

# Why Do We Share Fake News? A Cognitive Behaviour Analysis on the Use of Social Media in Global South Context

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## Research Article

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# WHY DO WE SHARE FAKE NEWS? A COGNITIVE BEHAVIOUR ANALYSIS ON THE USE OF SOCIAL MEDIA IN GLOBAL SOUTH CONTEXT

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## Abstract

The world has been hit by the COVID - 19 epidemic, prompting us to release vaccines at breakneck speed. As much as this elicited an outpouring of joy from us, it also elicited a slew of worries and anxieties. So much so that many have been led astray by false information spread throughout their various social media platforms. It didn't take long for us to realize how quickly these "news" circulated among peers and friends. This led us to work on this project, in which we attempted to identify adequate links between the propagation of these misinformation and the factors that may be connected with our respondents being fed lies from sources they believe to be trustworthy based on personal ties. In order to find our targeted outcomes, we used a cognitive method. A total of 202 replies were chosen for the final round, in which respondents were presented with falsified news and then asked how they would react to news being shared or posted with someone with whom they have a personal connection. The Likert Chart Scale was our primary method of data collection,

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with Yes/No responses serving as a backup. The findings do provide us with some insight into the people who believed in our fabricated news, as well as how they would behave in a situation where the source of similar hoax news came from people who have a respectable place in their lives.

**Keywords:** Trustworthiness, Fake News, Social Media Usage, Verification Experiment, Urgency, Personal Relationships

## 1 Introduction

When social media networks such as Facebook and Twitter first came in touch with third world countries, it was mainly used by people who understood it - knowledgeable enough to grasp what such platforms are actually. Internet connectivity was not something that was at one's fingertips back then. The main obstacle of using the Internet in Bangladesh was its distribution and the device to access it. The Internet facility was still an urban privilege in Bangladesh as the telephone connections were more concentrated in urban areas, specially Dhaka - the capital of Bangladesh - based [1]. As years passed, the number of people with access to the internet increased exponentially as budget smartphones became readily available along with affordable internet packages. By the end of July 2021, Bangladesh had 123.74 million internet subscribers, almost 75% of the total population, of which 113.69 million are mobile phone subscribers [2]. Users gradually got familiar with it and thus everyone became aware of the role these platforms played in supplying information and news to the greater audience - the ease and the swift nature in which you can deliver it to the public. Such easiness prompted people to express their own views and opinions publicly on social media networks. As a result, users now possess the ability to make up news or share anything that comes up on their feed. This in turn has galvanised the spreading of fake news on these social platforms [3]. "Fake news" has been defined as disinformation spread through the media and then propagated through peer-to-peer communication [4]

One can just look into what happened during the Road Safety Movement in Bangladesh during 2018 [5]. Hundreds and thousands of students took to the streets in protest of a road accident that took the lives of two high-school students in Dhaka. The protests, the demonstrations all took place rapidly just by the click of a button on these social media platforms [6, 7]. Adding fire to the fuel were unconfirmed reports about rape and assaults on students that spread from one inbox to another like lightning. Friends and peers that you had known for years, siblings and cousins were pinging each other's Messenger and WhatsApp successively antagonising the students. These were later known to be verified as not true [8].

Another prime example is the communal violence that is widely prevalent in Bangladesh [9]. On occasions there are reports of vandalism in top news portals which took place on the basis of word of mouth. Sometimes social

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accounts are hacked and used to spread fabricated news provoking another religion. Misinformation about somebody demeaning one's belief only leads to destruction and later verification of it being untrue goes to no avail as the damage had already been done [10].

We are currently on the cusp of being fully vaccinated against COVID-19 and already a lot of fake news has been disseminating relating to the effectiveness of each one, misinformation about side effects and why it might even be a conspiracy from the hierarchy. These have been in circulation both nationally and globally [11, 12]. In this paper, we have tried to find if the source of a news or information makes one react differently to it, specially in terms of urgency which may lead to a said news not being properly verified. For this purpose we conducted a survey among the university students of Bangladesh.

## 2 Previous Works

A good number of works has gone into understanding, controlling and halting fake news. People have performed a person's behavioural analysis and looked into their personalities. Tweets from different profiles had been analysed to find what behavioural factors may contribute to the spreading of misinformation, simple binary classification models were used [13]. Linguistic patterns and personality scores using a Five-Factor Model (FFM) were also observed with a CNN Model to try to distinguish a fake news spreader from a fact checker [14]. A similar work for the problem was approached as a binary classification task and considered several groups of features, BERT semantic embedding and sentiment analysis from English and Spanish news. [15]. Analysis of verified and unverified social accounts, the number of posts and the counts of followers and following one had was also taken into consideration [16]. The predictors of Politically-slanted fake news (FN) which are usually conspiratorial in nature and often negative were examined using correlation analysis [17].

The structure of a fake news has also been investigated for detection and psychological impact it might have on an user in the past few years. Detection of fake news has been tried by using discourse segment structure analysis [18]. A similar study using hierarchical discourse level structure had also been investigated [19]. Collection of fake news via crowd sourcing and extraction of Linguistic features had also been done and run on a SVM classifier and five fold cross validation for detection. [20]. A Multi-Source Multi-Class Fake News Detection (MMFD) has been studied primarily using a CNN-LSTM model [21]. A very similar structure for MMFD with a combination of CNN and LSTM was applied but was approached by SPOT method, a fake news detection method based on semantic knowledge source and deep learning [22]. A study on the psychological appeal of a structure of a fake news has also been conducted [23]. Cognitive approaches such as changing the presentation and highlighting the source of news was also overtaken to check if the user's belief in the article had been influenced [24].

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Further works were also completed on how a user would evaluate or respond after encountering a fake news. A qualitative research method with a descriptive approach was done among a set of university students to see how they evaluated a fake news [25]. The same had been done for a set of college students in how they identified those fabricated news along with their behavioural traits and time taken. [26]. Fake news was supplied about undergraduate students to assess their believability, credibility, and truthfulness on them upon which behavioural analysis was performed as well as neurophysiological analysis such as confirmation bias. [27]. An in depth interview study was done to see how social media users from Singapore responded to encountering fake news and results were evaluated by the pattern of their responses [28].

The trustworthiness of any source also came under scrutiny in the propagation of fake news. A study performed to see if the level of trust source had affect of the spreading of fake news [29]. A systematic review into all the studies from 2012 to 2020 to get an understanding of a user's trustworthiness on social media networks [30]. An in depth qualitative analysis of what trust is and what is its role in information science and technology [31]. A computational trust framework for social computing where a trust value can be quantified for a piece of information [32].

## 3 Hypotheses

In our paper we have considered the following null hypotheses:

$H_01$ : Personal bonds do not act as a catalyst in hastily sharing a news which leads to it not properly being verified.

$H_02$ : Concern about a particular topic (in this case Covid-19) is based less on trusting the person sharing it but more on verification of it by oneself.

## 4 Method

### 4.1 Data Collection

Our survey was conducted via google forms that was supplied to students through different messaging platforms and groups on Facebook. Confidentiality was managed by placing anonymous coding for each self-report questionnaire. We originally recorded 216 responses, after cleaning and removing outliers, we got a final sample of 202 students.

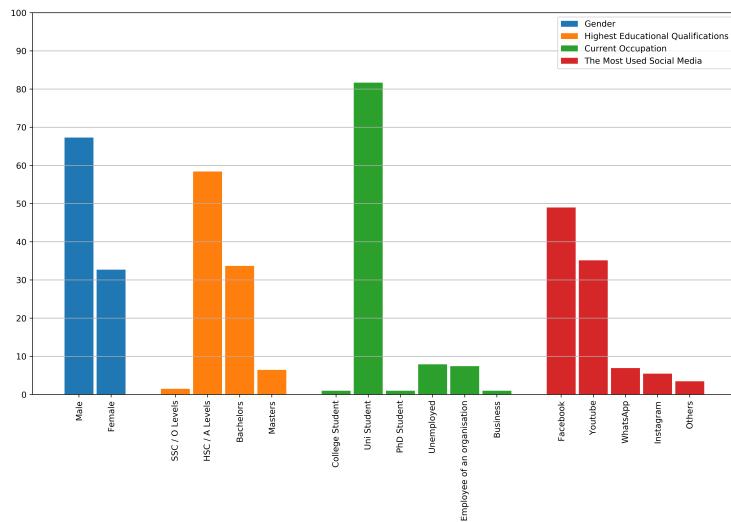
The students were faced with demographic questions initially which included age, gender, highest educational qualification and their current occupation status. We even asked them about their daily social media usage; how long they had been using these platforms and also their familiarity with the whole internet. The number of posts they shared and the type of posts they interacted with were also recorded. The major demographic information are depicted in terms of percentage in Fig 1.

In the immediate next part of our survey, we supplied our responders with fabricated news about the problems related to COVID-19 vaccines displayed

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from usually acclaimed sources and asked a series of questions related to them. Questions ranged from us asking about how it made them concerned about their friends and family to how desperate they were to share these as soon as they finished the survey.

In the latter sections, they were questioned on how they would usually react to any news that came up on their feeds and how their reactions might be if the source was from someone they knew or held a respectable position in their lives. We even asked them about their feelings to the consequences and the outcomes of their sharing or posting.



**Fig. 1:** Demographic Distribution

## 4.2 Measurement

Likert scales with 7 points were used in collecting these types of data ranging from strongly negative (1) to strongly positive (7). Other answers were tick boxes and just a few of them were descriptive. The 9 main features that we worked on for our cognitive analysis are as follows:

### Features measured with multiple choice options:

*Share FNF.* This variable defined if an individual would share our fabricated news among their friends and families on social media platforms. It consisted of 3 options: 'yes', 'no' and 'maybe'.

*Share FNF Urgency.* This feature defined if an individual would want to share our fabricated news as soon as the survey was completed. It consisted of 3 options: 'yes', 'no' and 'maybe'.

*Share FNF Personal Trust.* The individual was asked if he/she would share our supplied fake news if it came on their feeds via someone they admired, respected or trusted. It consisted of 3 options: 'yes', 'no' and 'maybe'.

*Connected FNF.* This variable defined is an individual was connected with their friends and families on social media platforms. It consisted of a 'yes' and 'no' option for the surveyee to answer.

*Correct News FNF.* This feature was measured by 3 options: 'yes', 'no' and 'maybe'. The question asked if our surveyee would correct their friends or families if the news shared or posted by them was untrue.

*Fake News Believe.* This was a question asked at the very end of our survey to see if an individual believed in the fabricated news that was supplied to them at the beginning. It came with 2 options: 'yes' and 'no'

#### Features measured with a 7 point Likert Scale:

*Urgency FNF.* This variable measured how instantly would an individual share any form of news or posts that came from someone that they trusted or respected very much.

*Trustworthy FNF.* This was a measure of how credible and reliable our surveyee found any posts or news that came from a source they personally knew or someone respectable to them.

*Important to share FNF.* This feature estimated how important an individual found to share any news that came from sources that they trusted upon.

### 4.3 Data preparation and Statistical analysis

Initially, we cleaned our dataset by removing responses that were invalid along with the ones that were outliers. Categorical responses were converted to numbered variables so that they were in a ranked order to aid our use of Ordinal Logistic Regression. Responses which were in the form of 7 point Likert Scale were converted into a 3 point one. This was done by averaging out the scales from 1-3 relating to their corresponding frequencies and also the scales from 5-7 in the same way. Scale position 4 was kept the same to use it as a neutral value.

Upon cleaning and preparing our dataset, we initially performed *Chi square tests* among the features to see if there were any significance between them. The *Spearman Rank Correlation Coefficient* was also calculated to get a better understanding of the nature of our data. Finally *Ordinal Logistic Regression* was used to see how the features related to one another. We also explored various other *graphical methods and visualizations* to get a more in depth understanding of our data.

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## 5 Results and Findings

### 5.1 Relation with Time

There are 3 features related to time in our work:

- i) *Time Social Per Day* - the number of hours the individual spends on social media platforms
- ii) *Time Internet Per Day* - the number of hours the individual spends on the internet
- iii) *Time Internet Years* - the number of years that the individual has been using the internet for.

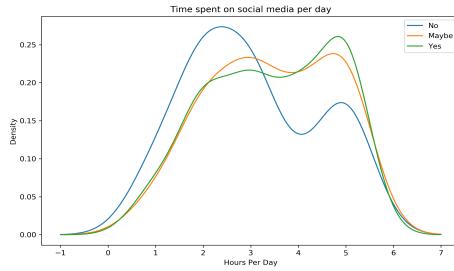
By the help of distribution plots we present the following findings of our main features:

Here, in Fig 2(a), we can see that for an individual who would want to share our provided false news, most of them spend around 5 hours per day on social media compared to their opposite counterparts where most of them spend just over 2 hours on these platforms. If we look into Fig 2(b), we see that the surveyees who would and wouldn't want to share peak around the same part of the graph whereas people with 'maybe' as their option spend more time on the internet compared to them. The number of years using the internet for these people are uniformly distributed in a similar way.

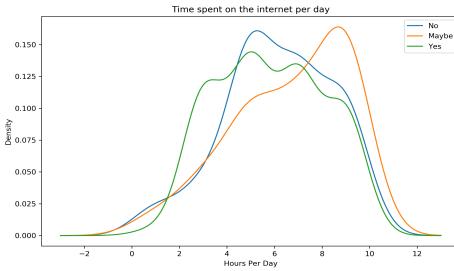
For this feature we observe that there is a much bigger spike for an individual who would urgently want to share our supplied fabricated news among peers around the 5 hour mark according to Fig 3(a). For the group of individuals who do not want to share as soon as finishing our survey, most of them are spending around 2-3 hours per day. Moving over to the time spent on the internet per day in Fig 3(b), we see people with "yes" as their answer spending slightly less time on the internet on average compared to the people who answered 'no'. The number of years using the internet distribution is again found to be distributed to in a similar way in Fig 3(c).

From our Fig 4(a) we can observe a similar distribution much like our previous two features. In terms of the group of individuals with 'yes', a large portion of them expend around 5 hours compared to their opposite counterparts who are around 2 hours. Majority of the responders with 'maybe' are seen to share a similar peak but only higher like responders with 'no'. Moving on to Fig 4(b) we notice it following a similar pattern to our previous features. Individuals answering 'yes' are exhausting around 4 hours whereas for individuals with 'no' are doing so for 5-8 hours. A distribution is observed for the number of years in using the internet in Fig 4(c). "Yes" group of people have been around the internet for slightly less years compared to people with "no".

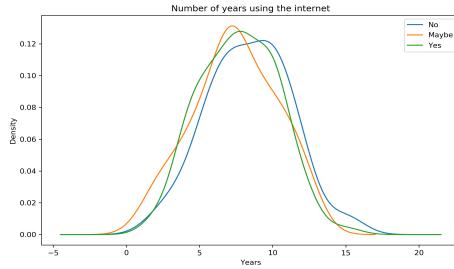
From Fig 5(a), we observe people who are usually connected with their close ones on social media platforms tend to spend more time on social media platforms per day compared to people who aren't. Fig 5(b) is showing that people who are connected with friends and family are spending time from 5-10 hours on the internet whereas for their opposite counterparts we see there



(a) Time spent on social media per day



(b) Time spent on the internet per day



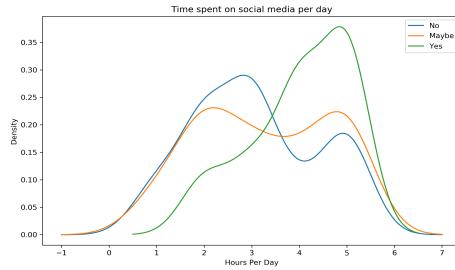
(c) Number of years using the internet

**Fig. 2:** Share FNF distribution with Time

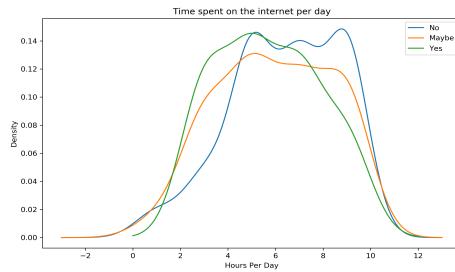
is a major spike around 4–6 hours. Fig 5(c) is showing a similar distribution nature for both these cluster groups.

We notice from Fig 6(a) a downward trend for people who would not want to correct their close ones if they mistakenly shared a false news from around 3 hours. We see the opposite for people who would move for a correction as rising spike is seen at around 5 hours. Similar trend is observed for people with 'maybe' as their answer. For Fig 6(b), we detect a similar distribution over hours among both positive and negative individuals whilst the neutral

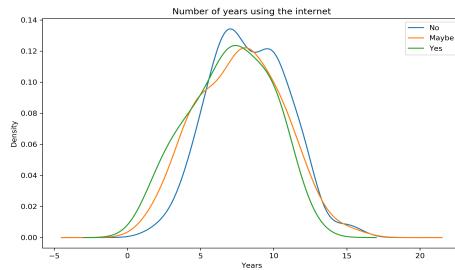
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(a) Time spent on social media per day



(b) Time spent on the internet per day

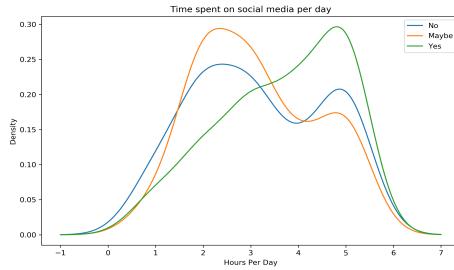


(c) Number of years using the internet

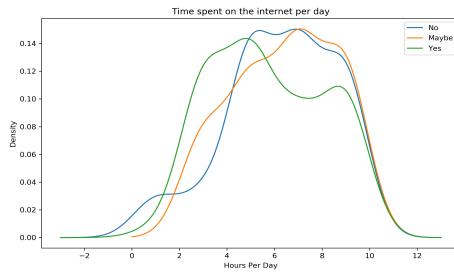
**Fig. 3:** Share FNF Urgency distribution with time

individuals are showing a peak around 7-10 hours. In the case for the number of years in using the internet, we see a slight deviation for individuals who responded with 'no' for correction in Fig 6(c). This is portraying that more experience with the internet in terms of people who would not want to correct false news.

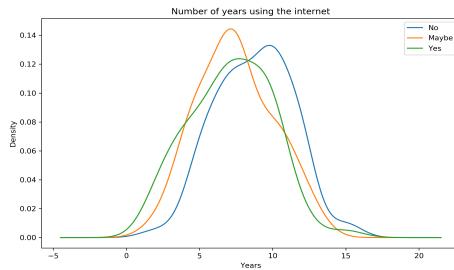
The distribution in Fig 7(a) is showing a similar pattern for both the 'yes' and 'no' group. However, the density for the 'yes' group are much higher in the same regions where the 'no' group has shown its peaks. This shows that there



(a) Time spent on social media per day



(b) Time spent on the internet per day

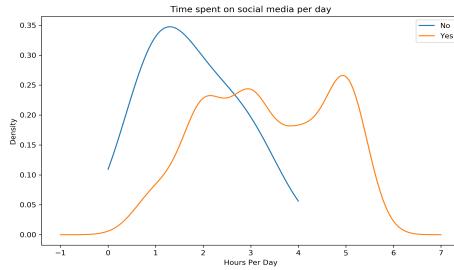


(c) Number of years using the internet

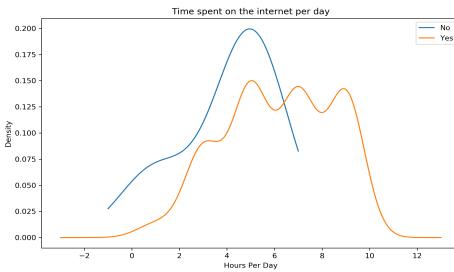
**Fig. 4:** Share FNF Personal Trust distribution with Time

are is a larger fraction of responders who believed in our supplied fabricated news compared to people who did not even though the use of social media per day was similar. Fig 7(b) depicts individuals who did not believe, spending a bit less time on the internet compared to their opposite individuals. This can be understood by the highest peaks occurring on two separate sides of their middle intersection. The number of years in using the internet distribution in Fig 7(c) shows both peaks are somewhat similar but the peak for 'yes' is a

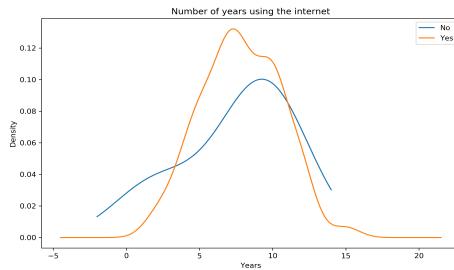
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(a) Time spent on social media per day



(b) Time spent on the internet per day



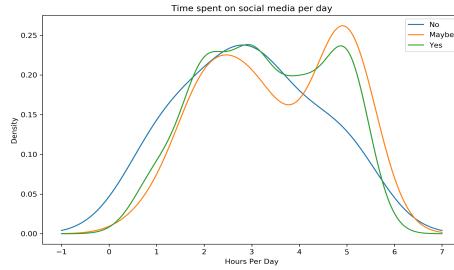
(c) Number of years using the internet

**Fig. 5:** Connected FNF distribution with Time

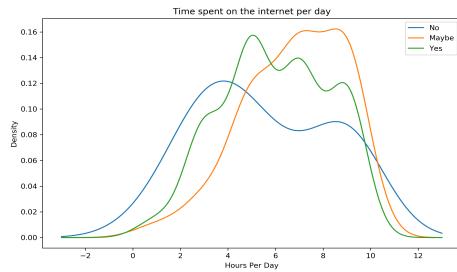
bit earlier than for 'no', showing people with more years of internet years are comparatively better at identifying what may be a fake news.

The numbers denoted in the legends of the distributions below are showing the mean value of the features on either side of the Likert Scale calculated with respect to their corresponding frequency.

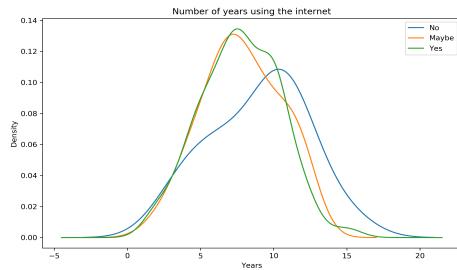
From Fig 8(a), we observe two contrasting separate peaks of almost the same density for individuals who find it urgent enough at both low and high ends whereas for individuals who are in the moderate section, a peak is seen



(a) Time spent on social media per day



(b) Time spent on the internet per day

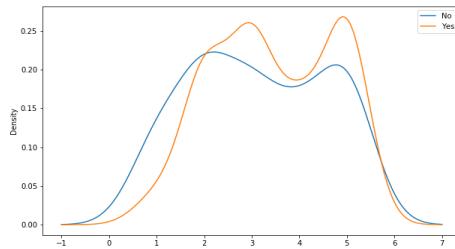


(c) Number of years using the internet

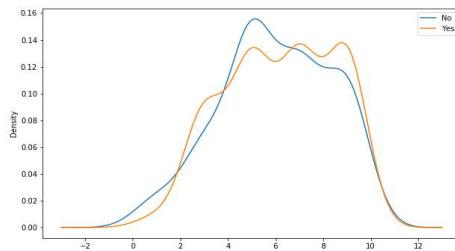
**Fig. 6:** *Correct News FNF distribution with Time*

in the lesser portion of hours per day on social media. People who find it more urgent are showing considerably more use of social medias per day compared to people who find it very less. From Fig 8(b), we see two distinct peaks opposite to one another showing individuals who do find it more urgent spend less time on the internet compared to individuals who find it very less urgent spending more time on the internet. The peak for the moderate section of urgency individuals is approximately between these two. The distribution for

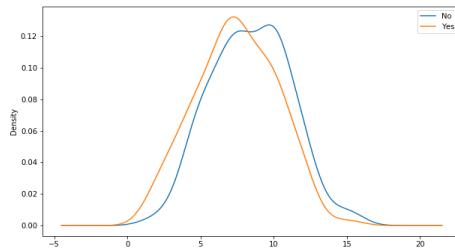
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(a) Time spent on social media per day



(b) Time spent on the internet per day

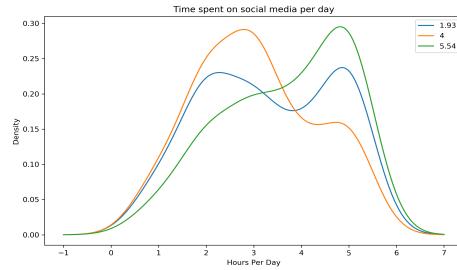


(c) Number of years using the internet

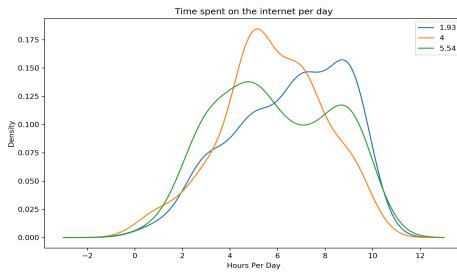
**Fig. 7:** *Fake News Believe* distribution with Time

the number of years are seen to be similar for all 3 sections of the individuals as seen on Fig 8(c).

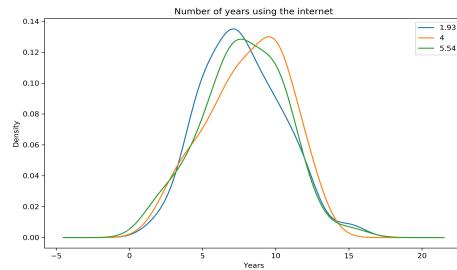
For this feature, from our Fig 9(a) it can be seen that people who find news less credible from personally known sources are spending relatively less time on social media platforms per day compared to people who find these news credible. The moderate section follows a similar nature to people who find it more credible. Opposite distinct peaks can also be observed for people who find it credible and who do not in Fig 9(b). People who find news and



(a) Time spent on social media per day



(b) Time spent on the internet per day

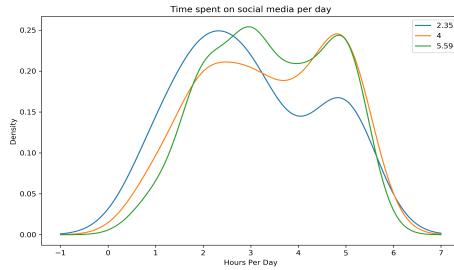


(c) Number of years using the internet

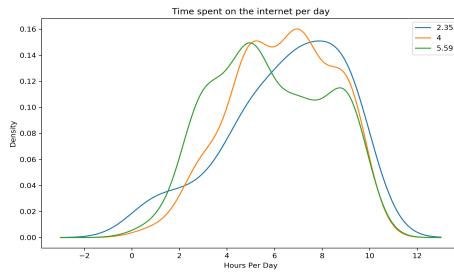
**Fig. 8:** Urgency FNF distribution with Time

information from those personally known sources trustworthy tend to exhaust less time on the internet of a peak at around 4 hours compared to their opposite counterparts at around 6 hours. The moderate section is in between both these peaks. Fig 9(c) shows a similar distribution for all 3 sections of the responders with people not finding news credible showing a narrow peak compared to the more spread out blunt peak for people who find it credible.

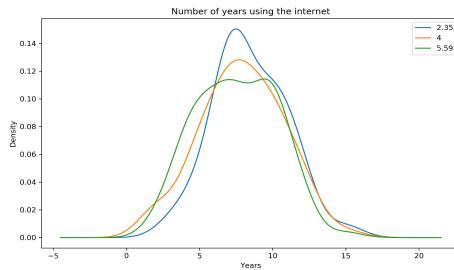
The distribution for this feature has shown that people who find it more important to share any news from their known sources such as families and

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(a) Time spent on social media per day



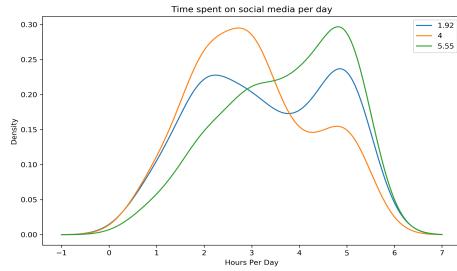
(b) Time spent on the internet per day



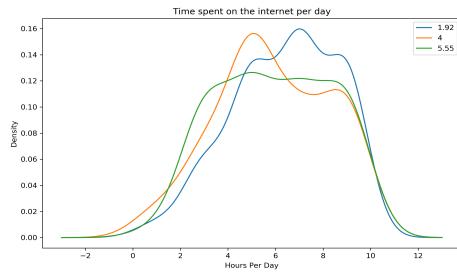
(c) Number of years using the internet

**Fig. 9:** *Trustworthy FNF distribution with Time*

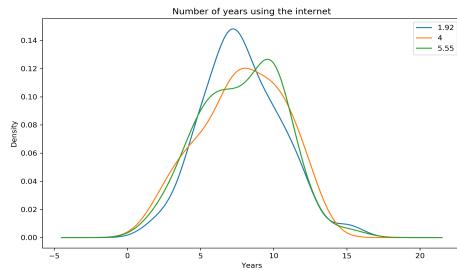
friends are spending more time on social media platforms per day with a peak at around 5 hours compared to their opposite counterparts whose times are distributed out from 2-6 hours from Fig 10(a). The moderate section is showing less time spent on social media platforms per day with a peak at 2-3 hours. Fig 10(b) is displaying people on the lower importance spectrum spending more time on the internet with a peak around 7 hours. Individuals who find it more important are almost evenly distributed out in terms of hours spent on the internet daily. The moderate section is showing a peak at just over 4 hours.



(a) Time spent on social media per day



(b) Time spent on the internet per day



(c) Number of years using the internet

**Fig. 10:** Important to share FNF distribution with Time

From Fig 10(c) we again notice a similar distribution much like our previous features for all 3 sections of groups of individuals.

**WHY DO WE SHARE FAKE NEWS? A COGNITIVE BEHAVIOUR ANALYSIS ON THE****5.2 Relation between features**

To find relationships between two features we have used the approach of Ordinal Logistic Regression as our responses were in ranked order and also taken a measure of their coefficient and their significance to understand the likelihood.

**New features that are included in this table are described as follows:**

*Urgency.* This variable is a measure of how hastily would the individual share the news or information coming from any source. This was measured using a Likert Scale.

*Trust Source.* This variable is a measure of how trustworthy an individual found the sources we used to show our fabricated news from. This was measured using a Likert Scale.

*Important To Let Others Know.* We asked the surveyees how important they found a news or information to let others know about using a Likert Scale.

*Motivated to Share.* The variable was used to measured how motivated one felt to share a certain news. The measuring tool was a Likert Scale.

*Consequences Aware.* This was a question with options "yes", "maybe" and "no" to see if while sharing a news, the surveyee was aware of the consequences it may have.

*Outcome.* This was a measure of how positive or negative outcome an individual expected after sharing a news or piece of information on social media platforms. This was measured using a Likert Scale.

*After Covid Vax.* Here we asked the responders if they would take the vaccine after reading our fabricated news. It consisted of "yes", "maybe" and "no" options.

*Elder Concern.* We asked if our fabricated news made them concerned about their elders in taking the vaccine. Consisted of "yes", "maybe" and "no" options.

Below is a table showcasing the coefficients and the p-value between the features after Ordinal Logistic Regression has been performed. Only the noteworthy relations are mentioned in the table.

Feature 1	Feature 2	Coefficient	P>z
Share FNF	Share FNF Personal Trust	1.7135	0.000
Share FNF	Share FNF Urgency	2.1452	0.000
Share FNF	Fake News Believe	0.6855	0.011
Share FNF	Urgency	0.2208	0.012
Share FNF	Trust Source	0.3721	0.000
Share FNF	After Covid Vax	-0.672	0.001
Share FNF	Elder Concern	0.8310	0.000
Share FNF Urgency	Share FNF Personal Trust	1.9624	0.000
Share FNF Urgency	Trust Source	0.2805	0.008
Share FNF Urgency	Urgency	0.2712	0.003
Share FNF Urgency	Elder Concern	0.4360	0.006
Share FNF Personal Trust	Fake News Believe	0.8093	0.003
Share FNF Personal Trust	Trust Source	0.2572	0.012
Share FNF Personal Trust	Elder Concern	0.6957	0.000
Urgency FNF	Trust Source	0.4137	0.000
Urgency FNF	Important To Let Others Know	0.5720	0.000
Urgency FNF	Motivated To Share	0.5879	0.000
Urgency FNF	Outcome	0.5682	0.000
Urgency FNF	Share FNF	0.3465	0.024
Urgency FNF	Share FNF Personal Trust	0.6085	0.000
Urgency FNF	Consequences Aware	0.8720	0.001
Urgency FNF	After Covid Vax	-0.4299	0.010
Trustworthy FNF	Trust Source	0.5244	0.000
Trustworthy FNF	Share FNF	0.4758	0.003
Trustworthy FNF	Urgency FNF	0.8564	0.000
Trustworthy FNF	Important To Let Others Know	0.6266	0.000
Trustworthy FNF	Outcome	0.6274	0.000
Important To Share FNF	Trustworthy FNF	0.9948	0.000
Important To Share FNF	Urgency FNF	1.5725	0.000
Important To Share FNF	Share FNF Urgency	0.3682	0.031
Important To Share FNF	Outcome	0.4714	0.000
Important To Share FNF	Trust Source	0.3334	0.001
Important To Share FNF	Share Personal Trust FNF	0.5450	0.000

**Table 1:** The coefficients and the p-value among features

## 6 Discussion

### 6.1 Related to Time:

Given from our distribution plots, we have been able to deduce the following from our observations:

When asked about features related to the fabricated news that we had supplied, the answers have shown that individuals who wanted to inform our news to their friends and families as soon as finishing our survey spends more time on social media platforms and less time on the internet per day compared to their opposite counterparts. The same can be said even if the same news came from sources that they have trust or respect upon. Thus we believe individuals in this group who would want to urgently share a news from personally known or admired sources without proper verification use maximum

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of their time on the internet to social media platforms. Their opposite group has shown that a small to moderate chunk of the amount of time spent on the internet is exhausted on social media platforms.

We notice a very similar pattern in time consumption when we asked the surveyees on how they would react to any news or information being shared from a personally known or admired source in general. The distribution plots of the features *Urgency FNF*, *Trustworthy FNF* and *Important to share FNF* have demonstrated the same results in terms of time expenditure on the internet and social media platforms.

People connected with their loved ones and friends dedicate more time on social media platforms and overall on the internet on a daily basis.

Individuals who feel they should let their source know if the news is false and needs to be corrected or unsure to inform, spend more time on social media over around 5 hours compared to individuals who are uninterested in correcting or letting them know. We also see the former group having low years of experience with the internet compared to the latter group.

Most people believing in our supplied fake news have shown a higher daily usage of social media and the internet. Though we suspect a small group of individuals may have had certain bias in answering this specific question due to it being asked directly.

## 6.2 Related to other features

From our table we have observed that *Share FNF* with *Share Personal Trust* has a coefficient of 1.7135, *Share FNF* with *Share FNF Urgency* has 2.1452, *Share FNF Urgency* with *Share FNF Personal Trust* has 1.9624 and *Important To Share FNF* with *Urgency FNF* has 1.5725. This shows if the news is coming from a personally known or admired source, the urgency in sharing is more significantly likely which in turn may lead to not verifying the said news. This observation has been made possible by introducing a fabricated news in our survey based on which our survey takers responded. If we take a closer look into the following relations of *Share FNF* with *Urgency* (Coefficient of 0.2208), *Urgency FNF* with *Share FNF Personal Trust* (Coefficient of 0.6085) and *Urgency FNF* with *Share FNF* (Coefficient of 0.3465), we end up noticing that the low coefficients are showing due to the general nature of the questions asked in those sections - the section where we asked the survey taker to record their responses in general day to day activity cases. But when the individual is faced with a piece of news while answering, we see a significant rise in the coefficients which we can consider to be raw to oneself.

Looking into relations of *Trust Source* with *Share FNF* (Coefficient of 0.3721), *Share FNF Urgency* (Coefficient of 0.2805), *Share FNF Personal Trust* (Coefficient of 0.2572) and *Important To Share FNF* (Coefficient of 0.3334) further validates our hypothesis. The low coefficients infer to a lower credibility on different news portals, but if backed up by a source that the said individual has a personal relationship with, the credibility of the news that has been shared to them increases.

We have also noticed that an individual sharing a piece of information from a trusted source generally expect a positive outcome. This can be backed up by the following relations of *Outcome* with *Urgency FNF* (Coefficient of 0.5682), *Trustworthy FNF* (Coefficient of 0.6274) and *Important To Share FNF* (Coefficient of 0.4714).

Good amount of likelihood has been observed for Covid 19 vaccine related features in our work. *After Covid Vax* with *Share FNF* (Coefficient of -0.672) and *Urgency FNF* (Coefficient of -0.4299) does show that the individual was affected by our fabricated news and hence the likelihood of sharing urgently is more. *Elder Concern* with *Share FNF* (Coefficient of 0.8310), *Share FNF Personal Trust* (Coefficient of 0.6957) and *Share FNF Urgency* (Coefficient of 0.4360) further solidifies our second hypothesis. When a concerning news is shared or posted by someone personally trusted by an individual, he/she is more likely to share it quickly without verification.

## 7 Dataset Observations

### 7.1 Relation with different share types

In our survey we asked our responders to mark the different type of contents that they share or post on their social media platforms. The list contained *Awareness, Educational, Entertainment, Informative, Motivational, News, Personal, Philosophical, Political, Religious, Scientific, Sports* and *Others*. When compared with our 9 selected features, we have been able to make the following observations, all units are in percentages:

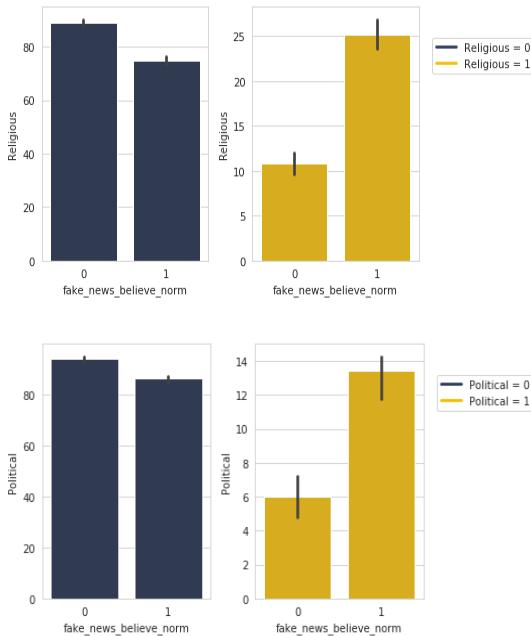
It can be seen from Figure 11 that in the case of sharing *Religious* and *Political* contents, there are a higher portion of responders who believed in our supplied fabricated news compared to people who did not. The opposite is observed among those who do not share contents in this categories.

Here in Figure 12, contents that are shared in the category of *Awareness, Educational* and *Motivational* are showing an upward trend for responders who find those important to share. However, in the case of *Entertainment* and to an extent *Philosophical*, we can observe that its the opposite trend. For *Informative*, the importance in sharing is neutral. The absolute opposite nature is more or less observed among people who do not share these types in the case of importance in sharing.

Figure 13 is showing that when *Awareness* and *Informative* contents are shared, the trust in peers and family members sharing of contents are also on the rise. Yet, while sharing *Entertainment* posts, the trust has a downward trend nature. The opposite trends are also observed in the non-sharing of these contents.

*Awareness, Educational, Informative* and *Motivational* posts shared by the responders relates to the urgency in sharing posts from their peers and family are gravitating in an upward direction as seen from Figure 14. While in the case of sharing *Entertainment* and some what *Philosophical* posts, the direction is

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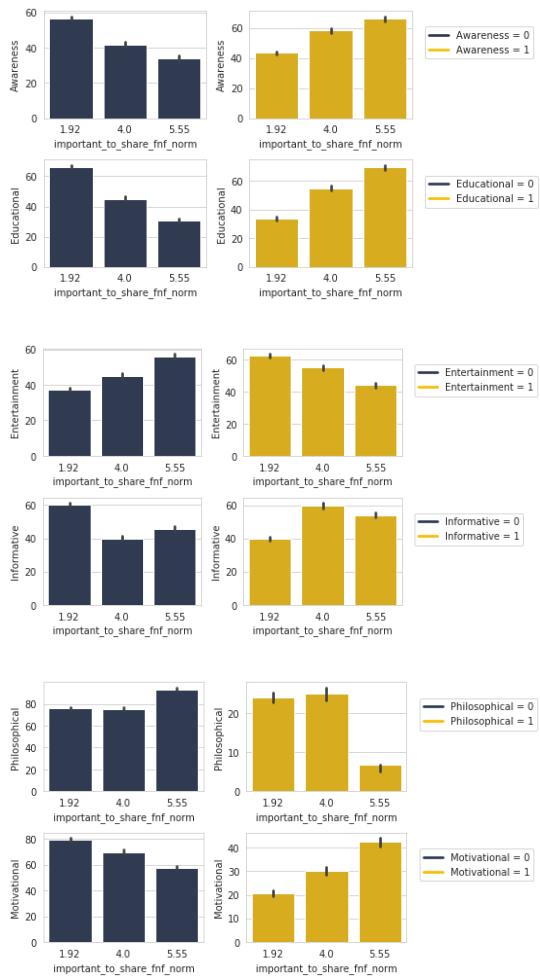
**Fig. 11:** *Fake News Believe with Religious and Political types*

on the flip side for urgency. Opposite trends are observed when these type of posts are not shared.

Figure 15 is showing that while sharing *Scientific* posts, the trend in sharing our supplied fabricated news has shown a dip. While in the case of *News* contents, it has taken the form of a U-shaped curve. The reverse nature is seen when among people who do not share these content types.

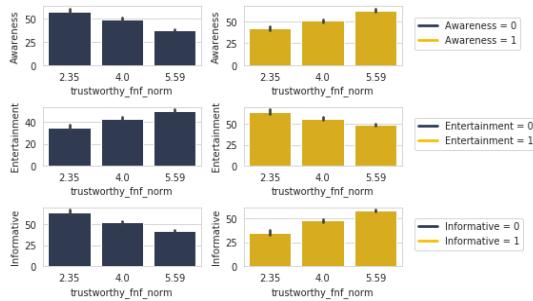
Figure 16 points to the trend of wanting to share our fabricated news as soon as finishing the survey, as rising among responders who share *Awareness* and *Educational* contents. The similar opposite trend is observed when these are not.

The rising trend is seen again in wanting to share our made up news among peers and friends from the group of people who share *Motivational* and *Educational* posts as shown in Figure 17. However, people who do not share these types have shown a similar negative trend in wanting to share our fabricated news among peers, family and friends.

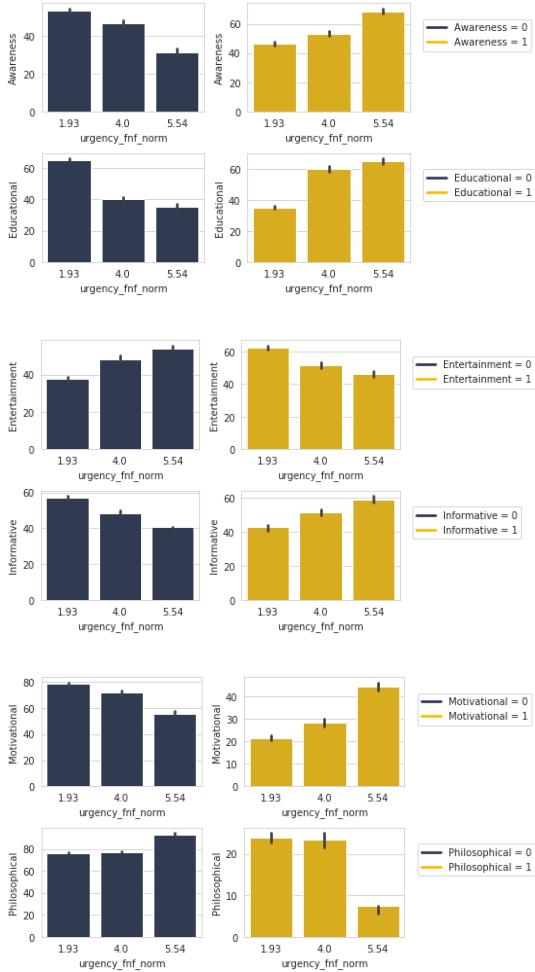


**Fig. 12:** Important to share FNF with Awareness, Educational, Entertainment, Informative, Motivational and Philosophical

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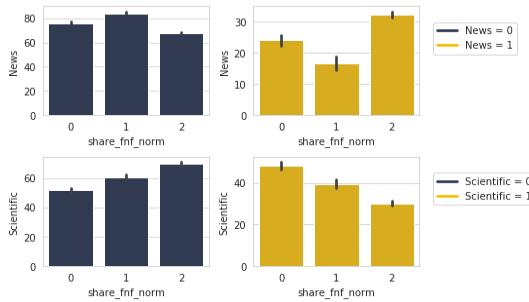
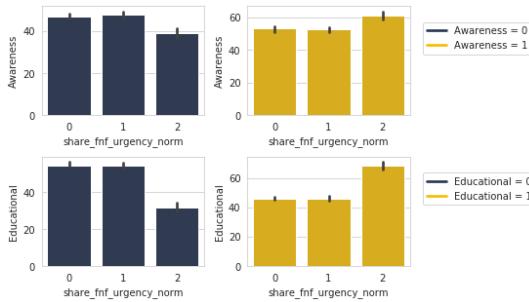
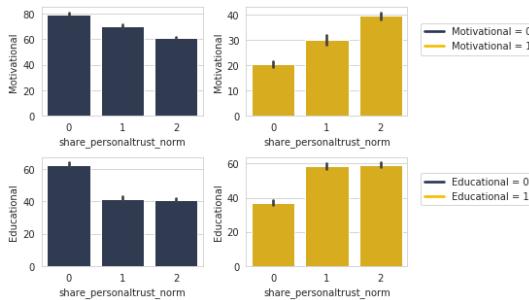


**Fig. 13:** Trustworthy FNF with Awareness, Entertainment and Informativeness



**Fig. 14:** Urgency FNF with Awareness, Educational, Entertainment, Informative, Motivational and Philosophical

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**Fig. 15:** Share FNF with News and Scientific**Fig. 16:** Share FNF Urgency with Awareness and Educational**Fig. 17:** Share FNF Personal Trust with Motivational and Educational

## 7.2 Relation with different social media platforms

### 7.2.1 All social media platforms used

The responders were tasked with marking all the social media platforms they use daily, the list included *Facebook*, *Whatsapp*, *Instagram*, *Twitter*, *YouTube*, *TikTok*, *Snapchat*, *Reddit* and *Others*. The following are the noticeable observations made:

Correct News FNF			
Instagram	0	1	2
0	56.3%	43.2%	39.4%
1	43.4%	56.8%	60.6%
WhatsApp			
0	43.8%	18.2%	16.9%
1	56.3%	81.2%	83.1%
Number of Responders	16	44	142

**Table 2:** Percentage of the number of people using *Instagram* and *WhatsApp* against the feature *Correct News FNF*

From Table 2, we can state that people who are more inclined in correcting their close ones or peers for false news tend to use *Instagram* and *WhatsApp* significantly more.

Share FNF			
Instagram	0	1	2
0	51.7%	35.4%	38.5%
1	48.3%	64.6%	61.5%
Number of Responders	58	48	96

**Table 3:** Percentage of the number of people using *Instagram* against the feature *Share FNF*

For this feature in Table 3, responders who wanted or were unsure in sharing our supplied fabricated news used *Instagram* significantly more compared to responders who did not want to share.

### 7.2.2 Most used social media platforms

The survey takers were also tasked in marking their most used social media platform. The list included *Facebook*, *Whatsapp*, *Instagram*, *Twitter*, *YouTube*, *TikTok*, *Snapchat*, *Reddit* and *Others* as before. The following are the noteworthy observations made:

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Trustworthy FNF			
Social Media Platform	2.35	4	5.95
YouTube	45%	41.8%	26%
Facebook	45%	43%	55%
Number of Responders	40	67	95

**Table 4:** Percentage of the people having *YouTube* and *Facebook* as their most used social media platform against the three values of the feature *Trustworthy FNF*

Urgency FNF			
Social Media Platform	1.39	4	5.54
YouTube	39.8%	36.7%	25.9%
Facebook	47%	50%	50%
Number of Responders	88	60	54

**Table 5:** Percentage of the people having *YouTube* and *Facebook* as their most used social media platform against the three values of the feature *Urgency FNF*

Share FNF			
Social Media Platform	0	1	2
YouTube	43.1%	35.4%	30.2%
Facebook	43.1%	56.3%	49%
Number of Responders	58	48	96

**Table 6:** Percentage of the people having *YouTube* and *Facebook* as their most used social media platform against the three values of the feature *Share FNF*

Share FNF Urgency			
Social Media Platform	0	1	2
YouTube	40.8%	30.2%	29.3%
Facebook	43.9%	57.1%	48.9%
Number of Responders	98	63	41

**Table 7:** Percentage of the people having *YouTube* and *Facebook* as their most used social media platform against the three values of the feature *Share FNF Urgency*

Share FNF Personal Trust			
Social Media Platform	0	1	2
YouTube	43.6%	32.1%	28.2%
Facebook	43.6%	52.8%	52.1%
Number of Responders	78	53	71

**Table 8:** Percentage of the people having *YouTube* and *Facebook* as their most used social media platform against the three values of the feature *Share FNF Personal Trust*

From Tables 4,5,6,7,8, we have been able to observe significant drops in percentages for *YouTube* whereas the changes were not much for *Facebook*. Upon observing the pattern it can be stated that with higher values of these features, responders are less likely to have *YouTube* as their most used social media platform.

## 8 Conclusion

By this study, we have been able to show a good amount of positive relationship between the trust of the source and the hastiness in which a piece of information can be shared skipping proper verification. It has been supported by the type of news that we had supplied and how it influenced the views of the survey takers somewhat. Supplying fabricated news has helped us in measuring these quantities in a robust way. The related use of social media platforms has also been portrayed in various methods using these features. The use of time on the internet and social media platforms has also shown what the key factors are in an individual not fact checking and spreading a suspected fake news to other parts of the larger population. Looking into the type of contents shared by the responders along with the use of specific social media platforms has helped us in taking a deeper look and profiling what type of individuals may be susceptible in contributing to the spreading of fake news whilst not verifying.

## Declarations

**Conflict of Interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

**Research involving Human Participants** A total of 216 human participants took part in our survey for this research.

**Informed Consent** All participants agreed to give their consent before taking our survey.

**Funding Information** No funding was received to assist with the preparation of this manuscript.

**Author Contribution** All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Shashwata Sourav Roy Samya, MD. Shaleh Islam Tommoy and MD. Forhad Rabbi. The first draft of the manuscript was written by Shashwata Sourav Roy Samya and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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