FACTORS AFFECTING BELIEF IN FAKE NEWS RELATED TO COVID-19 IN CHINA: A DUAL INFORMATION PROCESSING PERSPECTIVE

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by

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LIST OF ABBREVIATIONS

AVE	Average Extracted Variance
CB-SEM	Covariance-based Structural Equation Modeling
CMA	Common Method Variance
f^2	Effect Size of R^2
HTMT	Heterotrait-monotrait Ratio of Correlations
PLS-SEM	Partial Least Squares Structural Equation Modeling
Q^2	Predictive Relevance
q^2	Effect Size of Q^2
R^2	Coefficient of Determination
SEM	Structural Equation Modeling
SPSS	Statistical Package for the Social Sciences
VIF	Variance Inflation Factor

LIST OF APPENDICES

FAKTOR YANG MEMPENGARUHI KEPERCAYAAN TERHADAP BERITA PALSU BERKAITAN COVID-19 DI CHINA: SATU PERSPEKTIF PEMPROSESAN DWI MAKLUMAT

ABSTRAK

Semasa COVID-19, media sosial di China dipenuhi dengan berita palsu. Orang ramai sering mempercayai berita palsu di media sosial, yang boleh membahayakan individu, masyarakat dan negara. Walau bagaimanapun, tidak banyak kajian telah dijalankan mengenai kepercayaan terhadap berita palsu dalam konteks negara China. Kajian ini bertujuan untuk menentukan pengaruh mesej, individu dan faktor situasi terhadap kepercayaan terhadap berita palsu di media sosial di China semasa COVID-19 daripada perspektif pemprosesan maklumat dwi-proses, serta kesan pencarian status terhadap hubungan antara pemprosesan maklumat dan kepercayaan kepada berita palsu. Bagi menguji dan mengesahkan model penyelidikan bersepadu secara empirik dan mencapai objektif kajian, penyelidikan ini menggunakan kaedah tinjauan dan mengaplikasikan pelbagai ujian statistik. Soal selidik dalam talian telah diedarkan di lapan kejiranan kediaman di Beijing, China, dan sejumlah 813 respons sah telah dikumpulkan daripada pengguna media sosial berumur 18–65 tahun. IBM SPSS dan SmartPLS digunakan untuk meneliti data, menguji model penyelidikan secara empirik, dan menjawab persoalan kajian yang dikemukakan dalam kajian ini. Keputusan menunjukkan bahawa faktor mesej (persepsi daya tarikan dan kualiti mesej), faktor individu (kecenderungan risiko dan narsisisme), dan faktor situasi (lebihan maklumat dan persepsi ketidakpastian) mempengaruhi secara positif pemprosesan maklumat (heuristik dan pemprosesan sistematik) dan kepercayaan kepada berita palsu. Motivasi mencari status secara positif menyederhanakan hubungan antara pemprosesan

sistematik dan kepercayaan terhadap berita palsu. Secara teorinya, kajian ini mengkaji hubungan yang signifikan antara pembolehubah kajian dan membangunkan Teori Pemprosesan Maklumat Sistematik Heuristik. Secara praktikalnya, kajian ini menyarankan agar wartawan memberi perhatian kepada daya tarikan dan kualiti mesej semasa menghasilkan berita dan menjelaskan berita palsu. Kerajaan dan platform media sosial harus menyediakan latihan literasi media kepada mereka yang terdedah kepada berita palsu dan mengekalkan maklumat dan persekitaran sosial yang stabil untuk meminimumkan bahaya yang disebabkan oleh berita palsu. Secara keseluruhannya, kajian ini membayangkan bahawa kesan yang lebih kuat daripada faktor mesej, individu dan situasi terhadap memerangi kepercayaan terhadap berita palsu berbanding faktor pemprosesan maklumat, dan pencarian status yang dibentuk oleh media sosial memburukkan lagi masalah berita palsu.

FACTORS AFFECTING BELIEF IN FAKE NEWS RELATED TO COVID-19 IN CHINA: A DUAL INFORMATION PROCESSING PERSPECTIVE

ABSTRACT

During COVID-19, social media in China was overwhelmed with fake news. People often believe in fake news on social media, which can be harmful to individuals, society, and the country. However, little research has been conducted on the belief in fake news in the Chinese context. This study aims to determine the influence of message, individual, and situational factors on belief in fake news on social media in China during COVID-19 from a dual-process information processing perspective, as well as the impact of status-seeking on the relationship between information processing and belief in fake news. In order to empirically test and validate an integrated research model and achieve the research objectives, this study employed survey method and applied various statistical techniques. An online questionnaire was distributed in eight residential neighbourhoods in Beijing, China, and a total of 813 valid responses were collected from social media users aged 18–65. IBM SPSS and SmartPLS were used to examine the data, empirically test the research model, and answer the research questions posed in this study. Results indicated that message factors (perceived message attractiveness and quality), individual factors (risk propensity and narcissism), and situational factors (information overload and perceived uncertainty) positively influenced information processing (heuristic and systematic processing) and belief in fake news. Status-seeking motivation positively moderated the relationship between systematic processing and belief in fake news. Theoretically, this study examined the significant relationships between the research

variables and developed the Theory of Heuristic Systematic Information Processing. Practically, this study recommends that journalists to pay attention to the attractiveness and quality of messages when producing news and clarifying fake news. The government and social media platforms should provide media literacy training to those susceptible to fake news and maintain stable information and social environments to minimise the harm caused by fake news. Overall, this study implies that the stronger effects of the message, individual, and situational factors on combating belief in fake news than those of information processing factors, and the status-seeking shaped by social media exacerbate the fake news problem.

CHAPTER 1

INTRODUCTION

1.1   Introduction

Fake news refers to the deliberate presentation of (typically) false or misleading claims as news, where the claims are misleading by design. This chapter first outlines the issue of fake news on social media. Then the problem statement is presented after a discussion on the background of this study in this chapter. Additionally, this chapter discusses the research questions, objectives, and significance of this study. Next, the chapter elaborates on the scope of this study and defines the terms used in the present study. Finally, the chapter ends by providing an overview of the thesis structure.

1.2   Study background

Fake news is an issue of concern in today's society (Jankowski, 2018). The Internet and new media technology contribute to the proliferation of fake news (Humprecht, 2019). In recent years, fake news has become more prevalent on social media platforms such as Facebook, Twitter, and Weibo (Sadiku et al., 2018).

Fake news refers to the deliberate presentation of (typically) false or misleading claims as news, where the claims are misleading by design (Gelfert, 2018). Fake news differs from disinformation, misinformation, and rumour (see Table 1.1). There are three characteristics of fake news. First, fake news is committed to being news, not fiction. Fake news formats are similar to those of legitimate media organizations (Levy, 2017; Rini, 2017). Some fake news is not entirely false but attempts to distort the truth by mixing deliberate lies with well-known facts (Allcott & Gentzkow, 2017; Gelfert, 2018; Tandoc Jr et al., 2021). Second, fake news carries the

intended purpose of deception (Rini, 2017; Tandoc et al., 2017). Incidental disinformation or misreporting is not fake news. For example, an editorial error can result in false beliefs forming in a reader. In contrast, the deception of fake news is not accidental but on purpose (Gelfert, 2018). Third, fake news is misleading and generates false beliefs (Fallis, 2015). Fake news likely leads to false beliefs even when all other factors are equal (such as media literacy levels) (Gelfert, 2018).

Table 1.1 The definition of fake news, disinformation, misinformation, and rumours

Term	Definition
Fake news	The deliberate presentation of (typically) false or misleading claims as news, where the claims are misleading by design (Gelfert, 2018).
Disinformation	Fake or inaccurate information which is intentionally false and deliberately spread (Wu et al., 2016).
Misinformation	Fake or inaccurate information which is unintentionally spread (Wu et al., 2016).
Rumour	An item of circulating information whose veracity status is yet to be verified at the time of posting (Zubiaga et al., 2018).

The dangers of fake news are apparent. First, fake news can hurt those who have direct exposure to it. Fake news attempts to deceive people by providing false information, usually in the form of real news (Fallis & Mathiesen, 2019). It is a purposely designed trap that leads to wrong beliefs and behaviours (Gelfert, 2018).

Second, fake news destroys the communication system. Fake news undermines the authority of media institutions (Eldridge & Bødker, 2018), erodes trust in journalism (Wasserman & Madrid-Morales, 2019), and undermines cognitive mechanisms. The simultaneous circulation of real and fake news destroys trust in information (Waisbord, 2018). Truth is no longer associated with professionalism and facts but with perception (Cooke, 2018).

Third, fake news is often used for information warfare, endangering democratic societies and national security (Sample et al., 2020). It has been conceptualized, politicized, and weaponized (Tong et al., 2020; Tyushka, 2021). It does harm by influencing, undermining, and messing with the decisions of opponents (Singer & Brooking, 2018).

Even worse, a global crisis has provided a breeding ground for fake news. At the beginning of 2020, the COVID-19 pandemic infected many people worldwide. COVID-19 has sparked the phenomenon of an "infodemic", where fake news related to COVID-19 spreads globally (Rodrigo et al., 2022). The WHO has warned that we are not just fighting an epidemic; we are also fighting an infodemic. As dangerous as the virus is, fake news spreads quickly and easily (Tedros, 2020).

Fake news is a problem in and of itself, but it becomes even worse when combined with social media. Social media is a primary cause of fake news in today's environment (Tandoc et al., 2017; Waisbord, 2018). Research shows that fake news on social media spreads faster and wider (Vosoughi et al., 2018).

It is easy to fabricate fake news on social media due to the low cost of creating accounts and posting content (Allcott & Gentzkow, 2017). Globally, fake news on social media increased sixfold from December 2019 to March 2020 (Wahab et al., 2021). WhatsApp deletes two million fake news accounts monthly (Vereshchaka et al., 2020). There were 1.3 billion fake news posts on Facebook in just three months (Innes & Innes, 2021).

Social media filter bubbles and echo chambers exacerbate fake news problems (Baptista & Gradim, 2021). Filter bubbles are social media algorithms that enhance users' online experiences. Users can only access information that matches their

consumption behaviour (Spohr, 2017). As a result, partial information blind spots occur and reduce content diversity. Echo Chamber is an algorithm based on user preferences that suggest personalized content (Haim et al., 2017). Based on users' groups, circles, and past activities, recommend news (Campan et al., 2017). Del Vicario et al. (2016) states that both ways lead to confirmation and trust bias, making people more likely to believe fake news.

Statista (2021) states that 4.2 billion people use social media worldwide. These large numbers provide an audience base for fake news. People are more likely to be exposed to fake news on social media than in other media. In traditional media, journalists can verify the information, limiting exposure to fake news (Currie Sivek & Bloyd-Peshkin, 2017). In social media, fake news thrives due to a lack of control over posts and fact-checking (Zubiaga et al., 2018). Therefore, researchers usually focus on the issue of fake news on social media.

Past studies on fake news on social media have concentrated on the spread of fake news, the detection of fake news, and the audiences of fake news. These include studies on the motivations of those who share fake news (Altay et al., 2021; Apuke & Omar, 2021a; Herrero-Diz et al., 2020; Kumar et al., 2021; Osmundsen et al., 2020), the role played by social media features in spreading fake news (Bastos & Mercea, 2019; Lai et al., 2020; Rhodes, 2021), different techniques for detecting fake news on social media (Batailler et al., 2021; Jang et al., 2019; Paschen, 2019; Silva et al., 2021; Singh et al., 2021; C. Song et al., 2021), and the impact fake news has on people's attitudes, behaviours, and beliefs (Lee & Hosam, 2020; Melki et al., 2021; Staender et al., 2021). Despite having different focus areas, researchers all work to lessen the harm of fake news. With many people becoming direct victims of fake news, it is necessary to investigate why people believe it.

1.3 Fake news in China

The problem of fake news in China is tricky. A report by the Chinese Academy of Social Sciences suggests that WeChat, China's most popular social media platform, deletes over 2.1 million fake news items daily and that six in ten users encounter fake news daily (Pang, 2021). In addition, China is one of the countries most affected by COVID-19. Faced with a crisis, people seek more information on social media to be informed. However, Chinese social media includes a lot of fake news, and fake news proliferated heavily on Chinese social media during COVID-19. According to recent statistics, on Weibo alone, from December 2019 to August 2020, 2,104 fake news were retweeted 1,868,175 times and received 1,185,702 comments and 5,685,2736 likes (C. Yang et al., 2021). The Annual Fake News Research Group (2021) found that since 2020, fake news has increased in China. Table 1.2 provides ten examples of fake news in China. For instance, 'recipients of the COVID-19 vaccine will develop immune-suppressed AIDS' and 'gargling with salt water will prevent the infection of COVID-19'.

Table 1.2 Ten examples of fake news based on fact-checking platforms in China

Date	Fake news headline
May 2022	The COVID-19 virus is snake venom delivered through tap water.
May 2022	Recipients of the COVID-19 vaccine will develop immune-suppressed AIDS.
March 2022	Gargling with salt water will prevent the infection of COVID-19.
March 2022	A Shanghai man died by jumping to his death because he could not go out to buy medicine because of his isolation.
February 2022	Onions can absorb the COVID-19 virus.
December 2021	Cupping after a vaccination makes the vaccine 100 times more effective.
May 2021	Drinking and eating before the COVID-19 vaccine can prevent adverse reactions.
June 2021	COVID-19 vaccines magnetize a person's body.
December 2020	Women who receive the COVID-19 vaccine have infertility.
March 2020	China bans the export of surgical masks.

However, the Chinese government has not made a sufficient effort to correct fake news and guide its citizens in the right direction. According to Liao et al. (2020), on the social media platform, the Chinese government's engagement in disseminating accurate COVID-19 information is generally low. The proliferation of fake news with far less corrective information makes it easier for people to fall into fake news. For example, Xinhua News published fake news in January 2020 that Shuanghuanglian Oral Liquid could suppress an emerging coronavirus, which caused people to buy blindly (Xiao et al., 2020). In December 2020, a story about a COVID-19-infected person trying to hide his location was another example of fake news. The infected person suffered Internet violence (Cui, 2021). In addition, some fake news harms people's health, including the fake news that "smoking and drinking can help combat COVID-19," which leads people to engage in risky health behaviours (Y. Song et al., 2021).

Scholars have studied fake news in China from different perspectives to reduce fake news harm. For example, Chen (2013) analysed fake news on the Chinese social media platform Weibo and identified four factors in the growth of fake news: word limits on social media, a lack of gatekeepers, the speed of dissemination, and financial gain. Considering the new media environment, Li & Liu (2019) point out that fake news has emerged for several reasons, including journalists' failure to obtain facts, competition among media organizations, and a lack of media literacy among audiences. Due to financial pressures in society and low trust in the government, Huang (2020) stated that fake news spread rapidly during COVID-19. While these studies contribute to greater insight into fake news, some of the related issues, such as believing in fake news, still need further exploration.

1.4   Problem statement

Exploring belief in fake news is crucial because it aims to mislead people into false beliefs and behaviours (Baptista & Gradim, 2020; Gelfert, 2018). For example, there are conspiracy theories about the virus being created as a biological weapon in China and that cats and dogs can spread the virus (Y. Song et al., 2021). In addition, belief in fake news made cancer patients die after believing medical fake news for experimental treatments (Dai et al., 2020). It could mislead investors into making wrong stock purchases (Kogan et al., 2019); encourage the public to be against vaccinations (Iacobucci, 2019). According to Willnat et al. (2018), over 90% of social media users in China would choose to believe fake news when they encounter it. Therefore, it is important to find out why and what motivates people to believe in fake news.

By figuring out what factors make people believe fake news, people can avoid falling for it. For example, according to Tandoc et al. (2021b), people with anti-government attitudes may avoid traditional media, which makes them more susceptible to fake news. Advocating for increased conventional media usage is likely to effectively combat the harm caused by fake news (Tandoc et al., 2021a). However, although previous studies have contributed to exploring the reasons why people believe in fake news, there are still some problems with addressing the problem of fake news in China. This section specifically describes the research problems remaining.

First, there is very scarce research on the belief in fake news in China (Leng et al., 2021). Previous studies that examined the factors that contributed to the belief in fake news often came from Western countries (Shueb et al., 2021). However, due to contextual differences, research findings from other countries may not be valid in

China. Compared to Western countries, where political fake news is more prevalent,. For example, a US survey shows that partisanship plays a significant role in believing fake news, with Republicans more likely to believe non-political fake news (Pereira, Van Bavel, et al., 2018). According to Wang et al. (2020), fake news in China is more concerned with social issues. For fake news about social issues, the message, individual, and situational factors are more critical because three aspects carry out the whole process of fake news dissemination, including the conditions for the existence of fake news, the fake news itself, and the target audience (Bryanov & Vziatysheva, 2021). Therefore, in the Chinese context, the influence of message, individual, and situational factors on fake news should gain more attention.

Second, factors influencing a person's response to fake news are complex and diverse (Leng et al., 2021). Researchers have found that various factors influence belief in fake news, including news format, frequency of exposure, sources, political bias, emotions, conspiracy theories, and others (Anthony & Moulding, 2019; Bronstein et al., 2019; Nadarevic et al., 2020; Pehlivanoglu et al., 2021; Pennycook & Rand, 2020; Smelter & Calvillo, 2020; Tandoc et al., 2021a). However, these studies are scattered and fail to explain the impact of multiple factors within a framework. Handarkho et al. (2022) suggest integrating different aspects to better understand the belief in fake news.

Specifically, message factors influencing belief in fake news include characteristics, presentation, and message source, which attempt to answer what kind of fake news people are more likely to believe (Bryanov & Vziatysheva, 2021). Past research has found that message factors determine credibility (Lee & Shin, 2021). Therefore, this study will investigate the influence of message factors on belief in fake news. Specifically, message attractiveness and quality may influence fake news to

mislead people. According to Montañez et al. (2020), message attractiveness and quality, which reflect the attacker's effort, significantly impact the attacker's success. Baptista & Gradim (2020) found that fake news has an attractive structure (often with images and videos) to attract readers' interest. Message quality may be crucial in rebutting fake news (Wang et al., 2022). However, how perceived message attractiveness and quality affect belief in fake news is uncertain.

Not everyone is a victim of fake news (Pennycook & Rand, 2020). Taking individual factors into account enables an understanding of what kind of people are more likely to believe fake news (Bryanov & Vziatysheva, 2021; Schaewitz et al., 2020). Therefore, focusing on individual factors is an effective approach to addressing fake news. Individuals' attitudes toward fake news will likely depend on their personalities (Calvillo, Garcia, et al., 2021; Calvillo, Rutchick, et al., 2021). Risk propensity, as a personal characteristic (Meertens & Lion, 2008), can alter one's interpretation of information (Kwon & Lee, 2009). Also, according to Hardaker and Tsakanikos (2021), people with higher levels of narcissism are more sensitive to negative information. However, whether there is a relationship between these factors and the belief in fake news is unknown.

Situational factors are cognitive representations of people's environments (Rauthmann, 2012; C. Wang et al., 2020). Both theory and experience indicate that situations influence people's attitudes and behaviours (De Haas et al., 2020; Sherman et al., 2015). During COVID-19, social and informational environments have changed significantly. COVID-19 information has proliferated on social media since the epidemic outbreak (Kouzy et al., 2020). The increase in available information has led to information saturation, making it difficult for people to process it (Mai et al., 2021).

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Information overload is a severe threat (Farooq et al., 2020). Apart from that, the COVID-19 pandemic brings unprecedented uncertainty and stress (Wu, Yang, et al., 2021). Individuals may consume fake news when the environment is uncertain (Shirish et al., 2021). Therefore, this study will examine how situational factors, such as information overload and perception uncertainty, influence belief in fake news. As Van Bavel et al. (2020) suggest in their roadmap for the future of fake news research, a concerted effort to describe multiple explanatory factors in a single framework is largely absent from the existing literature. This study examines the messages, individuals, and situations influencing the belief in fake new.

Third, dual information processing describes how individuals process information in two ways. One is automatic, rapid, intuitive heuristic processing; the other is controlled, analytical, and effortful systemic processing (Chaiken & Ledgerwood, 2011). Previous studies of belief in fake news have focused on a single route of information processing. However, from an single information processing perspective (people process information in only one mode, heuristic or systematic processing), past research on belief in fake news has been controversial, specifically including three opinions: the first is that belief in fake news is a result of the positive influence of heuristic processing (Ali et al., 2021); the second is that belief in fake news is a result of the positive influence of systematic processing (Kahan, 2017); and the third is that belief in fake news is a result of the negative influence of systematic processing (Bronstein et al., 2019). Due to controversial opinions from an independent information processing perspective, a dual perspective exploring the belief in fake news is required.

Fourth, according to Grubbs et al. (2019), status-seeking motivations are typically present in user behavior on social media. Research indicates that status-seeking motives not only increase the potential for people to be exposed to fake news due to their use of social media but also make people more likely to consume fake news (Jin et al., 2017; Thompson et al., 2019). The possibility exists that it can infiltrate the belief in fake news. For example, people with status-seeking motives often disseminate and share fake news on social media (Apuke & Omar, 2021b). Although researchers have indicated that people's sharing behaviour implies trust (Pennycook et al., 2021; Talwar et al., 2019). However, the role of status-seeking on belief in fake news is unclear. This study fills that gap.

Fifth, fake news research in China has mainly qualitative findings and lacks empirical evidence. For example, Lin (2020) elaborates on media and discourse bias, posting opinions on why fake news appeals to audiences without examining data. Similarly, Liu and Wang (2011) suggest stereotypes may lead people to believe fake news. They analysed qualitatively rather than empirically in China. According to Burns and Groove (2014), the results of empirical research will be relatively independent of the researcher, and the findings will be more rigorous. However, past empirical studies on fake news in China are lacking. Therefore, this study conducts quantitative research to provide empirical findings for studying fake news in China.

1.5 Research gaps

Based on the above discussion, the gaps in this study can be divided into contextual gap, theoretical gap, and empirical gap (see Figure 1.1).

Contextually, there are few studies on what causes people to believe fake news in China. The problem of fake news in China is tricky (T.-L. Wang, 2020). And

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understanding why people believe fake news might be helpful to China in coming up with practical solutions.

Theoretically, there is a lack of a theoretical framework for dual-process information processing to explain belief in fake news (see Figure 1.2). The Theory of Heuristic and Systematic Information Processing suggests that people judge information based on these two types of thinking (Chaiken & Ledgerwood, 2011). One type of information processing is systems processing, which allows understanding information by analysing, thinking, and reasoning. The other is heuristic processing, which activates experienced shortcuts to judgment by focusing on salient, easily understood cues. According to this theory, the two types of information processing (heuristic and systematic) will proceed independently or simultaneously. However, previous studies have focused on independent information processing (heuristic or systematic) when explaining belief in fake news (Ali & Zain-ul-abdin, 2021; Bago et al., 2020; Pennycook & Rand, 2019, 2020; Tandoc et al., 2021a). But interpreting belief in fake news from a single information processing perspective is problematic (Pennycook & Rand, 2021; Van Bavel & Pereira, 2018). Therefore, explaining belief in fake news from a dual-processing perspective is necessary.

According to Chaiken and Ledgerwood (2011), the Theory of Heuristic and Systematic Information Processing can predict how various variables affect attitudes and judgments. Based on previous research, it is evident that not just a single factor influences belief in fake news. However, the framework for examining the multiple factors influencing belief in fake news is missing. Therefore, this study proposes a framework of multiple factors influencing belief in fake news (Baptista & Gradim,

2020; Bryanov & Vziatysheva, 2021; Calvillo, Rutchick, et al., 2021; Schaewitz et al., 2020; Tandoc Jr, 2019).

In addition, according to the Theory of Heuristic and Systematic Information Processing (Chaiken & Ledgerwood, 2011), when two types of information processing are present simultaneously, the effect on attitudes is not always stable but dynamic. Although motivation has an important influence on which information processing is chosen, it is unclear whether motivation influences the relationship between information processing and attitudes. Status-seeking is one of the most basic human motivations (Highhouse et al., 2016). Previous research has shown that status-seeking motivations can complexly influence information processing (Lee & Ma, 2012; Thompson et al., 2019). However, the impact of status-seeking on the relationship between information processing and fake news beliefs requires further investigation.

Empirically, there is not enough local data to address the issue of belief in fake news. A study is needed in China to fill this gap.
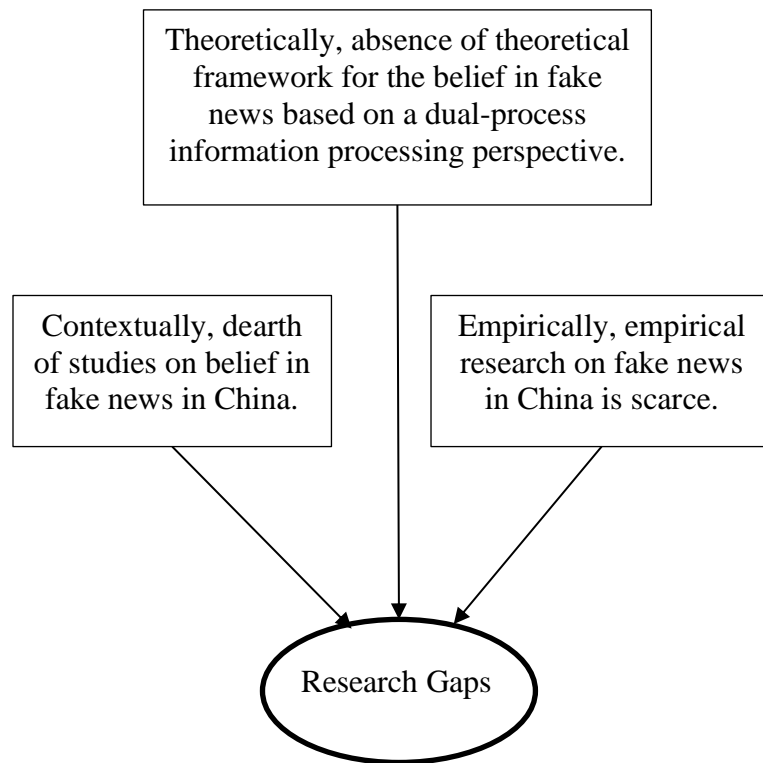
Figure 1.1 Summary of research gaps
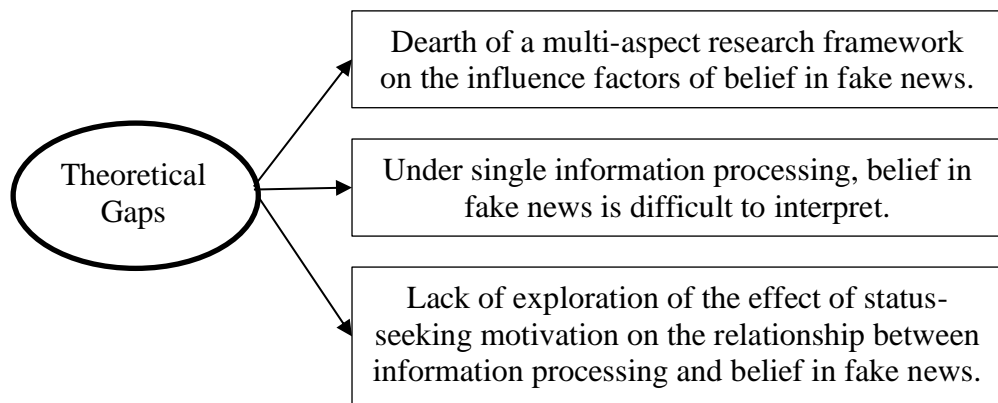
Figure 1.2 Summary of theoretical gaps

1.6   Purpose of study

Based on the problem of fake news on social media in China, this study investigates the factors influencing people to believe fake news. This study develops a model from a dual information processing perspective to achieve this goal. The model expands and innovates on previous research on the study of belief in fake news

(Moravec et al., 2020; Tandoc et al., 2021a). Specifically, the study has the following objectives.

i. To explore the message factors that influence belief in fake news.

ii. To explore the individual factors that influence belief in fake news.

iii. To explore the situational factors that influence belief in fake news.

iv. To explore the mediating effect of information processing between message, individual, situational factors, and belief in fake news.

v. To explore the moderating influence of status-seeking on the relationship between information processing and belief in fake news.

1.7 Research questions

Based on the discussion above, this study is guided by the following questions:

i. What is the relationship between message factors (perceived message attractiveness, perceived message quality) and heuristic systematic information processing?

ii. What is the relationship between individual factors (risk propensity, narcissism) and heuristic systematic information processing?

iii. What is the relationship between situational factors (information overload, perceived uncertainty) and heuristic systematic information processing?

iv. Does heuristic systematic information processing mediate the effect between message, individual, situational factors, and belief in fake news?

v. Does status-seeking moderate the relationship between heuristic systematic information processing and belief in fake news?

1.8   Significance of the study

        This study explores the factors that lead people to believe fake news on social media. This study provides contextual, theoretical, methodological, and practical contributions.

1.8.1   Contextual significance

        This study makes an effort to offer solutions to the problem of fake news in the unique Chinese political and social environment. Specifically, this study selects fake news on Chinese social media to examine why people fall for it. Considering China's unique political environment, fake news on social media is socially oriented. This study provides theoretical and empirical support for solving the problem of believing in fake news in China regarding the message, individual, and situational aspects (Guo, 2020; M. Wang et al., 2020).

1.8.2   Theoretical significance

        This study proposes a dual-process information processing model of message, individual, and situational influences on belief in fake news. The model is based on previous research on belief in fake news under a single information processing framework and further explores the issue of belief in fake news that a single information processing framework cannot clearly explain. With the model, this study attempts to answer the question of how the message, individual, and situational factors affect people's information processing and their belief in fake news in China, further develop the Theory of Heuristic and Systematic Information Processing, and expand the body of knowledge of the study of fake news in China (Zuo, 2021).

1.8.3 Methodological significance

Given that most past studies on the belief in fake news in China have used qualitative methods and lacked empirical results to support the findings, the present study strives to systematically collect and analyse quantitative data to obtain objective conclusions and insights to address the problem of fake news in China (Lin, 2020; Yu, 2019). The quantitative findings of this study are more credible and repeatable than those of previous qualitative studies and help to explore the universal rules of the fake news problem in China.

1.8.4 Practical significance

This study explores the factors influencing people's belief in fake news to understand why people believe in fake news on social media. As a result of this study, the government can actively adopt coping strategies to maintain the stability of China's information and social environments to ensure the security of individuals, society, and the nation (Guo, 2020; Liao & Shi, 2013). In addition, media organisations can better recognise how fake news undermines public trust in authoritative media by making people fall for it. By actively rebuilding a healthy communications ecosystem, media organisations can regain public trust (Cheng & Lee, 2019). Moreover, this study guides social media platforms and individuals in coping with fake news.

1.9 Scope of the study

First, this study investigates why people believe fake news on social media. Thus, the participants of this study must be social media users.

In China, social media usage is relatively low among minors and the elderly. Only 4.8% of individuals over 65 years of age use social media, and 12.3% of those under the age of 18 do the same. Among social media users under 18, only 2.6% are

0-11. The proportion of users aged 12-17 years is 9.7%, owing to the influence of digital education in China. For example, schools require students to study and submit assignments on social media (CNNIC, 2022; Spencer, 2022). Therefore, this study limits its scope to Chinese social media users aged 18-65.

Second, China has a population of 1.44 billion, including 983 million social media users. The area of China is approximately 9.6 million square kilometres. A large number and wide distribution of social media users make it difficult to survey nationwide. Therefore, this study focuses on Beijing, the capital city of China.

As the capital of China, Beijing is representative of its politics, economy, geography, and social activities. Besides, Beijing has a strong advantage in population size, gender ratio, aging, and basic quality (Office, 2021).

1.10   Definitions of key terms

These are the key concepts used in this study. This study uses these definitions to develop hypotheses and a theoretical framework.

Fake news

The phenomenon of fake news has become a social problem. Although there is little disagreement about fake news in ordinary language, its meaning as an academic term constantly changes (Tandoc et al., 2017). Before 2016, it referred only to satirical news, designed to entertain viewers through humour and satire. After, it acquired different meanings and intentions that threatened journalism and democracy (Baptista & Gradim, 2022). In recent years, especially after COVID-19, scholars have focused their definitions of fake news in the context of one of the many forms of online disinformation and have made it clear not to confuse fake news with other conceptualised weapons that are merely influenced by various political and economic

factors (McNair, 2017). Although there is currently no uniformity in the terminology of fake news, scholars' statements about fake news include three dimensions. The first is the importance of intent, i.e., scholars' definitions of fake news indicate an intent to mislead deliberately (Anderau, 2021). The second is the news-like format; that is, fake news mimics real news in format (Tandoc Jr, 2019). The third is the degree of falsity. Most of the time, fake news attempts to report or describe reality or events as they occur but mixes them with the truth or half-truths through misrepresentation and distortion of the facts with complete fabrications (C.-C. Wang, 2020). Based on the fact that most scholars define fake news based on misleading intent, mimicking the presentation of the news, and the degree of falsity, fake news in the present study refers to the deliberate presentation of (typically) false or misleading claims as news, where the claims are misleading by design (Gelfert, 2018).

Message attractiveness

Attractiveness is a concept that originated in the field of interpersonal psychology and describes a sense of self as a psychological construct. Attractiveness can be studied at different levels of abstraction, such as towards people or objects (Wirtz et al., 2013). In recent decades, scholars attempting to theorise about assessing online information credibility have noted the role of message attractiveness—a study of attractiveness to objects. Message attractiveness examines the surface characteristics of online information, i.e., visually superficial presentation or design elements such as colour schemes, fonts, layout, hierarchical order of content, and spacing (Jung et al., 2018). Although previous scholars have different focuses on the definition of message attractiveness based on their respective research, they all discuss it in terms of visually superficial features. For example, Braddy et al. (2008) focused on colour, font, layout, images, and text type (i.e., bulleted vs. paragraph) to consider

it. Wang and Lehto (2020) define message attractiveness as the overall presentation style of a message as expressed through message design elements and language abstractions. This study adopts the definition of message attractiveness that previous scholars have generally recognised; that is, message attractiveness refers to the image of a message, which is expressed through message design elements and linguistic abstraction (degree of visual aid), such as videos and pictures (Sarkar et al., 2022).

Message quality

Despite the importance of message quality in persuasion and communication research, little scholarly concern has been given to defining its concept. Mazzarol et al. (2007) are among the few who discuss message quality and state that message quality reflects the richness of the message. Some later scholars have supported the view, such as Le et al. (2018), who defined message quality as the richness of messages in their study. However, defining message quality in terms of richness is too broad, so some researchers intend to standardise message quality in terms of metrics to measure message quality. For example, Huang et al. (2009) consider message quality to be the completeness and consistency of a message. Keating (2021) defines message quality as the rationality and persuasiveness of a message. In communication studies, a high-quality message should be objective, comprehensive in reflecting the facts, and able to influence the audience's acceptance and behavioural response to the message (Metzger et al., 2003). Thus, based on the views of previous scholars, this study defines message quality as a message's ability to effectively produce a change in the variables it was designed to change, that is, perceived message effectiveness, measured by asking message recipients to evaluate the quality of the message (e.g., how logical and convincing the message is) (Jin et al., 2020).

Risk propensity

There are two themes in the definition of risk propensity. The first theme relates to the Prospect Theory, a key point of which is that risk propensity at the individual level is relatively inconsistent across situations—a person will take risks in some situations and avoid them in others (Doszyń, 2018). Thus, most scholars who have defined risk propensity based on prospect theory have tried to show that risk propensity refers to an individual's attitude or behaviour in the face of uncertain events, whose choices to seek or avoid risk change with changes in the external environment (Giunipero et al., 2008). The second theme that defines risk propensity considers personality traits rather than the situations people fall into. Under this theme, scholars' definitions of risk propensity tend to indicate an individual's underlying risk preference, which is often stable (Nicholson et al., 2002). In this study, risk propensity as an individual factor of a personality trait is examined for its effect on belief in fake news. Thus, based on previous scholars, this study defines risk propensity as a generalized personal trait that refers to an individual's general willingness to take risks. Risk propensity refers to individuals who enjoy risk; they are willing to take risks with high stakes and derive pleasure from doing so (Buchanan & Benson, 2019).

Narcissism

In the existing literature, narcissism is conceptualized in two forms: normal and pathological narcissism. Pathological narcissism reflects severe functional impairment and distress from clinical maladjustment (Miller et al., 2021). Pathological narcissism is further identified as having two expressions: grandiose and vulnerable (Di Pierro et al., 2019). Grandiose narcissism reflects an arrogant attitude, self-centeredness, and a tendency to be domineering. Vulnerable narcissism reflects inhibition of the self, negative affect, and the psychological disorder of social isolation. The extensive body of research on narcissism by social personality psychologists

relates to normal narcissism, which typically refers to a personality that fosters a positive self-image to encourage action (Miller et al., 2017). In particular, social media-promoting phenomena such as selfies and self-presentation have increased people's narcissism (Barry & McDougall, 2018; Halpern et al., 2016). It is characterized by an exaggerated sense of self and power and a dominant and aggressive interpersonal style (Gentile et al., 2013; Miller et al., 2017). This study focuses on the influence of normal narcissism as a personality trait on belief in fake news to propose effective strategies to combat fake news on social media. Therefore, narcissism in this study refers to those who view their own needs and goals as more significant than others and exhibit an inflated sense of importance and deservingness, typically a personality that fosters a positive self-image to encourage action (Krizan & Herlache, 2018).

Information overload

Information overload is recognised as a significant problem in the digital information age, where individuals and societies are dependent on and shaped by information in an unprecedented way. Information overload was introduced by the American social scientist Bertram Gross and refers to the state of any system when its information input exceeds its information processing capacity (Groes, 2017). Although this term is the most used, the phenomenon has other names, e.g., information overwhelms and communication overload. As a result, scholars have attempted to come up with a precise definition of information overload. For example, Bawden and Robinson (2009) defines information overload as an unmanageable amount of information. A few scholars define information overload from a philosophical perspective. For example, Spier (2016) defines information overload as a feature of the capitalist culture industry, whereby the increase in standardised cultural

information in the media reduces individuals' ability to reflect and think critically. Some recent scholars have suggested that information overload is best viewed as a situation that occurs when the efficiency and effectiveness of an individual's use of information are hampered by the amount of relevant and potentially useful information available to them (Jones & Kelly, 2018). While scholars have attempted to define information overload from different perspectives, the present study frames information overload as a total that affects an individual's situation. Information overload in this study refers to a situation when the information user fails to process any more information because of its enormity in size and volume. It is a situation caused by the large amount of information generated on social media (Koltay, 2017).

Perceived Uncertainty

Downey (1975) argues that behaviour is best understood by reference to the behavioural context (the environment in which an individual perceives and reacts) rather than the physical environment (the objective physical environment). Although uncertainty is often considered an environmental property, most social science scholars prefer to use perceived uncertainty to describe situations. Scholars consider perceived uncertainty is a property of the environment based on what society creates and the process by which individuals conceptualise the properties of the environment (Lewis & Harvey, 2001). Scholars generally agree that uncertainty is a situation presented by a person based on a perception based on his/her existing relationship with the environment (Lorenzi et al., 1981). Therefore, in this study, uncertainty refers to situations in which events cannot be expressed in precise probabilities. COVID-19 is a new disease fraught with uncertainty about the route of viral transmission, diagnosis, treatment, and prognosis. In addition to the uncertainty inherent in the disease, COVID-19 generates enormous uncertainty due to the severe imbalance of its global

impact, ubiquitous transmission, urgency, social function, and people's daily lives. Perceived uncertainty refers to people's perceptions of uncertainty situations (Wu, Rockett, et al., 2021).

Heuristic processing

Heuristic processing is a concept introduced by Chaiken in the Theory of Heuristic and Systematic Information Processing. It and systematic processing are used as two different modes of information processing to deal with the information that people receive. Heuristic processing refers to the process involves when someone use simple decision rules to help them arrive at a judgment about the validity of a message. There is usually little cognitive effort that relies on intuitive processing, for example, hobbies, feelings (Chaiken & Ledgerwood, 2011).

Systematic processing

Systematic processing is a concept introduced by Chaiken in the Theory of Heuristic and Systematic Information Processing. It and heuristic processing are used as two different modes of information processing to deal with the information that people receive. Systematic processing refers to process involves when a person thoroughly understanding all usable information through careful observation, thinking deeply, and reasoning to guide subsequent attitudes, judgments, and behaviour (Chaiken & Ledgerwood, 2011).

Status-seeking

Sociologists define status as an individual's relative position within a group based on prestige, honour or esteem (Thye, 2000). By extension, status-seeking encompasses activities aimed at improving an individual's status within a group and is therefore judged by the extent to which the activity enhances prestige, honour, or respect. Status-seeking objectives can be external or internal. Individuals may seek