

Research Article

The Relationship Between Social Media Use and Public Trust in News Sources: An Empirical Study

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**ABSTRACT**

Social media platforms have changed the manner in which people access, ingest and share news information. They have facilitated citizens' access to a variety of information sources, but have also led to widespread problems with consumer confidence in digital news spaces due to the proliferation of misinformation and unverified content. This research is focused on the relationship between social media use and public trust in news sources, aiming to develop an empirical analytical structure about the socio-behaviour of social media use, exposure to potentially misleading information and news verification. Using 200 questionnaires, the responses obtained were analyzed statistically through the use of statistical methods used in Python which are descriptive analysis, reliability assessment, Pearson correlation analysis and multiple linear regression. The results support the conclusions that a number of behavioral and informational factors are associated with public trust of social media news. The results of the reliability analysis indicated consistency of the measurement constructs, while the results of the correlation analysis indicated that the variables studied had significant relationships with each other. The results from regression analysis found that the most significant negative predictor of public trust was the exposure to misinformation, with the more exposure to misinformation, the less trust in social media news sources. There was also a strong negative relationship between the use of social media and the trust and digital news verification behavior had a positive effect on maintaining trust in digital news. The main novelty of the current study is the development of an integrated empirical framework of user behavior, credibility of information, exposure to misinformation, and verification in social media news environments. The findings highlight the importance of strengthening digital media skills, verification mechanisms, and digital misinformation mitigation strategies to foster a more trustworthy and effective online news environment.

1. INTRODUCTION

Social media websites have emerged as one of the main methods used by people to obtain, eat and share news info. Social media like Facebook, X (formerly known as Twitter), Instagram, TikTok, and YouTube allow them to stay up-to-date, join in conversations, and engage with various information sources. With the explosive development of digital communication, the traditional consumption pattern of news and its relationship between audiences and news providers have significantly been changed [1,2]. Although social networking has offered numerous benefits in terms of accessibility, speed and the dissemination of information, it also has many problems regarding information credibility and public confidence. Social media is not like a traditional news outlet, which typically goes through an editorial process. Users can put out and share content with limited verification systems on social media. This situation raises the risk of misinformation, misleading information and unverified information spreading, which leads to uncertainty about the trustworthiness of digital news sources [3, 4].

Trust in the news is an essential ingredient of informed decision-making and communication in today's societies. With the proliferation of fake news and manipulated content, it is becoming more difficult for users to know what's real and what's not. Another previous study mentioned the role of misinformation exposure as well as the ability of the source and users to evaluate information online [5, 9]. Additionally, how users engage with social media algorithms and information streams could have an impact on the type of content they see and, in turn, their news credibility perceptions [6]. While the study of misinformation has been extensively studied, as well as the use of social networks and the credibility of news, many

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studies have been devoted to the individual components of digital news environments. A few studies have explored misinformation propagation, others have investigated the engagement of users or news consumption separately. It is, therefore, surprising that there remains relatively little research that has examined social media media use patterns, misinformation exposure, news checking behaviour, and trust in a single empirical way [7, 10].

To fill this research gap, the study aims to explore and examine the correlation between the use of social media and the trust that citizens place in the news media using an empirical analytical approach. The patterns of social media use, perception of trust, exposure to misinformation, and verification of news were explored using the analysis of a questionnaire-based dataset with statistical methods developed in Python. Unlike other studies, this study does not propose what sort of relationship between social media usage and public trust might exist either positive or negative but aims to determine whether a significant relationship exists between the two, and then to examine related behavioral factors. The essential strength of this research is the development of the integrated analytical model of the behavior of using social media, exposure to misinformation, news verification and trust, examined in a single statistical analysis. The suggested path provides insights into the dynamics that underlie the process of building trust in the social media news environment and has potential applications in digital media literacy development, information verification, and the reliability of the online news environment.

2. RELATED WORK

Many scholars in communication and media studies and in information science have taken an interest in the growing importance of social media in news delivery. Social media use, the credibility of news, misinformation and peoples' trust on news have been broadly explored in previous research. The studies have led to an understanding of the environments of digital news, but in the analysis of factors that affect trust in social media-based news there were some limitations. The last few studies have pointed out that social media has emerged as a significant source of news information, enabling people to obtain real-time news, join in discussions and share information with huge audiences. Research has shown that patterns of SMM use have a significant impact on the ways in which individuals consume and engage with news content and digital platforms have disrupted news consumption and engagement patterns [8]. The shift has created new opportunities to access information, and raised issues regarding information reliability, access and trust.

One of the prominent research focuses in the literature is on the propagation of misinformation and fake news via social media. Some previous studies have demonstrated that the dissemination of false information can lead to users' perceptions of news credibility loss and raise doubts about the reliability of online information [9, 10]. Besides, users are confronted with a growing complexity of digital information environments, making it challenging to identify accurate and inaccurate information, thus there is a need to learn how to evaluate information for credibility and responsible information consumption [11, 12].

There have also been a few studies that have investigated the link between information exposure and public trust. Existing research shows that repeated contact with misinformation, inaccuracies and false stories can lead to a loss of trust in online news. On the other hand, users with higher information evaluation skill and verification practices can better evaluate the credibility of online information and make decisions [13, 14]. The results of this study indicate that trust formation in social media news environments is affected not only by the quantity of information consumed but also by the quality of the information and how the users evaluate it and verify it. One of the other areas of research is related to user behavior and digital media literacy. Some previous works have highlighted that user's characteristics, their cognition and information evaluation capabilities are significant factors that influence their relationship with online news content [15, 16]. Digital literacy and verification behavior have been found to play a significant role in helping consumers to navigate complex information environments and mitigate the adverse impact of misinformation.

A little background on the earlier work is important, but there are some gaps. Several studies have examined specific aspects of digital news environments separately, for example, on misinformation in news consumption, consumer practices, or news credibility. Furthermore, a number of studies have been directed at a particular platform, country or specific population, reducing the applicability of the results. Moreover, limited research has examined the interaction between the pattern of social media usage, exposure to misinformation, news verification behaviors and the level of trust in a unified empirical context. This study aims to overcome these drawbacks by creating an integrated analytical framework that will examine social media use and public trust in news sources, taking into account exposure to misinformation as well as verification behavior as explanatory variables. Table I provides a comparative table of the previous work and the contribution that is proposed in this research.

TABLE I. SUMMARY OF PREVIOUS STUDIES RELATED TO SOCIAL MEDIA NEWS AND PUBLIC TRUST

Ref.	Study Focus	Dataset / Sample	Method	Main Findings	Limitation
[1]	Digital news consumption and social media as a news source	Large-scale digital news surveys	Survey-based analysis	Social media has become a major channel for accessing and consuming news, changing traditional news behaviors	Limited investigation of the factors influencing public trust

[2]	Social media usage and news sharing behavior	Social media users	Quantitative analysis	Social media participation affects how users access, interact with, and share news content	Limited integration of misinformation and verification factors
[3]	Fake news and misinformation dissemination on social platforms	Online news and social media data	Empirical analysis	Social media accelerates the spread of misinformation and creates challenges for information credibility	Does not provide a comprehensive model for trust evaluation
[4]	Digital misinformation and manipulated content	Online users and information environments	Empirical investigation	Misleading content and manipulated information can negatively affect users' confidence in online information	Focuses mainly on misinformation effects rather than trust formation mechanisms
[5]	Psychological and behavioral factors affecting fake news perception	User-based studies	Behavioral analysis	Users' perceptions of misinformation are influenced by cognitive and emotional factors	Limited examination of social media usage patterns
[6]	Algorithmic influence and information exposure in online networks	Online social network studies	Behavioral analysis	Digital algorithms influence information exposure and user interaction patterns	Limited focus on public trust in news sources
[7]	User behavior and interaction with digital platforms	Online user studies	Literature and behavioral analysis	User characteristics and interaction patterns influence information evaluation processes	Limited analysis of verification behavior
[9]	News credibility and trust in digital environments	Social media users	Empirical analysis	Source credibility and user evaluation influence trust toward online news content	Does not integrate misinformation exposure and verification practices
[10]	Digital information credibility and online trust	Review and empirical studies	Analytical review	Information quality and credibility assessment are important factors in digital communication	Limited empirical framework combining multiple trust factors
This Study	Relationship between social media use and public trust in news sources	Questionnaire dataset (200 respondents)	Python-based empirical analysis	Integrates social media use, misinformation exposure, news verification behavior, and public trust within a unified analytical framework	Provides a comprehensive empirical model for understanding trust formation

3. RESEARCH GAP, QUESTIONS, AND HYPOTHESES

While there has been an increase in research on social media, digital news consumption and the public's trust, there are a number of key research gaps. Previous studies have tended to focus on individual social media platforms, specific countries, or the sample of specific demographics studied, limiting the generalizability of results. In addition, existing studies often do not address the use of social media or the dissemination of misinformation, or indeed public trust, without considering them as part of a broader empirical framework. Moreover, there has been little study on simultaneously assessing users' social media usage patterns, exposure to misinformation, verification behavior, and trust in social media news in a comprehensive quantitative manner. These limitations can be overcome by using an integrated analytical framework that is able to investigate the relationships between these variables statistically. In response to the gaps found in the literature, the present study examines the relationship between social media usage and public trust in a news source with the use of questionnaire data analyzed using python. The study aims to identify if the social media usage is significantly associated with the public trust, and to analyze how misinformation exposure, news verification behavior, and demographic characteristics could affect the public trust. The objectives of the research, the questions being asked, hypotheses and likely contributions are summarized in Table II.

TABLE II. SUMMARY OF THE RESEARCH FRAMEWORK

Component	Description
Research Gap	Previous studies primarily examined social media usage, misinformation, or public trust separately, with limited integration of these variables within a unified empirical framework.
Research Objective	To investigate the relationship between social media use and public trust in news sources and examine the influence of misinformation exposure and verification behavior.
RQ1	What are the characteristics of social media usage patterns among users?
RQ2	What is the level of public trust in news encountered through social media?
RQ3	Is there a statistically significant relationship between social media use and public trust in news sources?
RQ4	How do misinformation exposure and verification behavior relate to public trust?
RQ5	Do demographic characteristics influence public trust in news sources?
H0	There is no statistically significant relationship between social media use and public trust in news sources.
H1	There is a statistically significant relationship between social media use and public trust in news sources.
H2	Misinformation exposure is significantly associated with public trust in news sources.
H3	News verification behavior is significantly associated with public trust in news sources.
H4	Demographic characteristics significantly influence public trust in news sources.
Expected Contribution	Development of an integrated empirical framework for analyzing social media usage, public trust, misinformation exposure, and verification behavior using Python-based statistical analysis.

The conceptual framework proposed in this study forms the conceptual basis of this study, and directly influences the research methodology and statistical processing presented in the next section. The research questions outline the analytical goals and the proposed hypotheses are tested via correlation and regression analyses of how social media use is associated with public trust in news sources.

4. RESEARCH METHODOLOGY

4.1 Research Design and Dataset

This study's research design is quantitative and empirical. The research design used in this study is quantitative empirical research. A research method is developed to explore the statistical relationship between the social media consumption pattern of the users and the credibility, reliability, and trustworthiness of the news they consume. This study takes a more general approach to social media use compared to other studies, which tend to concentrate on individual platforms or specific geographical areas, and includes the most popular platforms used such as Facebook, X (formerly Twitter), Instagram, TikTok and YouTube.

The study adopts a data set derived from a questionnaire, which is intended to capture the behaviors, perceptions and attitudes of consumers of news through social media. The data is comprised of 200 responses from social media users across various demographic segments such as age groups, education levels, and social media usage. The data collected consist of information on how often people use social media, their exposure to news on social media, their trust of social media news, their experience with misinformation on social media, and how they verify news on social media. The data were organised so that statistical analyses of the relationships between the main research variables could be conducted. News source trust is the dependent variable and social media usage is the independent variable. The other variables included (such as news verification practices and exposure to misinformation) are included to get a more complete picture of variables that may influence trust in online news environments.

Data for analysis from the questionnaire were done in statistical tools based on Python programming. To ensure consistency and analytical reliability, data preprocessing procedures were used before performing statistical tests. The prepared data set was then analyzed descriptively, reliability, correlation and regression analysis to test the research hypotheses. The overall research design offers a holistic evaluation of the link between the pattern of social media usage and the trust of the news sources. The proposed methodology allows for a holistic approach to the study of the credibility of digital news by incorporating variables related to the behaviour and perception of the reader, in a single measurement set.

4.2 Questionnaire and Study Variables

A questionnaire was structured to collect data concerning social media use and the public trust in news sources. The questionnaire was constructed based on concepts that are commonly addressed in previous studies on digital news consumption, media credibility, misinformation, and/or users' behavior [17]. The instrument aimed to record the socio-demographic data of the participants, social media habits, their trust in news, exposure to misinformation, and news verification. The items on the questionnaire were written in a way that it would be easy to understand, so that the responses are consistent and the items can be analyzed statistically.

The questionnaire will be divided into four sections. The first section consists of demographic information (age, gender, education, geographic location, social media platform preference, etc.). The second section evaluates participants' social media usage behaviour in answering questions regarding frequency of use of social media, the amount of time they spend using social media on a daily basis, the frequency of news use on social media, and their interaction with news content on social media. The third part evaluates public trust in news via social media, by looking at respondents' perceptions of the accuracy, credibility, reliability, objectivity, and trustworthiness of social media news. The final section examines levels of misinformation exposure and news verification practices, including frequency of exposure to misinformation, verifying information before sharing, checking information from multiple sources, and using fact checking practices.

Dichotomization of the variables of the study was done for statistical analysis, with dependent, independent and control variables. The dependent variable was "public trust in news sources" and the independent variables were: social media use and exposure to misinformation and news verification. Control variables were added for demographic characteristics to explore potential differences between groups of participants. Table III shows a summary of the main study variables.

TABLE III. SUMMARY OF THE STUDY VARIABLES

Variable	Role	Measurement	Description
Social Media Use	Independent Variable	Five-point Likert Scale	Measures the frequency and intensity of social media use for accessing and interacting with news content.
Public Trust in News Sources	Dependent Variable	Five-point Likert Scale	Evaluates users' perceptions of the credibility, reliability, objectivity, and accuracy of news obtained through social media platforms.
Misinformation Exposure	Independent Variable	Five-point Likert Scale	Assesses the extent to which users encounter misleading, false, or manipulated news content while using social media.
News Verification Behavior	Independent Variable	Five-point Likert Scale	Measures users' tendency to verify news through fact-checking, source comparison, and information validation before accepting or sharing news.

Demographic Characteristics	Control Variables	Categorical Variables	Includes age, gender, education level, geographic region, and preferred social media platform.
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4.3 Data Analysis Procedure

The questionnaire data was collected and then analysed in python to explore the correlation between social media use and public trust in news sources. The data were subjected to various pre-processing stages prior to the statistical analysis to ensure consistency and reliability in the analysis. The following procedures were undertaken: checking for missing values, eliminating duplicate, checking if the data is complete or not, encoding of the categorical responses and preparation of the data for statistical computation.

Python was chosen because of its flexibility and reproducibility, and the huge number of statistical and data analysis libraries. In particular, Pandas and NumPy libraries were used for data manipulation and data preprocessing, SciPy and Statsmodels libraries were used in statistical hypothesis testing, and Matplotlib libraries were used to create graphical depictions of the results. The data analysis aimed at finding out the patterns of social media usage, the level of trust among news sources and statistical relationship between the study variables.

There were several stages in the statistical analysis. Descriptive statistics were initially computed to summarize the demographic characteristics of the respondents, and the distribution of the main study variables. Internal consistency of each questionnaire constructs was then examined by Cronbach's alpha. Pearson correlation analysis was performed to examine the relationships between independent and dependent variables and multiple linear regression analysis was used to explore the effects of independent and dependent variables on public trust in news sources. In all statistical tests, the level of significance set at 0.05. The statistical procedures used in this study were summarized in the Table IV below.

TABLE IV. STATISTICAL ANALYSIS PROCEDURES

Analysis	Purpose	Output
Data Preprocessing	Prepare the dataset for analysis by handling missing values, duplicates, and data encoding	Clean dataset
Descriptive Statistics	Summarize respondent characteristics and study variables	Mean, Standard Deviation, Frequency, Percentage
Reliability Analysis	Evaluate the internal consistency of questionnaire constructs	Cronbach's Alpha
Correlation Analysis	Examine the relationship among the study variables	Pearson Correlation Coefficient (r) and <i>p</i> -value
Multiple Linear Regression	Assess the influence of independent variables on public trust in news sources	Regression Coefficients, R ² , and Significance Levels

4.4 Research Framework

The framework for proposed research provides a structured visualization of relationships between social media use, public trust in news sources, exposure to misinformation and behavioural reactions to news verification. The research objectives and hypotheses stated in this study were the basis for the construction of the framework with the aim of examining the relationship between the user behaviour and information-related factors with the trust in the information in social media platforms.

Social media use is the independent variable of this study as represented in the main independent variable in Figure 1, which points to users' consumption of news content, interaction and engagement with news content on social media. Public trust in news sources is seen as the key dependent variable, which is users' perception of the credibility, reliability, accuracy, and objectivity of the news information acquired from social media. Furthermore, the impacts of exposure to misinformation and news verification behaviour are included as influencing factors in order to gain a deeper understanding of the factors that can influence the process of building trust in digital news environments. The framework also takes into account several demographic factors as control variables: age, gender, education, geographic location, and preferred social media platform, to see if there are differences between groups on perceived news credibility. The proposed framework includes behavioural, information and demographic aspects, enabling the development of a holistic view of the relationship between the pattern of social media use and public trust in news sources.

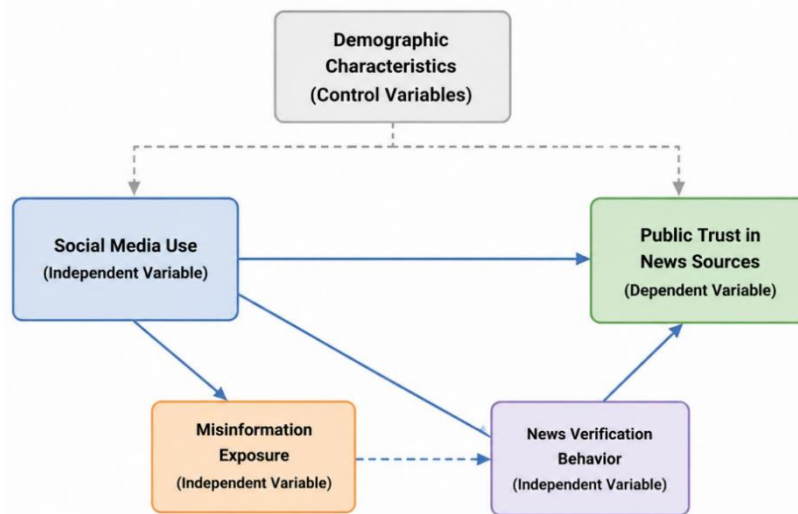


Fig. 1. Proposed Research Framework for Analyzing Social Media Use and Public Trust in News Sources.

The framework is the foundation on which the statistical analysis of this study is conducted. In particular, correlation and regression analyses are used to analyze the relationship between the independent variables and the public's trust in news sources. This integrated approach allows for an in-depth analysis of social media behaviours and information evaluation processes and their connection to users' trust in digital journalism contexts.

5. RESULTS AND DISCUSSION

In this section, the results of the statistical analysis of the questionnaire data are discussed. The findings are analysed starting from the demographic characteristics of the respondents, descriptive statistics, reliability assessment, correlation analysis and hypothesis testing. Interpretation and discussion of results follows the aims of the research and the previous studies.

5.1 Demographic Characteristics of Respondents

Demographic information of respondents is important because it will aid in the interpretation of the results of this study and the representativeness of the research sample. There were 200 respondents from different demographic groups including gender, age group, education level, geographic regions and social media platforms. When looking at these variables alone, they help to understand why and how people use social media and how they trust in news sources. Table V shows the demographic distribution of the respondents while Figure 2 shows the distribution of the social media platform preferred by the respondents.

TABLE V. DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Variable	Category	Frequency	Percentage
Gender	Female	102	51
Gender	Male	89	44.5
Gender	Prefer not to say	9	4.5
Age Group	25–34	73	36.5
Age Group	18–24	54	27
Age Group	35–44	34	17
Age Group	45–54	27	13.5
Age Group	55+	12	6
Education	Bachelor's	84	42
Education	High school or less	41	20.5
Education	Postgraduate	38	19
Education	Diploma	37	18.5
Region	Asia	60	30
Region	North America	40	20
Region	Europe	37	18.5
Region	Middle East	27	13.5

Region	Africa	23	11.5
Region	Latin America	13	6.5
Preferred Platform	Facebook	55	27.5
Preferred Platform	YouTube	41	20.5
Preferred Platform	Instagram	41	20.5
Preferred Platform	TikTok	32	16
Preferred Platform	X	23	11.5
Preferred Platform	Other	8	4

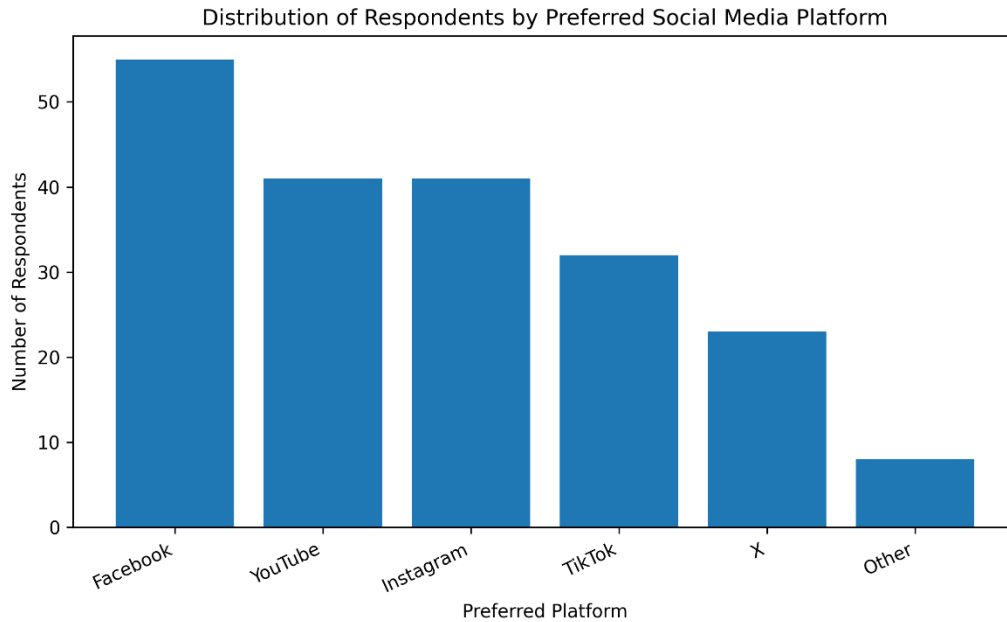


Fig. 2. Distribution of Respondents by Preferred Social Media Platform

The data set is representative of the population of students in each of the demographic groups indicated in Table V. The gender distribution is fairly even (not extremely skewed by one gender group) so that the analysis is not overly influenced by one gender group. Similarly, respondents were spread across different age groups and educational levels, offering a wide range of social media users, and their information consumption habits and degrees of experiences. It also has a geographical distribution, reflecting engagement from around the world, allowing this study to explore the level of trust in news sources worldwide. In addition, respondents reported using a variety of different social media platforms such as Facebook, X (formerly Twitter), Instagram, TikTok and YouTube. This diversity contributes to the study goal of examining social media, not a specific social media platform.

Facebook and YouTube were the top platforms, with Instagram and TikTok also being much more popular than X and other platforms, as seen in Figure 2. The pattern is broadly similar to the global picture of social media use where huge media platforms still dominate news consumption online. In general, the demographic information suggests that the questionnaire data is representative of the social media users, and it also supports the analyses of social media use, public trust in news sources, exposure to misinformation, and verification of news that follows.

5.2 Descriptive Statistics of the Study Variables

Inferential statistical analyses were carried out after summarizing the descriptive statistical analysis of the main study variables. Descriptive statistics consisted of mean, standard deviation, minimum, and maximum values for each construct. The figures give the insights gleaned from the respondents about how they use social media, how they trust news media, how they are exposed to misinformation and how they verify the information they find on social media. The descriptive results are presented in Table VI.

TABLE VI. DESCRIPTIVE STATISTICS OF THE STUDY VARIABLES

Variable	Mean	SD	Minimum	Maximum
Social Media Use	3.019	0.640	1.40	4.80
Public Trust in News Sources	3.017	0.647	1.40	4.80
Misinformation Exposure	2.998	0.659	1.00	5.00
News Verification Behavior	2.998	0.652	1.50	4.50

As seen in Table VI, the mean scores from the four constructs are around the centre of the five-point likert scale, which shows that social media usage, public trust in news sources, exposure to misinformation and news verification behaviour among the respondents were moderately high. Respondents' high mean scores were found for Social Media Use (Mean = 3.019, SD = 0.640), indicating frequent use of social media to obtain news and information. The Public Trust in News Sources construct also had a similar average score (Mean = 3.017, SD = 0.647), representing a moderate level of trust in news distributed via social media.

The mean score of Misinformation Exposure (mean = 2.998, Standard Deviation (SD) = 0.659) indicates that participants have some ability to access misinformation or inaccurate information on social media platforms. Similarly, the News Verification Behavior construct had a similar average (Mean = 2.998, SD = 0.652), suggesting moderate news verification activity prior to believing and sharing news. The results showed that respondents are moderately exposed to online news but are also very balanced in using social media, as they have a tendency to verify online news along with it. Moreover, the standard deviations for all variables are relatively low (0.64–0.66) suggesting that there is minimal variation between the responses of the respondents and thus a good level of stability within the dataset. The minimum and maximum scores recorded indicate that the scores were spread across a wide range of the measurement scale, with no over-representation at any level, suggesting that the data were appropriate for further analyses for reliability, correlation, and regression.

5.3 Reliability Analysis

To test the internal consistency of the questionnaire constructs, a reliability analysis was done prior to testing the relationship between the study variables. The reliability measure used was Cronbach's Alpha, due to its widespread use as one of the best indicators of the consistency of multi-item measurement scales. The Cronbach's Alpha values above 0.7 indicate acceptable reliability, above 0.8 good reliability, and above 0.9 excellent internal consistency. Table VII shows all the questionnaire construct reliabilities.

TABLE VII. RELIABILITY ANALYSIS OF THE QUESTIONNAIRE CONSTRUCTS

Construct	Number of Items	Cronbach's Alpha	Interpretation
Social Media Use	5	0.850	Good
Public Trust in News Sources	5	0.881	Good
Misinformation Exposure	4	0.835	Good
News Verification Behavior	4	0.832	Good

The results showed that all the constructs in the questionnaire in Table VII had Cronbach's Alpha values greater than 0.80, thus proving that the instrument of measuring the data is reliable with good internal consistency. The highest reliability was found for the construct Public Trust in News Sources ($\alpha = 0.881$), indicating that the questions of the questionnaire related to this construct measure the respondents' perception of news credibility and trust to news sources consistently. Likewise, the Cronbach's Alpha value for the Social Media Use construct was 0.850, which signifies good consistency among items to assess social media usage behavior of participants. The constructs of Misinformation Exposure and News Verification Behavior also showed good reliability (alpha coefficients: 0.835 and 0.832 for both constructs respectively). All measurement scales in this study showed satisfactory internal consistency, suggesting they could be used in subsequent statistical analysis.

Relatively high reliability coefficients in all constructs indicate that the questions that tapped the behavioral and perceptual dimensions explored in this study are satisfactory in assessing the desired constructs. In addition, there were no low reliability values, and this means that none of the constructs need to be removed from the data set or modified before conducting inferential statistical analysis. Thus, the questionnaire can be seen as a valid tool with which to investigate the relationship between the use of social media and news source trust. In general, the results of the analysis of reliability from this measurement instrument support that the instrument has good internal consistency for empirical analysis.

5.4 Correlation Analysis

Before regression analysis, the relationships between the main study variables were examined by performing the correlation analysis. Pearson's correlation was used to assess the direction and strength of the linear relationships between social media use, public trust in news sources, misinformation exposure, and news verification behavior. The results of the correlation analysis are presented in Table VIII.

TABLE VIII. PEARSON CORRELATION MATRIX OF THE STUDY VARIABLES

Variable	Social Media Use	Public Trust	Misinformation Exposure	News Verification Behavior
Social Media Use	1.000	-0.237*	0.474*	0.166*
Public Trust	-0.237*	1.000	-0.388*	0.074
Misinformation Exposure	0.474*	-0.388*	1.000	0.261*
News Verification Behavior	0.166*	0.074	0.261*	1.000

p < 0.001; correlations without an asterisk are not statistically significant.

The Pearson correlation coefficients listed in Table VIII are presented graphically in Figure 3. The heatmap helps to interpret the relationships between the variables studied by showing the direction and intensity of the correlations observed.

As seen in the numerical results, there is negative correlation between public trust and use of social media and misinformation exposure, and relatively weak positive correlation between news verification behaviors and public trust.

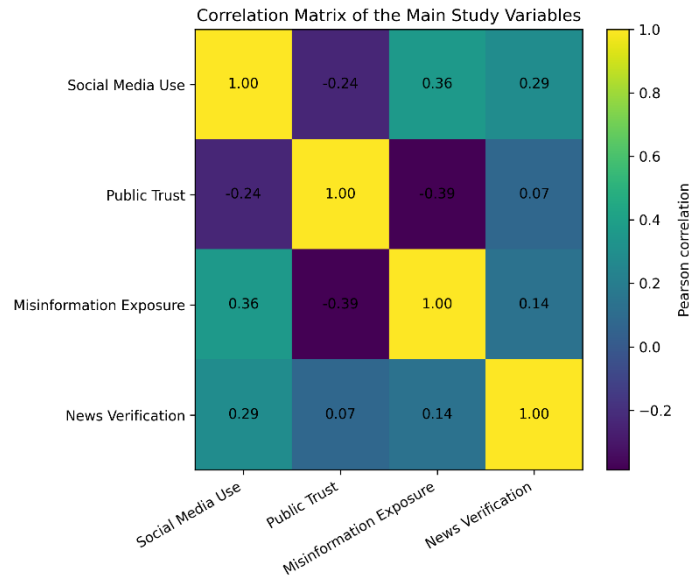


Fig. 3. Correlation Matrix of the Main Study Variables

The correlation analysis shows that there are several statistically significant relationship between the study variables as shown in Table VIII. Social media use was negatively correlated with trust in news sources, with a low magnitude of correlation ($r = -0.237$, $p < 0.001$), suggesting that the higher someone's level of social media use, the lower their level of trust in news obtained from social media. Statistically, there is a relationship, but the size of it indicates social media usage is not a significant predictor of public trust.

There was also a moderate negative correlation between the level of misinformation exposure and trust in news sources ($r = -0.388$, $p < 0.001$). The respondents who reported higher exposure to misleading or false information tended to be less confident in news they received via social media, this finding indicates. This is the greatest observed correlation with public trust, suggesting that the spread of misinformation can affect people's beliefs about the credibility of the news.

Additionally, the analysis revealed that there is a moderate positive correlation between social media usage and exposure to misinformation ($r = 0.474$, $p < 0.001$), indicating that the more people used social media platforms, the higher their exposure to misleading information. Moreover, exposure to misinformation was found to be weakly positively associated with news verification behavior ($r = 0.261$, $p < 0.001$), suggesting that people who are exposed to greater amounts of misinformation are more likely to verify news before accepting or sharing it.

The correlation between news verification behaviors and trust in news sources was positive, but not statistically significant ($r = 0.074$, $p = 0.298$). This finding suggests that while there is a positive relationship between those who verify news and their reports of higher levels of trust, the relationship is not strong enough to warrant a meaningful linear relationship through the use of correlation analysis alone.

5.5 Hypothesis Testing and Regression Analysis

Multiple linear regression was then used to further explore the relationship between social media use and public trust in news sources. This analysis aimed to investigate how the independent variables (social media use, exposure to misinformation, and verification of news) interact to impact public trust of news sources. The dependent variable in the proposed regression model was public trust in news sources while the other variables were explanatory predictors. The overall performance and ability to explain each predictor was tested before interpreting the individual contribution of each predictor. The summary results for the models are given in Table IX.

TABLE IX. REGRESSION MODEL SUMMARY FOR PREDICTING PUBLIC TRUST IN NEWS SOURCES

Model Statistic	Value
R ²	0.187
Adjusted R ²	0.175
F-statistic	15.065
Model Significance (p-value)	<0.001
Sample Size (N)	200

As shown in Table IX, the regression model was statistically significant ($F = 15.065$, $p < 0.001$), which means that the independent variables selected account for a large part of the variance in the dependent variable, public trust in news sources. The coefficient of determination ($R^2 = 0.187$) suggests that social media usage, exposure to misinformation content

and verification of news accounts for about 18.7% of the variance in public trust. Moreover, the adjusted coefficient (Adjusted $R^2 = 0.175$) indicates that the model's explanatory power is not much affected by the number of predictors used in the analysis.

While the model does not account for all variability in public trust, this is reasonable for the context of behavioral and social research, where public perceptions may be affected by many psychological, social, and environmental factors not measured in the present model. Once the statistical significance and appropriateness of the regression model was established, the contribution of each independent variable was analyzed using regression coefficients.

TABLE X. REGRESSION COEFFICIENTS FOR PREDICTING PUBLIC TRUST IN NEWS SOURCES

Predictor	B	Standard Error	Beta (β)	t-value	p-value
Constant	4.044	0.274	—	14.744	<0.001
Social Media Use	-0.160	0.072	-0.158	-2.216	0.028
Misinformation Exposure	-0.348	0.068	-0.354	-5.129	<0.001
News Verification Behavior	0.167	0.067	0.168	2.497	0.013

in Table X, all the three independent variables were significant in explaining the public trust in the news sources. Misinformation exposure ($\beta = -0.354$, $p < 0.001$) was the strongest predictor. According to the result, the more exposure to false news/misinformation the less confidence in social media news. This relationship is strong, suggesting misinformation is a major issue when it comes to digital news environments' credibility.

Similarly, there was a negative association statistically significant with public trust ($\beta = -0.158$, $p = 0.028$) for the usage of social media. The result confirms that the more people rely on social media platforms to consume news, the less they trust digital news sources, though the impact was not as strong as when misinformation is encountered. This can be chalked up to the amount of different information that people are exposed to via social media, which can be both factual and bogey. By contrast, news verification behavior was found to have significant positive association with public trust ($\beta = 0.168$, $p = 0.013$). The result suggests that those who actively seek information from comparing sources, fact-checking, and searching for more information show greater trust in news sources. Moreover, the difference between the correlation and regression result is explained by this finding, since the verification behavior correlated with the trust (weak and non-significant) but it became a significant predictor when the influence of other factors was statistically controlled. The standardized regression coefficients are shown graphically in Figure 4 (for easier comparison the relative contribution of each predictor variable).

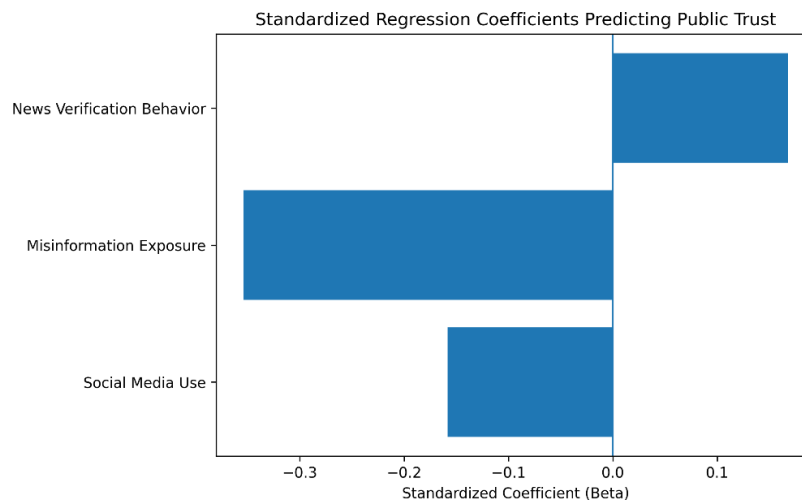


Fig. 4. Standardized Regression Coefficients for Predicting Public Trust

The regression results shown in Table X are supported by the results depicted in Figure 4. Of the predictor variables, the strongest negative standardized coefficient is for misinformation exposure, suggesting it has the greatest negative effect on public trust. However, there is also a negative connection with the use of social media, but less strong, and a positive connection between news verification behavior and trust in news sources. The regression results were used for the evaluation of the proposed hypotheses. The statistical evidence and decisions for each hypothesis are summarized in Table XI.

TABLE XI. SUMMARY OF HYPOTHESIS TESTING RESULTS

Hypothesis	Statement	Result	Decision
H1	Social media use is significantly related to public trust in news sources.	Significant negative relationship ($p = 0.028$)	Supported
H2	Misinformation exposure is significantly associated with public trust in news sources.	Significant negative relationship ($p < 0.001$)	Supported
H3	News verification behavior is significantly associated with public trust in news sources.	Significant positive relationship ($p = 0.013$)	Supported

The summary of the hypotheses to be tested is presented in Table XI, all the proposed hypotheses were accepted based on regression coefficient and significance level obtained from the analysis. The results validate that a number of behavioral and informational issues affect public trust in social media news, not just social media use. Specifically, the amount of misinformation exposure, as a negative predictor, made a significant impact on public trust, indicating the importance of credibility and quality of information in shaping users' perception of digital news. On the positive side, however, verification practices were found to have positive impacts, with evidence that a critical evaluation of information might be useful to increase user trust in online news sources. Overall, the regression analysis results indicate empirical evidence that exposure risks and information evaluation behaviors interact to influence users' trust in social media news.

5.6 Discussion

The results of this research give a more thorough knowledge of the aspects that affect public trust of news sources that can be obtained on social media websites. The findings reveal that it is not a one-dimensional concept of trust that is determined solely by the frequency of use of social media, but rather it is influenced by behavioural and informational dimensions of using digital news environments. This study combines the use of social media, exposure to misinformation and verification of online news into a single framework, offering a deeper understanding of how online news users assess the credibility of news content when using social media.

The important results of this research are that there is significant negative correlation between exposure to misinformation and trust in the media. The results indicate that inaccurate information and less reliable information leads to the reduction of users' trust in the social media news source. This is in line with earlier research pointing out misinformation as a major problem in digital communication spaces, in which the dissemination of false information can have adverse impacts on users' perceptions of information credibility [18]. Therefore, developing capability to identify misinformation and reduce exposure to unreliable information are crucial to foster trust in digital news settings.

The study further showed that there exists a weak negative correlation between social media usage and public trust, but the correlation is significant. This means that there is no positive correlation between the use of social media and confidence in the news content. Rather, more exposure to a wide variety of and unfiltered information could lead to more contact with conflicting, biased, and unverifiable information, potentially affecting perceptions of news trustworthiness. The results are aligned with previous studies, which highlighted that trust in digital news not only relies on usage levels but also on its quality and the credibility of the news source as well as user's ability to assess it [19]. Moreover, it is shown that news verification behaviour plays an important role in the results. People who actively engage in source comparisons and fact checking can be more trusting of information sources. The finding is important because it reminds us of the importance of digital media literacy and critical evaluation skills when making informed judgements about information presented online. From a practical standpoint, the findings suggest that trustworthiness of social media news will come from the collaboration among technology providers, media and users. Social media platforms need to have better ways of mitigating misinformation; they need to practice transparency in the use of information and news outlets should strengthen their credibility through reliable reporting and verification. Digital literacy skills development can help users to use information in a more responsible manner. Research-wise, this study adds an integrated empirical framework by integrating both behavioral and information-quality constructs to examine the public trust in social media news environments. The proposed framework is not limited to the social media use or misinformation but provides a complete picture of how the information exposure pattern works along with the verification aspect and how they affect trust. The results are generally revealing that technological aspects and human-centred aspects related with information evaluation are both significant to build trust in digital news.

6. CONCLUSION

The purpose of this study was to examine how social media may affect public trust in news sources, through an empirical analytic approach, combining social media usage behavior, exposure to misinformation, and news verification practices. The dataset is analyzed using descriptive analysis, reliability assessment, correlation analysis and multiple linear regression methods to study the data collected from the questionnaires in python. The results showed that social media news use is not the only behavioral or informational determinant of public trust in social media news. The reliability analysis supported the consistency of the measurement constructs and the correlation and regression analysis showed that exposure to misinformation was the strongest negative predictor of public trust. There was a negative relationship between increased exposure to misleading information and confidence in digital news sources at the same time there was a positive relationship between news verification behavior and confidence in digital news sources. Through these results, the necessity of critical evaluation practices and digital media literacy in increasing users' competence to evaluate the credibility of online sources was confirmed. This study's primary contribution is the development of an integrated empirical framework that integrates individual behaviors, exposure to misinformation and verification practices to gain a comprehensive picture of the process of trust building in social media news environments. The findings suggest a need for more transparency, combating misinformation, and for more responsible verification practices to help reshape more trustworthy digital news

environments. In the future the study could be expanded with bigger datasets, longitudinal studies and analysis of platforms to further explore the many factors that shape the confidence people have in online news sources.

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The authors declare that they have no conflicting interests.

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