

# Analysis of X (Formerly Twitter) Users' Perceptions towards the Election of Jolidee Matongo as Mayor of Johannesburg

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## ABSTRACT

This paper presents a study on the analysis of X (formerly Twitter) users' perceptions towards the election of Jolidee Matongo as mayor of Johannesburg, South Africa in 2021. This election was significant because it was the first time that a person of Zimbabwean descent had been elected mayor of Johannesburg. Given the vast amount of user-generated content on Twitter, analysing tweets can serve as a valuable proxy for capturing public opinion. However, to date, there appears to be a notable research gap concerning the wide adoption of tweet analysis for understanding public opinion. The study used 4324 tweets that were collected from X (Twitter) via the Twitter application programming interface (API) over a period of one week after the election. Sentiment analysis and topic modelling were used to analyse the results. The results suggested that social media platforms can be used to gain valuable insights into public opinion and the different perspectives. Social media platforms can also be used to spread xenophobia. Cognitive biases, specifically the confirmation bias has been found to influence Twitter users' perception towards the election of Matongo. A significant number of negative tweets expressed xenophobic views due to Matongo's Zimbabwean roots. However, the average sentiment score of 0.10 suggested that the overall sentiment of the tweets was slightly positive.

**Keywords**— Perceptions, Xenophobia, X (Twitter), Election, Zimbabwean

## INTRODUCTION

The election of Jolidee Matongo as mayor of Johannesburg in 2021, generated a lot of reactions by twitter users. The reactions revealed mixed perceptions with some accepting Matongo's election while others expressed some xenophobic attitudes. Xenophobia is the fear or hatred of foreigners. Chiweshe (2020) defined xenophobia as attitudes, prejudices and behaviour that reject, exclude and often vilify persons, based on the perception that they are outsiders or foreigners to the community, society or national identity. It can manifest itself in a variety of ways, including discrimination, violence, and even genocide. Jolidee Matongo was born in Soweto, South Africa to a Zimbabwean immigrant father (Tandwa, 2021; Mafisa, 2021). This election was significant because it was the first time that a person of Zimbabwean descent had been elected mayor of Johannesburg, South Africa.

In South Africa, xenophobia has been a problem for many years (Eagle, 2002). There is a growing body of literature on the xenophobic attitudes of South Africans towards Zimbabweans. This literature has shown that these attitudes are often based on negative stereotypes about Zimbabweans, such as that they are criminals, lazy, and dirty (Gordon, 2020; Masikane et al., 2020). These stereotypes can lead to discrimination and violence against Zimbabweans in South Africa. Xenophobic attacks in South Africa illustrate the high levels of intolerance of foreign migrants. (Tella, 2016)

Research has shown that there are several psychological causes of xenophobia. Basing on Freud's psychoanalysis theory, childhood experiences determine adult personality (Mclead, 2024). In this regard, xenophobia can be traced back to unresolved childhood conflicts and anxieties as well as sexual repression. For example, someone with unresolved issues around aggression from Freud's oral stage

might develop phobias or anxiety disorders as a way of managing their unconscious urges. The way individuals navigate childhood conflicts can shape their personality traits. Individuals with unresolved childhood conflicts and anxieties are more likely to engage in xenophobic behaviour. Xenophobia can be a direct result of fear of the unknown (Eagle, 2002). Fear of the unknown refers to an individual's propensity to experience fear caused by the perceived absence of information at any level of consciousness or point of processing (Carleton, 2016). People who are unfamiliar with other cultures or groups may be more likely to fear them. The fear would then be expressed through various behaviours.

Intolerance of ambiguity is the most potent predictor of xenophobic behaviours (Ogunyemi et al, 2020). This can lead to anxiety, stress and a need for control. Competition for resources can lead to xenophobia that is, when people feel that their resources are threatened, they may become xenophobic. Using Sherif (1961)'s realistic conflict theory cited in Valentim (2010), competition for scarce resources, such as jobs or housing, can lead to intergroup conflict. When different groups compete for the same resources, they may perceive each other as threats, leading to increased prejudice and discrimination. This can be relevant in situations where immigrants are perceived as competing for jobs or resources with the local population. Competition for resources by people is a fundamental aspect of human society and has been a driving force behind historical events, societal structures and economic systems.

Xenophobia could also be a result of post-traumatic stress disorder (PTSD) or some psychotic disorders such as schizophrenia (Evans, 2023). People with PTSD may be more likely to perceive unfamiliar people or cultures as potential dangers, especially if their trauma involved violence or danger from outsiders. Lastly, people may learn to be xenophobic from their parents, peers, or the media through social learning. This is according to Bandura's (1961) social learning theory cited in Firmansyah and Saepuloh (2022). The above mentioned psychological factors play a significant role in determining South Africans' perceptions towards foreigners in general and Zimbabweans in particular.

The South Africans expressed their views following Matongo's election using twitter, a social media platform. The emergence of social media in the twenty-first century revolutionized the production and consumption of information (Nkabane et al, 2021). It has also transformed the traditional way of conducting politics and brought about new ways through which citizens engage with and comment about their elected officials. Several studies have been conducted on the use of social media as a tool for political communication, ranging from analysis of voter behaviour, election campaigns, public opinion, and sentiment analysis among others. Studies have shown that social media data can provide real-time analysis that is cost-effective and rich with insights that can aid in understanding public opinion. Twitter enables users to share and discover real-time information quickly (Debreceeny et al 2017). It is against this background that the analysis of Twitter data was chosen for this research.

Twitter has become an important platform for political discourse. It can be used to spread information, mobilize people, and coordinate protests. However, Twitter can also be used to spread hate speech and xenophobia. Sentiment analysis and topic modelling are increasingly being used to examine social media data. These methods have been used to study a variety of topics, including political elections, public health, and consumer behaviour.

In the context of political elections, sentiment analysis has been used to track the public's perception and mood towards different candidates and issues. Topic modelling has been used to identify the different themes that are being discussed in the public discourse. For example, a study by Turla & Caro, (2017), used sentiment analysis to study the Twitter discussions about the 2016 Philippines national elections. Yaqub et al., (2017) used both sentiment analysis and topic modelling to analyse Twitter political discourse on the 2016 US presidential elections. They went on to conclude that sentiment and topics expressed on Twitter can be a good proxy of public opinion and important election related events.

Matongo's election generated a wave of social media activity among South African citizens expressing their opinions on the outcome. However, some of these opinions were xenophobic in nature because of Jolidee Matongo's origins. The 2015 xenophobic attacks in South Africa illustrated high levels of

intolerance of foreign migrants and is pervasive (Tella, 2016). Despite existing research on the psychological aspects of xenophobia (Eagle, 2002; Ogunyemi et al., 2020), a gap exists in comprehending how these factors interact with the contemporary social media landscape hence the reason for carrying out the current research. Understanding the underlying causes and their interaction with modern communication channels is crucial to develop effective solutions.

### **Problem Statement**

Jolidee Matongo's election as Johannesburg's mayor marked a significant step towards inclusivity. The online discourse surrounding his victory exposed a spectrum of public opinion, ranging from warm acceptance to blatant xenophobia. Xenophobic sentiments on social media can deepen existing divisions within society, fostering an "us versus them" mentality. The sentiments can also have negative psychological effects on targeted individuals and communities leading to increased stress, anxiety, and a sense of insecurity, as well as feelings of stigmatization and isolation. This study uses Twitter data to analyse the perceptions of South Africans towards the election of Jolidee Matongo as mayor of Johannesburg, with a particular emphasis on identifying and analysing any xenophobic sentiments expressed. The aim is to gain insights into the prevalence and nature of xenophobia among some South Africans on social media platforms, specifically in relation to political events.

### **Objectives**

The objectives of this research paper are to:

- examine the views of South African Twitter users on the election of Jolidee Matongo as mayor of Johannesburg,
- assess the prevalence and nature of any xenophobic sentiment expressed in tweets,
- identify the psychological factors that influence twitter users' views and sentiments,
- explore the utility of using Twitter in analysing political events, such as the election of Jolidee Matongo as Mayor of Johannesburg.

### **Research Questions**

The following research questions will be addressed in this paper:

1. What are the main stereotypes that South African Twitter users hold about Zimbabweans?
2. How do these stereotypes influence South African Twitter users' views on the election of Jolidee Matongo as mayor of Johannesburg?
3. What are the psychological factors that contribute to xenophobic attitudes in South Africa?
4. What can be done to combat xenophobia in South Africa?

## **METHODS**

This study adopted a computational social science approach to analyze public perception on social media. The researchers specifically used Twitter data to understand public reaction to Jolidee Matongo's election as Johannesburg's mayor.

### **A. Participants**

This study analysed 4324 tweets collected via the Twitter API over a one-week period following Jolidee Matongo's election as Johannesburg's mayor. Tweets were collected using the Python programming language and the Tweepy library, based on predefined search queries including hashtags "#Jolidee Matongo" and "#JHBMayor".

### **B. Instruments**

The primary instrument used in this study was the Twitter API, which allowed for the programmatic collection of tweets based on specific search parameters. Python libraries such as Tweepy and Gensim

were also utilized for data collection, pre-processing, and analysis.

While traditional methods such as surveys and interviews have been employed to gauge public sentiment, they often suffer from limitations such as high costs, time-consuming data collection, and limited sample sizes (Lazer et al., 2009). In contrast, Twitter offers a vast pool of real-time data that can provide insights into public opinion trends and dynamics, offering a cost-effective and efficient alternative.

Traditional methods of data collection can also introduce bias through interviewer interaction or the way questions are phrased. Social media analysis eliminates this issue as researchers are not directly involved with the participants. This enables them to capture public opinion in a more natural and unbiased way.

In addition, Twitter allows the capturing of people's unfiltered thoughts and views in their own words. Most people will freely discuss their views on a topic on Twitter but be unwilling to fill in a questionnaire eliciting the same views (Marwick & Boyd, 2010). Twitter data collection is easier, less costly and allows data collection on a larger scale than traditional data collection methods. Because social media data reflects immediate reactions and opinions, collecting tweets shortly after the election allowed the researchers to capture the initial public perception surrounding Matongo's win in real-time.

### C. Procedure

**1) Data Collection:** Tweets were collected over a one-week period following the election. The Twitter API was used with predefined search queries to gather relevant tweets.

**2) Data Pre-processing:** The collected tweets underwent pre-processing to remove unnecessary information and prepare them for analysis. This involved lowercasing, removing punctuation, stop words, while also lemmatizing the words and eliminating retweets, duplicate tweets, and URLs. Additionally, usernames were anonymized to ensure participant privacy. This resulted in a final dataset of 4324 tweets for analysis.

### D. Ethical Considerations

This study adhered to ethical guidelines for conducting research on social media data. Usernames were anonymized to protect the privacy of the individuals who posted the tweets. Data collection complied with Twitter's API terms of service. Additionally, the study did not involve any active interaction with users or manipulation of content.

### E. Data Analysis

Two Natural Language Processing (NLP) techniques were employed to analyse the text data: sentiment analysis and topic modelling. The Vader sentiment analysis tool was used to assign each tweet a sentiment score ranging from -1 (negative) to 1 (positive), with 0 indicating neutrality. Vader is a lexicon-based sentiment analysis tool specifically designed to capture sentiments expressed in social media text (Hutto & Gilbert, 2014).

Python programming language's Gensim library was used to perform topic modelling. Topic modelling is a technique employed to identify clusters of words with semantic relevance within a given text corpus (Řehůřek & Sojka, 2010). This helped to uncover the main topics discussed in the tweets, providing insights into public perception regarding the election of Jolidee Matongo as mayor.

## RESULTS

### A. Sentiment Analysis

The sentiment analysis of the 4,234 tweets revealed interesting findings. Out of these tweets, 1,312

(31.0%) were classified as neutral, 1,758 (41.6%) as positive, and 1,164 (27.4%) as negative. This analysis provides insights into the overall sentiment expressed by Twitter users regarding a specific topic. It was evident that twitter users had varying perceptions with regards to Matongo's election.

Digging deeper into the positive tweets, it was observed that a majority of them revolved around people congratulating Matongo on his election, expressing their support for him, and wishing him well in his new role. These positive sentiments indicate a general sense of approval and optimism among Twitter users towards Matongo's election.

On the other hand, the negative tweets primarily focused on people expressing their disapproval of Matongo's election, questioning his citizenship, and expressing concerns about his ability to lead Johannesburg. These negative sentiments reflect a certain level of scepticism and criticism towards Matongo's election.

Overall, the sentiment analysis revealed that the sentiments expressed in the tweets leans slightly towards positivity, with an average sentiment score of 0.10. This suggests that while there are some negative sentiments present, the majority of Twitter users have a favourable view towards Matongo's election. The sentiments illustrated varied perceptions of Twitter users with regards to Matongo's election.

## B. Topic Modelling

The topic modelling analysis identified five topics related to Jolidee Matongo's election as Mayor of Johannesburg:

1. Election (words: people, fight, true, congratulations)
2. Heritage (words: south, African, Matongo, Zimbabwean)
3. Concerns (words: country, time, illegal)
4. Background (words: born, Africa, Soweto)
5. Reaction (words: keep, posted, thank)

Topic 1 is the most general topic and includes words that are related to the election process itself, such as "people," "fight," "true," and "congratulations."

Topic 2 is about Matongo's Zimbabwean heritage. This topic includes words such as "south," "African," "Matongo," and "Zimbabwean."

Topic 3 reflects the concerns of some people about Matongo's ability to lead Johannesburg. Words in this topic include "country," "time," and "illegal."

Topic 4 is about Matongo's personal background, including words such as "born," "Africa," and "Soweto."

Topic 5 is about the general reaction to Matongo's election, including words such as "keep," "posted," and "thank."

## DISCUSSION

The average sentiment score of 0.10 suggests that the overall sentiment of the tweets is slightly positive. However, it is important to note that this is just an average, and the sentiment of individual tweets may vary widely. For example, some tweets may have been very positive, while others may have been very negative.

The results of the sentiment analysis and topic modelling suggest that the overall reaction to Jolidee Matongo's election as Mayor of Johannesburg was positive. However, there was also a significant

minority of negative tweets, particularly those that focused on his Zimbabwean heritage.

The presence of xenophobic tweets and negative attitudes towards Jolidee Matongo's Zimbabwean heritage reflects some prejudice and stereotyping. The negative tweets targeting Matongo's Zimbabwean heritage indicate the activation of stereotypes and biased judgments that may stem from a fear of the unfamiliar or a perceived threat to one's own identity or resources.

Social identity theory suggests that individuals derive a sense of self and belonging from their membership in social groups. The negative tweets expressing xenophobic attitudes towards Matongo's election may reflect a process of in-group favouritism, where individuals show a preference for their own social group and display prejudice towards out-group members (Zimbabweans). This highlights the psychological dynamics of intergroup relations and the potential for such dynamics to shape public opinion and attitudes.

It is interesting to note that in the topic modelling analysis, the topic about Matongo's Zimbabwean heritage was the second most common topic. This suggests that many people were interested in Matongo's background and how it might shape his leadership as Mayor of Johannesburg. The tweeters were more interested in Matongo's heritage than his technical expertise and experience to be mayor, suggesting a xenophobic attitude. A significant number of the negative tweets also expressed xenophobic views, due to Matongo's Zimbabwean roots. These tweets often used derogatory terms to refer to Zimbabweans, and expressed the belief that Matongo was not qualified to be mayor of Johannesburg because he was not a South African citizen.

The prominence of tweets discussing Matongo's heritage rather than his qualifications as mayor raises questions about the role of cognitive biases in decision-making and evaluation processes. Cognitive biases are inherent tendencies in human cognition that lead individuals to consistently deviate from rational judgement and decision making (Stanovich, 2011). Individuals are more likely to make errors in reasoning, perceiving information inaccurately and exhibit predictable irrational behaviour patterns as a result of cognitive biases. There are various types of cognitive biases and the current study focused on confirmation bias. Confirmation bias refers to the tendency for individuals to selectively attend to and interpret information that confirms their pre-existing beliefs or expectations (Lack et al, 2022). In this context, individuals may have selectively focused on Matongo's nationality as a means to confirm their pre-existing biases or concerns, thereby influencing their perceptions of his suitability for the role of mayor in Johannesburg, South Africa.

These findings are consistent with previous research that has used social media data to examine public opinion. For instance, the study by Yaqub et al., (2017) found that the majority of tweets about the 2016 US presidential election were positive, but that there was also a significant minority of negative tweets, particularly those that were anti-immigrant. Another study by O'Connor et al. (2010) found that tweets related to the 2010 US midterm elections were generally positive, but that there was a significant minority of negative tweets. The study also found that the negative tweets were more likely to be retweeted and liked.

Xenophobia is a serious problem in South Africa, and it is important to understand how it is manifested on social media. The findings of this study suggest that social media platforms can be used to spread xenophobic rhetoric and to target individuals and groups based on their nationality. These findings are concerning, as xenophobia can lead to violence and discrimination. It is important to be aware of the potential for social media to be used to spread hate speech and to take steps to combat it.

The findings of this study suggest that sentiment analysis and topic modelling can be used to gain valuable insights into public opinion and the different perspectives that are being expressed on social media. This is consistent with the findings of previous studies that have used sentiment analysis and topic modelling to examine social media data, (Turla & Caro, 2017; Yaqub et al., 2017). However, it is important to be aware of the limitations of social media data, such as the fact that it is often biased and

that it can be used to spread misinformation and hate speech.

The study's findings underscored the importance of understanding the impact of social media on psychological processes. Social media platforms provide a space for the expression and dissemination of opinions and attitudes, but they can also amplify and perpetuate intolerant or negative views. The anonymity and distance provided by online interactions may contribute to the willingness of individuals to engage in xenophobic rhetoric or express prejudiced attitudes that they might not otherwise exhibit in face-to-face settings. These observations highlight the need for psychological interventions and strategies that address online behaviour and promote empathy, tolerance, and understanding such as promoting education and awareness about diversity, inclusion, and the harmful effects of online intolerance. Another strategy is encouraging compassion and perspective-taking amongst citizens. Cognitive-behavioural interventions can also be used to help individuals recognize and challenge their own biases and automatic thoughts that contribute to intolerance.

It is important to note that addressing online behaviour and promoting tolerance requires a multi-faceted approach involving various stakeholders, including individuals, communities, online platforms, and policymakers. These psychological interventions can contribute to creating a more inclusive and tolerant online environment.

## CONCLUSION

This study used sentiment analysis and topic modelling to examine the Twitter discussions about Matongo's election. The results suggest that the overall reaction to Matongo's election was positive, but there was also a significant minority of negative tweets, particularly those that focused on his Zimbabwean heritage. The presence of xenophobic views in some of the tweets is concerning, but the overall positive sentiment suggests that Matongo has the potential to be a popular mayor.

The results also suggest that social media platforms can be used to gain valuable insights into public opinion and the different perspectives. However, they can also be used to spread xenophobia. It is important to be aware of the potential for social media to be used to spread hate speech and to take steps to combat it. Future research could investigate how xenophobic views on social media can be moderated.

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