

Correlation of Social Media Trends with Opinions of General Public in Pakistan

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Received for publication: 26 October 2024.

Accepted for publication: 11 December 2024.

Abstract

This research examines the nuanced correlation between emergent social media trends on the X (formerly twitter) platform and the collective sentiments of the general populace in Pakistan. Employing a comprehensive dual-methodology approach, comprising both qualitative and quantitative techniques, the study leverages a meticulously designed survey methodology, incorporating in-person interviews and conversations. This survey framework is strategically synchronized with the identification of prominent trends on the X platform, offering a temporally aligned insight into public opinion dynamics. The quantitative analyses, including correlation studies, are conducted to discern inherent patterns and identify outliers within the amassed data. The research scrutinizes correlations between X trend data and survey responses, emphasizing on the societal significance of these trends. These trends contribute the greater understanding of the role of social media in political domain. The chosen X platform is singled out for its dynamic growth data and recognized role as a news disseminator. The study concludes with implications for comprehending the multifaceted interplay between emergent digital discourses and societal sentiments, contributing substantively to the broader academic discourse through these correlations. The data indicates a divergence in broader view and social media view under the political domain but showed positive correlations in the social and economic domain.

Keywords: Correlation Analysis; Digital Information; Public Opinion; Social Media Trends; X (Twitter).

Introduction

In an era dominated by digital interconnectedness, social media platforms have become integral conduits for public expression, shaping and reflecting the collective consciousness of societies worldwide (King et. al., 2017). Social media, with its rapid dissemination of information and a significant impact on public perception, serves as a dynamic arena where trends often transcend mere digital conversations to become reflective of broader societal sentiments (King et. al., 2017). In this context, this current research endeavors to investigate the intricate correlation between emergent social media trends on the X platform and the collective sentiments of the general populace in Pakistan. The impetus for this study stems from the understanding that social media trends are not merely ephemeral expressions but potentially significant indicators of public opinion dynamics. As social media becomes an increasingly integral component of information consumption in Pakistan, understanding the nuanced interplay between trending topics and public sentiment holds substantial academic and societal significance (Bilal et. al., 2018).

Since the uniformity of political opinion is supported through a broad and unified governance setup, the dispersed news is widely accessible in the major areas (Afridi & Bilal, 2021). By concentrating on the capital city of Islamabad and employing a purposive sample of 400 partici-

pants, this research ensures a localized yet representative exploration of the dynamic interplay between social media trends and public sentiment. The paper not only investigates the awareness and support levels for identified trends but also delves into the intensity of this support, offering a comprehensive understanding of the nuanced relationships at play. This research seeks to unravel the multifaceted dynamics shaping the relationship between emergent digital discourses and the collective consciousness of the public in Pakistan.

Literature Review

Public opinion is simply understood as the sum total of attitudes, perspectives, beliefs, and assessments that a population holds concerning a specific societal issue, event, or subject matter (Moussaid, 2013). It stems from the dynamic exchanges of information, experiences, and viewpoints among individuals within a social setup (Mallinson & Hatemi, 2018). In democratic societies, public opinion is crucial for shaping decision-making processes. There are many factors that influence public opinion – experiences, socialization etc. However, in today's information age, none has had a greater influence on the opinions people form on certain topics, than social media. This profound influence of social media on public opinion is evidenced by its ability to shape public discourse and provide an ever- available platform for civic engagement. Singh & Halgamuge (2019) in their paper suggest that social media platforms like X (formerly Twitter) play a critical role in shaping public opinion by facilitating rapid information dissemination and enabling collective expressions of societal sentiments. However, their research does not establish a clear and experiential correlation between social media trends and public opinion. This paper focuses on data insights gathered through research and takes Pakistani society as a reference platform.

In our research, we build upon a hypothesis, and see its application in the context of a developing country like Pakistan, where traditional media is often entangled with regulatory and political constraints, and where digital interconnectedness has increasingly become a primary source of information consumption and public discourse (Bibi & Yousaf, 2020). Our research aims to critically analyze this dynamic of how social media has emerged as a critical space for free expression and public mobilization in Pakistan. Furthermore, numerous studies show how social media's influence on public opinion and public sentiment, has become relevant in recent times of political upheaval or social crisis. Graham & Avery's (2013) examination of crisis communication through social media highlights how rapid dissemination of information can shape public perceptions during emergencies. However, their study lacks a comprehensive discussion on the dynamics of public engagement with the information disseminated on platforms such as X, and also fails to take into account recent changes to digital media platforms. It does not sufficiently address how users process, interact with, and respond to the information, thereby influencing their reactions to the crisis at hand. This gap highlights the need for further investigation into the behavioral responses of the public to social media content during critical events. For this reason, this research that we have presented, would add value to the analysis of behavioral responses on shifting trends by looking through the digital lens of X.

Another study by Ausat (2023), offers a valuable examination of the role of social media in molding public opinion and its subsequent impact on decision-making processes. This study specifically focuses on the economic domain, investigating how perceptions and discussions on social media regarding economic issues can significantly shape and steer economic policymaking. Despite its contributions, the scope of this research is confined primarily to the economic sphere, limiting a broader understanding of social media's influence across various other sectors. This restriction highlights a gap in the literature and underscores the need for further studies to explore the extensive ef-

fects of social media on public opinion and decision-making in other domains. Nevertheless, in our paper, we uncover how, in the context of Pakistan, social media trends significantly influence public reactions to political and social events – focusing especially on the public sentiment that emerges out of these events. For this purpose, we have employed a combination of qualitative and quantitative data analysis, including surveys and trend analysis on the X (formerly Twitter) platform.

Another rising trend on X, as presented in the works of Recuero & Araujo (2012), is the rise of artificial trending topics which aim to push a certain narrative. These topics are strategically crafted to promote specific narratives, often diverging from prevailing public sentiments. This phenomenon raises important questions about the manipulation of social discourse through digital means. Building upon this foundational insight, our study delves deeper into the implications of such trends. We aim to systematically analyze the existence of artificially generated trending topics and their effects on shaping public opinion regarding various events or issues. This exploration seeks to uncover the domain in which these manufactured trends influence the collective perceptions and the discourse that surrounds them. This investigation is crucial for understanding the dynamics of information dissemination in the digital age and its implications for democratic engagement and media literacy.

A similar dynamic to consider when establishing a correlation between public opinion and social media are the ethical considerations concerning misinformation, and manipulation. This perspective is robustly supported by the work of Tucker et al. (2018), who offer an extensive review of the literature surrounding the impact of disinformation and political polarization through the lens of social media interaction. Building upon their foundational research, this study seeks to empirically test the hypothesis that manipulated social media trends have a discernible impact on public sentiment. Further, this paper endeavors to synthesize the existing body of research, emphasizing the complex role that the social media platform “X” plays in molding public perceptions in Pakistan. Through a detailed analysis of data, we aim to arrive at a nuanced understanding of how social media trends can potentially sway public opinion, thereby highlighting the urgent need for mechanisms that mitigate the risks associated with social media misuse in the political sphere.

Methodology

This paper focuses on qualitative and quantitative data analysis techniques. Therefore, survey technique was used which was conducted through in-person interviews, telephonic conversations and written correspondences. The surveys were conducted precisely in the same week the particular trend was identified to be trending on the X platform to get the most immediate insight. The surveys particularly obtained personal information such as age, educational background and household income to further understand the premise of the correlation. The X platform was used for weekly data collection and analysis of the data to identify the most trending topics and use that trend to build an immediate survey for information gathering on the same topic. Furthermore, quantitative techniques such as correlation analysis was done to identify patterns and the outliers that do not indicate association.

Results

The capital city of Islamabad was chosen for this research conducted and for correlating the Survey data and the erstwhile Twitter trend data, which was collected simultaneously. A sample size of 400 participants were chosen for the research and it was conducted in the same week when the issue was trending in Pakistan on the X platform, for effective correlation analysis. The participants have been further classified with regard to Age, Gender, Income and Educational Qualification in

this paper. The paper firstly analyzes the awareness of the trend, its support and the intensity of the support by the individuals. Furthermore, the trends were correlated if the growing topic had any support or significance for the general public according to the survey. The data analysis and results are presented and discussed further in the paper.

A. *X Trend Analysis*

X has been taken as a target social media platform for correlation analysis of this research due to its periodic changing and quantifiable growth data, and also because of the application being a recognized and publically engaging news platform (Hernández & Monnier, 2022). The data from X was taken from the trending hashtag bar when the topic was branded as the most significant in Pakistan in that week. The Hashtag Trend and its tweets were periodically recorded and have been presented in Table 1. The trends have been broadly defined into three domains: political, social and economic. Amongst many trending topics on X, only twelve have been sampled for this research based on their reach and prolonged occurrences. The purpose of the paper is not to analyze the actual trend and its nature but to authenticate the sentiments of the general public by correlating the reach of each trend with the opinions of the public.

Table 1. Trend Summary of X

Sr. No.	Trend	Nature of Trend	Tweets (k=1000)	Month
1	#DollarHike	Economic	181k	January, 2023
2	#PakistanUnderFascism	Political	411k	April, 2023
3	#SayNoTo9thMay	Political	165k	May, 2023
4	#InternetShutDown	Social	282k	May, 2023
5	#Cipher_A_Fraud	Political	109k	July, 2023
6	#Climate_emergency	Social	262k	July, 2023
7	#Chandrayaan3	Quasi-political	87k	July, 2023
8	#Imfpakistan	Economic	104k	July, 2023
9	#LongLivePakChinaFriendship	Political	93k	August, 2023
10	#AsiaCup2023	Social	420k	August, 2023
11	#PetrolDieselPrice	Economic	257k	August, 2023
12	#ElectricityBills	Economic	248k	August, 2023

Table 1 presents the hashtag tweets by classifying its nature and signifying its reach by displaying the tweet numbers recorded. The surveys were created in relation to the trending hashtags, and the trends collected were compared with the opinions of the public through diverse survey methodology.

B. *Age*

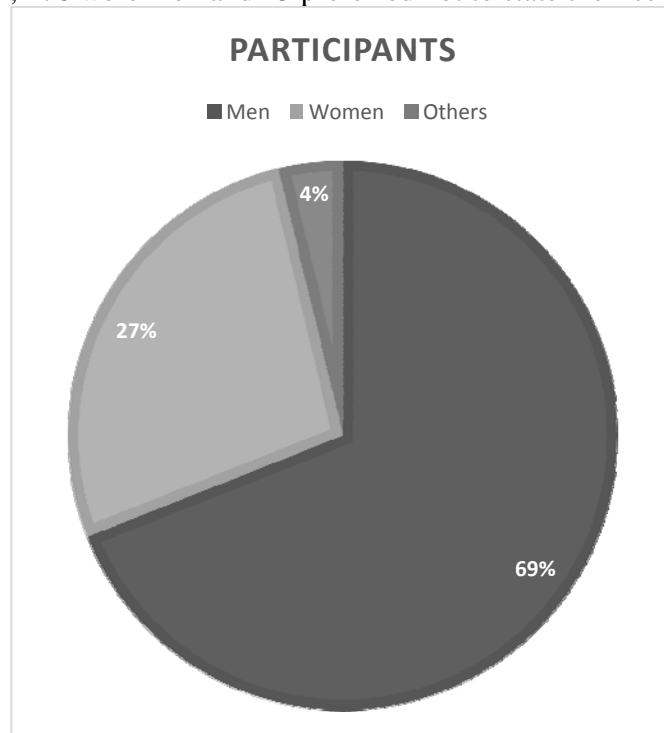
A pre-analysis was done with regard to participants and a number of 400 individuals were at random sampled, belonging to different socio-economic background of Islamabad. The age category for this research was divided into 4 brackets for analysis, as mentioned in Table 2. The age demographics were also used to acquire a deeper insight into the opinions of general public with respect to their age. It was recorded that the higher the age, the more strongly opinions were formed, according to the data gathered. Only three No Response/No Preference answer was given as summarized in Table 5 for age bracket 45 and above. Whereas, only 11 No Preference answers were given in age bracket of 30 to 45 years old.

Table 2. Age Distribution of Participants

Sr. No.	Age Bracket	No. of Participants	Percentage (%)
1	21 and Below	72	18%
2	22 to 30 years old	176	44%
3	30 to 45 years old	91	23%
4	45 and Above	61	15%

C. Gender:

The gender wise distribution of the participants is mentioned in Figure 1. Out of 400 participants, 109 were women, 276 were men and 15 preferred not to state their sexual orientation.

**Figure 1. Gender Distribution of the Participants****D. Income**

The household income was a pertinent factor in understanding opinions of general public and for the purpose of this research the income brackets were divided into three categories as mentioned in Table 3. Almost 47% of the participants had a monthly income of under 150\$. Whereas, just 15% of the participants had a monthly income of 1000\$ and above. The impact of Household Income on the correlation analysis is deliberated further in the discussion section.

Table 3. Household Income Bracket Distribution

Sr. No.	Income Bracket Distribution (per Month)	No. of Participants
1	Under 150 \$	189
2	150 to 1000 \$	148
3	1000\$ Above	63

E. Educational Qualification

The participants were also categorized according to their educational qualification to further understand the pattern of opinions as well as the pattern of social media use. The qualification criteria are summarized in Table 4. Almost 57% of the participants had a high school certificate or below. Whereas, 43% of the participants had a professional degree according to the survey.

Table 4. Educational Qualification of Participants

Sr. No.	Qualification	No. of Participants	% of Degree Holders
1	High School and Below	229	57%
2	Undergraduate Degree	126	43%
3	Post Graduate Degree	45	

F. Access to Social Media

Out of 400 participants, 364 had access to and were active users of social media platforms like X, as also indicated in Figure 2.

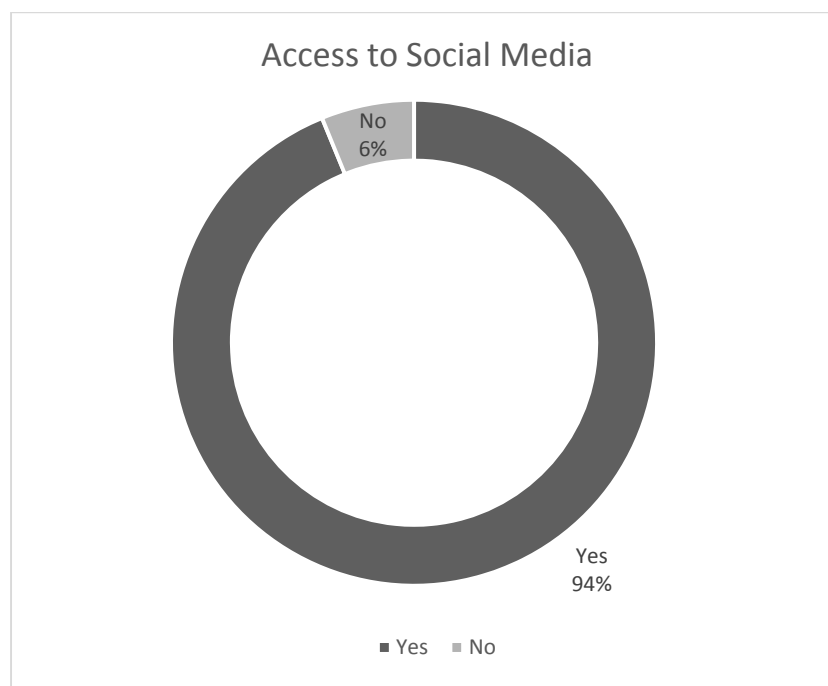


Figure 2. Access to Social Media

G. Support for the Topic

Table 5 describes the results of the surveys of the 400 individuals in which they were asked if they supported the topic which was trending and if it had a positive or negative notation attached to it. This part of the survey facilitated the correlation analysis to understand if the survey of the public related positively or negatively with the trending topics.

Table 5. Results for Support of the Topic

Sr. No.	Trends	Yes	No	No Preference
1	#DollarHike	322	68	10
2	#PakistanUnderFascism	342	50	8
3	#SayNoTo9thMay	86	301	13
4	#InternetShutDown	277	120	3
5	#Cipher_A_Fraud	94	299	7
6	#Climate_emergency	250	128	22
7	#Chandrayaan3	66	320	14
8	#Imfpakistan	301	88	11
9	#LongLivePakChinaFriendship	69	297	34
10	#AsiaCup2023	376	22	2
11	#PetrolDieselPrice	320	74	6
12	#ElectricityBills	386	13	1

Discussion

The survey conducted in Islamabad, of the 400 participants, analyzed the trend by inquiring about its existence and the intensity of support. The participants were also asked if they had access to social media and X platform. The survey initially focused on collecting personal information and then a dichotomous line of questioning with an option of opting out of the current survey. The participants were inquired if they knew about the existence of the ongoing trend and their views, if they also agreed with its trending nature on social media. Table 6 demonstrates the analysis of the Awareness of the Trend and its Support, which provides a premise to the claims of this paper. The analysis shows a positive correlation if the value *exceeds 1* and a negative correlation if its *less than 1*. The positive correlation is a premise to the idea in this research that the trending topics on social media are also supported in the same light by the general public. However, the negative correlation indicates a diversion in the growing trend with the public support.

Table 6. Correlation Analysis of Support and Awareness

Sr. No.	Trend	Awareness of Trend (out of 400)	Support for the Topic (out of 400)	Correlation of the Trend with Support
1	#DollarHike	312	322	1.032
2	#PakistanUnderFascism	298	342	1.14
3	#SayNoTo9thMay	191	86	0.45
4	#InternetShutDown	256	277	1.082
5	#Cipher_A_Fraud	222	94	0.423
6	#Climate_emergency	206	250	1.213
7	#Chandrayaan3	186	66	0.354
8	#Imfpakistan	288	301	1.045
9	#LongLivePakChinaFriendship	172	69	0.616
10	#AsiaCup2023	340	376	1.10
11	#PetrolDieselPrice	302	320	1.059
12	#ElectricityBills	377	386	1.024

This paper demonstrates, as in Table 6, that out of 12 trends, 4 showed a negative correlation, thus indicating a possibility of artificial trending techniques (Recuero & Araujo, 2012). Recuero and Araujo in their paper deeply explained how artificial topics are created and based upon, to further accelerate its reach. This paper, however, is building a premise for the identification of such topics that could potentially be artificially created for pushing a particular idea. Out of the four trends identified which had a negative correlation, three of them were of political nature and one of them were of quasi-political nature. This shows a significant tilt towards the artificial trend creation in political domain. Figure 3 shows a scatter plot with Awareness as 'X values' and Support as 'Y values' and the outliers are as discussed above.

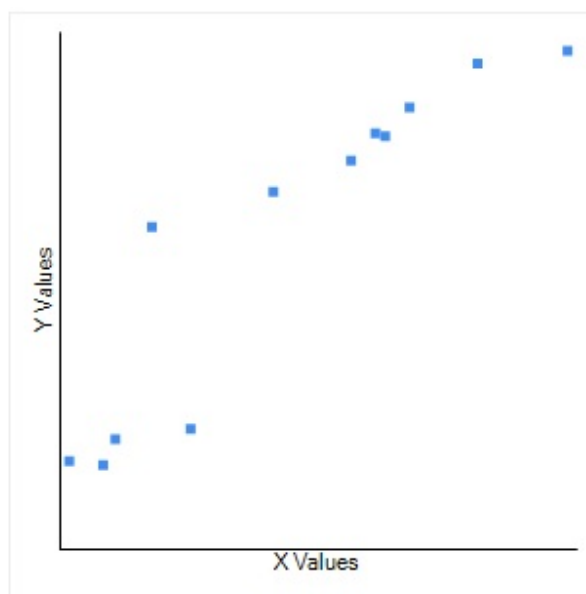


Figure 3. Scatter Plots for Correlation Analysis

The research conducted in this paper also indicated that the trends with the highest reach and tweets in that week also had the highest approval ratings amongst others. Whereas, the trends with the least correlation with general public were ones which had significant but small reach. Furthermore, a more detailed analysis of the support pattern indicated a number of factors. Firstly, a high support pattern existed amongst individuals with a high school certificate and below, with 68% approvals, as in Fig. 4. Secondly, the pattern analyzed amongst household income indicates that the highest support to trending topics on X were from the second class of income (150 – 1000\$) as in Fig. 5. Thirdly, the highest approvals for ongoing trends came from women with 86% of women showing support for programs and 77% of men showing a positive support. Lastly, the support amongst participants aged 30 and below was the highest, at 73%, as compared to participants of age 30 above, at 67%.

Nevertheless, this paper focuses mainly on the correlation of trends and the general public support. Hence, the analysis has indicated a positive correlating trend with public support, when it came to social and economic issues. However, the pattern for political nature trends were conflicted with 4 of them having negative correlations and only one with a positive correlation. Therefore, this research indicates and nurtures the idea of artificial trend creation which could also warrant a further study.

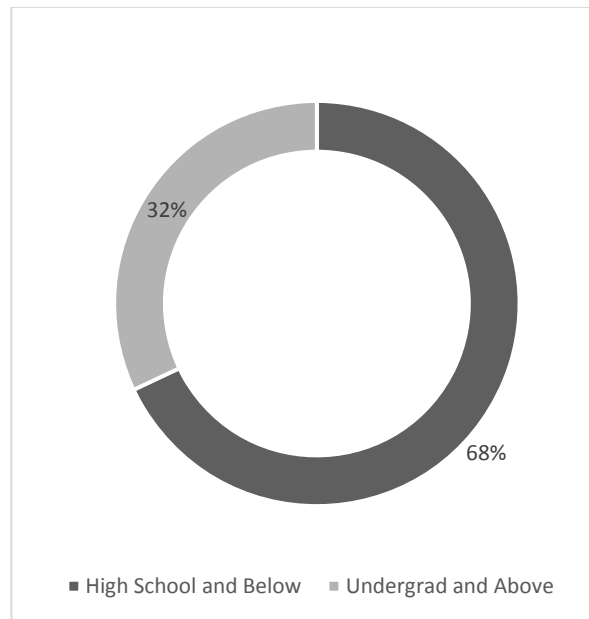


Figure 4. Support pattern w.r.t Education

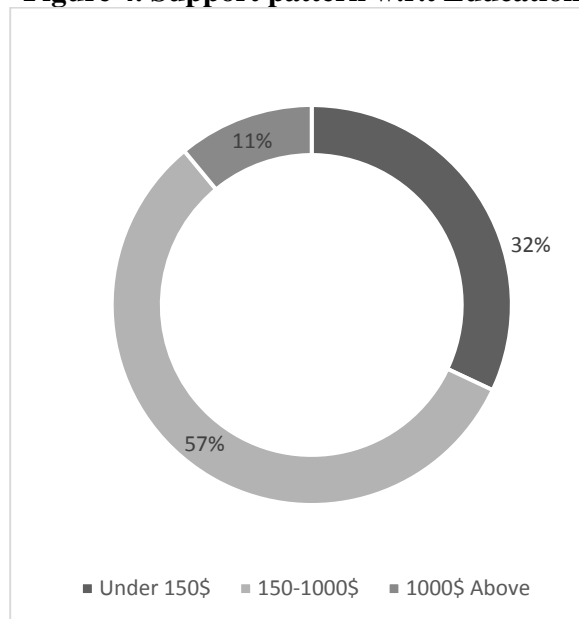


Figure 5. Support pattern w.r.t Income

Conclusion

Social Media having influence over social, economic and political affairs, has brought media industry to inertly diversify itself with demands to the general public. Issues are constantly highlighted and are trending daily on all major social platforms and has rapidly engaged a cultural change from print media to news channels to, finally, social media. This paper has demonstrated, through experiential approach, the actual support patterns of the general public with social media trending topics. It was observed that social and economic issues that were trending on social media platform 'X', were positively correlated with the general public. The higher the trending reach, the

more the positive support it had gained. However, this was not the case with political nature trends as the public opinion varied greatly. The negative correlation calculated among political topics demonstrated a generated biasness. This research indicates generation and pushing of political trends through artificial means, fundamentally also supported through literature reviewed. This could warrant further research on the matter in the future. Nevertheless, support patterns also varied with age, education and income, which indicated a diversity of approach in the research. However, the premise of this research fulfilled the initial target of correlating the opinions of public in-person and on social media platforms, indicating a pattern that can be applied on various demographics in the future.

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