

# Assessing Information Literacy in Digital Environments: Cross-Cultural Validation of the Smart Identification of Fake News Assessment (SIFNA)

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## Abstract

*The unprecedented growth of digital information ecosystems has substantially increased public exposure to misinformation, disinformation, and other unreliable online materials, presenting considerable obstacles to the advancement of information literacy on a global scale. Consequently, the capacity to critically assess, authenticate, and respond appropriately to information has emerged as an essential competency for contemporary learners. Although research on fake news and media literacy has expanded considerably, there remains a notable lack of psychometrically robust instruments capable of measuring information evaluation competencies consistently across diverse cultural settings. Accordingly, this study sought to develop and evaluate the cross-cultural measurement invariance of the Smart Identification of Fake News Assessment (SIFNA) among undergraduate students in China and Thailand. The research sample comprised 1,838 undergraduates, including 911 participants*

*from China and 927 from Thailand. Data were analysed using a sequential validation procedure encompassing item quality evaluation, exploratory factor analysis (EFA), second-order confirmatory factor analysis (CFA), and measurement invariance assessment. The findings indicated that 69 of the initial 100 items satisfied the predefined psychometric criteria. Subsequent EFA identified a four-dimensional structure consisting of verification of information before acceptance, being persuaded to follow and comply, response under time and social pressure, and evaluation of information consistency and source credibility. The final instrument retained 18 items, accounting for 51.20% of the total variance. Furthermore, the scale demonstrated high internal consistency ( $\alpha = .883$ ) together with satisfactory model fit indices ( $\chi^2 = 98.922$ ,  $df = 80$ ,  $p = .074$ ,  $RMSEA = .023$ ,  $CFI = .995$ ,  $TLI = .990$ , and  $SRMR = .078$ ). Measurement invariance testing further confirmed both configural and metric invariance between the Chinese and Thai undergraduate cohorts. The study advances research in library and information science by introducing a cross-culturally validated instrument for assessing information evaluation behaviour, source credibility judgement, and resilience against misleading information among university students. Moreover, SIFNA provides a valuable evidence-based resource for researchers, librarians, educators, and policymakers to evaluate information literacy competencies, develop targeted educational interventions, and enhance students' ability to operate effectively within increasingly complex digital*

**Keywords:** Fake News Literacy, Information Evaluation, Measurement Invariance, Cross-Cultural Validation.

## Introduction

At present, digital media and social networking platforms have become the primary channels through which young adults in both Thailand and China access information. China has 1.108 billion internet users, or 78.6% of the entire population (CNNIC, 2025). The same trend of daily social media use is observed in Thailand (National Statistical Office, 2026). Undergraduate students constitute one of the most active groups of digital media users (Oladeji and Alegebeleye, 2025), making them particularly susceptible to information disorder, including misinformation, disinformation, and fake news encountered during their everyday online activities.

Among these forms of information disorder, fake news presents a particularly significant concern because it frequently appeals to emotions, exploits uncertainty regarding information sources, and employs persuasive communication strategies, including sensational headlines and clickbait, to encourage users to click, believe, share, or act before verifying the information. Such practices may contribute to a wide range of adverse outcomes, including digital harm, financial fraud, social misunderstanding, interpersonal conflict, and flawed decision-making (Hamed et al., 2023; Pennycook and Rand, 2021). Therefore, the ability to critically evaluate, verify, and dismiss misleading information before accepting or disseminating it has become an indispensable competency for digital citizens in the twenty-first century (Pehlivanoglu et al., 2021).

Despite increasing recognition among researchers and practitioners of the importance of evaluating this competency, psychometrically sound instruments for assessing fake news identification remain limited, particularly those applicable across diverse linguistic and cultural settings (Broda and Strömbäck, 2024; van der Linden et al., 2021). Furthermore, many existing instruments were originally developed within Western societies, raising concerns regarding their applicability in different cultural environments. Failure to establish measurement invariance when comparing latent constructs across cultural groups may produce findings

that reflect linguistic differences, cultural influences, or response tendencies rather than genuine variations in the underlying constructs being measured (Cheung and Rensvold, 2002; Vandenberg and Lance, 2000).

Accordingly, this study sought to develop and validate the psychometric properties of SIFNA among undergraduate students in China and Thailand. The instrument was designed by integrating theoretical perspectives from the social sciences, psychology, and education to establish a conceptually robust framework suited to today's digital information environment. Its psychometric performance was evaluated through a comprehensive multi-stage validation procedure, generating empirical evidence for the structural validity, reliability, and cross-cultural measurement equivalence of SIFNA across Chinese and Thai undergraduate populations.

## Literature Review

### The Concept of Fake News Identification

Fake news, misinformation, and disinformation have become defining challenges of the contemporary digital environment, where enormous volumes of information are created and circulated almost instantaneously through social media platforms. Such content commonly relies on emotionally charged messaging, uncertain or obscure information sources, selective framing of facts, and persuasive communication designed to encourage users to believe, share, or respond before undertaking adequate verification (Ecker et al., 2022; Zhou and Zafarani, 2020). Consequently, the ability to identify deceptive information encompasses considerably more than distinguishing true information from false claims. It requires a combination of cognitive, behavioural, and evaluative competencies, including critical reasoning, resistance to persuasive influence, self-regulation under pressure, and systematic assessment of information reliability. In this study, fake news identification is conceptualised as an individual's capacity to critically examine, investigate, verify, resist undue influence, and evaluate information objectively before accepting, disseminating, or acting upon it. Achieving this competency requires the integration of multiple cognitive and behavioural processes. Based on the relevant literature, at least four complementary perspectives underpin effective fake news identification.

The first perspective emphasises analytical reasoning and cognitive flexibility. Individuals who successfully identify fake news typically engage in deliberate information processing by critically examining available evidence and establishing logical connections before reaching conclusions. Research has consistently shown that susceptibility to false information is associated with weaker analytical reasoning abilities (Pennycook and Rand, 2021). This perspective also involves multidimensional Classification (Piaget, 1977), whereby individuals simultaneously evaluate information from several viewpoints rather than relying on a single interpretation. Such cognitive flexibility enables them to overcome rigid thinking patterns, recognise complex relationships, and evaluate information more comprehensively. Consequently, stronger analytical reasoning enhances resistance to impulsive persuasion by encouraging thoughtful interpretation before information is accepted or acted upon (Orhan, 2023). In this respect, analytical thinking serves as an essential protective mechanism against familiarity effects, confirmation bias, and other forms of cognitive bias that may distort judgement.

The second perspective concerns resistance to persuasive influence and compliance. Individuals who effectively recognise fake news are generally less inclined to accept information unquestioningly and are more likely to scrutinise both its source and its credibility. According to Kelman (1961), the characteristics of an information source substantially influence whether individuals accept communicated messages and develop corresponding attitudes. Source legitimacy facilitates information acceptance through three psychological mechanisms. The first is internalisation, whereby information is accepted because it is perceived to be consistent with an individual's existing beliefs and values, leading to the perception that it is inherently credible. The second is identification, in which acceptance is influenced by the individual's relationship with the information source. Information originating from trusted individuals, such as parents, close friends, or significant others, is therefore more readily accepted. The third mechanism is compliance, whereby individuals accept information to obtain social approval or avoid negative reactions, particularly when influential or authoritative figures are involved.

The third perspective relates to individuals' responses when confronted with time constraints and social pressure. Drawing upon the Theory of

Fake News Analysis (Babii, 2020), social media users frequently demonstrate insufficient critical evaluation, making them vulnerable to sensational headlines, clickbait, and persuasive messages intended to stimulate immediate engagement through clicks, shares, comments, or impulsive behaviours, including unnecessary purchases or financial transactions. In contrast, individuals with strong fake news identification abilities are less likely to respond automatically to urgency-based appeals such as "share immediately", "be the first to know", or "don't miss out", which are specifically designed to reduce deliberation and encourage rapid reactions. Under conditions of limited time, emotional stress, or persuasive marketing and exaggerated advertising, individuals often depend on intuitive rather than reflective judgement, increasing the likelihood of accepting or distributing inaccurate information without proper verification (Pennycook and Rand, 2021).

The fourth perspective focuses on evaluating information consistency and source credibility. Careful examination of both the coherence of information and the trustworthiness of its source represents a fundamental strategy for resisting fake news. Principles commonly employed in research methodology (Leedy and Ormrod, 2010) may also be applied when assessing information encountered through digital media (Mayo and La France, 2014). Individuals should critically examine whether information remains logically consistent throughout, from its initial claims to its conclusions or recommendations, while evaluating the alignment of textual content, statistical evidence, figures, images, temporal references, locations, contextual details, reported events, and supporting information. Claims that appear exceptionally favourable or implausible should receive additional scrutiny. Furthermore, methodological principles, including the law of large numbers, may provide useful guidance for validating information through comparison with broader evidence. Based on these four theoretical perspectives, the initial pool of items for SIFNA was developed.

### **Measurement Invariance**

Within cross-cultural psychology and assessment research, establishing measurement invariance is regarded as a fundamental prerequisite before conducting comparisons between groups.

Demonstrating invariance reduces the possibility that observed group differences arise from variations in measurement instruments, language, or response styles rather than genuine differences in the constructs being examined (Putnick and Bornstein, 2016; Vandenberg and Lance, 2000). Accordingly, an instrument that demonstrates strong theoretical foundations and satisfactory psychometric properties within a single population should not be used for cross-group comparisons unless empirical evidence confirms that it measures the same constructs in an equivalent manner across all groups.

The evaluation of measurement invariance is typically undertaken through three sequential stages: configural invariance, metric invariance, and scalar invariance. Configural invariance examines whether the proposed measurement model retains an identical underlying factor structure across the groups being compared. Once this requirement is satisfied, metric invariance is assessed by testing the equivalence of factor loadings, thereby establishing whether the relationships between observed indicators and their corresponding latent constructs are comparable across groups. This stage is essential before meaningful comparisons of structural relationships among latent variables can be performed. The final stage, scalar invariance, evaluates the equality of item intercepts across groups. Establishing scalar invariance provides the necessary foundation for valid comparisons of latent construct means because it indicates that observed score differences reflect genuine differences in the underlying constructs rather than systematic measurement bias (Cheung and Rensvold, 2002; Meredith, 1993).

## Methods

### Participants and Sampling

The study sample consisted of 1,838 undergraduate students, including 911 participants from China and 927 from Thailand. All participants were enrolled in the second or third year of study within the Faculties of Education or Social Sciences/Humanities. The mean age of the respondents was 20.64 years. Of the total sample, 402 participants (21.87%) were male, whereas 1,436 (78.13%) were female. For the item quality assessment, the required sample size was determined using G\*Power (Faul et al., 2007). Based on an assumed effect size of 0.50, a

significance level of .05, and statistical power of .80, the analysis indicated a minimum sample requirement of 128 participants from each country. During the subsequent EFA, CFA, and MI procedures, sample adequacy was determined according to the “10-times rule” based on the sample-to-item ratio, as recommended by Hair et al. (2017) and Kock and Hadaya (2018). This criterion ensured that each analytical stage was supported by an appropriate sample size. Accordingly, 270 participants were included in the item quality analysis, 622 in the EFA, 460 in the CFA, and 486 in the MI assessment.

### Data Collecting Process and Research Ethic

Ethical clearance for research involving human participants was obtained from the Institutional Review Board (IRB) of Stamford International University (Approval Code: STIU-HRE119/2024). Following approval, formal permission to conduct the study was secured from the participating faculties and universities in both Thailand and China, after which classroom-based data collection schedules and procedures were coordinated. Data were collected electronically using Google Forms for participants in Thailand and Wenjuanxing (问卷星) for participants in China. Completion of the questionnaire required approximately 45–60 minutes. Before participation, respondents were informed of the study objectives, the questionnaire administration procedures, and their rights as research participants. Students who voluntarily completed and submitted the questionnaire were provided with a small token of appreciation for their participation.

### Data Analysis

Data analysis was conducted through four sequential phases.

The first phase focused on item quality assessment using two psychometric criteria. The first criterion was item discrimination, evaluated through the *t*-ratio, with acceptable items required to achieve  $t \geq 2.00$  ( $p \leq .05$ ). The second criterion was the item–total correlation coefficient, for which a minimum value of  $r \geq .30$  was adopted (Nunnally and Bernstein, 1994). Only items satisfying both requirements were retained for subsequent analyses. The second phase involved EFA. Prior to factor extraction, sampling adequacy and data suitability were examined using the Kaiser–Meyer–Olkin (KMO) measure, with an

acceptable threshold of  $KMO \geq .60$ , together with Bartlett's test of sphericity, which was required to reach statistical significance. Factor extraction was performed using the Principal Axis Factoring method, followed by Oblimin rotation. The number of retained factors was determined by combining the eigenvalue criterion ( $> 1.00$ ) with the results of Parallel Analysis. A factor was retained only when its eigenvalue obtained from the observed dataset exceeded the corresponding eigenvalue generated from the simulated dataset.

The third phase consisted of CFA to evaluate the adequacy of the proposed measurement model. Model fit was assessed using multiple goodness-of-fit indices, including CFI and TLI values of at least .92, SRMR below .08, and RMSEA below .07. Although the chi-square statistic was also examined, its significance was interpreted cautiously because this index is highly sensitive to large sample sizes. The final analytical stage involved MI testing to examine whether SIFNA functioned equivalently across the Chinese and Thai samples. The assessment proceeded sequentially from configural invariance to metric invariance and finally scalar invariance. Model equivalence at each stage was evaluated using the recommended criteria of  $\Delta CFI \leq .010$  and  $\Delta RMSEA \leq .015$  (Chen, 2007; Cheung and Rensvold, 2002).

| Factors   | Real data component eigenvalues | Simulated data mean eigenvalues |
|-----------|---------------------------------|---------------------------------|
| Factor 1* | 6.381                           | 1.317                           |
| Factor 2* | 2.245                           | 1.250                           |
| Factor 3* | 1.364                           | 1.208                           |
| Factor 4* | 1.191                           | 1.172                           |
| Factor 5  | 0.694                           | 1.125                           |

Note. \* = Factor should be retained. Results from PC-based parallel analysis.

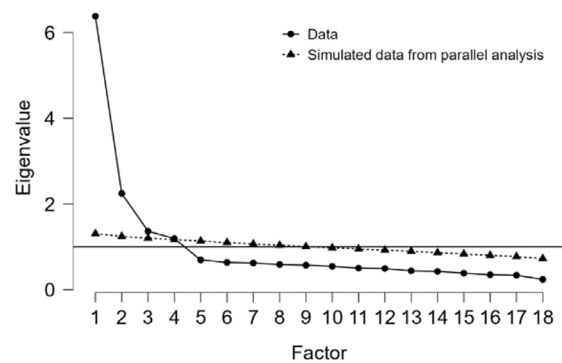
## Results

### Item Quality Analysis

The item quality assessment initially examined all 100 items included in the original instrument. Following evaluation against the predefined psychometric criteria, only 69 items satisfied both requirements and were therefore retained for subsequent analyses.

### Exploratory Factor Analysis (EFA)

The EFA was conducted using the 69 items retained from the preceding item quality assessment phase. Results from the Parallel Analysis indicated that four components possessed eigenvalues derived from the observed data that exceeded the corresponding mean eigenvalues generated from simulated datasets (Figure 1), a finding that was further supported by the scree plot. Accordingly, a four-factor structure of SIFNA was identified, consisting of 18 items that collectively accounted for 51.20% of the total variance. The adequacy of the dataset for factor analysis was confirmed by a KMO value of 0.912, indicating excellent sampling adequacy. In addition, Bartlett's test of sphericity yielded statistically significant results ( $\chi^2 = 4580.177$ ,  $df = 153$ ,  $p < 0.001$ ), demonstrating that the correlation matrix was appropriate for factor extraction.

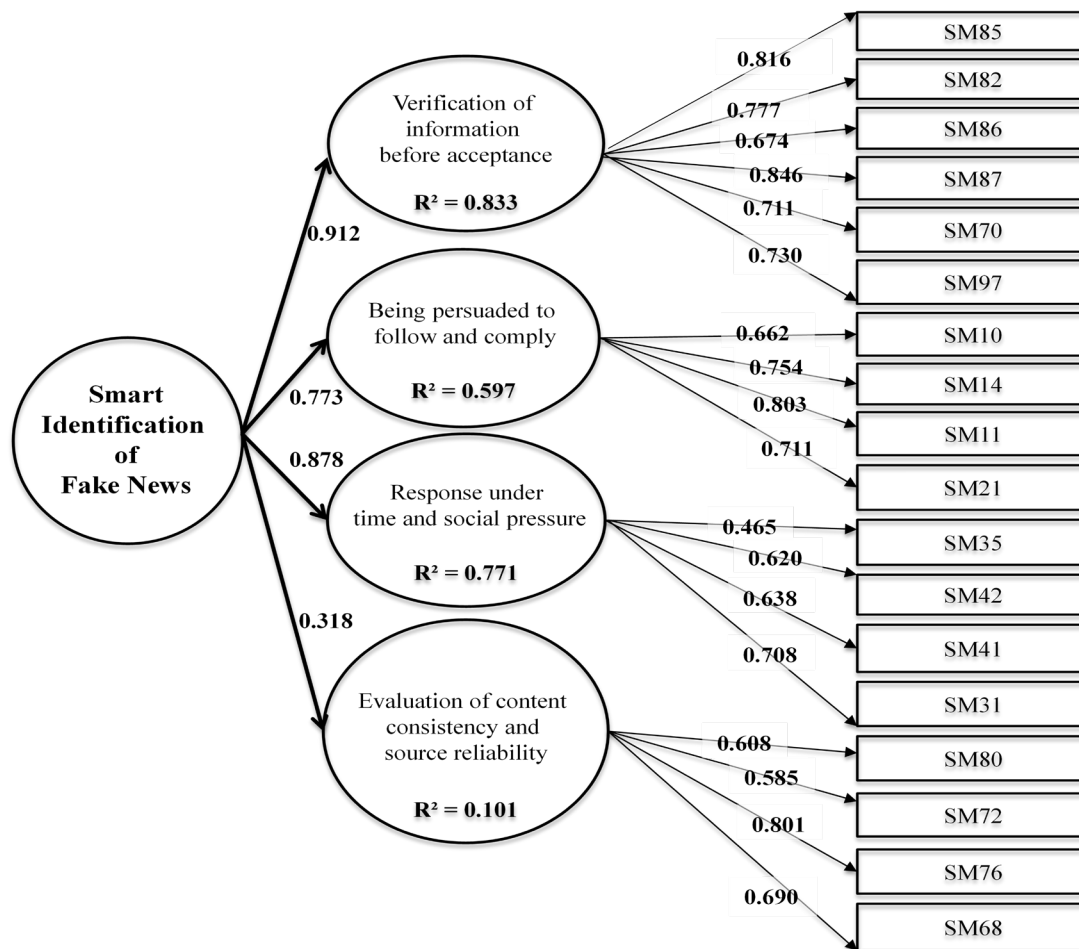


**Figure 1:** Results of the Exploratory Factor Analysis (EFA) of the Smart Identification of Fake News Assessment (SIFNA) and the Scree Plot from the Parallel Analysis.

### Confirmatory Factor Analysis (CFA)

The four-factor structure identified through EFA was subsequently validated using second-order CFA. The proposed measurement model demonstrated satisfactory goodness-of-fit, as indicated by  $\chi^2 = 98.922$ ,  $df = 80$ ,  $p = 0.074$ ,  $RMSEA = 0.023$ ,  $CFI =$

0.995,  $TLI = 0.990$ , and  $SRMR = 0.078$ . Furthermore, the newly developed SIFNA exhibited strong internal consistency, with an overall reliability coefficient of 0.883. The conceptual labels assigned to each factor, together with the corresponding statistical results for every item and latent construct, are presented in Figure 2.



**Figure 2:** Results of the Second-Order Confirmatory Factor Analysis (CFA) of the Smart Identification of Fake News Assessment (SIFNA).

### Measurement Invariance

MI was conducted to determine whether the newly developed SIFNA operated equivalently across undergraduate students from Thailand and China. Two complementary analytical approaches were employed: the permutation test and multi-group CFA. The permutation test provided evidence supporting configural invariance across both national samples (Henseler et al., 2016). All four first-order constructs demonstrated compositional invariance ( $p > 0.05$ ). However, the second-order construct, SIFNA18, did not satisfy the required criterion ( $r = 0.967$ , 5% quantile = 0.998,  $p = 0.000$ ), indicating that compositional invariance was not achieved at the higher-order level (Table 1).

The multi-group CFA further evaluated cross-group equivalence. The results confirmed configural invariance ( $\chi^2 = 501.36$ ,  $df = 258$ ,  $CFI = 0.938$ ,  $RMSEA$

$= 0.062$ ), indicating that the underlying factor structure was consistent across the Thai and Chinese samples. Subsequent testing also supported metric invariance, with  $\Delta\chi^2 = 12.28$ ,  $df = 14$ ,  $p = 0.0584$ ,  $\Delta CFI = 0.000$ , and  $\Delta RMSEA = 0.002$ , demonstrating that the factor loadings were statistically equivalent between the two groups and establishing weak invariance. In contrast, scalar invariance was not supported because the equality constraints imposed on the item intercepts resulted in a significant deterioration in model fit ( $\Delta\chi^2 = 90.829$ ,  $df = 14$ ,  $p < 0.001$ ,  $\Delta CFI = 0.020$ ) (Table 2). Overall, the findings indicate that SIFNA achieved configural and metric (weak) invariance across Chinese and Thai undergraduate students, whereas scalar invariance was not established. Consequently, the instrument demonstrates comparable factor structure and factor loadings across the two cultural groups, although comparisons of latent mean scores should be interpreted with caution.

**Table 1:** Results of Compositional Invariance Examine the Differences Between Chinese and Thai Undergraduate Students.

| Structure | Correlation c | Quantile (5%) | P-Value | Results       |
|-----------|---------------|---------------|---------|---------------|
| Factor 1  | 1.000         | 1.000         | 0.188   | Supported     |
| Factor 2  | 1.000         | 0.999         | 0.408   | Supported     |
| Factor 3  | 1.000         | 0.999         | 0.654   | Supported     |
| Factor 4  | 0.951         | 0.559         | 0.840   | Supported     |
| SIFN18    | 0.967         | 0.998         | 0.000   | Not Supported |

**Table 2:** Results of the Measurement Invariance of the Smart Identification of Fake News Assessment (SIFNA).

| Model             | ( $\chi^2$ ) | df  | CFI   | RMSEA | $\Delta\chi^2$ | $\Delta df$ | p      | $\Delta CFI (\leq 0.010)$ | $\Delta RMSEA (\leq 0.015)$ | Conclusion    |
|-------------------|--------------|-----|-------|-------|----------------|-------------|--------|---------------------------|-----------------------------|---------------|
| <b>Configural</b> | 501.36       | 258 | 0.938 | 0.062 | -              | -           | -      | -                         | -                           | Supported     |
| <b>Metric</b>     | 513.64       | 272 | 0.938 | 0.06  | 12.28          | 14          | 0.058  | 0                         | 0.002                       | Supported     |
| <b>Scalar</b>     | 604.47       | 286 | 0.918 | 0.068 | 90.829         | 14          | < .001 | 0.02                      | 0.008                       | Not Supported |

## Discussion

SIFNA differs from many existing fake news assessment instruments because it extends beyond the simple classification of information as either true or false. The instrument comprises 18 items representing four complementary dimensions: verification before acceptance, resistance to persuasive compliance, responses to time and social pressure, and evaluation of information consistency and source credibility. Consequently, SIFNA measures behavioural and cognitive tendencies that may increase individuals' susceptibility to misinformation rather than focusing solely on their ability to recognise factual accuracy. Moreover, these competencies have been associated with several desirable psychological characteristics, including creative problem-solving ability (Chotratanakamol and Bhanthumnavin, 2026) and logical thinking (Imjai et al., 2024), as well as positive behavioural outcomes such as volunteer behaviour (Sakdapat et al., 2025; Yeamyuan and Uansa-ard, 2022) and innovative behaviour (Wu et al., 2025).

Compared with the Misinformation Susceptibility Test (MIST), SIFNA adopts a fundamentally different approach to assessment. MIST is a performance-based instrument in which respondents distinguish between authentic and fabricated news headlines, thereby evaluating their ability to detect misinformation and identifying judgement biases such as excessive scepticism or unwarranted trust (Maertens et al., 2024). In contrast, SIFNA evaluates individuals' tendency when confronted with information characterized by urgency, popularity cues, persuasive marketing, or messages originating from trusted family members and acquaintances. Rather than assessing factual knowledge alone, it captures the likelihood that individuals will verify, believe, share, or act upon information under realistic digital conditions. This emphasis provides strong ecological validity within Asian

digital environments, where misinformation is frequently disseminated through instant messaging platforms, livestream commerce, and emotionally persuasive online content. Accordingly, SIFNA is best used alongside MIST or the Civic Online Reasoning task developed by Molerov et al. (2020), which requires participants to search for information sources, compare evidence, and evaluate authentic websites. Employing these complementary instruments enables researchers to determine whether individuals who report engaging in careful information verification also demonstrate these behaviours when confronted with misleading or false information.

The MI results demonstrating configural and metric invariance across Thai and Chinese undergraduate students support the use of SIFNA for examining structural relationships across the two groups. However, because scalar invariance was not established, comparisons involving latent construct means should be interpreted with appropriate caution. This outcome is consistent with numerous previous cross-national investigations involving multiple languages and cultural settings, where only partial measurement invariance has typically been achieved, as reported by Kuhn and Holling (2009) and Wernsing (2014). Achieving complete scalar invariance in cross-cultural research remains inherently difficult because linguistic differences, cultural influences, and variations in response styles frequently affect item intercepts.

Despite the absence of full scalar invariance, instruments may still retain considerable theoretical and practical value. From a psychometric perspective, SIFNA provides stronger evidence of cross-cultural applicability than several existing news literacy measures by demonstrating both configural and metric invariance across Thai and Chinese undergraduate populations. These findings indicate that the four-factor structure and the interpretation of the measurement items remain comparable across both cultural groups, supporting

meaningful comparisons of relationships among variables and structural path coefficients (Guo et al., 2021). Consequently, researchers employing SIFNA in cross-national studies are encouraged to report findings at the component level rather than relying solely on comparisons of overall latent means. Future research should further evaluate the instrument by examining its psychometric performance across additional countries, languages, and participant populations.

## Conclusion

This study advances library and information science by introducing SIFNA as a multidimensional measure of information literacy that extends beyond distinguishing true from false information. By assessing verification before acceptance, resistance to persuasion and compliance, response under time and social pressure, and evaluation of information consistency and source credibility, SIFNA captures key aspects required for evaluating digital information. The findings support configural and metric invariance across Chinese and Thai undergraduate students, enabling cross-cultural analyses of structural relationships, although latent mean comparisons should be interpreted cautiously because scalar invariance was not established. SIFNA also provides a practical tool for researchers, librarians, and educators to identify misinformation vulnerabilities, develop targeted information literacy interventions, and evaluate educational programmes. Future research should validate SIFNA across broader populations and digital contexts while continuing to examine its psychometric performance in response to emerging challenges, including generative AI, deepfakes, and algorithm-driven misinformation.

## Limitations

Despite demonstrating strong psychometric properties and cross-cultural applicability, SIFNA has several limitations. First, the instrument relies on self-reported responses, which may be affected by social desirability and may not accurately reflect individuals' actual behaviour when encountering misinformation. Second, although MI confirmed configural and metric invariance, scalar invariance was not established. Therefore, SIFNA is suitable for analysing structural relationships across countries, but comparisons of latent mean scores between Thai and Chinese students should be interpreted cautiously. Finally, the cross-sectional design prevented the assessment of temporal stability and changes in fake news identification over time. Future studies should

validate SIFNA across more diverse populations, cultural settings, and emerging digital environments shaped by generative AI, deepfakes, and algorithm-driven content to further strengthen its generalisability and long-term applicability.

## Future Research Directions

Future research should further validate SIFNA across diverse populations, educational levels, professional groups, and cultural contexts beyond Thai and Chinese undergraduate students. Establishing partial or full scalar invariance across additional countries would enhance its suitability for international comparative research. Future studies should also examine the predictive validity of SIFNA by exploring its associations with information verification behaviour, digital literacy, critical thinking, AI literacy, and susceptibility to misinformation. Combining self-report data with behavioural assessments, experimental methods, or digital trace analysis would provide stronger evidence of its practical validity. Furthermore, as digital information environments continue to evolve through generative AI, deepfakes, and algorithm-driven content, periodic re-evaluation and refinement of SIFNA will be essential to maintain its relevance, validity, and applicability across emerging forms of misinformation.

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## Appendix

Smart Identification of Fake News Assessment-SIFNA (in Thai (item direction) / Chinese / English) with 6-point rating scale from “absolutely not true” to “absolutely true”. Reverse score on negative items (-). Total of 18 items with reliability of 0.883.

### Factor 1: Verification of information before acceptance (6 items)

1. sm85 - เวลาเห็นโพสต์ที่ขึ้นว่า “ด่วน! รีบแชร์ก่อนโดนลบ” ฉันคิดจะรีบแชร์ก่อนไปก่อน (-) / 网上看到标题是“紧急! 快分享, 不然就删了的帖子!” 我会分享并保存。/ When a post says, “Urgent! Share before it’s deleted,” I think I should share it right away.
2. sm82 - เวลาเจอโพสต์เช่น “ต้องแชร์ภายใน 5 นาที ไม่งั้นจะโชคร้าย” ฉันคิดจะแชร์ต่อเพื่อไปก่อน (-) / 遇到“5分钟内不转发就会倒霉”之类的帖子时, 我会转发, 以防万一。/ When I come across a post like “Share within 5 minutes or you’ll be unlucky,” I think about sharing it just in case.
3. sm86 - ฉันมักจะกดอ่านโพสต์หรือฟังกลิปที่มีขึ้นต้นว่า “ช็อก! ทุกคนต้องดูต้องฟัง” “รีบดูก่อนโดนลบ” หรือ “ดูคลิปนี้แล้วชีวิตเปลี่ยน” (-) / 我倾向于阅读以“震惊! 每个人都必须看一看、听一听”、“在它被删除之前看一看”或“看一看这个视频, 你的生活就会改变”开头的帖子或视频。/ I often click on posts or clips with attention-grabbing phrases like “Shocking!” or “Watch before it’s deleted.”
4. sm87 - หากข่าวไม่ได้ระบุแหล่งที่มา (Source) แต่มันเนื้อหาชักจูงให้คนยอมรับ ฉันก็เชื่อได้ง่ายๆ โดยไม่พยายามหาต้นฉบับจากที่อื่น (-) / 如果新闻没有注明来源, 但内容具有说服力, 我会选择相信, 不会再研究其原始来源。/ If the news does not specify the source but contains persuasive content, I can easily believe it without trying to find the original source elsewhere.
5. sm70 - ถ้าเห็นประกาศว่า “แจกทุนเรียนปริญญาโทฟรีไม่มีเงื่อนไข” ฉันจะแชร์ทันที โดยไม่ต้องตรวจสอบ เพราะคิดว่ามันเป็นโอกาสดี (-) / 如果看到“免费硕士学位奖学金, 无附加条件”的公告, 我会未加核实立即分享, 因为我觉得这是一个很好的机会。/ I would immediately share a “free, unconditional master’s scholarship” announcement without checking it, assuming it is a great opportunity.
6. sm97 - ฉันไม่ชอบตั้งคำถามเยอะ เพราะบางทีอะไรที่แชร์กันเยอะๆ ก็น่าจะเป็นจริงอยู่แล้ว (-) / 我不太对一些信息提出过多疑问, 因为有时候觉得“转发信息的人很多应该就是真的了”。/ I avoid asking too many questions because widely shared information is probably true.

### Factor 2: Being persuaded to follow and comply (4 items)

1. sm10 - บ่อยครั้งที่ฉันมักคล้อยตามการ live สด เพราะพวกเค้าพาพ่อค้าพ่อขายได้ตรงใจฉันมาก จนต้องกดซื้อสินค้านั้นโดยไม่ต้องคิดอะไรมาก (-) / 我经常关注直播, 因为卖家的说辞很有说服力, 以至于我有时会不假思索就购买了产品。/ I am often swayed by livestream sellers and buy products without much thought.
2. sm14 - เมื่อมีร้านที่โฆษณาขายผลิตภัณฑ์ในช่วงเวลาพิเศษ เช่น «แฟลชเซลจำกัดเวลา» หรือ “limited edition” ฉันมักคิดจะสั่งซื้อทันที ถึงแม้จะไม่ใช่วิธีที่ถูกต้อง (-) / 当商店在特别时段宣传某种产品, 例如“限时闪购”或“限量版”, 我倾向于立即订购, 即使不是熟悉的店铺。/ When a store advertises a “limited-time flash sale” or “limited edition,” I often order immediately, even from an unfamiliar store.
3. sm11 - ถ้าเจอคนส่วนใหญ่บอกว่าผลิตภัณฑ์นั้นดี ฉันก็คิดว่าสิ่งนั้นน่าจะดีจริง โดยไม่ไปตรวจสอบ (-) / 如果大多数人说那个产品好, 我就会认为它真的好, 而不会去核实。/ If most people say a product is good, I believe it without checking.
4. sm21 - เมื่อเห็นบางสิ่งได้รับความนิยมในหมู่วัยรุ่น เช่น วิธีการลดความอ้วนแบบรวดเร็ว ฉันมักสนใจโดยไม่คิดถึงข้อสังเกตว่าข้อมูลที่ทำได้จริงหรือไม่ (-) / 当我看到一些在青少年中流行的东西, 例如快速减肥法, 我通常会很感兴趣, 但不会考虑这些信息是否属实。/ When something popular, like a quick weight-loss method, catches my interest, I may not check whether it is actually feasible.

### Factor 3: Response under time and social pressure (4 items)

1. sm35 - ฉันมักไม่ค่อยได้ตรวจสอบแหล่งที่มาของข้อมูล ถ้ามีการอ้างว่ามาจากแหล่งข่าวของรัฐ (-) / 如果信息来源是官方媒体, 我通常不再去核实信息来源。/ I usually do not check sources that claim to be from the government.
2. sm42 - ฉันมักจะกด like หรือกด share ข่าวสารที่ถูกต้องโดยไม่จำเป็นต้องอ่านข้อความนั้นให้ครบทั้งหมดก่อน (-) / 我倾向于点赞或分享我喜欢的新闻, 但不一定阅读全文。/ I often click “like” or “share” news I like without reading it all first.
3. sm41 - เมื่อเห็นข้อมูลทางด้นลบเกี่ยวกับประเทศใดประเทศหนึ่ง ฉันก็จะเชื่อและคงจะไม่ไปเที่ยวประเทศนั้น (-) / 当看到关于某个国家的负面信息时, 我会相信并且可能不会去该国旅行。/ When I see negative information about a country, I believe it and may avoid visiting.
4. sm31 - ถึงแม้ฉันจะได้รับข้อความข่าวสารแปลกๆ ทาง Line ที่ส่งมาจากพ่อแม่หรือญาติสนิท ฉันคงจะเชื่อทันที (-) / 我通常不会

起疑父母或近亲在微信或QQ上发来的信息。/ I immediately believe even strange LINE messages from my parents or close relatives.

Factor 4: Evaluation of information consistency and source credibility (4 items)

1. sm80 - หากภาพหรือคลิปวิดีโอในข่าวถูกปรับแต่ง (เช่น ตัดต่อ/ใส่ตัวหนังสือเกินจริง) ฉันคงจะสังเกตเห็นได้ (+) / 如果新闻中的图片或视频片段被篡改 (例如, 剪辑/添加夸张的文字), 我通常能够分辨看得出来。/ I would notice if news images or videos were edited or exaggerated.
2. sm72 - ฉันเคยเห็นคลิปภาพน้ำท่วม แต่ฉันสังเกตเห็นความไม่สอดคล้องระหว่างสถานที่ กับคำบรรยาย (+) / 我看过相关事件的视频, 如某地发生洪水, 但我注意到有时事件发生的位置和描述不一致。/ In some flood videos that I have seen, I notice when the location does not match the narration.
3. sm76 - ฉันมักสังเกตเห็นว่า มีหลาย Clip ถึงแม้เสียงพูดจะราบรื่นติดต่อกัน แต่ภาพกลับมีการสะดุดไม่ต่อเนื่อง (+) / 我经常注意到, 在一些网络视频中, 尽管声音流畅连续, 但画面却时有卡顿、口形和吐字对不上的情况。/ I often notice many clips with smooth speech but choppy, inconsistent video.
4. sm68 - เวลาซื้อของฉันมักจะอ่านฉลากด้านหลัง เพื่อตรวจสอบว่าตรงกับที่อ้างไว้บนฉาหน้าผลิตภัณฑ์หรือไม่ (+) / 买东西的时候, 我经常查看背面的标签, 看看是否与正面标示的一致。/ When buying something, I usually check whether the back label matches the claims on the front.



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