

# The news we choose to trust: Examining long-term mainstream versus non-mainstream news consumption and trust in a liberal-authoritarian media system

Journalism

2025, Vol. 0(0) 1–21

© The Author(s) 2025

Article reuse guidelines:

[sagepub.com/journals-permissions](https://sagepub.com/journals-permissions)

DOI: 10.1177/14648849251355764

[journals.sagepub.com/home/jou](https://journals.sagepub.com/home/jou)



**Zhang Hao Goh** 

Nanyang Technological University, Singapore

**Seth Seet** 

Nanyang Technological University, Singapore

**Edson C Tandoc Jr** 

Nanyang Technological University, Singapore

## Abstract

Monitoring and maintaining news trust in democratic societies is important. Thus, scholars have investigated how the consumption of mainstream and alternative news can influence how the public trusts them in the long term. However, such dichotomy is difficult to apply to the liberal-authoritarian media system in Singapore, where most media outlets are under the government's purview. To address this, the current study first distinguishes between 'mainstream' and 'non-mainstream' news media in Singapore. It then leverages the reinforcing spiral model to explore the potential reinforcing relationship between their consumption levels and trust. Growth modelling techniques were performed on a three-wave panel survey data ( $n = 427$ ). The intra-individual effects revealed a paradox of engagement in mainstream news content, positive media effects of non-mainstream news consumption on their corresponding trust, and negative influence of mainstream news consumption on non-mainstream news trust. The inter-individual

---

## Corresponding author:

Zhang Hao Goh, Wee Kim Wee School of Communication and Information, Nanyang Technological University, 31 Nanyang Link, #04-39, 637718 Singapore.

Email: [zhanghao.goh@ntu.edu.sg](mailto:zhanghao.goh@ntu.edu.sg)

effects demonstrated that high levels of mainstream (vs non-mainstream) news trust can dampen the growth of trust in non-mainstream (vs mainstream) news. However, at the same time, a positive association was found between the growth of trust in mainstream and non-mainstream news media. These findings reflect their complementarity and competitive nature in people's news repertoires.

### **Keywords**

Liberal-authoritarian media system, mainstream and alternative news media, news consumption, news media trust, reinforcing spiral model

Trust in news has long been considered an important prerequisite for news consumption. People consume news from sources they trust (Kalogeropoulos et al., 2019), and yet, some who consume mainstream news perceive it as biased and hence not trustworthy, pushing an increasing number of people toward alternative information sources (Lee, 2024). Thus, the relationship between news consumption and trust can be bi-directional (Tsfati et al., 2025).

A relevant theoretical framework to examine this relationship is the Reinforcing Spiral Model (RSM; Slater, 2007, 2015), which theorizes that news consumption leads to specific media effects, driving further consumption due to media selectivity, creating a positive feedback loop (Slater, 2007). Studies have used the framework to examine the interrelationships between trust and consumption of mainstream and alternative news. However, applying the same theoretical framework outside Western liberal media contexts can be challenging. This is because its application involves an underlying definitional framework that regards mainstream and alternative news as dialectical (Rauch, 2015), which cannot be applied to all media systems.

In the liberal-authoritarian media system of Singapore, dichotomizing news media as either mainstream or alternative is not straightforward. This is because the latter do not behave in the same way as the alternative news media in Western contexts. In other words, all news media outlets (including alternative ones) in Singapore adhere to state regulations in media content production (Goh et al., 2024).

Leveraging the theoretical framework of RSM, this study undertakes a novel attempt to examine how the long-term consumption of both mainstream and non-mainstream news media can impact news audiences' trust in them within Singapore's media system, a relatively understudied news media context. In doing so, the current study aims to contribute to the literature in two ways. First, using a three-wave panel survey data and leveraging the principles of RSM, it explores the potential intra-individual cross-lagged (reciprocal) influence of general consumption of mainstream and non-mainstream news on audiences' corresponding news trust in Singapore. Because choosing between mainstream and non-mainstream for news consumption constitutes an open dynamic system (Slater, 2007), this study also examines (as an intra-individual effect) how mainstream (vs non-mainstream) news consumption affects their trust in non-mainstream (vs mainstream) media in the long term. Second, this study explores whether those who

trust mainstream news would also trust non-mainstream news (and vice versa), and, by focusing purely on inter-individual effects, whether those who consume mainstream (vs non-mainstream) news would also trust non-mainstream (vs mainstream) news.

## Literature review

### *Mainstream and non-mainstream news media in Singapore*

Studies have debated the conceptual definitions of mainstream and alternative news media, which are highly contextual in different media systems (Wu, 2023). In Singapore, mainstream news refers to news content that usually aligns with the government's agenda to promote the country's political, social, and economic stability (George, 2012). News is generated and distributed by media outlets within a duopoly comprising a non-profit funded by the state that publishes the newspapers in the country, and a state-owned broadcaster operating all television and most radio stations. Thus, mainstream news content dominates traditional media platforms (i.e., television, newspapers, and radio) and is typically homogeneous (Teo, 2021), making its categorization as 'mainstream' straightforward.

Non-mainstream news outlets outside of this duopoly, including for-profit and private media start-ups that have risen online, typically face high barriers to entry. Their news content are mainly distributed online, via local websites, public forums, private blogs, and social media platforms. While the state does not own them, they are still under the purview of the government through a mandatory media license, and thus still exercise self-regulation (George, 2012; Goh et al., 2024). This makes operationalizing alternative news media in Singapore difficult. Nonetheless, a distinction can be made between mainstream and non-mainstream news content. Compared with mainstream news, non-mainstream news can be less homogenous and more experimental in terms of topic (e.g., viral social media trends and posts) and style (i.e., departures from an inverted pyramid structure, less formal writing) due to greater reliance on social media and younger audiences for viewership (Tandoc, 2018). With this distinction, this study categorizes news media types in Singapore as 'mainstream' and 'non-mainstream' based on the content they publish (Gupta and Yang, 2019).

### *Conceptualizing news trust and consumption*

*Levels of news trust and consumption.* News trust is generally defined as a judgment held by the audience and involves a positive attitude toward the news, considering it to be truthful and reliable (Aharoni et al., 2024). Still, because news is nested in multi-faceted media, the definition of news trust and consumption varies across the literature. For example, Strömbäck et al. (2020: 147) proposed different levels of abstraction when conceptualizing news trust and consumption, such as "news media in general," "individual media brands," and "journalists."

In this study, both news trust and consumption are conceptualized at the general level, referring to Singapore's mainstream and non-mainstream *news media in general*. News audiences implicitly form overarching belief systems toward these two categories of news that are typically distinguished and often compared within the liberal-authoritarian media

system (Ong and Pereira, 2025). With the existing belief system about the two categories of news, audiences may use predetermined repertoires of news sources, supported by their use of heuristics, to judge credibility or trustworthiness rather than relying on their knowledge or awareness of specific media brands or journalists (Park et al., 2024).

*The problem with mutual causality.* Studies assume mutual causality between news trust and consumption, a bi-directional relationship. Some studies examined them through either *selection* or *media* effects approaches (Aharoni et al., 2024). The former refers to when news trust is a predictor of news consumption, where news consumption results from a deliberative selection process involving trusted news sources (Kalogeropoulos et al., 2019); the latter specifies that news trust can be developed through active or incidental repeated news consumption (Park and Lee, 2023). However, treating these effects as ‘mutual’ can be challenging because the constituent directional effects are “motivated by different theoretical assumptions” (Tsfati et al., 2025: 16). For example, the utility maximization perspective can justify how news trust may predict news consumption (Tsfati and Cappella, 2003). It is assumed that people have limited resources (e.g., time), so they only consume news content that they find most trustworthy. From the selective exposure perspective, news audiences may also express a preference for trusted news sources to consume. Specifically, trust may act as a “reputation heuristic,” or cognitive shortcuts, to guide news audiences’ selection of certain accurate and trustworthy repertoires of news sources (Kaye and Johnson, 2021: 322).

The impact of news consumption on its corresponding trust can also be attributed to repeated exposure to news content, creating an ‘illusory truth,’ which promotes heightened levels of trust or perceived credibility (Udry and Barber, 2024). Exposure to journalistic practices and rhetorical devices that promote trust (Tsfati et al., 2025), such as objectivity, transparency in reporting, and compliance with journalism ethos, can also support the causal relationship from news consumption to trust. To navigate these different relationships and theoretical justifications, Tsfati et al. (2025) proposed to examine the relationship between news consumption and trust longitudinally, using latent curve models – a main analytical approach in most RSM studies.

### *Reinforcing Spiral Model*

The RSM unifies these relationships by suggesting how these effects can occur simultaneously. It forms a theoretical basis to explicate how individual-level trust in news media can be maintained (or strengthened) via their consumption over time (Slater, 2007, 2015). Several studies have leveraged this framework to explore the long-term effects of media consumption on different individual-level factors, such as political attitudes (e.g., Dahlgren et al., 2019) or social identities (e.g., Lin et al., 2023). This framework can be used to understand media consumption and how it can develop and maintain the beliefs and behavior of an individual. Specifically, media use influences an individual’s corresponding belief (a media effect), and that belief reinforces the type of media use (a selection effect) applied to “time-ordered processes” (Slater, 2007: 288).

The RSM contends that news audiences selectively expose themselves to specific attitude-consistent media content to avoid cognitive dissonance (Slater, 2015). In the Western context, studies have leveraged the RSM to explicate long-term impacts of the consumption of mainstream news content and its corresponding trust levels. This challenges the conventional understanding of trust as solely an antecedent to consumption, instead demonstrating how consumption can also influence trust. For example, Hoewe et al. (2023) found that trust in a cable news network (i.e., Fox News or MSNBC) can enhance the impact of U.S. news audiences' selective exposure to the news network on their expressions of agreement toward political news (i.e., political ideologies).

*Intra- and inter-individual effects.* The RSM involves both intra- and inter-individual effects. Media and selection effects operate as intra-individual effects, where one's media use and its eventual effect on oneself mutually reinforce one another (i.e., a reciprocal relationship) over time. Inter-individual effects refer to the individual baseline trends across different individuals, representing the "expected scores" in the underlying patterns in media use and their associated individual-level outcomes across different time points (Thomas et al., 2021: 191).

The RSM suggests that the intra-individual variability in both media and selection effects can affect the growth of baselines for media use and associated individual-level outcomes, triggering two plausible stages in the reinforcing spiral effect: *positive feedback loop* or *maintenance*. A positive feedback loop is where positive intra-individual reciprocal media and selection effects drive the growth of their corresponding baselines. Maintenance is where there is stable growth in news trust and consumption over time (i.e., mean of the linear slopes does not significantly differ from zero), with only positive media effects or both media and selection effects (Shehata et al., 2024; Thomas et al., 2021). Lastly, a state of *homeostasis* could be observed with stable baselines accompanied by weak or the absence of the above-mentioned intra-individual media and selection effects.

To examine the reinforcing spiral effect, this study treats general consumption of mainstream versus non-mainstream news as proxy measures of their specific news content consumption as Slater (2007) originally conceptualized. The examination of the reinforcing spiral effect in the current study shall be guided by the following research questions:

**RQ1:** At the intra-individual level, would trust in mainstream and non-mainstream news positively influence news audiences' corresponding news consumption (and vice versa)?

**RQ2:** At the inter-individual level, is there a positive growth in the baselines for mainstream and non-mainstream news consumption and trust among news audiences?

### *Choosing mainstream and non-mainstream news: An open dynamic system*

Conceptualizing the relationship between mainstream and non-mainstream news consumption becomes complicated as news audiences are simultaneously exposed to both.

Indeed, the RSM has highlighted that the reinforcing spiral processes do not always operate in a fully ‘closed positive feedback loop system’ (see Slater, 2007; Proposition 4B), where levels of individual-level outcomes become extreme over time. Rather, news audiences can be influenced by “competing alternative (news) media” (Slater, 2007: 296) as part of the external forces to the reinforcing process, which can limit or constrain each other. In Sweden, Andersen et al. (2023) found that the growth of alternative news orientation is negatively associated with the growth of mainstream media trust.

In this current study, the mutual influence of mainstream and non-mainstream news consumption can be conceptualized as a subset of a larger open dynamic system. Therefore, drawing upon the RSM, one can expect that the mutual influence of mainstream and non-mainstream news consumption should also influence that of mainstream and non-mainstream news trust, and vice versa. In Singapore, high trust in mainstream news may suggest that people turn to mainstream news outlets for certain consequential information, such as health information (Lwin et al., 2023). Conversely, due to skepticism and perceived bias in mainstream news media (e.g., Ardèvol-Abreu & Gil de Zúñiga, 2017), news audiences may turn to non-mainstream outlets for an alternative view, especially for government news. Both scenarios have implications for how they trust mainstream versus non-mainstream news.

From the selective exposure perspective, mainstream and non-mainstream news have differing content and journalistic practices, and audiences may perceive a difference and form a preference. The unique mediascape in Singapore suggests there could be nuances in the impact of long-term selective exposure to news content occurring in mainstream versus non-mainstream outlets. While mainstream consumption involves a conscious and voluntary selection of news content from a largely homogenous news environment, non-mainstream consumption may entail selective exposure to a relatively more diverse set of news content (Cardenal et al., 2019). This raises the question of whether the expected reinforcing spiral effect of trust in mainstream and non-mainstream news on their respective consumption would be equivalent and whether they would negatively influence one another within an open dynamic system.

With the above scenarios, this study examines how individual consumption levels of competing news sources may be associated with one another as an intra-individual effect (considering their reciprocal influences on their respective news trust), assuming robust inter-individual effects in their baseline growth rates (as reflected in RQ2):

**RQ3:** At the intra-individual level, how would trust in mainstream (vs non-mainstream) news influence news audiences’ consumption of non-mainstream (vs mainstream) news, and vice versa?

To probe the specific baseline relationships (in RQ2) in the open dynamic system, the current study shall also focus on examining the interplay between news trust and consumption across the mainstream and non-mainstream at the inter-individual level:

**RQ4:** At the inter-individual level, how would the baseline of trust in mainstream (vs non-mainstream) news influence news audiences’ baseline consumption of non-mainstream (vs mainstream) news, and vice versa?

## Method

### Sample

Three waves of online panel survey data, each conducted 6 months apart in Singapore, were used. The first wave was conducted in December 2020 (T1;  $n = 1606$ ), the second in June 2021 (T2;  $n = 800$ ), and the third wave in December 2021 (T3;  $n = 1016$ ). These were during the COVID-19 pandemic; residents in Singapore were heavily dependent on news across all media platforms to stay updated on the latest developments (e.g., quarantine measures and restriction orders). Such intensified reliance on the news during this period would trigger how people attempt to maintain their cognitive perceptions toward news content through a reinforcing spiral effect. This specific time frame aligns with Slater's (2007) suggestion that the reinforcing spiral effect could be present within a limited time period, constrained by situational factors (e.g., elections or crises). The choices between mainstream and non-mainstream news media outlets (each with differing levels of homogeneity in news content) should prompt audiences to perform selective exposure to and trust in news content.

A private market research company was commissioned to recruit participants in Singapore. Each survey wave includes those who have participated in either of the previous wave(s) and fresh participants. Only those who participated in all three waves ( $n = 427$ ) were shortlisted for analysis to ensure no missing data. Approval was given by the authors' university institutional review board (IRB) before data collection (IRB reference number: IRB-2020-10-048).

Only those aged 21 and above, and are Singapore citizens, permanent residents, or non-residents residing in Singapore at the time of the survey were recruited. Table 1 summarizes the demographic profiles of the participants.

### Procedures and measurement

After providing their informed consent before the start of the surveys, the participants answered demographic questions and questions that measured the key variables. Participants were remunerated for completing each survey.

*Mainstream and non-mainstream news trust.* News audiences' trust in the mainstream (MTRUST) and non-mainstream news media (NMTRUST) was measured by their responses to the question: "How much would you rate your level of trust for each of the following?" using a 5-point Likert scale, from 1 = "Not trustworthy at all" to 5 = "Completely trustworthy". To measure mainstream news media trust (T1:  $M = 3.22$ ,  $SD = 0.848$ ; T2:  $M = 3.26$ ,  $SD = 0.890$ ; T3:  $M = 3.35$ ,  $SD = 0.865$ ), participants rated a single item: local traditional news media outlets (e.g., The Straits Times, MediaCorp news). Using the same scale, participants rated how much they trust alternative<sup>1</sup> news outlets in Singapore (e.g., Mothership, The Online Citizen); NMTRUST (T1:  $M = 2.95$ ,  $SD = 0.840$ ; T2:  $M = 3.09$ ,  $SD = 0.805$ ; T3:  $M = 3.01$ ,  $SD = 0.795$ ).

*Mainstream and non-mainstream news consumption.* Frequency of mainstream news consumption (MCON; T1:  $M = 2.99$ ,  $SD = 0.850$ ,  $\alpha = 0.780$ ; T2:  $M = 3.03$ ,  $SD = 0.834$ ,

**Table 1.** Demographic profiles of participants for all survey waves.

	Wave 1 (n = 1606)	Wave 2 (n = 800)	Wave 3 (n = 1016)	Population
Median age	39 years old	41 years old	41 years old	43 years old
Male (%)	50.7	51.1	51.8	49.4
Female (%)	49.3	48.9	48.0	50.6
<i>Citizenship (%)</i>				
Singapore citizen	83.3	87.4	80.6	61.0
Permanent resident	12.1	11.3	17.0	9.12
Non-resident	4.7	1.4	2.4	29.9
<i>Ethnicity (%)</i>				
Chinese	75.4	85.4	83.6	75.6
Malay	13.3	7.9	8.7	15.1
Indian	6.8	4.9	5.0	7.6
Others	4.5	1.9	2.8	1.7

Note. Waves 2 and Wave 3 include fresh participants and those from the previous wave(s). The right-most column shows the demographic profiles for the general population (Population-in-Brief 2023 Report retrieved from <https://www.population.gov.sg/files/media-centre/publications/population-in-brief-2023.pdf>). Two participants who self-reported the third option ("Others") for their gender in Wave 3 did not participate in all three Waves and hence were excluded from the analyses.

$\alpha = 0.710$ ; T3:  $M = 2.94$ ,  $SD = 0.890$ ,  $\alpha = 0.750$ ) was measured with four items on a 5-point scale (from 1 = "Never" to 5 = "Very often"): (1) Read local TV news websites (e.g., [channelnewsasia.com](http://channelnewsasia.com)), (2) read print copies of local newspapers (e.g., Straits Times), (3) watch news on local TV (e.g., Channel 8, CNA), and (4) listen to local radio news.

Frequency of non-mainstream news consumption (NMCON; T1:  $M = 2.40$ ,  $SD = 0.968$ ; T2:  $M = 2.42$ ,  $SD = 0.993$ ; T3:  $M = 2.38$ ,  $SD = 0.984$ ) was measured in the same question and scale. Participants rated the frequency they performed the following on a typical day for a single measurement item: Read alternative online-only local news websites<sup>2</sup> (e.g., Mothership, [theonlinecitizen.com](http://theonlinecitizen.com)).

## Data analysis and results

The analyses are divided into two parts. The first part examines the intra- and inter-individual effects of mainstream and non-mainstream news consumption on their corresponding trust (RQ1, RQ2, and RQ3). The second part focuses on studying the inter-individual changes (RQ4) for the same long-term relationships using another model.

### *Investigating reinforcing spiral effects*

To investigate the reinforcing spiral effects of MCON (vs NMCON) and MTRUST (vs NMTRUST) as intra-individual effects, the current study follows a modelling strategy by [Curran et al. \(2014\)](#). All models in the current study were fitted using R, version 4.4.1

(Lavaan package, version 0.6-18). As the first step of this modelling approach, constrained random intercept models (RIMs) were created for all key outcomes measured in the current study. Overall, the fit indices in the RIMs indicate an acceptable fit to the data. Random linear slopes were added to the RIMs to capture inter-individual growth in consumption and trust patterns, leading to latent curve models. These nested models, which demonstrated an acceptable to marginal fit to the data, were tested for an improvement in model fit using the Chi-square difference test. Table 2 summarizes the findings from these models.

In the second step, the RIMs that significantly improved model fit when latent slope factors were added were combined to form a latent curve model with structured residuals (LCM-SR; Shehata et al., 2024). If no significant improvement was achieved, the RIMs were combined, leading to a constrained random intercept cross-lagged panel model (RICLPM). Two RICLPMs and two LCM-SRs (with a single slope factor) were modeled following the outcomes of the Chi-square difference tests in Table 2. Figure 1 provides a general illustration of how the RICLPMs and the LCM-SRs were modeled in the current study.

As observed in Figure 1, the factor loadings were constrained to 1 for the random intercepts and 0 to 2 for the random slopes. The loadings for the residuals on latent factors of news consumption and trust (i.e., Res-NC and Res-NT) were fixed to 1. The residual variances were constrained to be equal across the time points but allowed to vary between news consumption and news trust constructs. The cross-lagged paths from news consumption to news trust (path *b*) were constrained to be equal from T1 to T2 and from T2 to T3. The reverse paths (path *c*) with a different constraint were set to be equal for the same time period. The autoregressive paths were fixed to be equal from T1 to T2 and T2 to T3, but allowed to vary across the news consumption (path *a*) and trust (path *d*) constructs. The covariances of the residuals (*e*) between news consumption and news trust constructs were constrained to be equal for Time 2 and Time 3 but not for Time 1 to account for initial variations between them. Overall, the RICLPMs and LCM-SRs demonstrate a good fit to the data. Table 3 summarizes the results from these models.

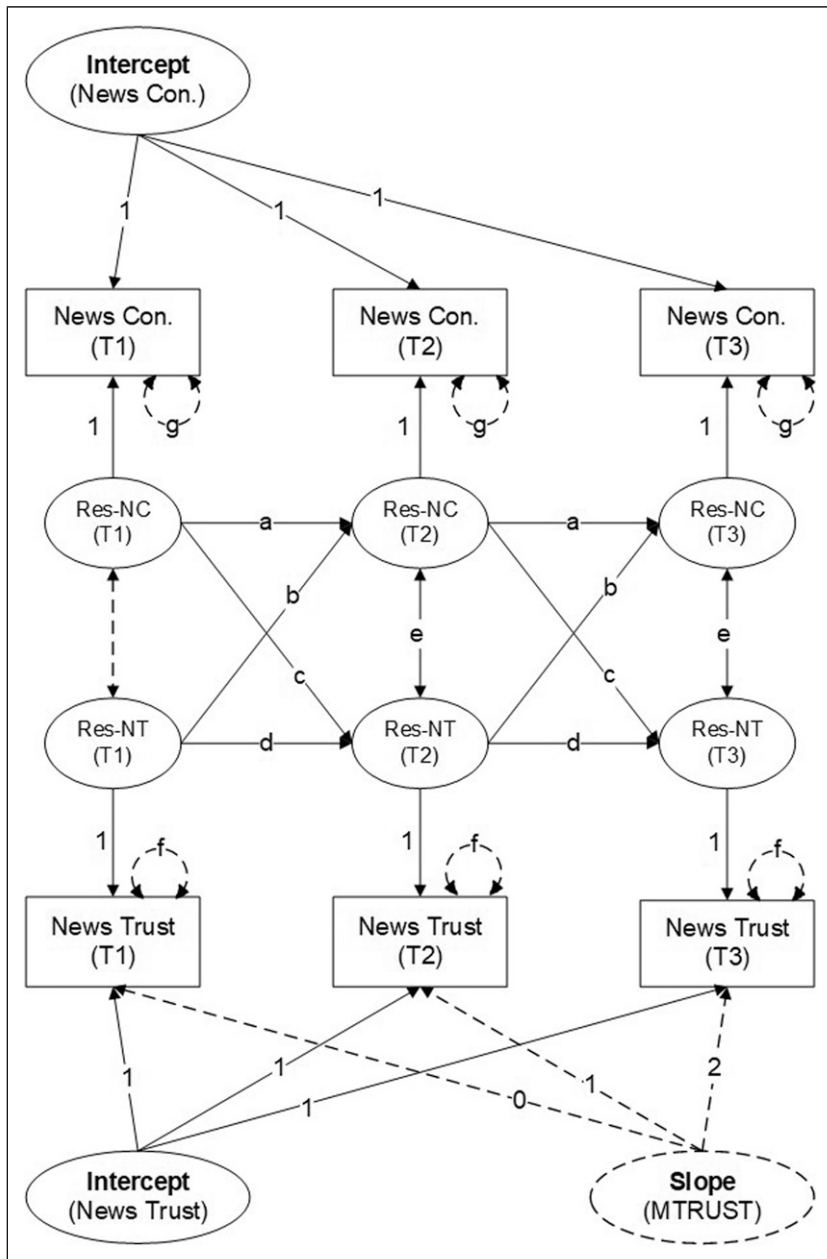
RQ1, RQ2, and RQ3 asked whether there are reinforcing effects between MCON (vs NMCON) and MTRUST (vs NMTRUST) or between MCON (vs NMCON) and NMTRUST (vs MTRUST), targeting a potential positive feedback loop. In Models 1 and 2 (RQ2), the inter-individual growth rates of MTRUST are significant when considered together with MCON and NMCON (*Est. mean*;  $MCON = 0.486$ ,  $SE = 0.161$ ,  $p = 0.003$ ; *Est. mean*;  $NMCON = 0.486$ ,  $SE = 0.161$ ,  $p = 0.002$ ).

However, a reinforcing spiral effect signalling a positive feedback loop could not be established. Slater (2007) stated this stage would require simultaneous positive growth in baseline news trust and consumption, a criterion that the single slope LCM-SRs (in Models 1 and 2) or the RICLPMs (Models 3 and 4) cannot satisfy. Moreover, regarding intra-individual effects (RQ1 and RQ3), the reciprocal media and selection effect within the residual structures of the LCM-SR models were either negative (in Model 1) or statistically insignificant (in Model 2), thus violating the assumptions of a positive feedback loop. Nonetheless, Model 1 demonstrates a downward reinforcing spiral of media and selection effects of mainstream news, indicating a paradox in the engagement of mainstream news.

**Table 2.** Parameter estimates, (co-)variances for intercept & slope factors, and fit indices for RIMs leading to LCMs.

	Random intercept model (RIM)			Latent curve model (LCM)			Chi-square difference test
	Intercept	Variance	Fit indices	Intercept (int.) Slope (Slp.)	Variance	Co-variance	
MTRUST	3.28*** (0.035)	0.422*** (0.037)	CFI = 0.978 RMSEA = 0.057	Int. = 3.22*** (0.040) Slp. = 0.061** (0.020)	0.399*** (0.050) 0.002 (0.016)	0.012 (0.021)	CFI = 0.998 RMSEA = 0.027 $\chi^2_{\Delta} (3) = 10.5$ $p = 0.015$
NMTRUST	3.02*** (0.031)	0.303*** (0.030)	CFI = 0.956 RMSEA = 0.065	Int. = 2.99*** (0.042) Slp. = 0.032 (0.021)	0.420*** (0.057) 0.018 (0.020)	-0.035 (0.023)	CFI = 0.964 RMSEA = 0.084 $\chi^2_{\Delta} (3) = 4.88$ $p = 0.181$
MCON	2.99*** (0.037)	0.527*** (0.041)	CFI = 0.988 RMSEA = 0.057	Int. = 3.01*** (0.040) Slp. = -0.026 (0.016)	0.511*** (0.047) 0.016 (0.010)	0.002 (0.016)	CFI = 0.995 RMSEA = 0.055 $\chi^2_{\Delta} (3) = 7.53$ $p = 0.057$
NMCON	2.83*** (0.041)	0.526*** (0.049)	CFI = 0.968 RMSEA = 0.062	Int. = 2.84*** (0.048) Slp. = -0.013 (0.025)	0.560*** (0.074) 0.010** (0.025)	-0.020 (0.033)	CFI = 0.960 RMSEA = 0.097 $\chi^2_{\Delta} (3) = 0.662$ $p = 0.882$

Note. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Unstandardized parameter estimates are presented. Standard errors are in parentheses. MTRUST: Trust in mainstream news; NMTRUST: Trust in non-mainstream news; MCON: Mainstream news consumption; NMCON: Non-mainstream news consumption. Chi-squared difference tests were conducted to investigate the improvement in model fit when the RIMs are fitted with the slope factors, leading to LCMs.



**Figure 1.** An Illustration of the RICLPM and the LCM-SR (single slope). Note. The dotted lines represent the slope factor (MTRUST) that was subsequently added to the RIM, leading to an LCM-SR with a single slope factor (Models 1 & 2). Otherwise, without the slope factor, the figure represents a RICLPM (Models 3 & 4). Covariances between the latent factors and the regressions of the latent factors on time-invariant covariates (age, gender, and education) were modeled but not shown. News Trust (NT) is defined as either MTRUST or NMTRUST. News Consumption (News Con.) refers to either MCON or NMCON.

**Table 3.** Inter- and intra-individual effects of news trust and consumption.

	Model 1	Model 2	Model 3	Model 4
Latent factors:	MTRUST & MCON	MTRUST & NMCON	NMTRUST & MCON	NMTRUST & NMCON
Model type:	LCM-SR (IS) Est.	LCM-SR (IS) Est.	RICLPM Est.	RICLPM Est.
<b>Inter-individual</b>				
MTRUST ( <i>Int.</i> )	2.75*** (0.324)	2.72*** (0.323)	–	–
MTRUST ( <i>Slp.</i> )	0.486** (0.161)	0.486** (0.161)	–	–
MTRUST ( <i>Int. Var.</i> )	0.386** (0.119)	0.414*** (0.066)	–	–
MTRUST ( <i>Slp. Var.</i> )	0.004 (0.052)	0.010 (0.034)	–	–
NMTRUST ( <i>Int.</i> )	–	–	3.78*** (0.255)	3.86*** (0.259)
NMTRUST ( <i>Int. Var.</i> )	–	–	0.267*** (0.050)	0.273*** (0.029)
MCON ( <i>Int.</i> )	2.65*** (0.305)	–	2.62*** (0.304)	–
MCON ( <i>Int. Var.</i> )	0.424*** (0.044)	–	0.477*** (0.041)	–
NMCON ( <i>Int.</i> )	–	3.37*** (0.328)	–	3.38*** (0.328)
NMCON ( <i>Int. Var.</i> )	–	0.486*** (0.047)	–	0.499*** (0.047)
<b>Intra-individual</b>				
CL. CON → Trust	–0.461* (0.200)	0.330 (0.503)	0.017 (0.739)	0.464* (0.233)
CL. Trust → CON	–0.268* (0.126)	–0.172 (0.322)	–0.377*** (0.107)	–0.054 (0.288)
AutoReg. Trust	–0.032 (0.512)	–0.442 (0.443)	0.045 (0.423)	0.563*** (0.199)
AutoReg. CON	0.610 (0.165)	–0.157 (0.462)	0.953*** (0.342)	–0.867** (0.252)
<b>Covariances</b>				
Int. (Trust) – Slp. (Trust)	–0.008 (0.046)	–0.016 (0.038)	–	–
Int. (CON) – Slp. (Trust)	0.007 (0.021)	–0.009 (0.019)	–	–
Int. – Int.	0.233*** (0.044)	0.037 (0.033)	0.134*** (0.031)	0.216*** (0.028)
<b>Model Fit</b>				
CFI	0.992	0.995	0.976	0.993
TLI	0.987	0.991	0.968	0.991
RMSEA	0.034	0.021	0.048	0.022

Note. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Unstandardized parameter estimates are presented. Standard errors are in parentheses. CL.: Cross-lagged effects, AutoReg.: Autoregressive effects. IS: LCM-SR with single slope. CON: MCON or NMCON.

The absence of individuals' linear growth rates (on average) in the constrained RICLPMs assumes stability<sup>3</sup> in audiences' NMTRUST. Model 4 reflects a significant media effect, reflecting fluctuations of non-mainstream news consumption that contribute to a stable growth of trust in the non-mainstream news, indicating a maintenance effect (Shehata et al., 2024). Meanwhile, Model 3 demonstrates a negative selection effect and does not constitute a maintenance effect.

Despite the absence of the expected reinforcing spiral effects, the cross-lagged outputs from these models provide important insights into how all four key latent factors would interplay as news audiences choose between mainstream and non-mainstream news. The implications of these findings shall be further elaborated in the Discussion section.

*A paradox in the mainstream news consumption.* Contrary to expectations, in Model 1 negative cross-lagged effects at the intra-individual level were found between MTRUST and MCON ( $Est. MCON(T) \rightarrow MTRUST(T+1) = -0.461, SE = 0.200, p = 0.021$ ;  $Est. MTRUST(T) \rightarrow MCON(T+1) = -0.268, SE = 0.126, p = 0.033$ ). This is accompanied by significant and positive autoregressive effects of MCON across time ( $Est. MCON(T) \rightarrow MCON(T+1) = 0.610, SE = 0.165, p < 0.001$ ). This indicates a paradox in news audiences' MCON, where they consistently turn to mainstream news despite placing less trust in it over time.

*Non-mainstream news: Trustworthy but unsustainable consumption.* Addressing RQ1, an intra-individual single cross-lagged (media) effect ( $Est. NMCON(T) \rightarrow NMTRUST(T+1) = 0.464, SE = 0.233, p = 0.046$ ) was found, demonstrating that NMCON has a positive influence on NMTRUST across time in Model 4. However, this effect is accompanied by negative and positive autoregressive effects of NMCON and NMTRUST ( $Est. NMCON(T) \rightarrow NMCON(T+1) = -0.867, SE = 0.252, p = 0.001$ ;  $Est. NMTRUST(T) \rightarrow NMTRUST(T+1) = 0.563, SE = 0.199, p = 0.005$ ), respectively. The findings align with the RSM, indicating that NMCON can positively drive and maintain audiences' trust in them. However, their trust in them cannot sustain their long-term consumption levels.

*Competing effects between mainstream and non-mainstream news.* RQ3 explores intra-individual competing effects between mainstream and non-mainstream news using Models 2 and 3. Model 3 demonstrates that news audiences' NMTRUST has a negative impact on their MCON;  $Est. NMTRUST(T) \rightarrow MCON(T+1) = -0.377, SE = 0.107, p < 0.001$ . However, its reciprocal influence is insignificant across time ( $Est. MCON(T) \rightarrow NMTRUST(T+1) = 0.017, SE = 0.739, p = 0.981$ ). This finding aligns with the RSM's proposition that the relationship between news consumption and trust is an open and dynamic system where the (potentially reinforcing) influence of news consumption of a particular news media source on its corresponding trust can be suppressed or neutralized by external forces, in this case, one's trust in another news media source. Notwithstanding the competing effects, news audiences' MCON remains stable given the significant and positive autoregressive effect of MCON ( $Est. MCON(T) \rightarrow MCON(T+1) = 0.953, SE = 0.342, p = 0.005$ ).

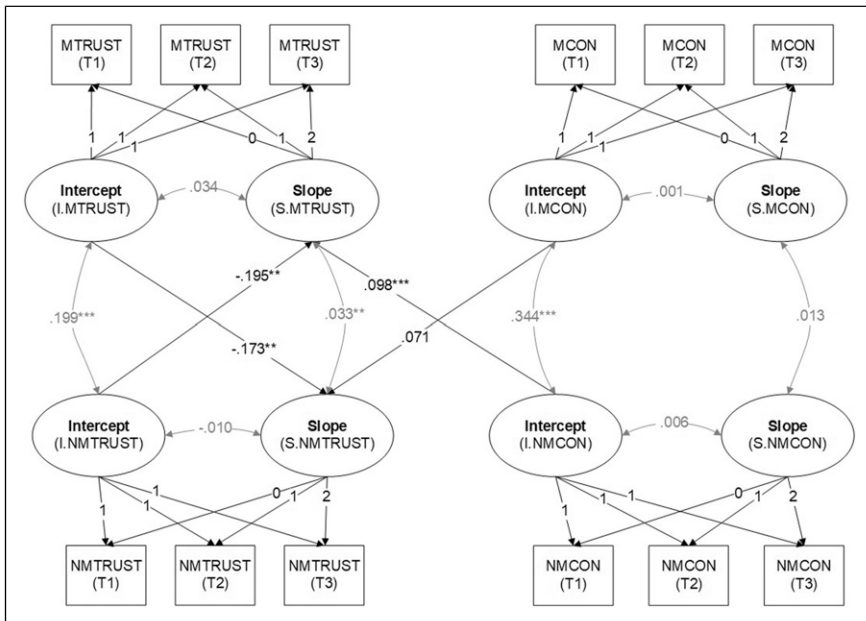
### *Inter-relationships between baselines in news trust and consumption*

RQ4 further explores how the competing effects of mainstream versus non-mainstream news trust and consumption can occur at the inter-individual level. Although the current study acknowledges that adding latent slope factors to form an LCGM does not improve model fit (as observed in Table 2), the RSM assumes linear growth. Therefore, a

multivariate latent growth curve model (LGCM; Thomas et al., 2021; Duncan and Duncan, 2009), Model 5, was fitted to assess the relationships between the slope and intercept factors of MCON and NMCON, as well as MTRUST and NMTRUST.

In Model 5, all loadings to the intercept factors were fixed at 1, whereas the slope (change) factors loadings were set from 0 to 2 to reflect the trajectories across the three time points. In addition, the key latent variables were regressed on time-invariant covariates (i.e., age and education level). Regression paths and covariances between the intercepts and slopes of the latent variables on news media consumption and trust were analyzed. Figure 2 illustrates the selected paths between the key latent intercept and slope factors. The fit indices for Model 5 suggest that the model has a good fit:  $CFI = 0.970$ ,  $TLI = 0.949$ ,  $RMSEA = 0.057$ .

Overall, the slope and intercept factors for MTRUST and NMTRUST were statistically significant (Intercept<sub>NMTRUST</sub> = 3.40,  $SE = 0.301$ ,  $p < 0.001$ , Slope<sub>NMTRUST</sub> = 0.481,  $SE = 0.210$ ,  $p = 0.022$ ; Intercept<sub>MTRUST</sub> = 2.71,  $SE = 0.325$ ,  $p < 0.001$ , Slope<sub>MTRUST</sub> = 0.852,  $SE = 0.222$ ,  $p < 0.001$ ). The intercept factors for MCON and NMCON were statistically significant, but not for their corresponding slope factors (Intercept<sub>NMCON</sub> = 2.84,  $SE = 0.047$ ,  $p < 0.001$ , Slope<sub>NMCON</sub> = -0.013,  $SE = 0.025$ ,  $p = 0.594$ ; Intercept<sub>MCON</sub> = 2.56,  $SE = 0.268$ ,  $p < 0.001$ , Slope<sub>MCON</sub> = -0.245,  $SE = 0.126$ ,  $p = 0.052$ ). Table 4 summarizes the selected parameter estimates for the latent factors in Model 5.



**Figure 2.** Regressions of key latent factors in the LGCM (Model 5). Note. Regressions of the latent factors on time-invariant covariates (age, gender, and education) were modeled but not shown. For simplicity, some paths indicating covariances between the latent factors were omitted. See Table 4 for a full set of covariances modeled between the latent factors.

**Table 4.** Model 5: Multivariate LGCM showing inter-individual effects of news consumption and trust.

Key latent factors	Intercept		Slope	
	Estimate ( $\beta$ )	Variance	Estimate ( $\beta$ )	Variance
MTRUST	2.71*** (0.325)	0.395*** (0.058)	0.852** (0.222)	0.011 (0.026)
NMTRUST	3.40*** (0.301)	0.347*** (0.046)	0.481* (0.210)	0.008 (0.017)
MCON	2.56*** (0.268)	0.506*** (0.045)	-0.245 (0.126)	0.017 (0.010)
NMCON	2.84*** (0.047)	0.508*** (0.064)	-0.013 (0.025)	0.012 (0.024)
Regressions	S.NMTRUST ( $\beta$ )		S.MTRUST ( $\beta$ )	
I.MTRUST (RQ4)	-0.173** (0.054)		-	
I.NMTRUST (RQ4)	-		-0.195** (0.062)	
I.MCON	0.071 (0.040)		-	
I.NMCON	-		0.098* (0.048)	
Covariance (COV)				
Slope-Slope				
S.NMTRUST / S.NMCON		0.009 (0.008)		
S.NMTRUST / S.MCON (RQ4)		0.008 (0.006)		
S.NMTRUST / S.MTRUST		0.033*** (0.010)		
S.MCON / S.NMCON		0.013 (0.010)		
S.MTRUST / S.NMCON		0.006 (0.009)		
S.MTRUST / S.MCON		0.001 (0.006)		
Intercept-Intercept				
I.NMTRUST / I.MTRUST		0.199*** (0.033)		
I.NMTRUST / I.NMCON		0.217*** (0.032)		
I.MTRUST / I.MCON		0.201*** (0.031)		
I.MCON / I.NMCON		0.344*** (0.037)		
I.MCON / I.NMTRUST		0.132*** (0.030)		
Intercept-Slope				
I.MTRUST / S.MTRUST		0.034 (0.030)		
I.NMTRUST / S.NMTRUST		-0.010 (0.022)		
I.MCON / S.MCON		0.001 (0.013)		
I.NMCON / S.NMCON		0.006 (0.028)		
Model Fit				

Note. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Unstandardized parameter estimates are presented. Standard errors (SE) are in parentheses. For simplicity, coefficients showing the correlations between residuals and indicators are omitted in this table.

*Long-term dampening of news trust in an open dynamic system.* RQ4 explores how MTRUST could affect NMTRUST, and vice versa, in the open dynamic system. Regression paths were analyzed from the intercept factors of MTRUST and NMTRUST to the slope factors of NMTRUST and MTRUST, respectively. The results in Model 5 demonstrated that the

initial MTRUST (vs NMTRUST) levels are negatively associated with the growth of NMTRUST (vs MTRUST);  $\beta_{LMTRUST \rightarrow S.NMTRUST} = -0.173$ ,  $SE = 0.054$ ,  $p = 0.001$ ;  $\beta_{L.NMTRUST \rightarrow S.MTRUST} = -0.195$ ,  $SE = 0.062$ ,  $p = 0.002$ . This finding highlights the competitive nature of both news sources in building news audiences' trust in them. Conceptualized by the RSM as part of the open dynamic system, high initial trust in one news source (as an external force) could dampen the growth of the other in the long run.

*Promotion of news trust amid competition.* Also addressing RQ3, a positive covariance was found between the intercept and slope factors for MTRUST and NMTRUST in Model 5;  $COV_{S.MTRUST, S.NMTRUST} = 0.033$ ,  $SE = 0.010$ ,  $p = 0.001$ ,  $COV_{LMTRUST, L.NMTRUST} = 0.199$ ,  $SE = 0.033$ ,  $p < 0.001$ . Moreover, an initial high level of NMCON is positively associated with MTRUST;  $\beta_{L.NMCON \rightarrow S.MTRUST} = 0.098$ ,  $SE = 0.048$ ,  $p = 0.041$ , and likewise for the impact of MCON on NMTRUST though this effect is marginal;  $\beta_{L.MCON \rightarrow S.NMTRUST} = 0.071$ ,  $SE = 0.040$ ,  $p = 0.078$ . Overall, despite their competitive nature, if audiences generally trust mainstream news content, they will also trust alternative news content, and vice versa. Thus, this reflects the complementarity of mainstream and non-mainstream news content within the media system.

## Discussion

Traversing beyond the dialectical definitional framework of mainstream-alternative news, the current study investigates the long-term implications of news consumption on news trust within a liberal-authoritarian media system in Singapore. By examining mainstream and non-mainstream news consumption in Singapore, the study found that their influence on their corresponding trusts is not mutually exclusive. This is explicated by investigating the long-term inter- and intra-individual effects among key latent constructs of trust and consumption of both types of news media.

The study found evidence that MCON and NMCON influence their corresponding MTRUST and NMTRUST, respectively; however, they do not model after the reinforcing spiral effects (RQ1) defined by Slater (2007). The RSM posits that reinforcing processes operate in an open dynamic system where the influence of one can be 'limited' or 'constrained' by the influences from the other, diminishing the possibility of having a positive feedback loop. Hence, the absence of a reinforcing spiral process between MCON and MTRUST could result from the suppression or neutralization of the influence processes between NMCON and NMTRUST, or vice versa. Such conflict is reflected in the negative intra-individual cross-lagged relationship between NMTRUST and MCON in the current study (see Model 3, Table 3).

Furthermore, in supporting the competing influences between mainstream and non-mainstream news, the inter-individual dampening effects of NMTRUST on MTRUST, and vice versa (RQ3), were demonstrated in Model 5. While extensive literature has acknowledged the opposing effect between mainstream and alternative news media trust (Hameleers et al., 2022; Strömbäck et al., 2020), the current study extends it by demonstrating how competing trust in one news media source, beyond the dialectical relationship of mainstream versus alternative, can dampen the growth of trust of the other

across time. Specifically, the initial trust in mainstream news outlets (vs NMTRUST) may act as a barrier against the future growth of NMTRUST (vs MTRUST).

The findings addressing RQ3 also highlight the formidability of non-mainstream news media sources in shaping news audiences' opinions and their evaluations of mainstream news media sources in the long term. Specifically, the current study demonstrated that increased NMCON can boost NMTRUST over time (Model 4) and that increased NMTRUST negatively influences MCON. These findings are aligned with existing studies that have acknowledged how skepticism toward mainstream news media drives them to turn to alternative news media sources (e.g., [Thorbjørnsrud and Figenschou, 2022](#)) and studied the long-term implications of it, such as eroding political interest among those who consume mainstream news media ([Reiter and Matthes, 2023](#)).

Non-mainstream news consumption also decreased across time, indicated by its negative autoregressive effects in Model 4. Two interpretations can be made from this. First, it could reflect an episodic engagement of non-mainstream news, where audiences turn to them for specific latest developments on events or temporary spikes in interest in 'alternative' views during the pandemic (e.g., [Hiaeshutter-Rice and Weeks, 2021](#)). This may occur during events that challenge the mainstream narratives, such as COVID-19 anti-vaccination conspiracies, where audiences may supplement their news diet with alternative narratives. Although these may bolster their long-term trust in the non-mainstream, possibly due to confirmation bias, it does not maintain high consumption levels over time ([Del Vicario et al., 2017](#)). Second, such a dynamic could reflect the formation of information bubbles where audiences' NMTRUST can persist even if they temporarily reduce their NMCON ([Milczarek, 2023](#)). This suggests that the trust gained from the episodic engagement in the non-mainstream at critical periods may solidify, driving their long-term shift in trust.

The negative bi-directional cross-lagged relationships between MCON and MTRUST in Model 1 reflect a paradox. One reason could be the low-choice mainstream news media environment in Singapore. Audiences may consume mainstream news out of necessity, probably due to the urgency to get important updates regarding the COVID-19 pandemic, despite a low level of trust (e.g., [Taneja and Yaeger, 2019](#)). From a theoretical perspective, such paradoxical relationships may also point to a shift toward homeostasis ([Slater, 2007](#)) where news audiences revert to their equilibrium mainstream news consumption levels.

The current study must be examined in light of a few limitations. First, it did not specifically identify the mainstream versus non-mainstream media sources or brands consumed and trusted through selective exposure. Second, the current study focuses only on NMCON on websites and does not account for consumption of such content on social media platforms; this was done to better distinguish it from mainstream content, which also appears on social media. This may not fully represent audiences' consumption of non-mainstream news, as social media platforms play an important role in facilitating both MCON and NMCON. Future studies may examine the consumption and trust of specific news media platforms to examine reinforcing effects. Third, some subjectivity is involved in the interpretation of 'mainstream' and 'non-mainstream' media. Lastly, the current study did not explicitly define both types of news media beyond the examples of the specific media brands in the survey questionnaire. The assumption is that Singaporean news audiences could colloquially identify them as two distinct forms of news media.

## Conclusion

In a liberal-authoritarian media system in Singapore, the mainstream media may assure news audiences of objectivity, accuracy, and quality in news content. However, there is still a chance that new audiences may be skeptical about them. Even though non-mainstream news could provide narratives absent in the mainstream, news audiences may still ‘pivot back’ to the mainstream, given the potential problems of biases and misinformation. In all, the awareness and understanding of these competing and complementary processes may be a first step towards building trust in an increasingly converging and digitalized news media environment.

## Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

## ORCID iDs

Zhang Hao Goh  <https://orcid.org/0000-0001-8944-027X>

Seth Seet  <https://orcid.org/0000-0002-7510-5902>

Edson C Tandoc  <https://orcid.org/0000-0002-8740-9313>

## Notes

1. The term ‘alternative’ is used in the survey questionnaire to align with the colloquial understanding of news sources (with two popular news brand examples provided) that are not part of mainstream news.
2. Although non-mainstream news media are also prevalent in social media platforms, the decision to focus on ‘alternative local news websites’ would afford a clearer distinction between the consumption of mainstream and non-mainstream news. Therefore, such measurement would not also account for incidental exposure to mainstream news when consuming non-mainstream news.
3. We compared the random slope LCMs (with freely estimated variances) with fixed slope LCMs, where their slope variances were constrained to zero. Fixing the slope variances in the latter did not worsen the models’ fit, reflecting that individual slope differences were generally the same (i.e., having flat/stable trajectories). Furthermore, all slopes were visually inspected to ensure that all individuals show flat trajectories.

## References

- Aharoni T, Baden C, Overbeck M, et al. (2024) Re-assessing the dynamics of news use and trust: a multi-outlet perspective. *Communication Research*: 1–30. DOI: [10.1177/00936502241273263](https://doi.org/10.1177/00936502241273263).

- Andersen K, Shehata A and Andersson D (2023) Alternative news orientation and trust in mainstream media: a longitudinal audience perspective. *Digital Journalism* 11(5): 833–852. doi: [10.1080/21670811.2021.1986412](https://doi.org/10.1080/21670811.2021.1986412).
- Ardèvol-Abreu A and Gil de Zúñiga H (2017) Effects of editorial media bias perception and media trust on the use of traditional, citizen, and social media news. *Journalism & Mass Communication Quarterly* 94(3): 703–724. doi: [10.1177/1077699016654684](https://doi.org/10.1177/1077699016654684).
- Cardenal AS, Aguilar-Paredes C, Galais C, et al. (2019) Digital technologies and selective exposure: How choice and filter bubbles shape news media exposure. *The International Journal of Press/Politics* 24(4): 465–486. doi: [10.1177/1940161219862988](https://doi.org/10.1177/1940161219862988).
- Curran PJ, Howard AL, Bainter SA, et al. (2014) The separation of between-person and within-person components of individual change over time: A latent curve model with structured residuals. *Journal of Consulting and Clinical Psychology* 82(5): 879–894. doi: [10.1037/a0035297](https://doi.org/10.1037/a0035297).
- Dahlgren PM, Shehata A and Strömbäck J (2019) Reinforcing spirals at work? Mutual influences between selective news exposure and ideological leaning. *European Journal of Communication* 34(2): 159–174. doi: [10.1177/0267323119830056](https://doi.org/10.1177/0267323119830056).
- Del Vicario M., Scala A., Caldarelli G., Stanley H. E. and Quattrociocchi W. (2017) Modeling confirmation bias and polarization. *Scientific Reports* 7(1): 1–9. doi: [10.1038/srep40391](https://doi.org/10.1038/srep40391).
- Duncan TE and Duncan SC (2009) The ABC's of LGM: An introductory guide to latent variable growth curve modeling. *Social and Personality Psychology Compass* 3(6): 979–991. doi: [10.1111/j.1751-9004.2009.00224.x](https://doi.org/10.1111/j.1751-9004.2009.00224.x).
- George C (2012) *Freedom from the Press: Journalism and State Power in Singapore*. Singapore: NUS Press.
- Goh ZH, Chew MCH and Tandoc EC Jr (2024) Singapore: navigating media regulation and digitization. In: *Media Compass: A Companion to International Media Landscapes*, 390–397. DOI: [10.1002/9781394196272](https://doi.org/10.1002/9781394196272).
- Gupta RK and Yang Y (2019, October). Predicting and understanding news social popularity with emotional salience features. In: Proceedings of the 27th ACM international conference on multimedia, Nice, France, 21–25 October 2019, 139–147. doi: [10.1145/3343031.3351048](https://doi.org/10.1145/3343031.3351048).
- Hameleers M, Brosius A and de Vreese CH (2022) Whom to trust? Media exposure patterns of citizens with perceptions of misinformation and disinformation related to the news media. *European Journal of Communication* 37(3): 237–268. doi: [10.1177/02673231211072667](https://doi.org/10.1177/02673231211072667).
- Hiaeshutter-Rice D and Weeks B (2021) Understanding audience engagement with mainstream and alternative news posts on Facebook. *Digital Journalism* 9(5): 519–548. doi: [10.1080/21670811.2021.1924068](https://doi.org/10.1080/21670811.2021.1924068).
- Hoewe J, Jett J, Lusvardi A, et al. (2023) Selection, trust, and the effects of cable news consumption. *Journalism & Mass Communication Quarterly* 100(2): 392–415. doi: [10.1177/10776990221142877](https://doi.org/10.1177/10776990221142877).
- Kalogeropoulos A, Suiter J, Udris L, et al. (2019) News media trust and news consumption: factors related to trust in news in 35 countries. *International Journal of Communication* 13: 3672–3693.
- Kaye BK and Johnson TJ (2021) “Newstrusting” or “newsbusting?” heuristic and systematic information processing and trust in media. *Atlantic Journal of Communication* 29(5): 312–327. doi: [10.1080/15456870.2021.1869004](https://doi.org/10.1080/15456870.2021.1869004).

- Lee FLF (2024) Politically driven intentional news avoidance under democratic backsliding. *The International Journal of Press/Politics*. doi: [10.1177/19401612241253196](https://doi.org/10.1177/19401612241253196).
- Lin H, Wang Y, Lee J, et al. (2023) The effects of disagreement and unfriending on political polarization: a moderated-mediation model of cross-cutting discussion on affective polarization via unfriending contingent upon exposure to incivility. *Journal of Computer-Mediated Communication* 28(4): 1–13. doi: [10.1093/jcmc/zmad022](https://doi.org/10.1093/jcmc/zmad022).
- Lwin MO, Lee SY, Panchapakesan C and Tandoc E (2023) Mainstream news media's role in public health communication during crises: Assessment of coverage and correction of COVID-19 misinformation. *Health Communication* 38(1): 160–168. doi: [10.1080/10410236.2021.1937842](https://doi.org/10.1080/10410236.2021.1937842).
- Milczarek E (2023) Information bubble: how to control democracy in the information society era. *Challenges of the Future* 8(1): 1–14.
- Ong QW and Pereira E (2025) How Singaporean teens assess the credibility of news and news sources. In: Tandoc Jr EC (ed) *Fake News across Asian Countries*. 1 ed. London: Routledge.
- Park S and Lee JY (2023) Incidental news exposure on Facebook and its relation to trust in news. *Social Media + Society* 9(1): 1–12. doi: [10.1177/20563051231158823](https://doi.org/10.1177/20563051231158823).
- Park S, Fisher C, Fletcher R, et al. (2024) Exploring responses to mainstream news among heavy and non-news users: from high-effort pragmatic scepticism to low effort cynical disengagement. *New Media & Society*: 1–21. DOI: [10.1177/14614448241234916](https://doi.org/10.1177/14614448241234916).
- Rauch J (2015) Exploring the alternative–mainstream dialectic: What “alternative media” means to a hybrid audience. *Communication, Culture & Critique* 8(1): 124–143. doi: [10.1111/cccr.12068](https://doi.org/10.1111/cccr.12068).
- Reiter F and Matthes J (2023) Correctives of the mainstream media? A panel study on mainstream media use, alternative digital media use, and the erosion of political interest as well as political knowledge. *Digital Journalism* 11(5): 813–832. doi: [10.1080/21670811.2021.1974916](https://doi.org/10.1080/21670811.2021.1974916).
- Shehata A, Thomas F, Glogger I, et al. (2024) Belief maintenance as a media effect: A conceptualization and empirical approach. *Human Communication Research* 50(1): 1–13. doi: [10.1093/hcr/hqad033](https://doi.org/10.1093/hcr/hqad033).
- Slater MD (2007) Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual behavior and social identity. *Communication Theory* 17(3): 281–303. doi: [10.1111/j.1468-2885.2007.00296.x](https://doi.org/10.1111/j.1468-2885.2007.00296.x).
- Slater MD (2015) Reinforcing spirals model: Conceptualizing the relationship between media content exposure and the development and maintenance of attitudes. *Media Psychology* 18(3): 370–395. doi: [10.1080/15213269.2014.897236](https://doi.org/10.1080/15213269.2014.897236).
- Strömbäck J, Tsfati Y, Boomgaarden H, et al. (2020) News media trust and its impact on media use: toward a framework for future research. *Annals of the International Communication Association* 44(2): 139–156. doi: [10.1080/23808985.2020.1755338](https://doi.org/10.1080/23808985.2020.1755338).
- Tandoc EC Jr (2018) Five ways BuzzFeed is preserving (or transforming) the journalistic field. *Journalism* 19(2): 200–216. doi: [10.1177/1464884917691785](https://doi.org/10.1177/1464884917691785).
- Taneja H and Yaeger K (2019, May). Do people consume the news they trust? In *Proceedings of the 2019 CHI conference on human factors in computing systems*, Glasgow, Scotland, UK, 04–09 May 2019, pp. 1–10. doi: [10.1145/3290605.3300770](https://doi.org/10.1145/3290605.3300770).

- Teo W (2021) Social news use & citizen participation among young activists in Singapore. *JeDEM - EJournal of EDemocracy and Open Government* 13(1): 164–189. doi: [10.29379/jedem.v13i1.627](https://doi.org/10.29379/jedem.v13i1.627).
- Thomas F, Shehata A, Otto LP, et al. (2021) How to capture reciprocal communication dynamics: comparing longitudinal statistical approaches in order to analyze within-and between-person effects. *Journal of Communication* 71(2): 187–219. doi: [10.1093/joc/jqab003](https://doi.org/10.1093/joc/jqab003).
- Thorbjørnsrud K and Figenschou TU (2022) The alarmed citizen: fear, mistrust, and alternative media. *Journalism Practice* 16(5): 1018–1035. doi: [10.1080/17512786.2020.1825113](https://doi.org/10.1080/17512786.2020.1825113).
- Tsfati Y and Cappella JN (2003) Do people watch what they do not trust? Exploring the association between news media skepticism and exposure. *Communication Research* 30(5): 504–529. doi: [10.1177/0093650203253371](https://doi.org/10.1177/0093650203253371).
- Tsfati Y, Vliegenthart R, Strömbäck J, et al. (2025) An asymmetrical reinforcing spiral? Disentangling longitudinal dynamics of media use and mainstream media trust. *Journal of Communication* 75: 16–26. doi: [10.1093/joc/jqae039](https://doi.org/10.1093/joc/jqae039).
- Udry J and Barber SJ (2024) The illusory truth effect: a review of how repetition increases belief in misinformation. *Current Opinion in Psychology* 56: 1–7. doi: [10.1016/j.copsyc.2023.101736](https://doi.org/10.1016/j.copsyc.2023.101736).
- Wu S (2023) As mainstream and alternative media converge?: Critical perspectives from Asia on online media development. *Journalism Practice*: 1–17. DOI: [10.1080/17512786.2021.1976072](https://doi.org/10.1080/17512786.2021.1976072).

### Author biographies

Zhang Hao Goh is a Research Fellow at the Centre for Information Integrity and the Internet (IN-cube) at the Wee Kim Wee School of Communication and Information in Nanyang Technological University, Singapore. His research interests include digital well-being, internet use, and news media consumption.

Seth Seet is a Project Officer at the Wee Kim Wee School of Communication and Information at Nanyang Technological University, Singapore. His research looks at the issue of fake news, misinformation, and fact-checking, as well as social media.

Edson C Tandoc Jr is Professor and Director of the Centre for Information Integrity and the Internet (IN-cube) at the Wee Kim Wee School of Communication and Information in Nanyang Technological University, Singapore. He specializes in digital journalism studies and does research on the issue of fake news.