean	Clean
Respected Maulvi Abdul Kabir said: Now compared to the past, good conditions have been provided for the return of migrants and aid is provided to them in a transparent manner, and we assure that the rights of migrants and returnees and the human rights of all Afghan people are protected. 3/4	respected maulvi abdul kabir also said islamic emirate want deprive women education allow go homes mentioned examples women girls actually engaged business education work offices hospitals
As the majority of the people of Afghanistan are Muslims, the Afghan government considers the observance of the Islamic hijab in accordance with the religious and cultural values of the Afghan society and in accordance with the ideals of the majority of Afghan women, and emphasizes that nothing against the religious and cultural belief of the Islamic society has been imposed on Afghans. . 4/6	majority people afghanistan muslims afghan government considers observance islamic hijab accordance religious cultural values afghan society accordance ideals majority afghan women emphasizes nothing religious cultural belief islamic society imposed afghans
If Europe is working for women's rights in Afghanistan, but it is a slave, then in a religious and conservative society like ours, who can claim destruction rather than work to secure women's rights? Europe should not look at the Afghan society/women from the perspective of its own values.	europe working womens rights afghanistan slave religious conservative society like claim destruction rather work secure womens rights europe look afghan society women perspective values
These are female protesters harassing security forces who are protecting them. This shows the tolerance good behavior of IEA soldiers but no one will show this picture,no western journalist will tweet this. IEA will always protect the women their rights in Afghanistan. #Peace https://t.co/UJ561d2SEQ	female protesters harassing security forces protecting shows tolerance good behavior ie a soldiers one show pictureno western journalist tweet ie a always protect women rights afghanistan peace
Head of the Ministry of Higher Education: University doors are closed to women for four reasons. 1_ The existence of women's dormitories 2_ They come from one province to another province without mahram 3_ Students do not observe hijab 4_ And male and female students continue to live together. https://t.co/C2Nub9QmHr	head ministry higher education university doors closed women four reasons existence womens dormitories come one province another province without mahram students observe hijab male female students continue live together
On the basis of the decree of His Highness Amirul Momineen Hufzaullah, former governor of Kabul Province, Sheikh Nada Mohammad Nadeem was appointed as the head of the Ministry of Higher Education. On the basis of the order of the Supreme Commander of the Faithful, the former governor of Kabul, Sheikh Nada Mohammad Nadeem, was appointed as the Acting Minister of Higher Education. https://t.co/BHBGAMOTHh	basis decree highness amirul momineen hufzaullah former governor kabul province sheikh nada mohammad nadeem appointed head ministry higher education basis order supreme commander faithful former governor kabul sheikh nada mohammad nadeem appointed acting minister higher education

Table 2: Tweets From Taliban

Tweets from the Taliban can be seen in Table 2, whereas activist tweets can be seen in Table 1; it appears that the Taliban tweets do not promote women's education. Activists are tweeting more than ever before on women's empowerment and education. In Afghanistan, advocates of both sexes are asking the public to promote girls' education. A greater number of activist tweets focus on the importance of women continuing their education.

Unclean	Clean
RT @Malala: While banning girls from school, the Taliban are also arresting champions of education. @matiullahwesa founded @penpath1 to pro...	malala banning girl school taliban also arresting champions education matiullahwesa founded penpath pro
Since 555 days, #Afghan #girls #education centers closed in #Afghanistan. Quality Education has the power to transform societies in a single generation. Afghan girls & women need quality education. They need support & help For Formal education, #LetAfghanGirlsLearn https://t.co/2hdSbFAIaC	since days afghan girl education centers closed afghanistan quality education power transform societies single generation afghan girl women need quality education need support help formal education let afghan girl learn
@matiullahwesa is the voice of Afghan generation. He is peaceful education activist. He want to Education for all in Afghanistan. We are all also have obligation to rise voice for Afghan girls and women education in Afghanistan. #RelaeseMatiullahwesa #LetAfghanGirlsLearn https://t.co/Yv4BBSNrB4	matiullahwesa voice afghan generation peaceful education activist want education afghanistan also obligation rise voice afghan girl women education afghanistan relaesematiullahwesa let afghan girl learn
Negotiating the ban on women education in Afghanistan is so silly. Explaining to anyone why Afghan women have the right to get an education is so silly. Explaining how and why Islam supports is so silly. It is all just waisting time. #Taliban wont allow so the wait is also silly. https://t.co/sk5VtLjAiD	negotiating ban women education afghanistan silly explaining anyone afghan women right get education silly explaining islam supports silly waisting time taliban wont allow wait also silly
The war in Afghanistan is to destroy the idea of education. This war started fifty years ago. The world cannot even imagine how many teachers, students and education workers have been killed and how many schools have been burned in Afghanistan. https://t.co/lkUwrNtI3Z	war afghanistan destroy idea education war started fifty years ago world cannot even imagine many teachers students education workers killed many school burned afghanistan

Table 3: Tweets From Ordinary People (Female)

Table 3 contains tweets of Afghan female, their tweets addressing education and support for women. These tweets illustrate the solidarity displayed by Afghan women for their fellow women and their education. One such example is the story of "matiullahwesa," an activist who was recently jailed by the Taliban for his passion to women's education and his attempts to arrange private lessons for females. Unfortunately, his situation remain unknown following his arrest. The tweets illustrate that people are fully aware of the relevance of education and consequently speak up for it. Moreover, other tweets suggest that the impediments to education extend beyond the Taliban, pointing out that the continuing fighting in Afghanistan also restricts educational prospects.

Unclean	Clean
@tomas_niklasson @gmukhopadhaya Excellency! I really appreciate your efforts for Afghanistan and Afghans. Afghans love to see you and others like you working for peace, political stability and protection of human rights particularly women education and rights in Afghanistan.	tomas niklasson gmukhopadhaya excellency really appreciate efforts afghanistan afghans afghans love see others like working peace political stability protection human rights particularly women education rights afghanistan
Have men in Afghanistan also staged rallies in support of women education? Women have been banned by Taliban for last 2 years but men inside Afghanistan are as silent as they have been sniffed by snake. Unfortunately many Afghans/Pashtun have religion dearer than their country	men afghanistan also staged rallies support women education women banned taliban last years men inside afghanistan silent sniffed snake unfortunately many afghanspashtun religion dearer country
Taliban reclusive Ameer Haibatulla said that his Emirate will not surrender to int pressure over women education and rights. In 2001 also TBs had such stubborn stance over #Osamabinladen who latter on was killed by US in Pak. Is Pak Army eying for an other project over Afg?	taliban reclusive ameer haibatulla said emirate surrender int pressure women education rights also tbs stubborn stance osamabinladen latter killed us pak pak army eying project afg
Afghanistan needs women leadership and women need education. Taliban r afraid of educated women. We stand with Afghan women and demand to let them get educated. Without women education no nation can prosper. Afghanistan needs prosperity and prosperity needs educated girls.	afghanistan needs women leadership women need education taliban r afraid educated women stand afghan women demand let get educated without women education nation prosper afghanistan needs prosperity prosperity needs educated girl
Why Taliban in Afghanistan r so much against women education and empowerment? Who r Taliban to decide about dress and education of women? Let us stand against terrorist Taliban and their masters in Pakistan to emancipate women and Afghanistan from them.	taliban afghanistan much women education empowerment taliban decide dress education women let us stand terrorist taliban masters pakistan emancipate women afghanistan

Table 4: Tweets From Ordinary People (Male)

Tweets from Afghan males are explicitly blaming the Taliban for their bans on women's education. These tweets shows that Afghan male strongly support women's education. They frequently blamed the Taliban and called them to allow women educate. Apart from that its very interested to highlights, most of Afghan people blaming the Taliban that working for the Pakistan, and any order related to women's education comes from Pakistan. The tweets are strongly supportive of education, and standing with women's education.

CHAPTER IV: ACTIVISTS', TALIBANS' AND AFGHANISTAN PEOPLE'S VIEWS ON WOMEN'S EDUCATION

In this section the researcher focuses on the view of activists both male and female, both consists of 54 different activists. The total amount of tweets which achieved from male is 17,079, while female is (34,837). Female has more tweets than male, this shows that female is more active on Twitter. At first, we use sentiment measurements as a starting point for investigation to get insight about their tweets, this is essential as starting point.

Male activists, (5,180) positive, (8,307) neutral, and (3844) negatives, and the percentage of their positive is (29.8%). While, female activists, (13582) neutral, (13,531) positive, and negative (7,724). Female are mostly impartial and favorable about different issues, including women's education, the analysis found that positive sentiment (38.8%). Figure 1 shows, the sentiment distribution among activists, and female are slightly higher in their positive tone, while male are tend to be more neutral.

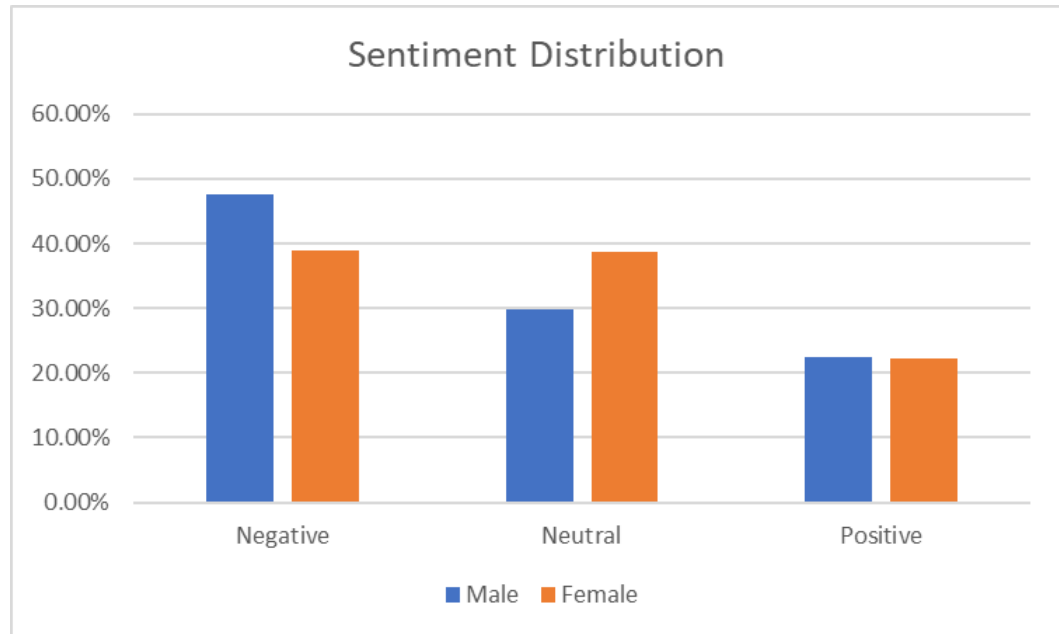


Figure 1:Sentiment Distribution (activists)

To narrow down the sentiment into five keywords which are “women,” “education,” “school,” “university,” and “girl,” this helps us to extract the exact tones of their tweets. The sentiment analysis of tweets reveals interesting insights about how these topics are discussed. Starting with the keyword "women" male activists predominantly express a neutral sentiment, accounting for 53.76% of occurrences, see table 5 for more detail.

However, there is also a significant presence of positive sentiment at 29.11%. Negative sentiment, although relatively lower at 17.13%, still represents a notable portion of the discussions. When it comes to the keyword "education," male activists showcase a more positive outlook, with 43.27% of tweets expressing positivity. The sentiment distribution reveals that 41.62% of tweets maintain a neutral tone, while a smaller proportion of 15.11% leans towards a negative sentiment. Regarding the keyword "school," male activists tend to exhibit a relatively balanced sentiment distribution. Approximately 47.47% of tweets

maintain a neutral tone, while positive and negative sentiments stand at 27.18% and 25.35%, respectively.

This suggests that opinions and feelings towards schools are varied among male activists. In the case of the keyword "university," male activists express a predominantly neutral sentiment, accounting for 56.84% of tweets. However, there is also a notable presence of positive sentiment at 27.24%. Negative sentiment represents a smaller proportion, accounting for 15.92% of occurrences. Finally, when it comes to the keyword "girl," male activists express a combination of sentiments.

The sentiment analysis reveals that 31.07% of tweets express a positive sentiment, while 47.15% maintain a neutral tone. Negative sentiment represents a significant proportion at 21.78%, indicating that discussions surrounding girls can evoke mixed reactions among male activists. Shifting the focus to female activists, the analysis indicates that they utilize these keywords more frequently than their male counterparts. Out of a total of 34,837 occurrences, women contributed 13,615 tweets related to these topics, suggesting their openness to discussing women's education on Twitter. Analyzing the sentiment distribution among female activists, the keyword "women" elicited a mix of sentiments. While negative sentiment accounted for 19.22% of occurrences, a larger portion of 39.61% expressed a positive sentiment, indicating a more optimistic view.

Neutral sentiment constituted the majority at 41.17%. Regarding "education," women activists showcased a higher inclination towards positivity, with 48.55% of tweets expressing a positive sentiment. Negative sentiment

accounted for 20.25% of occurrences, while neutral sentiment stood at 31.19%. Similar to their male counterparts, discussions around "school" among female activists exhibited a relatively balanced sentiment distribution. Negative sentiment represented 26.05% of tweets, followed by neutral sentiment at 39.98% and positive sentiment at 33.96%.

For the keyword "university," women activists leaned towards a neutral sentiment 43.85% as well, but positive sentiment 36.51% held a considerable presence. Negative sentiment accounted for 19.64% of occurrences. Lastly, the keyword "girl" evoked a mixture of sentiments among female activists. Negative sentiment represented 23.29% of tweets, while neutral sentiment accounted for 39.66%. Positive sentiment stood at 37.04%, highlighting a relatively optimistic outlook. We can say that men are more likely to have neutral tone, while women are more likely to express positive tone regarding the five keywords.

Male						Female				
Sentimen	women	educatio	school	universit	girl	women	educatio	school	universit	girl
Neutral	53.90%	41.71%	47.33%	56.70%	46.96%	41.18%	31.19%	39.98%	43.85%	39.66%
Positive	29.04%	43.34%	27.06%	27.31%	31.09%	39.61%	48.55%	33.96%	36.51%	37.04%
Negativ	17.06%	14.95%	25.61%	15.99%	21.95%	19.21%	20.25%	26.05%	19.64%	23.29%

Table 5: Sentiment Analysis of Tweets Containing the Keyword (activists)

The sentiment analysis results reveal interesting patterns in the way both male and female participants expressed their opinions.

Gender	Positive	Negative	Neutral
Male	31.433426	19.524251	49.042323
Female	39.123090	20.593420	40.283490

Table 6: Calculate Sentiment for Males and Female on Five Keywords (activists)

Among male activists, a significant portion 31.43% of their sentiments was positive, while 19.52% leaned towards negativity. The majority 49.04% expressed a neutral sentiment, indicating a balanced perspective overall. In contrast, female activists exhibited a higher level of positivity, with 39.12% of their sentiments being positive. Similar to males, around 20.59% of their sentiments are negative. However, a slightly lower proportion 40.28% expressed a neutral sentiment. These findings suggest that there are differences in how males and females express their sentiments regarding the analyzed keywords. To make our result clearer, we provide the result in the format of graph, look at figure 2, the distribution for five keywords, based on the graph, female stay less negative and more positive.

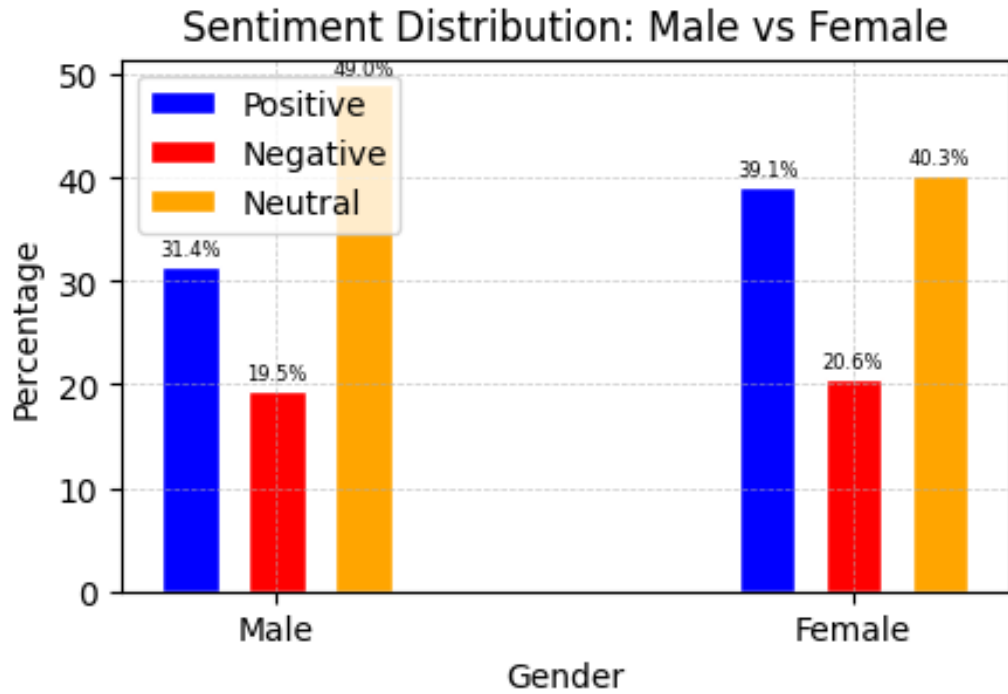


Figure 2: Sentiment Distribution Male vs Female (activists)

To completely narrow down our data, and specifically look for women's education, we have used keyword of "women education", this allows us to break down the data and look for those tweets which has only these two words.

	Male	Female
Sentiment	Women Education	Women Education
Neutral	59.09%	46.32%
Positive	31.82%	40.00%
Negative	9.09%	13.68%

Table 7: Sentiment Distribution on Women Education (activists)

The table 7 reveals that, among males, the sentiment appears to be predominantly neutral, with a significant percentage of 59.09%, indicating a balanced outlook or perhaps a lack of strong emotional inclination towards women's education. Positive sentiment follows closely behind at 31.82%, suggesting a favorable perception and support for empowering women through

education. However, negative sentiment among males remains present, though comparatively lower at 9.09%, highlighting some reservations or concerns regarding this topic.

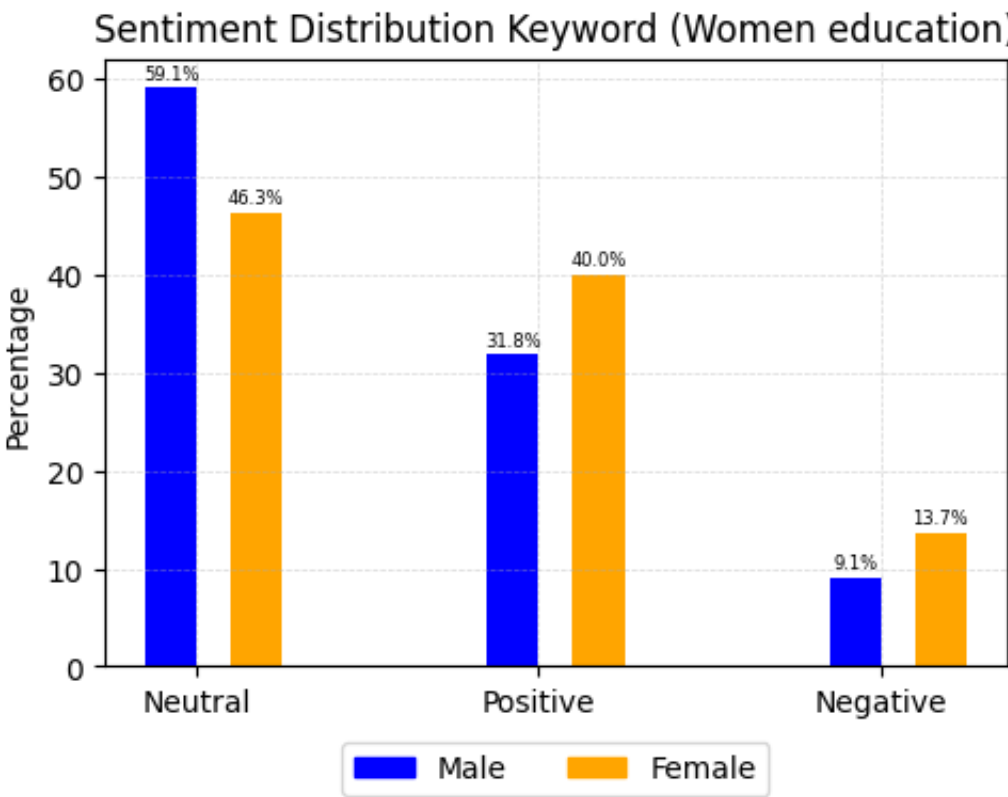


Figure 3: Sentiment Distribution on Women Education (activists)

Conversely, females exhibit a slightly different sentiment distribution. While the majority still falls under the neutral category at 46.32%, it appears that a significant proportion of females, accounting for 40.00%, express a positive sentiment towards women’s education, emphasizing their belief in the importance and benefits of educating women.

However, it is noteworthy that a slightly higher percentage of females, at 13.68%, indicate a negative sentiment, implying that some women may have reservations or face challenges regarding women’s education. These findings

underscore the complexity of opinions and perspectives surrounding women’s education, with variations between genders. The table’s insights shed light on the diverse attitudes and sentiments towards this crucial aspect of education, emphasizing the need for continued efforts to promote and address the barriers faced by women in their pursuit of education.

Based on the analysis of sentiment distributions in male and female tweets, we observe the following results:

Gender	T-Statistic	P-Value
Male	13.599393%	6.610973e-42%
Female	42.011182%	0.000000e+00%

Table 8: Calculate Sentiment Scores for Entire Dataset (activists)

Table 8 shows the sentiment score for the entire dataset, which we conducted between male and female. Even through this for the entire dataset, but it still compares both male and female. The T-statistic measures the magnitude of the difference between the means of the two groups, while the P-value represents the probability of observing such a difference by chance. In the case of male tweets, the T-statistic of 13.599393 suggests a substantial difference in sentiment compared to a hypothetical mean sentiment of 0.

The very low P-value 6.610973e-42 indicates that the probability of obtaining such a difference by random chance is extremely unlikely, providing strong evidence of a significant difference in sentiment. For female tweets, the analysis reveals an even more pronounced difference. The T-statistic of 42.011182 implies a substantial deviation from the hypothetical mean sentiment of 0.

Moreover, the P-value of 0.000000e+00 (effectively zero) reinforces the notion that the observed difference is highly significant, leaving virtually no room for chance.

Further we have implemented the same method for our five keywords, which we have earlier described it. Table 6 show the analysis of sentiment in tweets related to education reveals interesting findings when considering the gender of the users. By focusing on men’s education tweets, the statistical comparison indicates a substantial difference in sentiment from the neutral standpoint. The computed t-statistic of 12.23 suggests a significant deviation from a neutral sentiment score of 0. This indicates that male’s tweets concerning education, encompassing keywords like “women,” “education,” “school,” “university,” and “girl,” tend to exhibit a distinct sentiment, whether positive or negative. Additionally, the associated p-value of 4.973316e-34 further reinforces the significance of this difference. This implies that male’s opinions and attitudes towards education, particularly when related to women, display a pronounced sentiment that differs significantly from neutrality.

Gender	T-Statistic	P-Value
Male	12.231949%	4.973316e-34%
Female	28.321007%	1.696955e-171%

Table 9: Calculate Sentiment Scores for Five Keywords (activists)

When we refer to women’s tweets, we get a significant departure from neutrality, with a t-statistic of 28.321007 and an incredibly small p-value of 1.696955e-171. This indicates that women’s sentiments about education, as expressed in their tweets, differ significantly from neutrality. These findings

highlight the distinct perspectives and attitudes of male and female when discussing education.

Understanding these divergent sentiments is crucial for addressing gender-specific challenges and promoting inclusivity in educational contexts. In short, the analysis provides strong evidence of gender-related differences in sentiment expression and emphasizes the need for considering gender perspectives in educational discourse.

To get solid result regarding women's education, it's time to only test "women education" keyword, both count as a single keyword.

Gender	T-Statistic	P-Value
Male	2.595307%	0.011091%
Female	3.432136%	0.000892%

Table 10: Calculate Sentiment Scores for Women Education (activists)

Uncovering distinct sentiment patterns among male and female. Male's tweets displayed a discernible shift from neutral sentiment, as evidenced by a t-statistic of 2.595307 and a p-value of 0.011091. Meanwhile, female's tweets exhibited an even more pronounced deviation, indicated by a higher t-statistic of 3.432136 and a p-value of 0.000892.

These findings underscore the substantial differences in sentiment expressed by male and female when discussing women's education. Recognizing and addressing these divergences can guide targeted approaches and foster inclusivity within educational contexts. Gender serves as a crucial factor in shaping perspectives and emotions surrounding this important topic.

The chi-square test of independence was performed separately for male and female genders. For the male gender, the test yielded a chi-square statistic of 53.38 and an extremely small p-value of $2.57e-12$. Similarly, for the female gender, the chi-square statistic was 35.16, with a highly significant p-value of $2.31e-08$. These results indicate a strong association between the gender of the users and the presence of tweets related to the five specified keywords. The cross-tabulation of gender and label shows that among females, 21,222 tweets were not related to the keywords, while 13,616 tweets were related. Among males, 10,934 tweets were not related to the keywords, and 6,474 tweets were related.

The significant chi-square test results suggest that the occurrence of tweets related to the specified keywords differs significantly between genders. The findings imply that there are notable differences in the engagement and discussion of the specified topics on social media platforms based on gender. Such insights can be valuable for understanding gender-specific perspectives and behaviors related to the given keywords and can aid researchers, policymakers, and educational institutions in tailoring strategies and initiatives accordingly.

Female Activists Top Frequent Words

To discuss the female activists, the most commonly used words reflect the pressing issues and concerns prevailing in Afghanistan. The term "Taliban" takes the lead with a frequency of (13,079), underscoring the significant impact of the Taliban's rule. "Women" follows closely with (11,054) mentions, emphasizing the focus on gender equality and women's rights. Other frequently mentioned words include "Afghanistan" (8,665), "girl" (5,830), "Afghan" (5,339), and "people"

(4,002), highlighting the broader context of societal discussions. Additionally, "rights," "school," "Kabul," and "education" feature prominently, shedding light on the key concerns related to human rights and access to education.

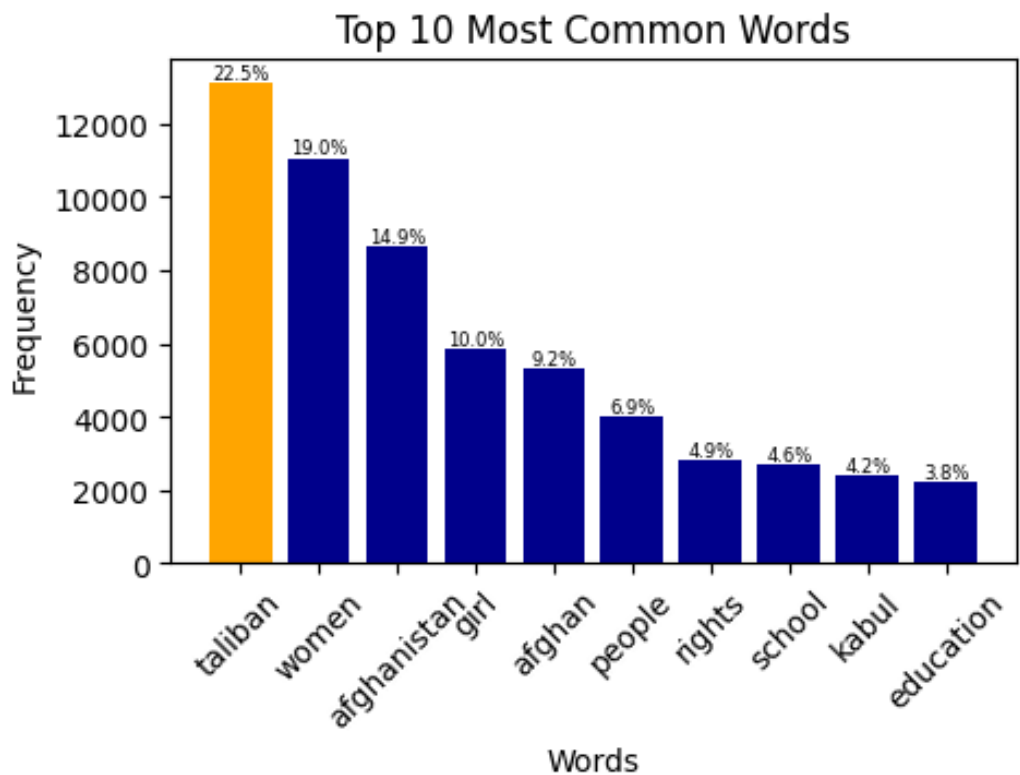


Figure 4: Female Activists Top Frequent Words

In Table 11, we can observe the frequencies of the top 10 words mentioned by female activists. Notably, the word "Taliban" holds the highest count, indicating its significance in their discussions. Following that, we find words like "women," "girl," "rights," and "schools," which align with the focus of our study. It is reassuring to see these keywords present in the dataset, as they reflect the concerns and topics that female activists actively engage with.

Female Activists	Frequency Words
Taliban	13,079
Women	11,054
Afghanistan	8,665
Girl	5,830
Afghan	5,339
People	4,002
Rights	2,843
School	2,694
Kabul	2,417
Education	2,239

Table 11: Frequent Words (female activists)

The word cloud visualization from female activists is displayed in Figure 5. The size of each word represents its frequency of occurrence in their discussions. As depicted, the word "Taliban" appears prominently, indicating its significant presence in their conversations. Additionally, we can see those words such as "women," "girl," "rights," and "schools" hold considerable importance, as they are larger in size, reflecting their frequent usage. This word cloud visualizes the key topics and concerns expressed by female activists in their discussions related to our study.

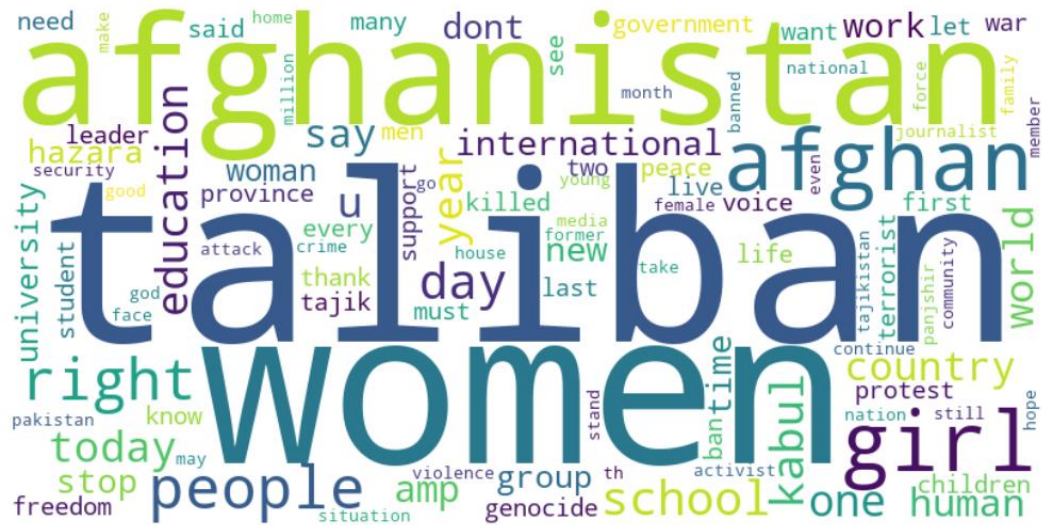


Figure 5: Female Activists Word-Cloud

To discuss the male activists, several notable terms in examining the word frequencies among male activists. "Taliban" emerges as the most frequent word same as the female activists, but with higher percentages, reflecting its significant presence in their discussions. Alongside that, we find mentions of "Afghanistan," "women," "girl," "Afghan," "education," "school," "Kabul," "Talibans," and "people." These terms collectively indicate the key topics and concerns that male activists actively engage with. It suggests that their conversations revolve around issues related to the Taliban, gender equality, education, and the broader context of Afghanistan. The prominence of these words sheds light on the focal points within the discourse of male activists.

Male Activists Top Frequent Words

When we delve into the male activists, it becomes evident that the word "Taliban" takes center stage with a staggering frequency of 8099. This sheds light on a significant focus on addressing the actions and impact of the Taliban. Alongside this, other notable terms such as "Afghanistan" 3287, "women" 3218, "girl" 2422, and "education" 1495 emerge, revealing a strong commitment to championing gender equality and ensuring access to education. Additionally, the presence of words like "Afghan," "school," "Kabul," "Talibans," and "people" indicates the diverse range of topics that male activists engage with and advocate for.

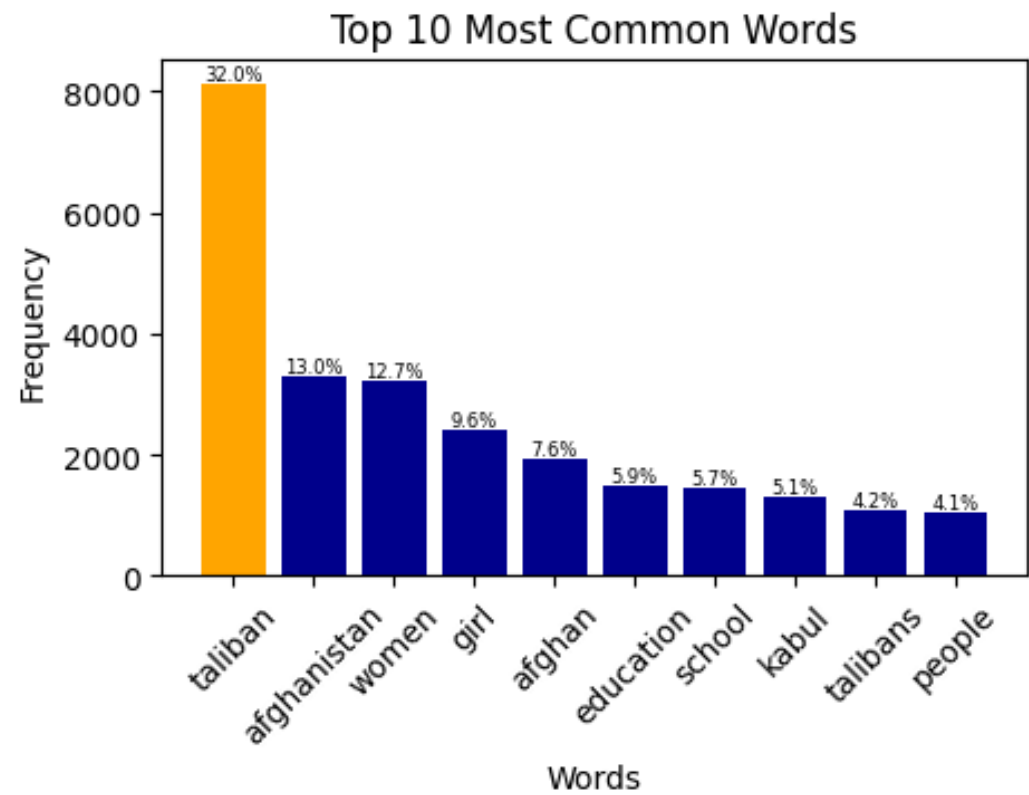


Figure 6: Male Activists Top Frequent Words

Male Activists	Frequency Words
Taliban	8099
Afghanistan	3287
Women	3218
Girl	2422
Afghan	1915
Education	1495
School	1444
Kabul	1291
Talibans	1072
People	1047

Table 12: Frequent Words (Male activists)

Also, the word cloud visualization from male activists shows a significant focus on “Taliban” followed by “Women,” “Afghanistan,” “school,” and “university,” This reflects a concern for gender equality and access to education.

serve as a call to action for fostering equal educational opportunities for all individuals.

Optimization terminated successfully.
Current function value: 0.666075
Iterations 4

Logit Regression Results

Dep. Variable:	label	No. Observations:	51916
Model:	Logit	Df Residuals:	51914
Method:	MLE	Df Model:	1
Date:	Fri, 19 May 2023	Pseudo R-squ.:	0.0002553
Time:	00:26:46	Log-Likelihood:	-34580.
converged:	True	LL-Null:	-34589.
Covariance Type:	nonrobust	LLR p-value:	2.638e-05

	coef	std err	z	P> z	[0.025	0.975]
const	-0.4439	0.011	-40.423	0.000	-0.465	-0.422
sex	-0.0809	0.019	-4.198	0.000	-0.119	-0.043

Women's Education: From an Activist, Taliban and Ordinary People Perceptions

This section consists of activists both male and female, Taliban officials is only male, there is no female in the cabinet of the Taliban, and also, ordinary people, which are Afghan people does not involve in politics. Except the Taliban the other two groups both consists of male and female, but our focus is not on the gender, instead we analyze them in a group, based on their background, like “activist, people, and Taliban”. At first, we would have a look at their tweets in group, then we move forward and analyze them in dept, using keywords, “education”, “school”, “university”, “women”, “girl”, and “women education”. These keywords narrow down the dataset and analyze only those tweets which related to these certain words.

This section is solely for activists, ordinary people and Taliban, in the rest of the section instead of (ordinary people) we use only people which is equivalent to (ordinary people) in this study. Taliban has a total of tweets 75,971 followed the people which is 57,689, and activists 52,247, Taliban has the largest total of tweets which shows how the Taliban active on Twitter platform, even though we have the same sample for each group. Further, figure 8 shows, a sentiment distribution among their tweets, according to the figure, Taliban has the dominant positive tweets and smallest neutral as well, the smallest negative tweets.

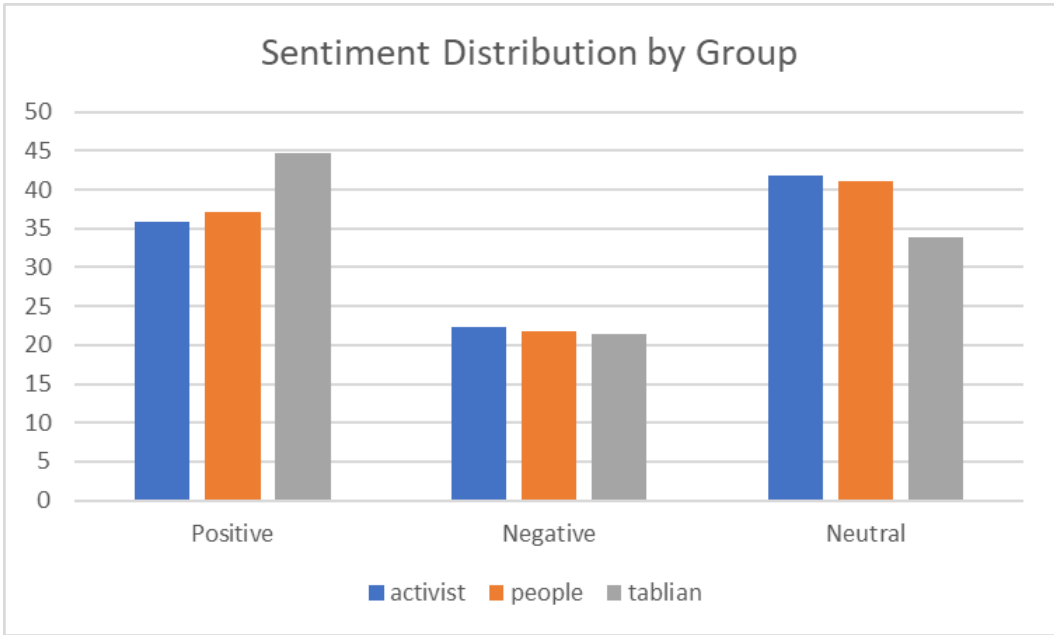


Figure 8: Sentiment Distribution of (activists, taliban, people)

Table 13 shows, the exact percentage of each group, activists and people has the same value on neutral side, while Taliban’s are seeming to be more positive. Table 13, and figure 8 are the same exact result but different approaches, one in chart format, while other in a table.

Group	Positive	Negative	Neutral
Activist	35.894522%	22.282148%	41.823330%
People	37.163793%	21.721719%	41.114488%
Tablian	44.766355%	21.329472%	33.904173%

Table 13: Sentiment Distribution of (activists, taliban, people)

In our analysis of tweets related to the keywords "women," "education," "school," "university," and "girl," we aimed to gain insights into the level of support for women's education in Afghanistan. However, it is important to note that the sentiment distribution for the Taliban was unavailable in the provided data, as all values were NaN (0). Meanwhile, our analysis primarily focuses on the sentiments of activists and the general public, including the Taliban, but for Taliban received NaN (0).

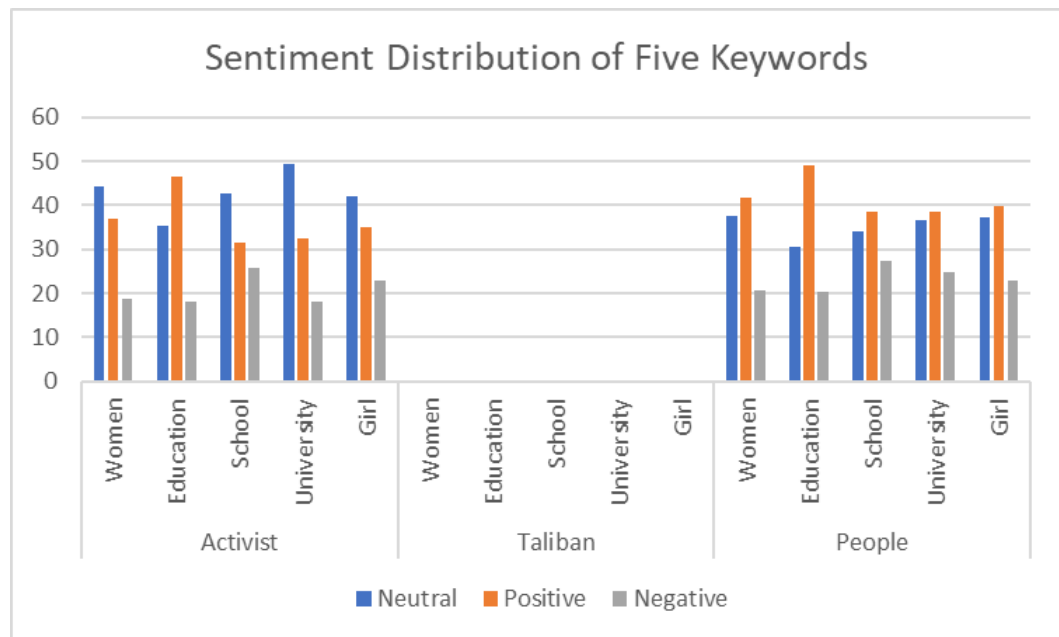


Figure 9: Sentiment Distribution of five Keywords (activists, taliban, people)

When examining the sentiment distribution among activists, we observed varying opinions on the issue of women's education. For the keyword "women,"

the sentiment distribution showed diverse views. Approximately 44.42% of the tweets expressed a neutral sentiment, indicating a lack of clear stance or mixed opinions. On the positive side, 36.91% of the tweets supported women's issues, emphasizing the importance of education and empowerment. However, it is worth noting that around 18.68% of the tweets reflected a negative sentiment and expressed reservations or opposition towards women's education.

Moving on to the keyword "education," we found that among activists, 35.43% of the tweets had a positive sentiment, highlighting the value and significance of education for women. Conversely, 18.16% of the tweets expressed a negative sentiment, suggesting concerns or objections regarding women's access to education. Notably, 46.41% of the tweets remained neutral, indicating a lack of strong sentiment or a balanced perspective among activists. Regarding the keyword "school," the sentiment distribution showed a similar pattern. Activists expressed a mix of sentiments, with 42.67% of the tweets being neutral, 31.53% positive, and 25.80% negative. This suggests that while a significant proportion of activists support the idea of women attending school, there are also concerns or criticisms expressed by a notable portion of the community.

For the keyword "university," the sentiment distribution among activists revealed that 49.43% of the tweets had a neutral sentiment, indicating a lack of a clear stance. However, 32.52% of the tweets were positive, demonstrating support for women pursuing education. Around 18.04% of the tweets displayed a negative sentiment, reflecting reservations or objections towards women's participation in university education. Lastly, focusing on the keyword "girl," the sentiment

distribution among activists showcased a similar trend to the previous keywords. Approximately 42.06% of the tweets had a neutral sentiment, while 35.13% expressed a positive sentiment, emphasizing the significance of supporting girls' education. Around 22.81% of the tweets displayed a negative sentiment, indicating concerns or criticisms about girls' education access.

However, it is crucial to acknowledge the absence of sentiment data for the Taliban in our analysis, which limits our ability to assess their stance on women's education. It would be valuable to obtain sentiment data from the Taliban's perspective to understand the different groups' viewpoints comprehensively. In the sentiment distribution among people, we find that for the keywords of women, education, school, university, and girl, the sentiment percentages vary. When it comes to women, approximately 37.72% of the people express a positive sentiment, while around 20.70% hold a negative sentiment, and the remaining 41.59% maintain a neutral stance. Regarding education, about 30.45% of people express positivity, 20.39% hold a negative sentiment, and 49.16% maintain a neutral viewpoint. Similarly, sentiments related to school, university, and girl show variations in the percentages of positive, negative, and neutral sentiments among the people.

Activist						Taliban					People				
Sentiment	Women	Education	School	University	Girl	Women	Education	School	University	Girl	Women	Education	School	University	Girl
Neutral	44.42	35.43	42.67	49.43	42.06	Nan	Nan	Nan	Nan	Nan	37.72	30.45	34.17	36.69	37.20
Positive	36.91	46.41	31.53	32.52	35.13	Nan	Nan	Nan	Nan	Nan	41.59	49.16	38.45	38.59	39.75
Negative	18.68	18.16	25.80	18.04	22.81	Nan	Nan	Nan	Nan	Nan	20.70	20.39	27.37	24.72	23.05

Table 14: Sentiment Analysis of Tweets Containing the Keyword (activists, taliban, people)

In Table 14, we can observe the percentage breakdown of each keyword, highlighting an unfortunate absence of data for the Taliban group. There are a couple of potential explanations for this absence. It could be that the Taliban either refrains from tweeting about these specific keywords or their involvement in discussions related to women, education, school, university, and girl is minimal, resulting in negligible representation in the collected data. This underscores the significance of the data obtained from the other two groups, providing valuable insights into their perspectives.

Tweets Related to Keywords
jobs allocated women educational sector today announced ministry education jobs teachers administrative staff male female states herat farah ghor badghis nangarhar laghman kunar nuristan
many years uzbekistan hijab allowed women educational institutions
public private universities throughout country open men women education process extended percent remaining parts country thousands women education higher education public health id passport offices airports police media

Table 15: Tweets Related to five Keywords (activists, taliban, people)

Among the tweets we analyzed from the activists and people groups, we have curated a collection of the most suitable tweets corresponding to our chosen keywords. It is worth mentioning that a significant proportion of their tweets predominantly discuss subjects like Islam and the official visits of their representatives to foreign countries, which may not directly relate to our specific investigation on women's education. Nonetheless, we have diligently selected tweets that closely align with our research topic, ensuring their relevance and significance.

To narrow down our data and focus on keyword "women education" only, we found a number of noteworthy patterns emerge. We first put our attention to the Taliban group, unfortunately, the sentiment distribution data is not available NaN (0). This lack of information hinders our understanding of the Taliban's stance on women's education specifically. It could imply that they do not engage in discussions or tweets about women's education, or their stance is not reflected in the dataset. Again, you can take table 14, the best tweet related to education on their dataset.

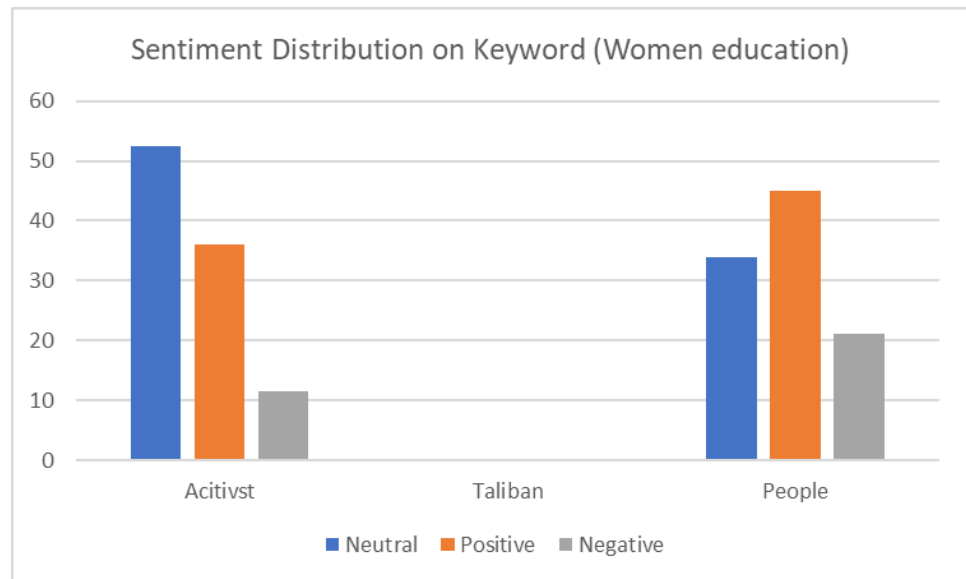


Figure 10: Sentiment Distribution on Women Education (activists, taliban, people)

Considering the sentiment distribution among people, it is evident that a significant proportion of tweets, 33.94%, express a neutral sentiment. This suggests diverse opinions and perspectives among the general public regarding women's education. On the positive side, 44.95% demonstrate a supportive sentiment towards women's education, indicating a widespread belief in the importance of empowering women through educational opportunities. Conversely, 21.1% of the tweets are negative, highlighting concerns or reservations people may have regarding various aspects of women's education.

Women education	Activist	Taliban	People
Neutral	52.46%	NaN	33.94%
Positive	36.07%	NaN	44.95%
Negative	11.48%	NaN	21.10%

Table 16: Sentiment Distribution on Women Education (activists, taliban, people)

Based on the analysis of the sentiment distribution on the specific keyword "women education," activists show a mixed sentiment with a notable emphasis on support and advocacy. However, the lack of available data on the Taliban group limits our understanding of their stance. The general population's sentiment distribution reveals diverse opinions, with a significant portion expressing support for women's education while acknowledging some negative sentiments. These findings shed light on the complexities and varying perspectives surrounding women's education within different groups, underscoring the need for further exploration and dialogue on this crucial topic.

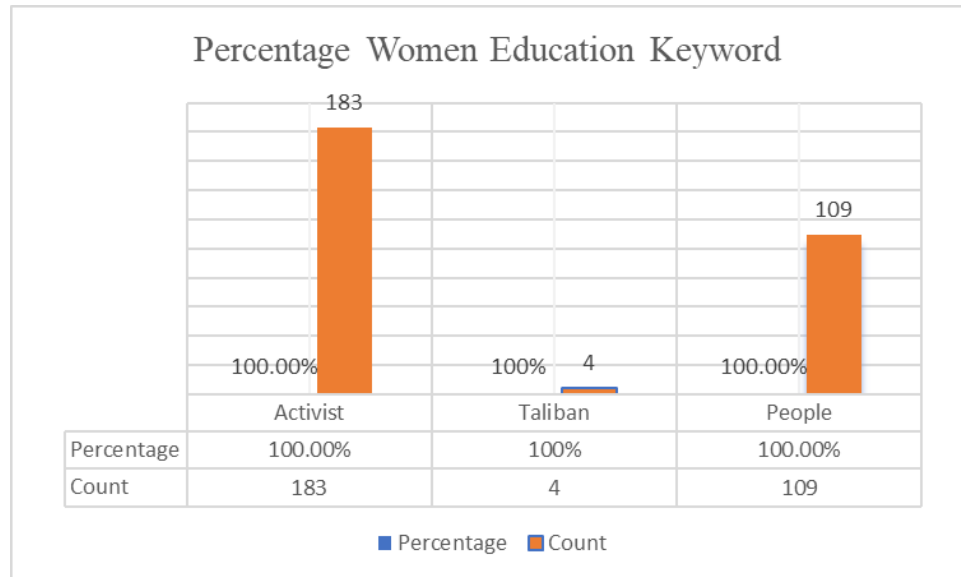


Figure 11: Percentage Women Education Keyword (activists, taliban, people)

In addition to recover Table 16, we conducted a more detailed investigation focusing on the keyword "women education." Our findings revealed that only four tweets mentioned "women education." The percentage for this keyword does not appear in Table 15 because either these tweets did not express a positive sentiment or the sample size was too small to calculate a meaningful percentage. These findings are based on our analysis compared to the other two groups.

Group	Percentage	Count
Activist	100.00%	183
Taliban	100.00%	4
People	100.00%	109

Table 17: Percentage and Count on Women Education (activists, taliban, people)

Based on Table 17, we found that people generally have a more positive sentiment toward "women's education." However, activists tend to express their support for women's education more passionately, resulting in a lower positive sentiment but a higher number of related tweets compared to the general population, table 15 shows, activists has tweeted (183) related to "women education," followed by people (109) and Taliban which is (4).

Analyzing the Frequency of Keywords Regarding Women's Education

The figure 12 provides valuable insights regarding our keywords, namely "women," "education," "school," "university," and "girl." It illustrates the frequency of these keywords' usage by different groups over the course of each year. Based on the figure, we can observe that activists have consistently used these keywords more frequently in their tweets, particularly between October 2022 and January 2023. These findings suggest that the activist group has shown higher engagement and emphasis on these topics during those specific time frames.

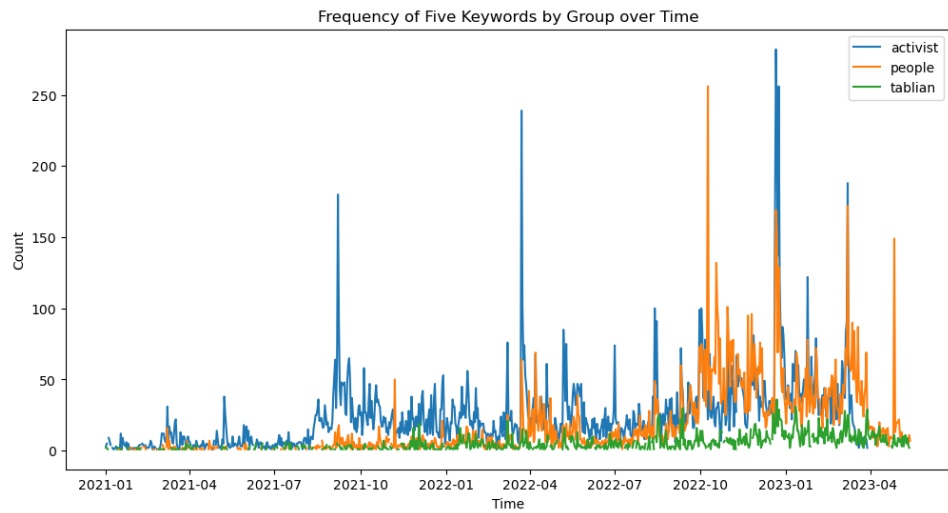


Figure 12: Frequency of Five Keywords by Group over Time (activists, taliban, people)

Additionally, the analysis reveals that the people has noticeably utilized the mentioned keywords. This indicates that people are actively engaged in discussions related to education and express support for women's rights and equality in education. On the other hand, the Taliban has exhibited a considerably lower frequency of tweets containing these keywords. This suggests that the Taliban group may not prioritize or demonstrate concern for women's education based on their limited usage of these keywords.

Last but not least, the results of the statistical test reveal a significant relationship between the groups and the label values. The chi-square statistic, which measures the discrepancy between the observed and expected frequencies, has a high value of (26655.35). This indicates a substantial difference between the groups regarding their support or opposition towards women's education. The p-value, which assesses the

statistical significance, is extremely low at (0.0). This suggests that the likelihood of observing such a large discrepancy between the groups by chance alone is negligible. Therefore, we can conclude that there is a significant association between the groups and their stance on women's education, indicating varying levels of support or opposition across the different groups.

Taliban Top Frequent Words

The Taliban's most frequently used terms reveal their point of view. Words like "Afghanistan," "people," and "Islamic" reveal their connection with the region, their religion, and their political leanings, respectively. They appear to be leading towards an Islamic state, as terms like "minister," "country," and "emirate" all point that way. The words "ministry," "god," "said," and "foreign" all allude to their diplomatic and theological concerns. These reoccurring expressions shed light on the Taliban's overarching goals and ideas.

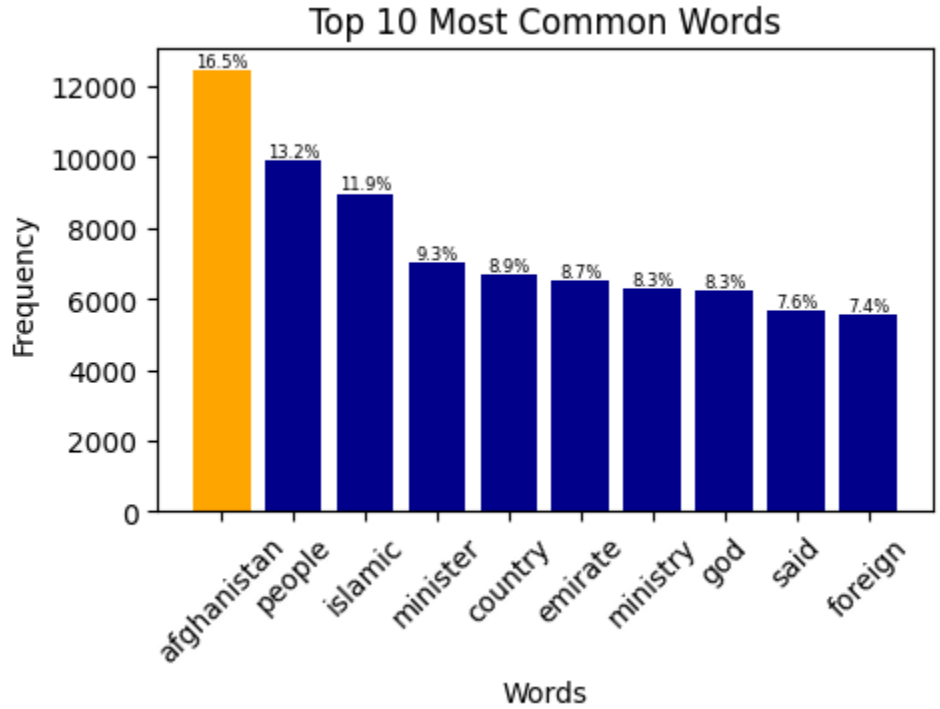


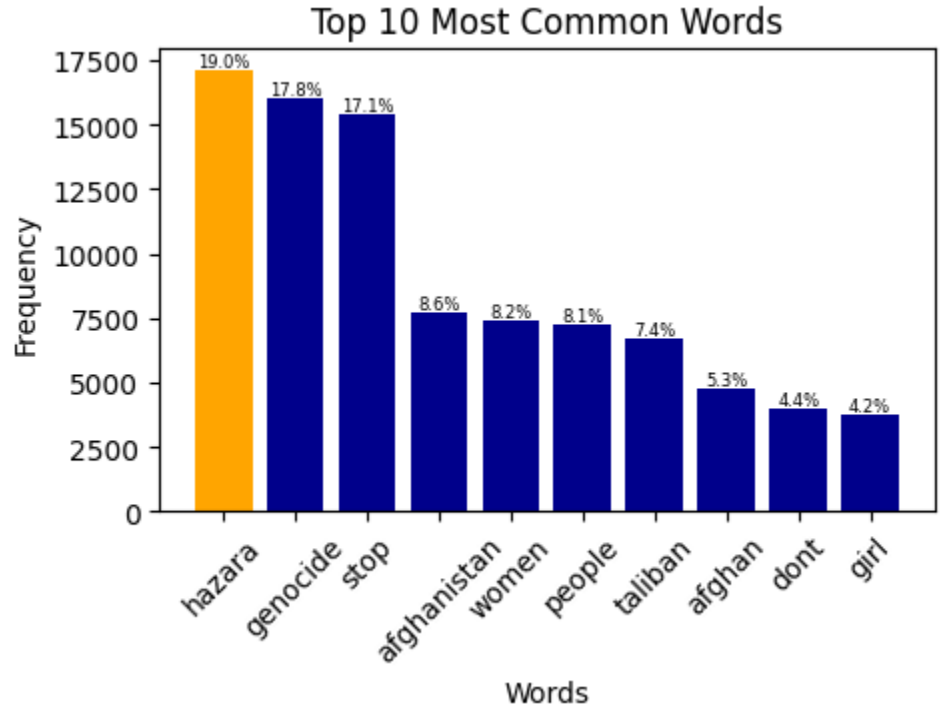
Figure 13: Taliban Top Frequent Words

The word cloud for the Taliban reveals key themes and priorities. It prominently includes words such as "Afghanistan," "people," and "Islamic," highlighting their close association with the country and their religious ideology. Terms like "minister," "country," and "emirate" suggest their involvement in governance and their pursuit of an Islamic state. This word cloud offers a concise glimpse into the Taliban's central focus and core values.



Female Ordinary People Top Frequent Words

Ordinary women's top 10 words represent their worries and activism. "Hazara," "genocide," and "stop" show their awareness and activism. "Afghanistan," "women," and "people" demonstrate their national identity. "Taliban" shows their resistance to the gang, while "girl" underlines their empowerment of young women. These remarks reveal the social and political priorities of regular women.



Male ordinary people, word cloud expresses their concerns, about Afghanistan and the Taliban. "Afghanistan," "Taliban," and "people" show

their focus on the country's predicament and its impact on Afghans. "Hazara," "genocide," and "Pakistan" indicate their grasp of regional affairs. "Stop," "country," and "one" emphasize their patriotism, action, and individuality. The word cloud the most pressing issues and areas of interest, including Afghanistan, the Taliban, and the Hazara people. This shows that they care about ending genocide, Pakistan, and violence. The cloud symbolizes the people's love of their homeland along with their dedication to maintaining tranquility there.



Figure 17: Male Ordinary Word-Cloud

CHAPTER V: GENDER AND WOMEN'S EDUCATION: A CLOSER LOOK AT THE ACTIVISTS

The struggle for women access to education has been there for quite long time, with activists playing an important role in supporting women's education and push society for gender equality. The study have analyzed the differences in the perspectives of activists, Taliban and ordinary Afghan people on women access to education, alos, how gender affect activists both male and female perceptions about women's education.

It is important to recognize the differences in the experiences of male and female activists when fighting for equal educational opportunities for women. Women's rights advocates have first-hand experience with the discrimination, societal standards, and other factors that make it difficult for women to further their education. The challenge of overcoming such obstacles strengthens their resolve to work toward educational equity. They are highly motivated to take action because of their compassion for and identification with women's difficulties.

However, male activists take a different tack when discussing the topic of women's education. They are aware of the inequalities that exist between the sexes and value gender equality highly. They recognize that empowering women through education improves communities and

countries as a whole. Male activists who support women's education seek to eliminate discrimination and promote equality for all.

CHAPTER VI : DISCUSSION

The discourse highlights a conspicuous inequality between the perspectives of activists, Taliban, and ordinary Afghan people concerning the education of women, as indicated by the research findings. Advocates demonstrate keen backing and promotion of women's education, underscoring the significance of equitable access to educational opportunities.

The unwavering endeavors of the individual in question indicate their dedication toward the progression of gender equality in the realm of education, as well as their advocacy for societal transformation. Conversely, the limited involvement of the Taliban with regard to the education of women is a cause for concern. The absence of significant attention given to this crucial matter implies a disregard for the promotion of women's empowerment and rights through educational means.

The conspicuous contrast in perspectives underscores the divergent ideologies and priorities held by these two factions. Moreover, the substantial backing exhibited by the general public towards the education of women reflects a more extensive societal preoccupation and aspiration for equality. The results emphasize the significance of enhancing the

advocacy efforts of activists and implementing focused measures to tackle the inequalities in women's education. It is imperative for policymakers, educators, and organizations to engage in collaborative efforts toward the development of inclusive policies, community engagement, and the establishment of strong support systems.

In addition to the discussion surrounding activists and the Taliban, it is crucial to consider the perspectives of ordinary people regarding women's education. The findings highlight their substantial support for women's education, indicating a broader societal concern and recognition of the importance of equal access to education for women. This support signifies a collective desire for positive change and highlights the potential for widespread social transformation.

Understanding the perspectives of ordinary people is vital for policymakers, as it provides insight into the societal landscape and helps identify areas where interventions and policies can be implemented to address barriers and promote gender equality in education. By harnessing this support and actively involving ordinary people in initiatives, it becomes possible to create a more inclusive and supportive environment for women's education. The study's findings underscore the need for collaboration among policymakers, educators, activists, and ordinary people to collectively work towards dismantling barriers and ensuring that every

woman has the opportunity to access quality education, empowering them to contribute to their communities and achieve their full potential.

CHAPTER VII: CONCLUSION

The study carries several important reasons; first and foremost, the study focused on women's education, and we clarified the perspectives of various organizations, including activists, ordinary people, and the Taliban. Knowing the extent of support and public interest in women's educational opportunities requires an appreciation of these viewpoints. Second, we emphasize the significance of activism in fighting for women's access to education. When it's about gender equality and promoting education activist play an important role and raising awareness, and advocating for policy reforms. This study analyzes the involvement and backing of activists to highlight the need to amplify their voices and support their activities.

Third, the research sheds light on how various communities prioritize and interpret the world. It shows how campaigners and the Taliban view women's education very differently. This insight is critical for politicians, educators, and groups working to advance women's access to education because it illuminates the obstacles that must be overcome to realize gender equality in the society. The importance of ordinary people's backing for women's education is also emphasized. The results indicate a cultural concern and desire for women's educational equality.

This highlights the need for supportive legislation, active communities, and social networks to facilitate women's access to education. The relevance and connections found are also supported by statistical tests used in the study, such as the chi-square test, cross-table along other techniques that enable us to analyze tones of tweets. The analysis is strengthened, and the links between the variables are better understood, as a result of this. This research is significant because it adds to the existing body of knowledge on women's education, sheds light on the roles different groups play in developing attitudes and support, and offers guidance to those working to ensure that women and men have equal access to educational opportunities. This study can inform targeted actions, policies, and advocacy activities to improve women's education and empower women via knowledge and skills by analyzing the current situation and identifying gaps.

Throughout the analysis of the data and results, it is evident that different groups, namely activists, ordinary people, and the Taliban, hold distinct attitudes and sentiments towards women's education. Activists stand out with their notable support for women's education, as reflected in their frequent use of keywords related to women, education, school, university, and girl. This suggests their active involvement in advocating and promoting women's access to education. The chi-square test confirms the strong association between activists and their support for women's

education, underscoring their consistent engagement and vocal commitment to advancing gender equality in education. On the other hand, the ordinary people group has shown a significant level of support for women's education as well. Although their frequency of tweets related to women's education is slightly lower compared to activists, it is evident that they share a genuine interest and concern. The word-cloud analysis reveals important themes such as the Hazara community, genocide, and the call to stop violence, indicating their awareness of the obstacles women face in education and their strong desire for positive transformations. The chi-square test results further solidify the association between ordinary people and their support for women's education, confirming their active involvement and commitment to bringing about change.

Surprisingly, the Taliban group showed very limited engagement and concern when it comes to women's education. Their frequency of tweets related to the specified keywords was significantly lower compared to activists and ordinary people. This observation highlights a clear inequality in priorities and ideologies between the Taliban and the other groups. It indicates that the Taliban does not prioritize or emphasize women's education in their messaging, reflecting a disregard for the significant role education plays in empowering women. The word-cloud analysis for the Taliban further reinforces this finding, as their focus primarily revolves around Afghanistan, people, and Islamic values, with

minimal mention of women's education. This underscores the need for targeted efforts to address this gap and promote gender equality in education within the Taliban context. The analysis reveals a stark contrast between activists and the Taliban regarding their attitudes towards women's education. Activists actively support and advocate for women's education, while the Taliban's engagement is lacking. This difference underscores opposing ideologies. Strong support from ordinary people further emphasizes societal concern and the desire for equality. Policymakers, educators, and organizations should address these findings to improve women's education and promote gender equality. Supporting and amplifying activists' voices is crucial. The data highlights the need for targeted interventions, policies, and continued advocacy to ensure equal access to education for all women.

References

- Anderson, C. L., Reynolds, T. W., Biscaye, P., Patwardhan, V., & Schmidt, C. (2021). Economic Benefits of Empowering Women in Agriculture: Assumptions and Evidence. *The Journal of Development Studies* 57, 200.
- Bank, B. J. (2007). *Gender and Education: an Encyclopedia, Volumes I & II*. 88 Post Road West, Westport, CT 06881: Praeger.
- Domagoj Margan, A. M. (2015). LaNCoA: A Python Toolkit for Language Networks Construction and Analysis. *In 2015 38th International Convention on Information and Communication Technology, Electronics and Microelectronics*.
- El Barachi, M., AlKhatib, M., Mathew, S., & Oroumchian, F. (2021). A novel sentiment analysis framework for monitoring the evolving public opinion in real-time: Case study on climate change. *Journal of Cleaner Production*, 1.
- Evans, H. K., & Clark, J. (2015). “You Tweet Like a Girl!”: How Female Candidates Campaign on Twitter. *American Politics Research*, 10.
- Fluri, J. L. (2009). Geopolitics of gender and violence from below. *Political Geography*, 260.

- Inayatullah, S. (2022). Women's Education in Afghanistan Disparities in Education Under the Taliban affecting Women's Capabilities Development. *Malmö university*.
- Johnson, L. (2004). A Generation of Women Activists: African American Female Educators in Harlem, 1930-1950. *Jstor*.
- Karamouzas, D., Mademlis, I., & Pitas, I. (2022). Public opinion monitoring through collective semantic analysis of tweets. *Social Network Analysis and Mining*, 1.
- Karlsson, P., & Mansory, A. (2008). Islamic and Modern Education in Afghanistan - Conflictual or Complementary? *Institute of International Education Stockholm University*.
- Kihlstrom, J. F., & Cantor, N. (2000). Social Intelligence. *Cambridge, England: Cambridge University Press*.
- Kitzie, V., & Ghosh, D. (2016). #Criming and #Alive: Network and content analysis of two sides of a story on twitter. *American Journal of Political Science*, 2.
- Klenk, R. M. (2010). *Educating Activists Development and Gender in the Making of Modern Gandhians*. Estover Road, Plymouth PL6 7PY, United Kingdom: Lexington Books.
- Lewis, D., & Burke, C. J. (1949). Categorical Data and Chi-Square Tests. *American Journal of Political Science*.

- Lorber, J. (2001). *Gender Inequality: Feminist Theories and Politics*. Los Angeles, California: Claude Teweles.
- Luguetti, C., & Oliver, K. L. (2020). A transformative learning journey of a teacher educator in enacting an activist approach in Physical Education Teacher Education. *American Journal of Political Science*.
- Lyytikäinen, L. (2013). Gendered and classed activist identity in the Russian oppositional youth movement. *American Journal of Political Science*.
- Mashwani, H. U. (2017). Female Education in Afghanistan: Opportunities and Challenges. *International Journal for Innovative Research in Multidisciplinary Field*.
- McGregor, S. L. (2015). Framing consumer education conceptual innovations as consumer activism. *American Journal of Political Science*.
- Nussbaum, M. C. (2004). Women's Education: A Global Challenge. *The University of Chicago Press*.
- Orfan, S. N. (2021). Political participation of Afghan Youths on Facebook: A case study of Northeastern Afghanistan. *Cogent Social Sciences*.
- Parson, L. (2020). Researching Gender and Higher Education. *American Journal of Political Science*, 515.
- Pedregosa, F. (2011). Scikit-learn: Machine Learning in Python. *Journal of Machine Learning Research*, 2826.

- Plutzer, L. A. (1993). Contextual Determinants of Feminist Attitudes: National and Subnational Influences in Western Europe. *American Political Science Association*, 149.
- Rene, R. (2010). *A Survey of the Afghan People*. AINA Media, Kabul: The Asia Foundation.
- Rieger, T. A. (2019). A survey of the Afghan people: Afghanistan in 2019. *The Asia Foundation*.
- Scott, R., & Kosslyn. (2015). Content Analysis. *American Journal of Political Science*, 9.
- Skaine, R. (2002). *The Women of Afghanistan Under the Taliban*. Jefferson, North Carolina: McFarland & Company, Inc.
- Telesetskyt, A. (1998). In the Shadows and Behind the Veil: Women in Afghanistan Under Taliban Rule. 1.
- Weiner, G. (1986). Feminist Education and Equal Opportunities: Unity or Discord. *British Journal of Sociology of Education* , 1986, Vol. 7, No. 3 (1986), pp. 265-274.
- Welzel, C., & Inglehart, R. (2008). The Role of Ordinary People in Democratization. *Journal of democracy*.
- Women, U. (2022). Women's rights in Afghanistan, one year after the Taliban taken-over.

Yousaf, F., & Jabarkhail, M. (2021). Afghanistan's future under the Taliban regime: engagement or isolation? *Routledge*.

Appendix

```
1. import tweepy
2. import pandas as pd
3. consumer_key = 'your_consumer_key'
4. consumer_secret = 'your_consumer_secret'
5. access_token = 'your_access_token'
6. access_token_secret = 'your_access_token_secret'
7. auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
8. auth.set_access_token(access_token, access_token_secret)
9. api = tweepy.API(auth)
10. username = 'twitter_username'
11. tweets = api.user_timeline(screen_name=username, count=100)
12. tweets_list = []
13. for tweet in tweets:
14.     tweets_list.append({
15.         'created_at': tweet.created_at,
16.         'text': tweet.text,
17.         'retweets': tweet.retweet_count,
18.         'favorites': tweet.favorite_count
19.     })
20. df = pd.DataFrame(tweets_list)
21. print(df.head())
```

Table 18. Fetch tweets by username

```
1. import pandas as pd
2. tweets_df = pd.read_excel('./data_processed/complete.xlsx')
3. tweets_df = tweets_df.dropna()
4. tweets_df['text'] = tweets_df['text'].str.lower()
5. keywords = ["women", "education", "schools", "study", "learn", "right", "ban", "people",
6.             "afghan", "educated", "girls", "female", "protest", "pashtun", "tajik", "uzbek", "hazara",
7.             "rights", "prohibit", "patriarch", "close schools", "close universities", "university", "man"]
8. matched_tweets = {}
9. for keyword in keywords:
10.     tweets_df['text'] = tweets_df['text'].fillna('')
11.     matched_tweets[keyword] = tweets_df[tweets_df['text'].str.contains(keyword, case=False)]
12.
13. for keyword, df in matched_tweets.items():
14.     print(f"{keyword}: {len(df)}")
15. for keyword, df in matched_tweets.items():
16.     df.to_excel(f'./data_processed/{keyword}_matched_tweets.xlsx', index=False)
```

Table 19. Find related data by keywords

```
1. def remove_usernames_links(tweet):
2.     tweet = re.sub("@[\s]+", "", str(tweet))
3.     tweet = re.sub("http[\s]+", "", str(tweet))
4.     return tweet
5. df = df.replace(r"\n", " ", regex=True)
```

```
6. df["text"] = df["text"].apply(remove_usernames_links)
```

Table 20. Remove URL, and mention

```
1. from collections import Counter
2. hashtags = []
3. for row in df['text']:
4.     hashtags.extend([tag.strip("#") for tag in row.split() if tag.startswith("#")])
5. counts = Counter(hashtags)
6. top_tags = counts.most_common(10) # modify topn parameter here
7. fig, ax = plt.subplots(figsize=(12, 8))
8. ax.bar([tag[0] for tag in top_tags], [len(tag[0]) for tag in top_tags])
9. ax.set_title("Top 50 Hashtags with Lengths")
10. ax.set_xlabel("Hashtag")
11. ax.set_ylabel("Length")
12. plt.xticks(rotation=90)
13. plt.show()
```

Table 21. Top 10 Trends

```
1. import pandas as pd
2. import re
3. pattern = r'#\w+'
4. df['hashtags'] = df['text'].str.extractall(pattern)[0].values
5. print(df)
```

Table 22. Remove Hashtags

```
1. import pandas as pd
2. contraction_map={
3.     "ain't": "is not",
4.     "aren't": "are not",
5.     "can't": "cannot",
6. }
7. def expand_contractions(text):
8.     pattern = re.compile('{{}}'.format('|'.join(contraction_map.keys()))),
9.     flags=re.IGNORECASE|re.DOTALL)
10.     def replace(match):
11.         return contraction_map[match.group(0).lower()]
12.     return pattern.sub(replace, text)
13. text_cols = data.select_dtypes(include=[object]).columns
14. data['text'] = data['text'].apply(lambda x: expand_contractions(str(x)))
15. data.head(5)
```

Table 23. Expand Contractions

```
1. import re
2. sample_string = 'This is a sample string with ASCII characters: !@#$%^&*()_+={}[]\|.;"<>,.?/~`'
3. clean_string = re.sub(r'^\x00-\x7F)+', '', sample_string)
```

```

4. print('Original string:', sample_string)
5. print('Cleaned string:', clean_string)

```

Table 24.Remove ASCII Characters

```

1. def whitespace(columns_name, text):
2.     data[columns_name] = data[columns_name].replace("", "", regex=True) #remove empty string
3.     data[columns_name] = data[columns_name].str.strip() #remove whitespace
4. whitespace('name',data)
5. whitespace('text',data)

```

Table 25. Remove Whitespace

```

1. df.dropna(subset=['text'], inplace=True)
2. df.dropna(inplace=True)
3. df.drop_duplicates(subset=['text'], inplace=True)
4. df[['text']].sample(5)

```

Table 26. Drop Null Values

```

1. import string
2. def remove_punctuations(text):
3.     for punctuation in string.punctuation:
4.         text = text.replace(punctuation, "")
5.     return text
6. df['text'] = df['text'].apply(remove_punctuations)

```

Table 27. Remove Punctuations

```

1. ct = pd.crosstab([df['ethnic'], df['gender']], df['label'], normalize='index')
2. print(ct)

```

Table 28. Contingency Code

```

1. from sklearn.feature_extraction.text import CountVectorizer
2. from sklearn.linear_model import LogisticRegression
3. import numpy as np
4. vectorizer = CountVectorizer(stop_words=stopwords.words('english'))
5. X_train_vectorized = vectorizer.fit_transform(X_train)
6. unwanted_words = ['afghanistan', 'taliban', 'afghan', 'kabul']
7. for word in unwanted_words:
8.     try:
9.         idx = vectorizer.vocabulary_[word]
10.        del vectorizer.vocabulary_[word]
11.        vectorizer._validate_vocabulary()
12.        X_train_vectorized = X_train_vectorized[:, np.arange(X_train_vectorized.shape[1]) != idx]
13.    except KeyError:
14.        pass
15. X_train_vectorized = vectorizer.fit_transform(X_train)
16. lr = LogisticRegression()
17. lr.fit(X_train_vectorized, y_train)

```

Table 29. Transforming Textual to numeric


```

1. from sklearn.metrics import classification_report
2. y_pred = lr.predict(X_test_vectorized)
3. print(classification_report(y_test, y_pred))

```

Table 30. Evaluate Performance

```

1. def label_tweets(text):
2.     keywords = ['education', 'school', 'university', 'women', 'girl']
3.     for keyword in keywords:
4.         if keyword in text.lower():
5.             return 1
6.     return 0
7. df = df.copy()
8. df['label'] = df['text'].apply(label_tweets)

```

Table 31: Labeling Data

```

1. x = df['text']
2. sentiment_labels = []
3. sentiment_scores = []
4. for tweet in x:
5.     # Create a TextBlob object
6.     blob = TextBlob(tweet)
7.     # Get the sentiment polarity (-1 to 1)
8.     polarity = blob.sentiment.polarity
9.     if polarity > 0:
10.        sentiment = 'positive'
11.    elif polarity < 0:
12.        sentiment = 'negative'
13.    else:
14.        sentiment = 'neutral'
15.
16.    sentiment_labels.append(sentiment)
17.    sentiment_scores.append(polarity)
18. # Add the sentiment labels and scores as new columns in the DataFrame
19. df['sentiment'] = sentiment_labels
20. df['sentiment_score'] = sentiment_scores
21.

```

Table 32: Sentiment Analysis

```

1. # Define custom colors for sentiment categories
2. colors = {'negative': 'red', 'neutral': 'blue', 'positive': 'orange'}
3.
4. # Calculate sentiment counts
5. sentiment_counts = df['sentiment'].value_counts()
6.
7. # Plot the sentiment counts with custom colors
8. plt.figure(figsize=(8, 6))
9. sentiment_counts.plot(kind='bar', color=[colors.get(x, 'gray') for x in sentiment_counts.index])
10. plt.xlabel('Sentiment Category')
11. plt.ylabel('Count')
12. plt.xticks(rotation=0)

```

```

13. plt.title('Sentiment Distribution')
14. plt.show()
15.
16. # Calculate total counts
17. total_counts = sentiment_counts['positive'] + sentiment_counts['negative']
18. print("Sentiment Distribution:", total_counts)

```

Table 33: Sentiment Distribution

```

1. women_positive_count = df[(df['gender'] == 'male') & (df['sentiment'] == 'positive')].shape[0]
2. women_total_count = df[df['gender'] == 'male'].shape[0]
3. women_positive_percentage = (women_positive_count / women_total_count) * 100
4. # Print the results
5. print("Positive tweets from taliban:", women_positive_count, "(", women_positive_percentage, "%")

```

Table 34: Calculate Positive Tweets

```

1. coding_scheme = {
2. 'women': ['women', 'woman', 'female', 'feminine', 'girl', 'lady'],
3. 'education': ['education', 'educational', 'learning', 'academics', 'knowledge'],
4. 'school': ['school', 'classroom', 'teacher', 'students', 'curriculum'],
5. 'university': ['university', 'college', 'higher education', 'academia', 'campus'],
6. 'access': ['access', 'opportunity', 'enrollment', 'attendance', 'entry'],
7. 'quality': ['quality', 'standard', 'curriculum', 'teaching', 'learning'],
8. 'benefits': ['benefit', 'advantage', 'improvement', 'progress'],
9. 'barriers': ['barrier', 'restriction', 'obstacle', 'challenge', 'difficulty'],
10. 'empowerment': ['empower', 'empowering', 'confidence', 'self-esteem', 'agency'],
11. 'gender': ['gender', 'discrimination', 'inequality', 'feminism', 'patriarchy']
12. }
13.
14. # Define a function to apply the coding scheme to each tweet
15. def apply_coding_scheme(text):
16.     codes = []
17.     for code, keywords in coding_scheme.items():
18.         for keyword in keywords:
19.             if keyword in text.lower():
20.                 codes.append(code)
21.     return codes
22.
23. # Apply the coding scheme to the text column and create a new column for the codes
24. df_edu['codes'] = df_edu['text'].apply(apply_coding_scheme)
25.

```

Table 35: Code Scheme

```

1. from nltk.sentiment import SentimentIntensityAnalyzer
2. import nltk
3. # Initialize the sentiment analyzer
4. sid = SentimentIntensityAnalyzer()
5. # Loop through each keyword and calculate the sentiment of tweets containing that keyword
6. for keyword in ['women', 'education', 'school', 'university', 'girl']:
7.     keyword_tweets = df_edu[df_edu['text'].str.contains(keyword)].copy()
8.     keyword_tweets.loc[:, 'sentiment_score'] = keyword_tweets['text'].apply(lambda x:
sid.polarity_scores(x)['compound'])

```

```

9. print(f"Sentiment analysis of tweets containing the keyword '{keyword}':")
10. print(keyword_tweets.groupby('sentiment')['text'].count())

```

Table 36: Analyzing Five Keywords

```

1. from nltk.sentiment import SentimentIntensityAnalyzer
2. import nltk
3. import pandas as pd
4.
5. # Initialize the sentiment analyzer
6. sid = SentimentIntensityAnalyzer()
7.
8. # Create a DataFrame to store the sentiment percentages for each keyword
9. keyword_sentiments = pd.DataFrame(columns=['Positive', 'Negative', 'Neutral'])
10.
11. # Loop through each keyword and calculate the sentiment of tweets containing that keyword
12. for keyword in ['women', 'education', 'school', 'university', 'girl']:
13.     keyword_tweets = df_edu[df_edu['text'].str.contains(keyword)].copy()
14.     keyword_tweets['sentiment_score'] = keyword_tweets['text'].apply(lambda x:
sid.polarity_scores(x)['compound'])
15.
16.     # Calculate the sentiment distribution for the keyword
17.     sentiment_distribution = keyword_tweets.groupby('sentiment')['text'].count()
18.     total_tweets = sentiment_distribution.sum()
19.
20.     # Calculate the percentage of each sentiment category
21.     sentiment_percentage = sentiment_distribution / total_tweets * 100
22.
23.     # Add the sentiment percentages to the DataFrame
24.     keyword_sentiments.loc[keyword] = sentiment_percentage.values
25.
26. # Calculate the average sentiment percentages across all keywords
27. average_sentiments = keyword_sentiments.mean()
28.
29. # Print the average sentiment percentages
30. print("Average sentiment percentages:")
31. for sentiment, percentage in average_sentiments.items():
32.     print(f"{sentiment}: {percentage:.2f}%")

```

Table 37: Average Sentiment Percentages

```

1. sentiment_scores = [TextBlob(tweet).sentiment.polarity for tweet in df['text']]
2. # Compare the sentiment distributions using a t-test
3. t_stat, p_value = stats.ttest_1samp(sentiment_scores, 0)
4. print("Comparison of Sentiment whole tweets:")
5. print("T-statistic:", t_stat)
6. print("P-value:", p_value)

```

Table 38: Comparison of Sentiment Whole Tweets

```

1. import scipy.stats as stats
2. from textblob import TextBlob
3. keywords = ['women', 'education', 'school', 'university', 'girl']
4. # Filter tweets containing the keywords

```

```

5. men_education_tweets = df[df['text'].str.contains(''.join(keywords), case=False)]
6. # Calculate sentiment scores using TextBlob
7. sentiment_scores = [TextBlob(tweet).sentiment.polarity for tweet in men_education_tweets['text']]
8. # Perform one-sample t-test
9. t_stat, p_value = stats.ttest_1samp(sentiment_scores, 0)
10. # Print the comparison results
11. print("Comparison of Sentiment for five keywords:")
12. print("T-statistic:", t_stat)
13. print("P-value:", p_value)

```

Table 39: Comparison of Sentiment Five Keywords

```

1. taliban_education_tweet = df[df['text'].str.contains('women education', case=False)]
2. sentiment_scores = [TextBlob(tweet).sentiment.polarity for tweet in taliban_education_tweet['text']]
3. t_stat, p_value = stats.ttest_1samp(sentiment_scores, 0)
4. print("Comparison of Sentiment for Women Education Tweets:")
5. print("T-statistic:", t_stat)
6. print("P-value:", p_value)

```

Table 40: Comparison of Sentiment on Keyword Women Education

```

1. from scipy.stats import chi2_contingency
2. contingency_table = pd.crosstab(df['gender'], df['label'])
3. chi2, p_value, _, _ = chi2_contingency(contingency_table)
4. print("Chi-square Test of Independence:")
5. print("Chi-square:", chi2)
6. print("P-value:", p_value)

```

Table 41: Chi-square Test of Independence

```

1. cross_tab = pd.crosstab(df['sentiment'], df['gender'])
2. # Print the cross-tabulation
3. print("Cross-Tabulation of Sentiment and Gender:")
4. print(cross_tab)

```

Table 42: Cross-Tabulation of Sentiment and Gender

```

1. import matplotlib.pyplot as plt
2. from collections import Counter
3. # Combine all the text into a single string
4. all_text = ''.join(df['text'].tolist())
5. # Split the text into individual words
6. all_words = all_text.split()
7. # Count the occurrences of each word
8. word_counts = Counter(all_words)
9. # Retrieve the most common words
10. most_common_words = word_counts.most_common(10)
11. # Extract the words and their frequencies
12. words = [word for word, count in most_common_words]
13. frequencies = [count for word, count in most_common_words]
14. # Calculate the total frequency of all words
15. total_frequency = sum(frequencies)
16. # Calculate the percentages
17. percentages = [count / total_frequency * 100 for count in frequencies]
18. # Set up the figure and axes

```

```

19. fig, ax = plt.subplots(figsize=(10, 6))
20. # Create a bar chart for the most common words
21. bars = ax.bar(words, frequencies, color=['orange', 'darkblue', 'darkblue', 'darkblue', 'darkblue', 'darkblue',
'darkblue', 'darkblue', 'darkblue', 'darkblue'])
22. # Add labels and title
23. ax.set_xlabel('Words')
24. ax.set_ylabel('Frequency')
25. ax.set_title('Top 10 Most Common Words')
26. # Rotate x-axis labels for better readability
27. plt.xticks(rotation=45)
28. # Add percentage labels above each bar
29. for bar, percentage in zip(bars, percentages):
30.     height = bar.get_height()
31.     ax.text(bar.get_x() + bar.get_width() / 2, height, f'{percentage:.1f}%', ha='center', va='bottom')
32. # Show the chart
33. plt.show()

```

Table 43: Frequent Words

```

1. sentiment_counts = df.groupby(['created_at', 'label']).size().unstack()
2. # Extract the time periods and convert them to datetime objects
3. time_periods = pd.to_datetime(sentiment_counts.index)
4. # Set up the figure and axes
5. fig, ax = plt.subplots(figsize=(12, 6))
6. # Plot the stacked area plot for sentiment categories
7. ax.stackplot(time_periods, sentiment_counts.T, labels=sentiment_counts.columns)
8. # Add labels and title
9. ax.set_xlabel('Time')
10. ax.set_ylabel('Count')
11. ax.set_title('Tweet Frequency Time Series')
12. # Add legend
13. ax.legend()
14. # Show the chart
15. plt.show()
16.

```

Table 44: Time Series

```

1. from wordcloud import WordCloud
2. text = ''.join(df['text'])
3. # Create a WordCloud object with customized options
4. wordcloud = WordCloud(width=800, height=400, background_color='white', colormap='viridis',
5.                        max_words=100, contour_width=3, contour_color='steelblue',
6.                        prefer_horizontal=0.8, relative_scaling=0.5,
7.                        collocations=False).generate(text)
8. # Add a central word
9. wordcloud.generate_from_text("Afghanistan")
10. # Manipulate font sizes for the central word and other words
11. wordcloud = WordCloud(width=800, height=400, background_color='white', colormap='viridis',
12.                        max_words=100, contour_width=3, contour_color='steelblue',
13.                        prefer_horizontal=0.8, relative_scaling=0.5,
14.                        collocations=False).generate(text)
15. wordcloud.words_["Afghanistan"] = 80 # Set font size for the central word

```

```
16. # Display the word cloud using matplotlib
17. plt.figure(figsize=(10, 6))
18. plt.imshow(wordcloud, interpolation='bilinear')
19. plt.axis('off')
20. plt.tight_layout()
21. plt.show()
```

Table 45: Word-Cloud