



ESSACHESS – Journal for Communication Studies

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ESSACHESS –
Journal for Communication Studies
Volume 16 Issue 1(31), p. 115-134
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<https://www.essachess.com/>
DOI: 10.21409/essachess.1775-352x

Cite: ROBINSON, J. Y. (2023). The Casual Observer: Low-Activity Twitter Users as Arbiters of (Mis)Information in the War in Ukraine. *ESSACHESS*. <https://doi.org/10.21409/MVFN-PN09>

Jessica Yarin ROBINSON
Doctoral Research Fellow, Department of Media & Communication,
University of Oslo
NORWAY
email: j.y.robinson@media.uio.no

Abstract: The spread of misinformation in the digital age has become a significant concern, especially during times of crisis and conflict. In the context of the ongoing war in Ukraine, a web of actors – including government officials, journalists, activists, and ordinary citizens – participate in shaping public discourse on platforms such as Twitter. Although much attention has been devoted to the role of bots and other highly active users in spreading misinformation, the majority of Twitter users remain “casual” observers with limited active engagement in crises. This paper investigates the communication strategies of these casual observers concerning the war in Ukraine, focusing on their propensity to share misinformation. Drawing on an analysis of 117 million tweets, the findings indicate casual users are less likely to disseminate links to misinformation sources. This observation underscores the potential of low-activity users to act as a stabilizing force in public discourse, mitigating the spread of false narratives and promoting more accurate information during times of crisis. By shedding light on the role of casual observers in shaping public discourse, this

Article received January 29, 2023. Article accepted on May 9, 2023.
Conflict of Interest: The author declares no conflict of interest.

research contributes to a more comprehensive understanding of crisis communication and highlights the need for a nuanced examination of information sharing dynamics on social media platforms.

Keywords: armed conflict, social media, engagement, user types, misinformation, Twitter

L'observateur habituel. Les utilisateurs de Twitter à faible activité comme arbitres des (fausses) informations dans la guerre en Ukraine

Résumé: La propagation de la désinformation à l'ère numérique est devenue une préoccupation importante, en particulier en période de crise et de conflit. Dans le contexte de la guerre en cours en Ukraine, un réseau d'acteurs - dont des responsables gouvernementaux, des journalistes, des militants et des citoyens ordinaires - participe à l'élaboration du discours public sur des plateformes telles que Twitter. Bien qu'une grande attention ait été accordée au rôle des bots et d'autres utilisateurs très actifs dans la diffusion de fausses informations, la majorité des utilisateurs de Twitter restent des observateurs "occasionnels" avec un engagement actif limité dans les crises. Cet article étudie les stratégies de communication de ces observateurs occasionnels concernant la guerre en Ukraine, en se concentrant sur leur propension à partager des informations erronées. S'appuyant sur une analyse de 117 millions de tweets, les résultats indiquent que les utilisateurs occasionnels sont moins susceptibles de diffuser des liens vers des sources de désinformation. Cette observation souligne le potentiel des utilisateurs à faible activité à agir comme une force stabilisatrice dans le discours public, en atténuant la propagation de faux récits et en promouvant des informations plus précises en temps de crise. En mettant en lumière le rôle des observateurs occasionnels dans la formation du discours public, cette recherche contribue à une compréhension plus complète de la communication de crise et souligne la nécessité d'un examen nuancé de la dynamique de partage d'informations sur les plateformes de médias sociaux.

Mots-clés: conflit armé, médias sociaux, engagement, types d'utilisateurs, désinformation, Twitter

Introduction

Russia's 2022 invasion of Ukraine has been called "the most documented war in human history" (Johnson, 2022). Images, news articles, military announcements, and social media posts from the ground circulate through virtual information channels in what Hoskins and Shchelin (2023) have called the continuous "war feed." Among the most global of these channels is the platform Twitter, which was early on incorporated into the war effort by both Ukraine and its allies and by the Kremlin (Snowden, 2022). Yet, attention is not evenly distributed: most Twitter users do not actively engage with content related to the war in Ukraine. Previous social media research primarily

focuses on the behaviour and impact of highly active users (Bakshy et al., 2015; Makhortykh & Sydorova, 2017; Vosoughi et al., 2018), even excluding the least active users during the data cleaning process (e.g. Guo et al., 2020; Hagen et al., 2018; Sadri et al., 2018). In an age in which publics are constantly connected to crisis and conflict through the “residual awareness” provided by media (Hoskins & O’Loughlin, 2010, p. 2), it is argued here that studying communication patterns among the less actively engaged provides a useful window into the experience of mediated war and crisis communication, and potentially helps explain how and why certain information proliferates.

This paper thus explores the communicative patterns of low-activity Twitter users, described as “casual users,” discussing the war in Ukraine. The idea of the casual observer draws on public relations research by James E. Grunig’s (2005) situational theory of publics, as well as public opinion research (Converse, 2006 [1964]). This paper suggests that research should consider the role of low-activity users in public discourse around crises, as these users constitute a large portion of the overall social media user base and their engagement with misinformation may be more representative of the general public (Wojcik & Hughes, 2019). The paper puts a particular focus on sharing of misinformation. Misinformation has been a significant concern on social media platforms, particularly in the context of political conflicts (Allcott & Gentzkow, 2017; Lewandowsky et al., 2017; Wardle & Derakhshan, 2017), and has raised particular concerns around the war in Ukraine (Hoskins & Shchelin, 2023; Pierri et al., 2022).

The paper uses empirical material from the first 150 days of the 2022 Russia–Ukraine conflict collected from Twitter’s global live streaming API between Feb. 25 and July 24, 2022, totalling a data collection of 117 million tweets. This collection includes tweets that may have since been deleted as part of Twitter’s censorship efforts. Casual users are defined in this paper as those who only appear once in the data. Using big data parsing techniques, these users are identified, and their tweeting patterns are compared to more active users in the data. Sources of misinformation are based on the classifications by Media Bias/Fact Check (MB/FC), as demonstrated by Pierri et al. (2022).

The results show that casual observers represent half the users in the global data. Moreover, casual users tend to be more active than previous research might suggest (Hargittai et al., 2010; Nielsen, 2006). Rather than taking a follow-the-leader approach to misinformation, they demonstrate distinct misinformation sharing behaviours from the rest of the userbase and overall they are less likely to share links to misinformation sources, even when accounting for rate of tweeting. In addition, the analysis suggests casual users share qualitatively different types of information from these sources. This research suggests that rather than posing a threat to quality information, low-activity users may act as a mitigator in the spread of information during crisis. Understanding the communication practices of these users, it may be

possible to develop more effective strategies for reducing the spread of misinformation on social media platforms by targeting casual users.

The paper is structured as follows. The following literature review aims to provide an overview of the current state of research on low-activity Twitter users and identify key themes and gaps in the field. Four hypotheses and two research questions are proposed. The empirical data and methodological approach are then described, followed by the findings of these analyses. Finally, the findings are discussed in relation to the existing literature and the limitations of this study, and lines of future research are described.

1. Theoretical Perspectives

There is debate over whether social media increases awareness of armed conflicts. Some scholars argue that social media can contribute to an increase in awareness of armed conflicts by providing real-time access to information from conflict zones, which can include both official statements and citizen-generated content (Makhortykh & González Aguilar, 2020; Zeitzoff, 2017). This can lead to a greater sense of proximity to the conflict and a greater emotional impact on the audience. Additionally, social media has allowed for a more decentralized dissemination of information about conflicts, which can include a greater diversity of voices and perspectives, including those describing the human impact of the conflict (Chouliaraki, 2015).

On the other hand, the vast amount of information available can make it difficult for people to focus on the most important events. For example, in a study of Twitter in the Syrian Civil War, Lynch et al. (2014) warn that social media can create the “dangerous illusion” of having comprehensive information about a conflict, when in fact the information is heavily curated by different actors, algorithms, and network dynamics (p. 5). Other research finds social media is also used to spread polarizing and propagandistic messages (Makhortykh & Sydorova, 2017), which can make it difficult for people to sort out accurate information from misinformation (Hoskins, 2021; Hoskins & Shchelin, 2023). The following sections look more closely at levels of engagement with issues, social media activity, and the relationship to misinformation.

1.1. Publics and their Varying Levels of Attention

The variability in people’s engagement with different issues is a well-documented phenomenon in the study of public opinion. The public opinion researcher Philip Converse (1964) argued that voters not only have varying points of view but varying strengths of opinion, such that a voter may express an opinion on an issue when asked by a pollster, but otherwise that issue may not be very important to the voter. “Different controversies excite different people,” Converse explained (p. 53).

Converse was influential in what has become known as “issue publics,” referring to the portion of the public that pays attention to a particular issue.

Public relations scholar Grunig (1997) further distinguished between different forms of issue publics Situational Theory of Publics. These include all-issue publics, or those interested in a wide range of problems; apathetic publics, which are generally inattentive to all problems; single-issue publics, which are focused on one subset of problems; and hot-issue publics, which arise around crises in the media (p. 13). As the name suggests, hot-issue publics dissipate once the media moves on to other topics (Aldoory & Grunig, 2012). Even within hot-issue publics, Luoma-aho and Vos (2010) argue that there are active and passive actors – those “on the stage” and those “in the audience” (p. 324). Yet those in the audience are still listening.

Research tends to highlight the most politically active members of publics, as they tend to be those who are most knowledgeable and/or most affected by an issue (Grunig, 1997; Luoma-aho & Vos, 2010). These individuals tend to have a deeper understanding of current events and a more nuanced perspective on them (Delli Carpini & Keeter, 1996), making them influential opinion leaders that help less engaged citizens understand current events (Katz & Lazarsfeld, 2017 [1955]). In contrast, scholars have at times been critical of passive actors (Putnam, 2001; Prior, 2005).

Yet more research has been reconsidering, or nuancing, this view of passivity. For example, from the perspective of democratic theory, Ekman and Amnå (2012) have theorized “latent” engagement, which they argue is different from political disengagement. Latent engagement is engagement of *attention* – taking an interest in a topic, for example. Latent engagement does not rise to the level of more visible forms of political participation or activism, but Ekman and Amnå argue it is a necessary precursor to these (p. 293). Moreover, Luoma-aho and Vos (2010) argue that public attention to topics varies over time. “When a fierce debate is going on in one arena, it may attract more players on the stage and also a bigger passive audience,” they write (p. 321). Such temporal shifts have become easier to track on social media sites, as will be discussed in the following section.

1.2. Social Media Publics and their Varying Levels of Activity

The age of social media and Big Data has provided new means of tracking engagement with issues. Drawing on Converse’s concept, Bruns and Burgess (2011) have proposed that Twitter can be seen as a series of “issue publics,” made up of people engaged in particular issues, whether sports, politics, television, or music. These publics are able to be tracked and visualized through the digital traces – their tweets, @mentions, and use of #hashtags. In the area of strategic communication, Hellsten et al. (2019) examine “issue arenas” on Twitter, drawing on Luoma-aho and Vos’s theory. They distinguish between active and passive stakeholders in these

arenas through forms of activity on the platform, finding that peaks of attention also increase attention among passive stakeholders (p. 42).

Such research, however, is heavily reliant on the most active participants. In Hellsten et al.'s definition, for example, passive stakeholders are identifiable only through the tweets of the active stakeholders (p. 40). This is to be expected because it is by definition the active users that provide more digital trace data. Yet there has been significant speculation about what are sometimes called social media "lurkers," the silent majority of electronic fora. One of the oft-cited rules of thumb about social media is the "90-9-1 rule," referring to the concept that 90% of users never post, 9% post a little, and 1% of users post a lot (Nielsen, 2006). (This oft-cited rule does not appear to have been amended since its development, perhaps a sign of the dearth of research.)

Some research has gotten at the phenomenon through other means, such as qualitative interviews and opinion polling. For example, a 2019 Pew survey of Americans with Twitter accounts found that 10% of users contribute 80% of the tweets (Wojcik & Hughes, 2019). These highly active users were more likely to be women, and posted more about politics (p. 3). Some researchers have found that low-activity users tend to be more interested in Twitter as an entertainment medium, which could suggest that they are less informed in civic affairs issues (McClain et al., 2021).

On the other hand, low-activity users may also see following the discussions of others as a form of participation. In a literature review, Sun et al. (2014) found that among the reasons low-activity users don't post are that they were looking for information (p. 114). In analyses of temporal Twitter patterns, Bruns and Stieglitz (2013) found that immediately following a crisis, lower activity users contribute a large portion of tweets, but high-activity users are more responsible for the daily ebbs and flows of discussion around a topic (p. 101). While activity should not be confused with influence in online communities (Grčar et al., 2017; Razis & Anagnostopoulos, 2014), survey data does suggest that high activity users also have higher follower counts, and get more engagement than the average user (Wojcik & Hughes, 2019). Moreover, as found by Karlsen (2015), opinion leaders in social media spaces tend to be those who are actively engaged with politicians and parties. In addition, particularly with regard to foreign affairs, public opinion research in the United States has found that the public tends to be especially reliant on opinion leaders for understanding of the issues (Cavari & Freedman, 2019; Hayes & Guardino, 2011; Golby et al., 2018).

With these previous findings in mind, the following hypotheses are proposed. First (H_a), casual users will engage in what Kalnes et al. (2017) have identified as more passive forms of information redistribution, such as retweeting other users and tweeting stories directly from media websites (as indicated by "via" markers in tweets), as opposed to more active forms of engagement such as @mentioning,

@replying, and tweeting original commentary. Second, (H_b) casual users will be particularly active during major points in the conflict, but (H_c) will generally follow the same peaks as more active users. Although as noted by Luoma-aho and Vos (201), users may exhibit different degrees of influence in different issue arenas, the fourth hypothesis (H_d) is that casual users will have a lower follower count, reflecting that they are less likely to be opinion leaders. In the follow section, I will further examine the issue of misinformation sharing in relation to low-activity users.

1.3. Misinformation

As the internet and social media continue to permeate daily life, concerns have arisen about the potential decline in political knowledge due to the prominence of entertainment and sports content over political and civic affairs (Lewandowsky et al., 2017; Prior, 2005). This shift could increase susceptibility to conspiracy theories and misinformation, especially in the context of social media platforms where bots can exacerbate the spread of false narratives (Shao et al., 2018). On the other hand, social media may facilitate passive engagement with the news, exposing users to current affairs through incidental encounters (Fletcher & Nielsen, 2018), and reinforcing media infrastructures that make personal preferences less of a factor (Haugsgjerd et al., 2021). Importantly, being informed does not necessarily correlate with the level of activity on social media platforms. Hochschild and Einstein (2015a; 2015b) have developed a typology that delineates varying levels of political knowledge and misinformation: the actively informed (engaged and well-informed), the inactively informed (not actively engaged but well-informed), the actively misinformed (actively engaged but ill-informed), and the inactively misinformed (low engagement and low knowledge about an issue). (See Figure 1.)

Interestingly, while low engagement with the news generally corresponds to lower levels of political knowledge and a less nuanced understanding of current events (Pennycook & Rand, 2022), research on misinformation sharing often implicates the most politically engaged – or at least the most politically passionate users (Guess et al., 2018; van der Linden, 2022). Marwick and Lewis (2017) suggest that social media sites are especially susceptible to spreading intentionally and unintentionally false information because of their ability to rapidly connect far-flung communities of people with extreme views. Social media logics also favour highly emotional content, which false information often appeals to (Bakir & McStay, 2018; Vosoughi et al., 2018). Scholarship has often connected misinformation sharing to echo chambers containing adamant political believers (Del Vicario et al., 2015; Valenzuela et al., 2019). As noted by Hochschild and Einstein, it is the actively disinformed who have attracted particular attention, being in internet jargon, “loud wrong.”

		Level of engagement	
		Low	High
Level of knowledge	Low	<i>Inactively misinformed</i>	<i>Actively misinformed</i>
	High	<i>Inactively informed</i>	<i>Actively informed</i>

Figure 1. *Informed–engaged typology* (as described in Hochschild & Einstein, 2015a; 2015b)

However, as noted by Allcott and Gentzkow (2017), these are minority of social media users and the general public overall. As described above, most Twitter users are in the silent, or relatively silent, majority (McClain et al., 2021; Wojcik & Hughes, 2019). There is limited research that directly addresses the left side of Hochschild and Einstein’s typology: that is, the “low” engagement side, and the question of whether low-activity Twitter users are less informed than more active users. Some research would suggest low activity users may have less developed networks and digital literacy skills, and therefore are more susceptible to misinformation (Hargittai, et al. 2010), while other research provides evidence that “lay” people can contribute significantly to mitigating misinformation (Pennycook & Rand, 2019). By examining the online behavior of casual observers, we can better understand the dynamics of misinformation spread on Twitter and develop more effective strategies to promote accurate information sharing across diverse user groups (Lewandowsky et al., 2017).

Thus, I propose two final research questions. First (RQ₁), are casual users more susceptible to misinformation sharing? Additionally, I propose the following qualitative research question (RQ₂): In what way does information sharing differ among casual users from the rest of the userbase? This question will be answered using time series analysis and qualitative examination of important tweets. In the next section, I discuss the data and methods used to approach these five hypotheses and one research question.

2. Data and Methods

The methods section of this academic research article describes the process used to collect and analyse big data from Twitter in relation to the war in Ukraine in 2022. The data used in this study consisted of 117 million tweets collected from Twitter in real-time using the keywords “ukraine” and “kyiv”. Collections were made using the DMI-TCAT, a tool designed for the digital humanities by at the University of Amsterdam (Borra & Rieder, 2014). Following collection, the tweets were loaded into Google BigQuery for further analysis.

To begin the analysis, low-activity or “casual” users were first identified. Casual users were defined as those who had tweeted only 1 time during the collection period. This separation of users allowed for a comparison of the behaviour and characteristics of casual users in relation to the war in Ukraine.

Next, the tweets were analysed in Google BigQuery using SQL queries. The queries were designed to identify users who had shared misinformation sources, as well as those who had not. The misinformation sources were defined according to the classifications of Media Bias/Fact Check (MB/FC), which is a website that rates the accuracy and bias of news sources (Van Zandt, 2022). Drawing on Pierri et al. (2022), a list of what are classified as “low credibility” sources was compiled; these include what Van Zandt calls questionable sources and conspiracy-pseudoscience sources. A list of 378 misinformation sources and their associated domains was compiled from MB/FC manually. URLs and domains within the tweets were then extracted using built-in tools of the DMI-TCAT in combination with Regex extractions. The top-level domains of the URLs were then compared to the list of misinformation sources.

Several measures were used to assess the engagement level of users, in addition to the number of tweets about Ukraine found in the data. These measures are available as metadata in each tweet. For each user, this data is gathered from their last available tweet in the data.

- *follower count*: number of accounts who follow a user

- *followee count*: number of accounts the user follows

- *verified*: whether the user has been verified, a demarcation Twitter previously used to identify public figures, official governmental and organizational accounts, celebrities, and journalists (note that the data pre-dates the subscription-based verification program Twitter Blue)

- *lifetime tweet count*: number of tweets the user has sent (tweets deleted by the user will be deducted from this count)

- *profile creation date*: date that the user set up their Twitter account

Since users who have been on Twitter longer will have had more opportunities to tweet, lifetime tweet count may vary based on the age of the Twitter account. To standardize the lifetime tweet count, a measure called *daily tweet rate* is calculated by dividing lifetime tweet count by the number of days between the profile creation date and the last available tweet in the data.

Another aspect of the analysis was to compare the temporal patterns of tweets from casual users to that of the rest of the user base. To do this, time series analysis to identify patterns in the frequency and timing of tweets from casual users was compared to the rest of the user base. Tweeting “peaks” were defined as those days in which tweet volume was at the 80th percentile or higher; in order to account for the

fact that tweeting was higher at the start of the war than in later months, this percentile was calculated separately for February–March, and then April–July. This analysis helped nuance the picture of how casual users engage with social media during a crisis, and how their behaviour compares to that of more active users.

3. Findings

The findings from this study address four hypotheses and two research questions. Before establishing the evidence for or against the hypotheses, a general assessment of the data was made to provide a general overview. It was found that casual users, meaning those who only appear once in the data, make up 49.5% of the userbase (4,962,233 users out of 10,020,547), and produced 4.2% of the total tweets (4,962,233 tweets out of 117,144,527). These users provide a general basis for hypothesis testing. In addition, the most prominent online domains shared in tweets were found to be dominated by major English language news outlets. The top domains in order of proportion of shares were YouTube (11% of tweets with URLs), Reuters (5%), the *New York Times* (5%), the BBC (4%), the *Guardian* (3.8%), the *Washington Post* (3.1%), CNN (2.8%), Telegram (2.5%), the *Wall Street Journal* (1.6%), and the Associated Press (1.4%).

Table 1. Forms of tweeting

	Tweet type (proportion)				
	Active/Interactive			Passive	
	mention	comment, no mention	reply	retweet	via
Non Casual Users	0.01	0.10	0.10	0.77	0.01
Casual Users	0.02	0.13	0.15	0.69	0.01

Table 2. Forms of misinformation tweeting

	Misinformation sharing : Tweet type (proportion)				
	Active/Interactive			Passive	
	mention	comment, no mention	reply	retweet	via
Non Casual Users	0.01	0.25	0.03	0.66	0.04
Casual Users	0.01	0.25	0.02	0.68	0.05

3.1. Statistical Analysis

Regarding the first hypothesis (H_a), casual users were not found to engage in more passive forms of information exchange, such as retweeting and tweeting directly from media websites, meaning the hypothesis was not supported. As seen in Table 1, casual users were more likely to @mention and @reply to other users, as well as send out original commentary. They had proportionally fewer retweets and “via” tweets direct from news sites. However, casual users who shared misinformation are less likely to engage in political exchange and more likely to share information passively (Table 2). These differences suggest that casual users may be less politically engaged and more focused on receiving information, rather than actively participating in the conversation.

Regarding hypothesis H_b, the findings show that casual users were indeed particularly active during major points in the conflict. For example, the number of tweets from casual users spiked during the initial invasion, during President Zelensky’s address to the German Parliament (March 17), and Russia’s retreat from the city of Kharkiv (May 14). This suggests that casual users may be paying closer attention to the conflict during moments of heightened violence and/or media attention. Hypothesis H_c was also supported by the findings, as casual users were found to exhibit the same peaks as more active users (see Figure 2). This indicates that, despite their low engagement, casual users may still be following the same news cycles and trends as more active users. Moreover, a manual analysis of the peak days (see below) indicates the most-shared content was nearly identical between casual and non-casual users.

The fourth hypothesis (H_d) was also supported by the data, as casual users had a lower overall follower count (Mdn = 72; M = 1,337; SD = 76,537) compared with non-casual users (Mdn = 155; M = 3,073; SD = 144,728). This suggests that even on

other topics casual observers of the war may have less influence on other users through the information they share.

In answer to the first research question (RQ₁), initial observations suggest that casual users are not more susceptible to misinformation sharing. Of the 10,020,547 total users in the data, 321,806 (or 3.2%) shared links to misinformation sources; however, only 19,624 of the misinformation sharers are casual users (out of 4,962,233 total casual users). In other words, only 0.39% of casual users shared misinformation. However, casual users by definition share fewer tweets in general, so this lower proportion could be due to their general lower levels of activity.

A logistic regression was performed on a random sample of users ($n = 200,000$) to assess the effect of activity measures on the likelihood that users would share misinformation sources. Before running the analysis, predictor variables were assessed for multilinearity and linearity with the logit. The correlation coefficients between the predictor variables were all under the recommended threshold of 0.7 and variance inflation factor (VIF) values were all close to 1, indicating low collinearity between variables (Field, 2013, p. 325). After examining scatterplots and conducting a Box-Tidwell test, it was determined that some of the continuous predictor variables exhibited nonlinearity in their relationship with the logit. To address this issue and improve the model's performance, these continuous predictor variables were transformed by taking the natural log. This transformation helped linearize the relationship between the predictor variables and the logit of the outcome variable.

Table 3. Relationship between activity and misinformation sharing

	B	Exp(B)	S.E.	p
follower count (log)	-0.02	0.98	0.01	0.055
followee count (log)	0.06	1.062	0.013	<.001
lifetime tweet rate (log)	0.086	1.09	0.012	<.001
verified(1)	-1.034	0.356	0.164	<.001
number of tweets in data (log)	0.947	2.578	0.011	<.001
casual user(1)	-0.899	0.407	0.059	<.001
Constant	-5.621	0.004	0.06	<.001
Nagelkerke's R^2	0.327			
Outcome variable: Shared Misinfo (shared = 1; else = 0)				

The logistic regression model was statistically significant, $\chi^2(6) = 17094.15$, $p < .001$. (See Table 3.) The strongest predictor was being verified: “blue check” users were less likely to share misinformation. Being a casual user also decreased the likelihood. In fact, more active users – as judged by tweet rate and the number of tweets in the data about the war in Ukraine – appear to be more likely to share misinformation sources. All this suggests that non-verified active users were most likely to share misinformation sources. However, the model has very low sensitivity, successfully identifying only 14.3% of the misinformation sharers. Overall, the results suggest that user activity level is not a good predictor of misinformation sharing.

3.2. *Qualitative Analysis of Misinformation Tweeting*

Finally, addressing the second research question (RQ₂), information sharing among casual users differs from the rest of the userbase in several ways. First, the time series analysis, shown in Figure 2, indicates that while casual users generally followed the same patterns as more active users, casual users’ patterns were markedly different from non-casual users’ misinformation sharing patterns. This can be seen in Figure 2 in the differences between the blue top row (casual users) and the orange top row (non-casual users).

A qualitative analysis of the top tweets sharing misinformation sources suggests not only temporal, but also thematic differences between user types. Here I provide a narrative. In the first days of the conflict (Feb. 27-28), non-casual users’ most common tweets sharing misinformation sources have to do with U.S. President Joe Biden’s handling of the conflict. Casual users do not focus on this, but on general updates about action on the ground. This changes during a peak from March 10-12, when casual users share information about the removal of an Oliver Stone documentary from YouTube. This is also important among non-casual users, but so is a claim that “deleted webpages” show Obama led effort to build biolabs in Ukraine. Later on May 2-5, the casual users share a tweet from @rebeccagrantd (a Fox News analyst) critical of Pakistan’s relationship with Russia. The non-casual users pay relatively little attention to this: instead, they focus on a Tucker Carlson tweet critical of Biden’s support for Ukraine, and a tweet from *Russia Today* claiming that the Pope blames NATO for the war.

Overall, the most popular content among the two groups is a tweet about the Oliver Stone documentary that links to Rumble.com, a Canadian website rated as “Questionable” by MB/FC. However, casual users tend to favour content that could be characterized as opinion-based, such as the tweet from the Fox News contributor, while non-casual users favour content about hidden motives and other conspiratorial factors behind the war, particularly by President Biden and President Obama.

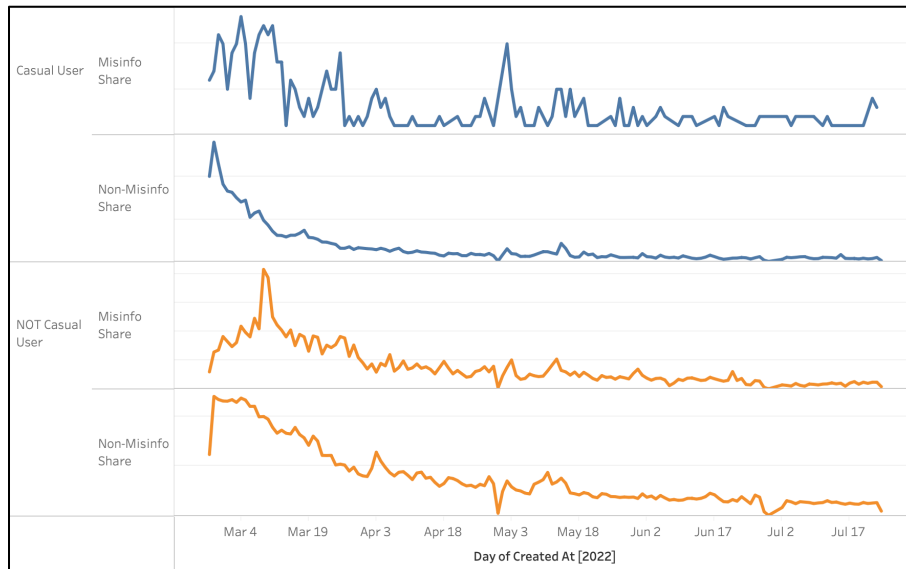


Figure 2. *Time series data*

4. Discussion

The role of social media in armed conflict and political crisis is a topic of debate among scholars (Chouliaraki, 2015; Hoskins & Shchelin, 2023; Makhortykh & González Aguilar, 2020; Zeitzoff, 2017). On one hand, social media provides real-time access to information from combat zones, allowing for a greater sense of proximity and emotional impact on the audience. Yet on the other, the vast amount of information available on social media can also make it difficult for people to focus on the most important events and can lead to the spread of misinformation and propaganda.

This analysis has sought to understand the “casual observer” of war – that is, the user who represents the silent (or nearly silent) majority of social media users. Admittedly, this is an unconventional approach to studying crisis communication on social media. Much of the previous research has focused on opinion leaders, stakeholders, and organizations in particular issue arenas. However, it is suggested that understanding low-activity users is necessary to understanding the greater information ecosystem, and combatting misinformation in what Hoskins and O’Loughlin (2010) have called the current state of “diffused war.”

Overall, the findings show that casual users tend to engage in more interactive forms of tweeting, such as @mentions and replies, indicating a more engaged and active approach to the conflict than might be expected. This contradicts the first

hypothesis (H_a) that casual users will be more passive, and suggests that casual users are not simply inactive recipients of information, but rather active participants in the conversation on the war in Ukraine. This is indirectly supported by previous research that suggests low-activity users may have different perceptions of how they are participating that doesn't conform to the demand that engagement equals posting (Ekman & Amnå, 2012; Sun et al., 2014).

The analysis also showed that casual users had lower follower counts, indicating that they are not opinion leaders according to the usual metrics. This supports the fourth hypothesis (H_d). However, this finding should be viewed with caution, as other factors such as network structure, information diffusion patterns, and overall influence in the Twitter community may also play a role in determining influence in a particular issue arena (Dubois & Gaffney, 2014; Hellsten et al., 2019; Razis & Anagnostopoulos, 2014).

The findings also suggest that casual users were not more susceptible to misinformation sharing (RQ_1) with a low proportion of the tweets from casual users containing misinformation; a regression analysis further demonstrated that casual users were had less likelihood of sharing questionable sources, even when accounting for the users' lower activity levels. This finding is important in light of concerns about the spread of misinformation on social media during conflicts, as it supports the idea that low-activity users – that is, most users – are not especially susceptible to misinformation. The findings could be interpreted as supporting previous research that suggests highly active partisans may be more politically motivated in what they share (Allcott & Gentzkow, 2017; Hochschild & Einstein, 2015; see van der Linden, 2022, for a discussion on the “motivated reasoning” vs. “inattention” theses). However, the analysis here shows an additional dimension. Much like Tolstoy's quip that “every unhappy family is unhappy in its own way,” the findings here suggest that casual users are misinformation sharers in their own way, while non-misinformation sharing generally followed the same pattern regardless of user type (Figure 2). In particular, casual users appeared to be more interested in opinion-based content than conspiracy content.

This finding is important as it highlights the diversity of information sharing behaviours on Twitter, and suggests that different groups of users may have different motivations and approaches to information exchange. Hochschild and Einstein (2015b) have suggested that the actively misinformed are hard minds to change (p. 472). It may be that the inactively (or less-actively) misinformed arrive at misinformation with different motivations. This could have implications for policy makers and media organizations seeking to curb the spread of mis- and disinformation, particularly in the context of sensitive and complex issues like the war in Ukraine. Policymakers and media organizations need to engage with casual users, providing them with accurate and reliable information and helping them develop the

skills necessary to critically evaluate the information they come across on social media platforms.

Conclusion

This study provides a deeper understanding of the behaviour of low-activity “casual” users on Twitter during first 150 days of Russia’s invasion of Ukraine. The findings suggest that casual users tend to engage in more interactive forms of tweeting, are not more susceptible to misinformation sharing, have lower follower counts, and have distinct misinformation sharing behaviours from the rest of the userbase. The findings contribute to the broader literature on social media use and user behaviour, particularly in the context of crisis. The results highlight the importance of considering the different ways in which information is being shared and consumed by different types of users, and their different needs and interests.

One challenge with this study is that the low-activity users do not meet a certain threshold of activity, a necessity for them to be studied using computational methods. In other words, they are not truly “lurkers” or “inattentive” users (Sun et al., 2014; van der Linden, 2022). Future research can build upon these findings by exploring motivations and experiences of low-activity users – including those who never post – through other means, such as qualitative interviews or surveys. Additionally, this study imposes an artificial threshold to separate casual users from the other users; it would be worth considering *gradients* of user activity in future research. Studies might for example consider the interplay between low-, medium-, and high-activity users, including on other platforms. Overall, the findings here suggest there is not as much of a follow-the-leader pattern as might be expected, paving the way for novel research trajectories on the mechanisms through which individuals encounter both accurate and misleading information in digital networks.

Acknowledgements

Thank you to the members of Centre for the Study of Political Communication (POLKOM) at the University of Oslo for their valuable feedback in the early stages of this work, and to Sahar Hassani for advising on parts of the analysis.

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