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Everyday trust repair: how immigrants in the Nordic region navigate and correct health misinformation

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Abstract

Introduction. This study uses the stimulus–organism–response framework to examine how immigrants in the Nordic region encounter and respond to health misinformation in multilingual and transnational information environments.

Method. The study draws on seventy-two semi-structured interviews conducted in Finland, Norway, and Sweden between 2021 and 2023. Eighteen interviews were conducted during the COVID-19 pandemic and fifty-four after the acute phase.

Analysis. Rule-guided qualitative content analysis transformed interview material into six case-level ordinal indicators. These indicators were then examined quantitatively through exploratory partial least squares structural equation modelling.

Results. Checking with trusted sources was positively associated with perceived media reliability and correction engagement. Perceived misinformation harm was positively associated with information-sharing behaviour, whereas greater exposure was associated with lower perceived media reliability and less checking. Exploratory subgroup analyses indicated possible variation by country, education, age, length of residence, and interview period, but these patterns require caution because the groups were small and unequal.

Conclusion. The framework clarifies how exposure, internal appraisal, and behavioural response are related in this sample. The findings suggest the value of multilingual communication through trusted institutional and interpersonal channels; however, the analysis remains exploratory because the indicators were interpretively derived from interviews.

Introduction

Misinformation has become a persistent feature of contemporary information environments, shaping how individuals evaluate expertise, authority, and credibility in digital media contexts. People often encounter misleading or conflicting information within ongoing streams of messages, discussions, and media content rather than as clearly false claims (Ecker et al., 2022; Sundin et al., 2017). For immigrants, these challenges are intensified by the need to navigate across languages, unfamiliar media systems, and cultural expectations. Everyday decisions about whom or what to trust are often situated within disrupted or reconfigured information environments in which familiar sources, communicative norms, and institutional reference points may no longer align with the realities of settlement and adaptation (Lloyd, 2017; Ruokolainen & Widén, 2020). The Nordic setting is relevant because immigrants may navigate both institutional public-health communication and multilingual, transnational media environments, while language barriers and varying levels of trust in authorities can shape interpretation (Czapka et al., 2023). These conditions make the region a useful context for examining how people reconcile sources of authority across linguistic and cultural boundaries and negotiate misinformation in everyday life.

Health information circulates through a range of channels, including official institutions, transnational media, and informal social networks, where distinctions between verified guidance and uncertain claims are not always clear. Within these environments, individuals actively interpret, compare, and translate information across contexts, evaluating not only accuracy but also familiarity and relevance. These processes are central to understanding how trust and credibility are formed in diverse societies (Kaihlainen et al., 2022; Sundin et al., 2017). Health misinformation frequently takes the form of emotionally engaging and socially salient content that spreads rapidly through digital platforms and interpersonal networks. Research on online diffusion shows that false or misleading content can travel quickly and widely, while emotionally charged language further increases its likelihood of circulation and amplification (Brady et al., 2017; Vosoughi et al., 2018). However, exposure alone does not determine belief. Individuals often respond to uncertain or alarming claims by engaging in verification practices, such as consulting institutional sources or cross-checking information across channels. Such practices are associated with greater trust in reliable information and lower susceptibility to misinformation (Agle et al., 2021; Roozenbeek et al., 2020).

Through repeated verification, individuals may recalibrate which sources they consider credible. Trust in official institutions can coexist with scepticism toward digital or transnational media, resulting in differentiated evaluations of informational authority. At the same time, encounters with misleading claims can evoke concern, frustration, or anxiety, which shape how information is interpreted and whether corrective action is taken (Ecker et al., 2022; Siani & Green, 2023). Studies of correction behaviour further suggest that responses to misinformation are often embedded in social relationships, with corrective practices occurring more frequently within trusted networks than in public online spaces (Bode & Vraga, 2021; Vijaykumar et al., 2022). In this study, correction engagement refers to challenging a misleading claim, providing verified information, or helping others recognise inaccurate information within social networks.

As awareness of misinformation increases, it may translate into everyday corrective practices. Individuals may challenge misleading claims, share verified information, or provide guidance to others within their social networks, reflecting forms of social responsibility and care (Feng, 2024). In this sense, encounters with uncertain information can prompt processes of reflection and verification that contribute to the stabilisation of trust in selected sources. In this study, these practices are understood as ways individuals build and maintain trust in information within their communities.

From an information research perspective, the issue is not only whether a claim is true or false, but how people encounter, assess, use, share, avoid, and correct information in situated settings. Migrants may move between official health systems, national news, transnational media, messaging applications, family networks, and community contacts. These channels offer different cues of authority and accessibility, and a source may be trusted for one purpose but not another. The study therefore treats trust as differentiated and practice-based, expressed through checking, comparison, selective sharing, and correction rather than as one general attitude. This framing situates misinformation response within everyday information behaviour and its institutional and social context (Lloyd, 2017; Ruokolainen & Widén, 2020; Sundin et al., 2017).

This practice-oriented view also clarifies why trust is not represented as a single outcome. Checking, reliability appraisal, sharing, and correction are related but analytically distinct ways of engaging with information. Their meaning depends on the situation: checking can involve an institutional website, a health professional, or a knowledgeable relative; sharing can circulate either verified or uncertain material; and correction requires an explicit attempt to challenge or replace a claim. Modelling these indicators separately permits a more precise account of how credibility judgements and perceived harm are associated with different reported actions.

Importantly, misinformation is not always perceived in a uniform way; what is considered false or misleading by some individuals may be viewed as credible or legitimate by others, depending on their prior beliefs, experiences, and trust in information sources (Pennycook & Rand, 2019). Judgements of truth and falsity are often shaped by language, familiarity, and social context. Migrant audiences may encounter conflicting health messages across national and transnational sources and evaluate credibility through lived experience, relational trust, and prior knowledge rather than formal accuracy alone (Lloyd, 2017; Ruokolainen & Widén, 2020). Exposure to uncertain information therefore constitutes an ongoing cognitive and social process involving interpretation, emotion, and memory, rather than a simple encounter with true or false claims (Ecker et al., 2022). Building on this perspective, the present study treats exposure to misinformation as the starting point of a broader process that unfolds within everyday information practices. Individuals encountering contradictory information may compare sources, assess credibility, evaluate potential harm, and sometimes attempt to correct misleading claims. These processes link exposure, evaluation, and behavioural response.

Drawing on seventy-two semi-structured interviews conducted with immigrants living in Finland, Norway, and Sweden between 2021 and 2023, this study examines statistical relationships among exposure to health misinformation, internal appraisals, and behavioural responses in multilingual and transnational information environments. The stimulus-organism-response framework provides the organising structure. Although the source material is qualitative, the reported analysis is quantitative: Rule-guided coding transformed each transcript into six case-level ordinal indicators, which were examined through exploratory partial least squares structural equation modelling and multigroup analysis. The interviews therefore provided the basis for indicator construction rather than a separate set of qualitative findings. Three research questions guide the analysis:

1. How is exposure to misinformation associated with checking with trusted sources, perceived media reliability, and perceived misinformation harm, and how are these appraisal-related indicators related to one another?
2. How are exposure and the appraisal-related indicators associated with correction engagement and information-sharing behaviour?
3. What recurring or context-specific patterns are visible in the modelled relationships across education, country of residence, length of residence, age, and interview period?

By addressing these questions, the study examines how verification, credibility judgements, perceived harm, and behavioural responses are statistically related in this sample. The analysis is exploratory and does not infer causal effects from the cross-sectional indicators.

Background and literature review

Misinformation as an everyday condition

Recent research increasingly characterises misinformation not as an isolated disruption but as a routine feature of contemporary information environments, embedded in everyday communication where informational, emotional, and social dynamics intersect (Malik et al., 2023). Rather than being shaped by single instances of false information, individuals are often exposed to ongoing streams of competing and sometimes contradictory claims that require continuous interpretation. Within this context, misinformation functions less as a discrete category and more as part of a broader communicative process in which uncertainty, ambiguity, and evaluation are central.

Digital information environments amplify these dynamics by facilitating rapid circulation of emotionally engaging content. False or misleading information can spread rapidly and widely through networked platforms, while emotionally charged messages are especially likely to attract attention and be recirculated (Brady et al., 2017; Vosoughi et al., 2018). At the same time, encountering information from multiple sources without clear signals of credibility can increase confusion, making it more difficult for individuals to distinguish between reliable and unreliable claims (Malik et al., 2023).

Uncertainty may also persist even after formal corrections. Studies of scientific retractions demonstrate that disputed or withdrawn findings can continue to circulate through citations, media coverage, and public discourse, contributing to long-term informational ambiguity (Bakker et al., 2024; Stiller et al., 2023). For immigrant populations, these challenges are often intensified by the need to interpret information across linguistic and cultural contexts. Research in Nordic settings shows that migrants frequently encounter differing or conflicting health messages across national and transnational sources, requiring them to evaluate credibility within multiple interpretive frameworks (Czapka et al., 2023).

Trust, credibility, and fact-checking

Navigating uncertain information environments depends on both trust and information literacy. Confidence in scientific institutions and reliable information sources has been shown to reduce susceptibility to misinformation, while low trust increases vulnerability to misleading claims (Agle et al., 2021; Roozenbeek et al., 2020). At the same time, cognitive reflection can improve people's ability to distinguish higher- from lower-quality information sources (Pennycook & Rand, 2019). However, trust is not static; it is often constructed and negotiated through everyday practices of verification and comparison. Individuals commonly respond to uncertain or contested claims by consulting multiple sources, cross-checking information, or seeking confirmation from knowledgeable others. These practices reflect efforts to reduce uncertainty and establish credibility across competing information channels (Ahmed & Rasul, 2022).

Through such processes, individuals may develop differentiated understandings of informational authority, recognising some sources as more reliable than others based on experience and perceived consistency. For immigrants, fact-checking practices are shaped by structural and contextual factors, including language proficiency, access to services, and familiarity with institutional systems. Research on digital health services highlights how language barriers and limited access can complicate engagement with official information, affecting both comprehension and trust (Kaihlainen et al., 2022). At the same time, scientific and digital literacy can shape how individuals evaluate information and trust preventive measures (Siani & Green, 2023).

Perceived harm and emotional interpretation

Misinformation is not only evaluated cognitively but also experienced emotionally and socially. Encounters with misleading or uncertain information can evoke concern, anxiety, or frustration, particularly when the information is perceived as having potential consequences for personal or collective well-being. Research on misinformation has shown that affective responses and intuitive judgements can shape how people assess claims and whether they accept or reject them (Pennycook & Rand, 2019; Song et al., 2023). These emotional responses influence how individuals interpret information and whether they act.

Research on correction behaviour suggests that responses to misinformation are often embedded in social contexts. Individuals are more likely to engage with or respond to misinformation within familiar networks, where communication is shaped by trust, relationships, and shared understanding (Bode & Vraga, 2021). Emotional reactions, such as concern for others or a desire to prevent harm, can further motivate engagement with contested information. Among immigrants, perceptions of harm may be heightened by broader social conditions. Misinformation related to healthcare, vaccination, or public policy can carry particular significance in contexts where access to services, legal status, or prior experiences influence how information is interpreted. Studies indicate that misinformation may disproportionately affect socially vulnerable groups by increasing uncertainty and undermining trust, reinforcing the importance of considering emotional and contextual factors in understanding responses to misinformation (Kisa & Kisa, 2024).

Correction and information sharing as social practice

Recent research has shifted attention from institutional responses to misinformation toward the role of ordinary users in managing information within their social networks. Correction is increasingly understood as a social practice embedded in relationships rather than a purely informational act. Studies of messaging platforms show that individuals often address misleading claims within small, trusted groups, where corrective actions are shaped by interpersonal dynamics and shared norms (Vijaykumar et al., 2022). Similarly, sharing behaviour reflects social as well as informational motivations. Individuals may share information to inform others, maintain social connection, express concern, or manage uncertainty (Lu et al., 2022). Information perceived as useful or protective may also circulate despite uncertainty about its accuracy, highlighting the complex relationship between care, responsibility, and misinformation. Research during the pandemic further indicates that trust in online information and information overload can increase the circulation of unverified content (Laato et al., 2020). In information behaviour research, sharing, checking, and correction are understood as situated practices that occur within social relationships and information environments rather than as isolated individual choices (Lloyd, 2017; Sundin et al., 2017). For migrants, these practices may connect institutional information with interpersonal and transnational sources (Ruokolainen & Widén, 2020).

Correction engagement and information-sharing behaviour are analysed separately. Sharing refers to circulating or discussing health information, whether it challenges a false claim. Correction requires an attempt to warn, clarify, challenge, or replace misinformation. A person may share frequently without correcting or may correct selectively while otherwise sharing little. The distinction also avoids assuming that all information circulation is beneficial. In the model, these are parallel responses with different expected antecedents: perceived harm is more relevant to sharing, while checking and perceived reliability are more relevant to correction. This separation reflects the difference between information transmission and accuracy-oriented intervention (Bode & Vraga, 2021; Feng, 2024; Vijaykumar et al., 2022).

The stimulus–organism–response framework

The stimulus–organism–response (S–O–R) framework originated in environmental psychology, where environmental stimuli were proposed to affect internal cognitive and affective states and, through those states, behavioural responses (Mehrabian & Russell, 1974). The term organism is retained as the framework’s established label for internal appraisal; it is not used here to reduce participants to biological organisms. More recent research has adapted S–O–R to digital information and misinformation sharing by treating media exposure as a stimulus, cognitive or affective appraisal as the organism component, and sharing, avoidance, or other action as the response (Jiang et al., 2025; Wu, 2022). The framework is therefore used here as a concise way to organise relationships between exposure, evaluation, and action.

The framework was selected because the research questions concern an ordered process from misinformation exposure to checking, reliability, and harm appraisals, and behavioural response. It foregrounds a verification practice, checking with trusted sources, and the cognitive and affective appraisals represented by perceived media reliability and perceived misinformation harm, followed by correction engagement and information-sharing behaviour. This theoretical choice does not imply that emotions, relationships, or social structures are unimportant. Language, migration history, interpersonal networks, country of residence, and interview period are treated as contextual conditions that may shape the modelled relationships. Nor does S–O–R establish temporal or causal order in the present cross-sectional data; it functions as an organising framework for exploratory associations. Figure 1 illustrates this structure.

The analytical role of the framework is deliberately bounded. It provides a vocabulary for arranging the six indicators, but it does not replace information-practice explanations of how credibility is negotiated in specific settings. Information practices are shaped by language access, institutional familiarity, relationships, technologies, and the purposes for which information is sought or shared. The same reported act of checking may therefore involve different resources and constraints across participants. In the present model, these contextual conditions are not treated as additional latent constructs. They define the setting within which the modelled associations should be interpreted. This distinction prevents the stimulus–organism–response sequence from being read as a universal psychological mechanism and keeps the theoretical contribution connected to situated information behaviour.

Operationally, checking, reliability, and harm are not interchangeable. Checking records how routinely participants reported consulting or comparing trusted sources. Perceived media reliability is an evaluative judgement about the credibility of media and institutional channels, whereas perceived misinformation harm concerns possible consequences for health or community well-being. Their placement within the organism component reflects their position between exposure and outward action, but the paths among them are empirical rather than assumed. Correction and sharing are likewise modelled as distinct responses. Demographic variables are not part of the causal chain; they are used only in exploratory group comparisons. This mapping tests a bounded version of the framework without claiming to capture the full complexity of information practice.

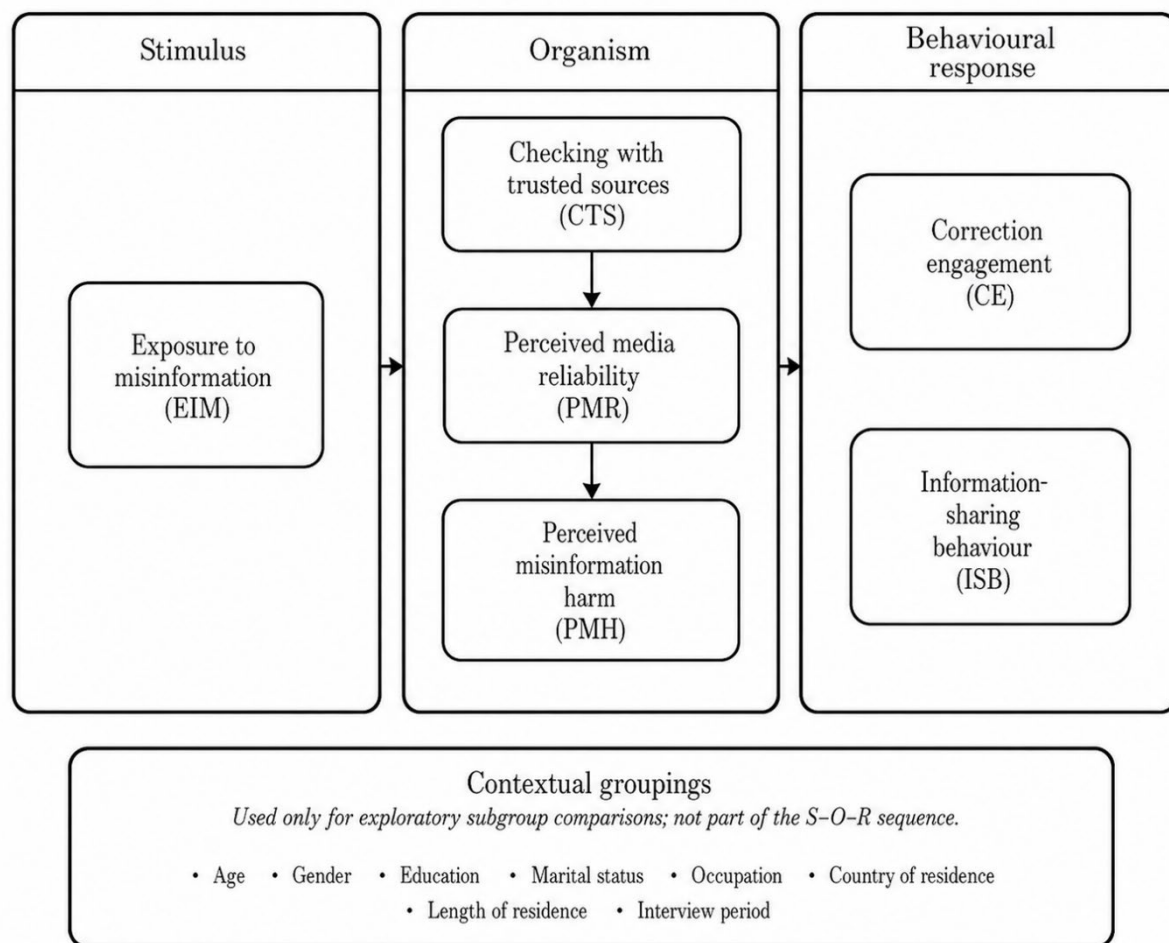


Figure 1. Stimulus–organism–response model of health misinformation among immigrants in the Nordic region.

The six analytical indicators correspond to the stimulus–organism–response framework illustrated in Figure 1. Exposure to misinformation represents the stimulus. Within the organism component, checking with trusted sources is treated as a reported verification practice linked to appraisal, while perceived media reliability and perceived misinformation harm represent internal appraisals. Information-sharing behaviour and correction engagement are classified as behavioural responses. The label behavioural response is used deliberately because emotional and cognitive changes were not modelled as outcomes.

Methods

Research design and participants

This study used a qualitative-to-quantitative data transformation design based on a single dataset of semi-structured interviews. The primary material consisted of seventy-two anonymised interviews with adult immigrants residing in Finland, Sweden, and Norway, conducted between 2021 and 2023. Rule-guided qualitative content analysis was used to construct case-level ordinal indicators, after which the research questions were examined quantitatively through exploratory structural modelling. Because the data were collected through one method and the reported results are based on one quantitative modelling strand rather than separate qualitative and quantitative findings, the study is not described as mixed-methods research. The coding stage

provided a transparent basis for indicator construction rather than an independently reported qualitative analysis.

Participants were recruited through community organisations, language centres, online networks, and personal contacts. These recruitment pathways sought variation in linguistic background, age, education, employment, and length of residence. All participants were at least eighteen years old and provided informed consent before participation. The corpus included participants with asylum-seeking or refugee-related backgrounds and participants with other settlement histories. Migration pathway and legal status were not recorded in a harmonised form across all interview waves, so exact comparable counts could not be reported, and these variables were not entered into the model. The sample distribution was also uneven across countries, with a higher proportion of participants from Finland, and educational attainment was relatively high. These features reflect access to recruitment networks rather than population characteristics and preclude claims of national representativeness. Appendix 2 presents the harmonised participant characteristics.

The interview guide addressed everyday health information practices, including information seeking, trust in sources, experiences of conflicting or unclear advice, and engagement in sharing or correcting health-related claims. Prompts about conflicting advice were phrased neutrally: The interviewer did not label any source or claim as false and did not imply that available health information was necessarily inaccurate. Misinformation was coded only when participants themselves described information as false or misleading, as a rumour, or as confusing and the surrounding context supported that interpretation.

Data collection

The lead author conducted all interviews, either face to face or online, in English, Persian/Farsi, or Kurdish. When linguistic clarification was needed during an interview, a bilingual assistant trusted by both the researcher and the participant translated or explained the meaning of individual terms. The assistant's role was limited to this in-interview clarification. Interviews lasted forty-five to ninety minutes. They were audio-recorded with consent, transcribed verbatim, and anonymised during transcription. Non-English material was translated into English through a meaning-based approach that prioritised semantic equivalence over literal wording; uncertain expressions were checked against the original-language material. Eighteen interviews were conducted during the COVID-19 pandemic wave, and fifty-four were conducted during a later wave after the acute phase of the pandemic. COVID-19 health information was central to the earlier wave and could also arise as a recent reference point in later interviews, whereas the later guide addressed health information more broadly. Interview period was therefore retained as a contextual binary indicator derived from the data-collection wave. It should not be interpreted as a causal before-and-after design.

Coding framework and analytical process

All seventy-two transcripts were processed through rule-guided qualitative content analysis combining inductive category identification with theoretically informed structuring (Hsieh & Shannon, 2005; Mayring, 2019). The coded material was then transformed into structured indicators for the quantitative model. Six analytical constructs were defined as:

- Exposure to misinformation (EIM)
- Checking with trusted sources (CTS)
- Perceived media reliability (PMR)
- Perceived misinformation harm (PMH)
- Correction engagement (CE)
- Information-sharing behaviour (ISB)

These indicators represent analytically ordered but interrelated components of how individuals encounter, evaluate, and respond to uncertain or misleading information. Each construct was operationalised as a seven-point ordinal indicator derived from linguistic expressions of frequency, intensity, and evaluative judgement. Full construct definitions, scale anchors, and illustrative examples are provided in Appendix 1.

Coding relied on contextual interpretation rather than keyword matching, particularly because the dataset was multilingual. Construct definitions and scale anchors are provided in Appendix 1; the full framework, linguistic indicators, and decision rules appear in Appendices 5A–5D; and constructed calibration examples are provided in Appendices 6A–6G.

Coding roles, consistency, and transparency

The lead author completed the primary coding and final case-level scoring for all seventy-two transcripts. The co-author reviewed the construct definitions, scale anchors, decision rules, selected coded segments, and borderline cases, but the full dataset was not independently double-coded. An intercoder agreement coefficient was therefore neither calculated nor claimed. Consistency was supported through explicit category definitions, repeated application of the same decision rules, analytic memoing, review of selected material, and an audit trail in NVivo 15 (Mayring, 2019; O'Connor and Joffe, 2020).

The division of roles was intended to combine procedural continuity with critical review. Having one researcher code the complete corpus reduced variation arising from changes in coder, while co-author review tested whether definitions and borderline decisions were intelligible beyond the primary coder. Nevertheless, this arrangement does not establish coder interchangeability. A second researcher might have assigned different case-level scores, especially where frequency and intensity cues conflicted or where translated expressions carried several plausible meanings. The appendices therefore document the coding logic so that readers can assess the transformation process and future studies can test its reproducibility with independent coding teams.

The following procedures supported consistent indicator construction:

1. Detailed category definitions and linguistic indicators (Appendix 5A–5B)
2. Explicit decision rules for interpretive standardisation (Appendix 5C)
3. Iterative refinement through repeated transcript analysis
4. Review by both authors of selected transcripts, coded segments, analytic memos, and borderline decisions

These procedures make the derivation of the indicators traceable, but they do not substitute for independent double-coding. The aim was consistent application of the documented coding logic across transcripts rather than statistical demonstration of coder interchangeability. The coding process followed a structured three-stage procedure that transformed interview material into the six indicators used in the model.

Three-stage indicator construction procedure

Phase 1 – Construct identification: Interview segments describing experiences, perceptions, or practices related to health information were identified and provisionally assigned to one or more analytical constructs.

Phase 2 – Linguistic scaling: Coded segments were translated into ordinal values using recurrent expressions of frequency, regularity, intensity, and behavioural strength. Typical linguistic markers for each scale level are summarised in Appendix 5B, with calibration examples provided in Appendices 6A–6G.

Phase 3 – Interpretive standardisation: Coded expressions were consolidated into final construct scores using explicit decision rules addressing contextual interpretation, dominant patterns across the transcript, weighting of repeated statements, construct prioritisation in cases of overlap, and memo-based interpretation (Appendix 5C).

The lead author conducted coding, scoring, and memo-writing in NVivo 15, which was used to organise transcripts, apply categories, document decisions, and maintain an audit trail. Coding categories, linguistic indicators, and decision rules were refined during repeated analysis, with decisions on selected ambiguous cases discussed between the authors. Supporting materials, including construct definitions, the interview guide, scale anchors, decision rules, and calibration examples, are provided in Appendices 1–6. The statements in Appendices 6A–6G are constructed calibration examples representing possible linguistic markers; they are not verbatim participant quotations and are not used as qualitative evidence in the results.

Quantification and data integration

After coding, each transcript received one ordinal score for each of the six constructs. These scores were exported from NVivo and combined with harmonised demographic variables: age, gender, education, occupation, marital status, country of residence, length of residence, and interview period. Systematically coded qualitative material can be transformed into structured variables for exploratory statistical analysis (Fetters & Freshwater, 2015). In this study, however, the transformation is an indicator-construction step and does not by itself constitute a mixed-methods design. The indicators are case-level interpretive summaries derived from one interview per participant; they are not multi-item psychometric scales and should not be treated as equivalent to validated questionnaire measures. Figure 2 summarises the workflow.

Data transformation involved a loss of granularity that must be distinguished from measurement error in a questionnaire. A seven-point score summarised the dominant pattern in an interview, even when a participant described different practices across platforms, topics, or relationships. The score represented an analytically standardised case summary rather than a direct observation at a single moment. It also did not assume equal psychological distance between adjacent categories. Numerical coding enabled comparison and exploratory path estimation, but the ordinal origin of the indicators limits strong metric interpretation of the results. Coefficients are consequently used to describe modelled associations within this dataset, not to claim precise population effects or psychometric properties.

Case-level scoring followed the dominant-pattern rule in Appendix 5C. When an interview contained statements corresponding to more than one scale point, repeated and contextually consistent descriptions received greater weight than isolated remarks. Scores were assigned after considering the full transcript and overlap between constructs was resolved by identifying the segment's primary meaning. For example, asking a bilingual friend was scored as checking when the purpose was verification, but retained as context when it concerned translation alone. This reduced mechanical keyword counting but made scoring dependent on interpretation. The audit trail recorded coded passages, memos, provisional scores, and reasons for resolving ambiguous cases.

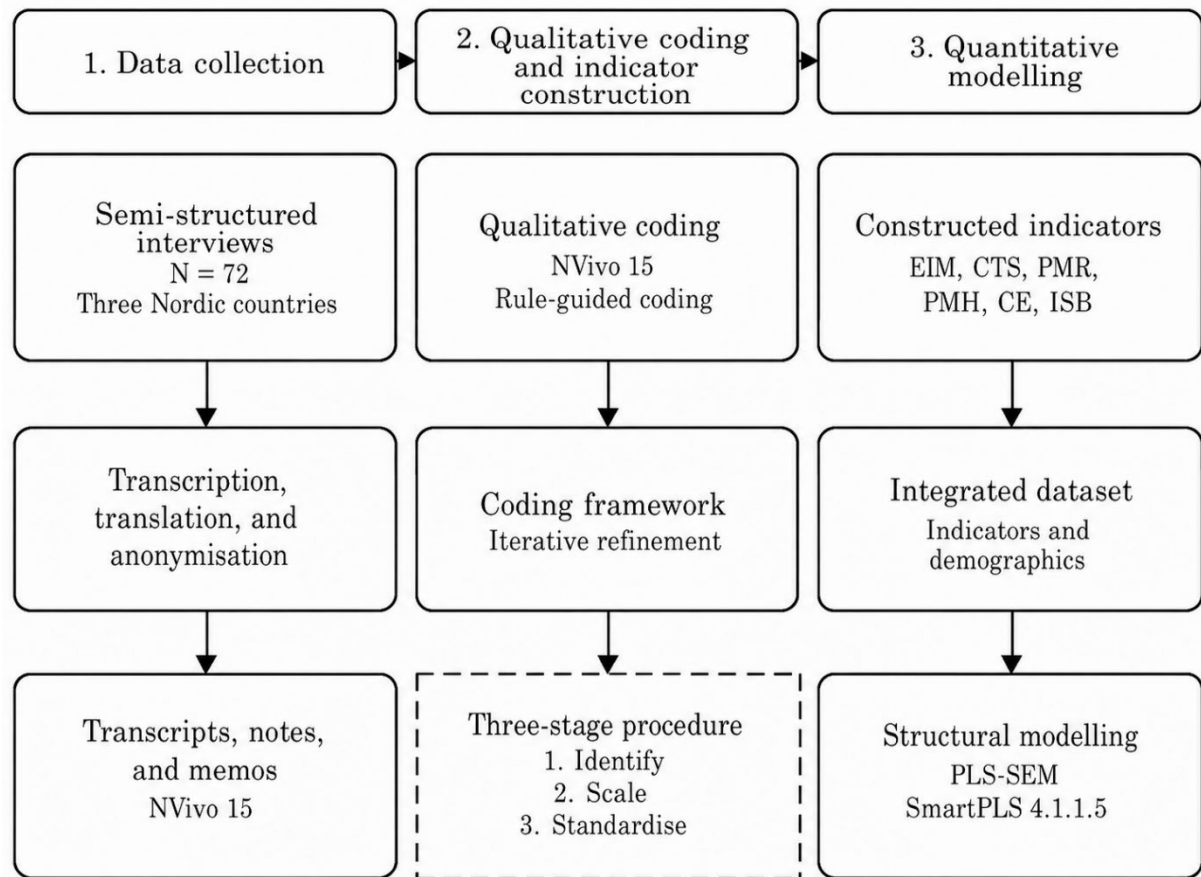


Figure 2. Analytical workflow from qualitative interviews to exploratory structural modelling.

Quantitative modelling

The coded dataset was analysed in SmartPLS 4.1.1.5 (Ringle et al., 2024) using partial least squares structural equation modelling (PLS-SEM). The model consisted of six single-indicator variables derived from the coded interview data. PLS-SEM was selected because of its suitability for exploratory modelling with moderate sample sizes, non-normally distributed data, and analytically derived indicators (Hair et al., 2019; Sarstedt et al., 2021). Bootstrapping with 5,000 resamples was used to estimate path coefficients, standard errors, and confidence intervals. Predictive relevance was assessed using the Stone–Geisser Q^2 statistic and the PLSpredict procedure.

Because the model relied on single-indicator variables derived from qualitative coding rather than multi-item scales, traditional internal consistency measures such as Cronbach's alpha and composite reliability were not applicable. An a priori power analysis in G*Power 3.1.9.7 used an F test for fixed-model multiple regression, R^2 deviation from zero, with $f^2 = 0.15$, $\alpha = 0.05$, power = 0.80, and three predictors (Faul et al., 2009). The resulting minimum sample size was seventy-seven observations. The available sample ($n = 72$) was therefore five cases below the a priori target. Nevertheless, PLS-SEM is widely applied in exploratory research settings with moderate sample sizes and non-normal data distributions. Methodological discussions further emphasise that sample adequacy should be evaluated in relation to model complexity, research objectives, and robustness checks rather than relying solely on heuristic rules (Hair et al., 2019; Sarstedt et al., 2021).

The analysis is therefore exploratory rather than confirmatory. With analytically derived single indicators, the model is best understood as path modelling among coded case summaries rather

than as a test of latent constructs. The reported results concern statistical associations among these derived indicators; no separate qualitative findings are claimed. Exploratory multigroup analysis was used to identify possible recurring and context-specific patterns across demographic and contextual groupings, not to support population-level comparisons between immigrant groups.

Ethical considerations and data handling

This paper draws on interview data from a broader research project that received ethical approval from the Board for Research Ethics at Åbo Akademi University before data collection. The study followed the ethical principles of the Finnish National Board on Research Integrity (TENK, 2019) and Regulation (EU) 2016/679 (General Data Protection Regulation). Participants received multilingual information about the study's purpose, voluntary nature, data handling, and right to withdraw, and provided informed consent before being interviewed. Names, workplaces, and precise geographic markers were removed or replaced with neutral descriptors during transcription. Audio files were deleted after transcription verification, and anonymised materials were stored on encrypted, access-restricted institutional servers.

Results

Participant characteristics

Seventy-two immigrants participated, representing varied ages, educational backgrounds, lengths of residence, and migration experiences (Appendix 2). Women (50%) and men (49%) were nearly equally represented, with one participant identifying as non-binary. Approximately three-quarters were over forty years old, and 40% were aged fifty-one years or older. Educational attainment was high: 78% held an associate or bachelor's degree or higher, including 28% with a doctorate. Participants resided in Finland ($n = 43$), Sweden ($n = 17$), and Norway ($n = 12$); twenty-eight had lived in the country for one to five years, twenty-four for six to ten, and twenty for more than ten years. The corpus included asylum-seeking or refugee-related and other settlement histories, but migration pathway was not harmonised across waves and was not analysed. Eighteen interviews were conducted during the pandemic wave and fifty-four after the acute phase. This period variable captured data-collection context rather than a causal temporal contrast.

Exploratory model diagnostics and global fit

Because each construct was represented by one coded indicator, internal consistency and conventional measurement-model validity statistics were not applicable. The model was assessed using approximate global fit and collinearity diagnostics. The estimated model had a standardised root mean square residual of 0.024, a normed fit index of 0.971, dULS of 0.012, and dG of 0.024 (Table 1). These values are reported descriptively and should not be read as validation of psychometric measurement.

Index	Saturated model	Estimated model	Bootstrap Mean	95% CI	99% CI
SRMR	0.000	0.024	0.015	0.028	0.035
dULS	0.000	0.012	0.006	0.017	0.026
dG	0.000	0.024	0.011	0.032	0.048
Chi-square	0.000	8.211	—	—	—
NFI	1	0.971	—	—	—

Table 1. Global model fit with bootstrapped reference intervals.

SmartPLS also produced heterotrait–monotrait values for the single-indicator constructs. These values are retained in Table 2 as pairwise association diagnostics, not as evidence of discriminant validity. The largest value was 0.846 for perceived misinformation harm and information-sharing

behaviour, with a 95% confidence interval extending to 0.961. Variance inflation factors ranged from 1.00 to 1.95, indicating no problematic predictor collinearity in the estimated paths.

Pair/path (predictor → target)	HTMT	95% CI	VIF
EIM ↔ CTS (EIM → CTS)	0.318	[0.035, 0.584]	1
EIM ↔ PMR (EIM → PMR)	0.587	[0.452, 0.702]	1.112
EIM ↔ PMH (EIM → PMH)	0.431	[0.159, 0.639]	1.525
CTS ↔ PMR (CTS → PMR)	0.544	[0.338, 0.713]	1.112
CTS ↔ CE (CTS → CE)	0.827	[0.707, 0.904]	1.458
PMR ↔ CE (PMR → CE)	0.685	[0.525, 0.804]	1.567
PMH ↔ ISB (PMH → ISB)	0.846	[0.668, 0.961]	1.266
PMR ↔ ISB (PMR → ISB)	0.448	[0.221, 0.636]	1.567
PMR ↔ PMH (PMR → PMH)	0.435	[0.194, 0.640]	1.948

Table 2. Pairwise association and variance inflation factor diagnostics.

Structural model results

Within this sample, explained variance was highest for correction engagement ($R^2 = 0.775$) and information-sharing behaviour ($R^2 = 0.741$), followed by perceived media reliability ($R^2 = 0.487$), perceived misinformation harm ($R^2 = 0.257$), and checking with trusted sources ($R^2 = 0.101$). Four paths had $p < .001$: perceived misinformation harm was positively associated with information-sharing behaviour ($\beta = 0.827$); checking with trusted sources was positively associated with correction engagement ($\beta = 0.667$) and perceived media reliability ($\beta = 0.398$); and perceived media reliability was positively associated with correction engagement ($\beta = 0.378$).

Exposure to misinformation was negatively associated with perceived media reliability ($\beta = -0.460$, $p < .001$) and checking with trusted sources ($\beta = -0.318$, $p = .037$). Two paths met only the study's exploratory $p < .10$ criterion: exposure to misinformation was positively associated with perceived misinformation harm ($\beta = 0.268$, $p = .068$), while perceived media reliability was negatively associated with information-sharing behaviour ($\beta = -0.173$, $p = .077$). Table 3 reports the statistically significant and $p < .10$ paths and their effect sizes; Appendix 3 reports the full set of modelled paths.

Result type	Path/construct	β	SE	t	p	Sig	f^2
Structural paths	PMH → ISB	0.827	0.085	9.680	< .001	***	2.083
	CTS → CE	0.667	0.074	9.023	< .001	***	1.357
	CTS → PMR	0.398	0.088	4.532	< .001	***	0.277
	PMR → CE	0.378	0.096	3.927	< .001	***	0.406
	EIM → PMH	0.268	0.147	1.824	.068	†	0.064
	PMR → ISB	-0.173	0.098	1.771	.077	†	0.074
	EIM → CTS	-0.318	0.153	2.083	.037	*	0.112
	EIM → PMR	-0.460	0.086	5.340	< .001	***	0.371
Model explanation (R^2)	CE	0.775	—	—	—	—	—
	CTS	0.101	—	—	—	—	—
	ISB	0.741	—	—	—	—	—
	PMH	0.257	—	—	—	—	—
	PMR	0.487	—	—	—	—	—

Table 3. Structural paths and explained variance (R^2). † $p < .10$, * $p < .05$, ** $p \leq .01$, *** $p \leq .001$.

Figure 3 visualises the structural paths meeting the $p < .05$ threshold, showing standardised path coefficients (β) and explained variance (R^2).

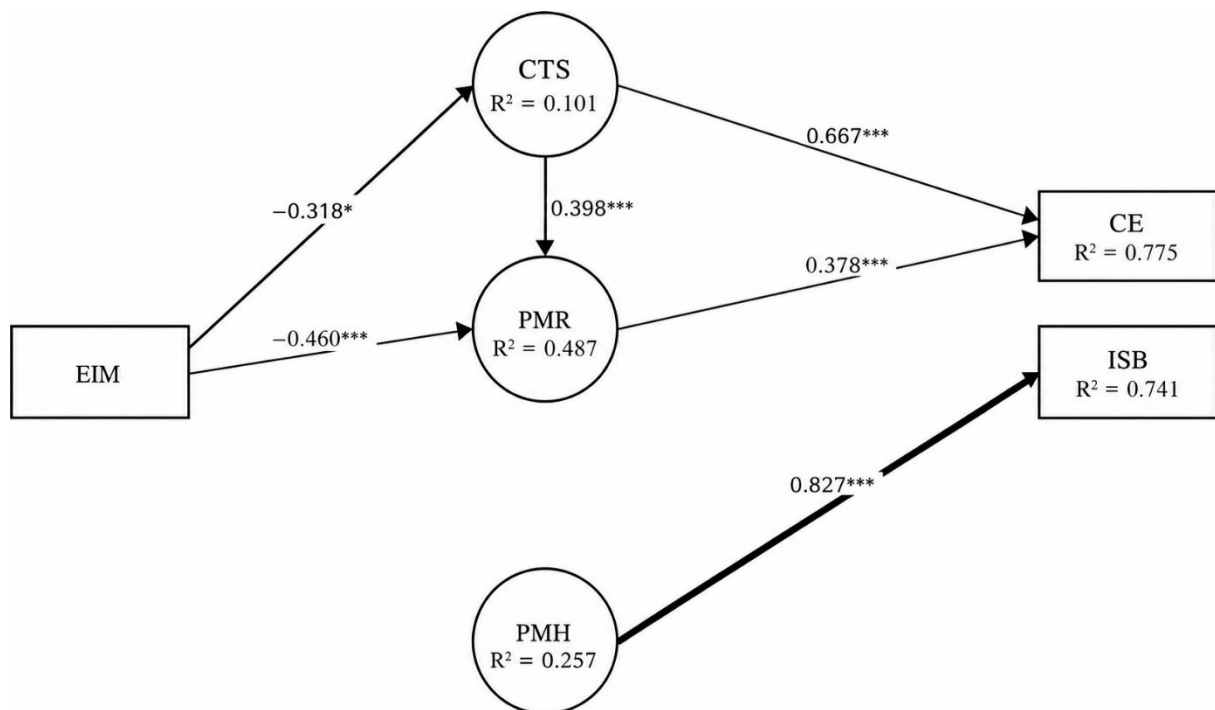


Figure 3. Stimulus-organism-response paths meeting $p < .05$ and explained variance (R^2). Standardised coefficients are shown; * $p < .05$, ** $p < .01$, and *** $p < .001$.

Indirect-effects analysis

Bias-corrected and accelerated bootstrap tests examined indirect associations between exposure, checking, intermediate appraisals, and behavioural outcomes. Total indirect effects linked exposure to information-sharing behaviour ($\beta = 0.408$, $p < .001$) and correction engagement ($\beta = -0.379$, $p = .001$). Checking with trusted sources had a positive total indirect association with correction engagement ($\beta = 0.119$, $p = .007$) and a negative total indirect association with information-sharing behaviour ($\beta = -0.272$, $p = .032$).

Specific indirect effects clarified these patterns. Checking with trusted sources was positively associated with correction engagement through perceived media reliability ($\beta = 0.150$, $p = .001$). Exposure was negatively associated with correction engagement through perceived media reliability ($\beta = -0.174$, $p = .006$) and through checking with trusted sources ($\beta = -0.212$, $p = .045$). Two paths to information-sharing behaviour met only the exploratory $p < .10$ criterion: the pathway through perceived misinformation harm ($\beta = 0.222$, $p = .084$) and the pathway through perceived media reliability ($\beta = 0.080$, $p = .073$). Table 4 reports the indirect and total effects.

Effect type	Indirect path	β	SE	t	p	Sig.
Total indirect effects	EIM → ISB, through all modelled indirect routes	0.408	0.112	3.660	< .001	***
	EIM → CE, through all modelled indirect routes	-0.379	0.119	3.188	.001	***
	CTS → CE, through PMR and/or PMH	0.119	0.044	2.686	.007	**
	CTS → ISB, through PMR and/or PMH	-0.272	0.127	2.144	.032	*
	EIM → PMH, through CTS and/or PMR	0.162	0.094	1.721	.085	†
	EIM → PMR, through CTS	-0.126	0.072	1.758	.079	†
Specific indirect effects	CTS → PMR → CE	0.150	0.045	3.321	.001	***
	EIM → PMR → CE	-0.174	0.063	2.774	.006	**
	EIM → CTS → CE	-0.212	0.106	2.004	.045	*
	EIM → PMH → ISB	0.222	0.128	1.729	.084	†
	EIM → PMR → ISB	0.080	0.044	1.795	.073	†
	EIM → CTS → PMR	-0.126	0.072	1.758	.079	†
Total effects (for reference)	CTS → CE	0.786	0.061	12.808	< .001	***
	PMH → ISB	0.827	0.085	9.680	< .001	***
	EIM → PMR	-0.587	0.064	9.118	< .001	***
	PMR → CE	0.355	0.097	3.657	< .001	***
	PMR → ISB	-0.325	0.168	1.929	.054	†
	EIM → PMH	0.431	0.121	3.551	< .001	***
	CTS → PMH	-0.246	0.138	1.776	.076	†

Table 4. Bootstrapped indirect and total effects using bias-corrected and accelerated confidence intervals (BCa, two-tailed $\alpha = .05$). † $p < .10$, * $p < .05$, ** $p \leq .01$, *** $p \leq .001$.

The total indirect effect of exposure to misinformation on perceived misinformation harm combines three pathways: Through checking with trusted sources, through perceived media reliability, and sequentially through checking with trusted sources and perceived media reliability. The total indirect effect of exposure to misinformation on perceived media reliability operates through checking with trusted sources. Total effects equal the corresponding direct effect plus all indirect effects linking the predictor and outcome.

Predictive performance

Out-of-sample prediction was assessed with PLSpredict and the cross-validated predictive ability test (CVPAT). All Q^2_{predict} values were positive. Values were highest for perceived media reliability (0.332) and information-sharing behaviour (0.221). The PLSpredict RMSE values were virtually identical to the linear-model benchmark. In the CVPAT comparison, the PLS model had lower cross-validated loss for information-sharing behaviour ($p = .033$), perceived media reliability ($p = .001$), and the overall average-loss comparison ($p = .031$). Table 5 presents the complete comparison. Given the small sample and single indicators, these results are treated as exploratory predictive evidence rather than external validation.

Metric	CE	CTS	ISB	PMH	PMR	Overall
$Q^2_{predict}$	0.159	0.053	0.221	0.161	0.332	—
PLS RMSE	1.14	1.442	1.05	1.076	0.729	—
LM RMSE	1.143	1.442	1.047	1.076	0.729	—
Δ RMSE (PLS-LM)	-0.003	0	0.003	0	0	—
PLS loss	1.299	2.078	1.103	1.158	0.531	1.234
IA loss	1.541	2.191	1.41	1.377	0.792	1.462
Average loss difference	-0.242	-0.113	-0.307	-0.219	-0.261	-0.228
t value	1.31	0.466	2.178	1.453	3.41	2.196
p value	0.194	0.643	0.033	0.151	0.001	0.031
Favoured (CVPAT)	ns	ns	$p < .05$	ns	$p < .01$	$p < .05$

Table 5. Predictive performance and model comparison (PLSpredict and CVPAT). Δ RMSE was calculated as PLS RMSE minus linear-model RMSE; negative values favour PLS-SEM, positive values favour the linear-model benchmark, and zero denotes equivalent rounded RMSE.

Demographic and contextual patterns

Exploratory multigroup analyses were used to identify possible recurring or context-specific patterns across demographic and contextual groupings rather than to make population-level comparisons between immigrant groups. Because seventy-two cases were repeatedly divided into small and unequal groups, the results are reported as provisional patterns rather than confirmatory subgroup evidence. Nominal $p < .05$ differences appeared for education, country of residence, length of residence, interview period, and age; no such differences appeared for gender, occupation, or marital status. The education grouping indicated nominal differences for CTS $\rightarrow$ CE ($\Delta\beta = 0.357$, $p = .037$), PMH $\rightarrow$ ISB ($\Delta\beta = -0.420$, $p = .003$), and PMR $\rightarrow$ ISB ($\Delta\beta = -0.455$, $p = .001$).

For the country grouping, nominal differences appeared for the association between exposure to misinformation and checking with trusted sources ($\Delta\beta = 0.590$, $p = .028$), exposure to misinformation and perceived misinformation harm ($\Delta\beta = 0.671$, $p = .010$), exposure to misinformation and perceived media reliability ($\Delta\beta = -0.462$, $p = .012$), perceived misinformation harm and correction engagement ($\Delta\beta = 0.368$, $p = .010$), perceived media reliability and correction engagement ($\Delta\beta = 0.308$, $p = .021$), and perceived media reliability and perceived misinformation harm ($\Delta\beta = 0.537$, $p = .035$). For length of residence, one nominal difference appeared for the association between perceived misinformation harm and correction engagement ($\Delta\beta = 0.395$, $p = .036$), and one $p < .10$ difference appeared for the association between exposure to misinformation and checking with trusted sources ($\Delta\beta = 0.626$, $p = .060$). These estimates may reflect contextual variation, but the small subgroup sizes do not support population-level claims about country or length of residence.

The interview-period grouping contrasted 18 pandemic-wave interviews with fifty-four later-wave interviews. Nominal differences appeared for the association between checking with trusted sources and correction engagement ($\Delta\beta = 0.356$, $p = .030$) and the association between perceived misinformation harm and correction engagement ($\Delta\beta = -0.850$, $p < .001$). The age grouping showed a difference for the association between perceived misinformation harm and correction engagement ($\Delta\beta = 0.461$, $p = .017$). Table 6 summarises nominal and $p < .10$ patterns; Appendix 4 provides all multigroup results. Interpretation should focus on possible heterogeneity rather than the direction or magnitude of any single subgroup estimate.

Variable	Grouping	Path	$\Delta\beta$	p	Sig.	Larger estimated coefficient
Education	Lower vs higher	CTS → CE	0.357	.037	*	Lower education
		PMH → ISB	-0.420	.003	**	Higher education
		PMR → ISB	-0.455	.001	***	Higher education
Country	Finland vs Sweden and Norway	EIM → CTS	0.590	.028	*	Finland
		EIM → PMH	0.671	.010	**	Finland
		EIM → PMR	-0.462	.012	*	Sweden and Norway
		PMH → CE	0.368	.010	**	Finland
		PMR → CE	0.308	.021	*	Finland
		PMR → PMH	0.537	.035	*	Finland
		CTS → PMR	-0.310	.082	†	Sweden and Norway
Length of residence	≤ 5 years vs > 5 years	PMH → CE	0.395	.036	*	≤ 5 years
		EIM → CTS	0.626	.060	†	≤ 5 years
Period	After acute phase vs during COVID-19	CTS → CE	0.356	.030	*	After acute phase
		CTS → PMR	0.504	.092	†	After acute phase
		PMH → CE	-0.850	< .001	***	During pandemic wave
		PMR → PMH	-0.501	.079	†	During pandemic wave
Occupation	Working vs not working	EIM → PMR	0.338	.070	†	Working
Age	Younger vs older	PMH → CE	0.461	.017	*	Younger
Gender	Female vs male	—	—	—	—	—
Marital status	Single vs married/partnered	—	—	—	—	—

Table 6. Exploratory subgroup patterns in structural paths. † $p < .10$, * $p < .05$, ** $p \leq .01$, and *** $p \leq .001$; small and unequal groups require caution. The analysis was used to identify possible recurring or context-specific patterns, not to support population-level group comparisons.

Discussion

This study examined statistical associations among coded indicators of exposure to health misinformation, checking, reliability, perceived harm, sharing, and correction in a sample of immigrants in Finland, Norway, and Sweden. The stimulus–organism–response framework helped organise these associations as links between exposure, internal appraisal, and behavioural response. The results do not describe a separate qualitative analysis and do not establish causal sequences.

The methodological contribution lies in making the transformation from interview material to case-level indicators explicit. Rule-guided coding preserved a documented connection to the source material, while structural modelling identified patterns across the seventy-two cases. At the same time, the transformation condensed contextual meanings into one score for each construct for each participant. The model can therefore identify associations among summaries, but it cannot provide the in-depth narrative interpretation expected from a conventional qualitative interview study.

The contribution to information behaviour research is therefore methodological as well as substantive. Substantively, the model links information encounter, source checking, credibility appraisal, perceived harm, sharing, and correction within one bounded account. Methodologically, it shows how interview material can be standardised for exploratory comparison while retaining an explicit audit trail from construct definition to case score. This approach may be useful when existing qualitative datasets contain recurring, comparable descriptions but were not designed as surveys. Its use nevertheless requires restraint: the transformation should be justified by the research question, categories should be documented before modelling, and numerical results should not be presented as if they originated from validated scales. The present study follows these boundaries by reporting the coding rules, distinguishing calibration examples from participant quotations, and limiting inference to associations among the derived indicators. In this sense, the analysis complements rather than replaces qualitative information-practice research, and it identifies relationships that warrant examination through independently designed measures and prospective data collection.

This distinction is important for interpreting the discussion. The following sections address only the quantitative path, indirect-effect, predictive, and multigroup results. Qualitative content analysis is discussed as the procedure used to construct the indicators, not as an additional strand of findings. The approach is most useful for generating testable propositions that can later be examined with larger samples and validated multi-item measures.

In this paper, *everyday trust repair* is an interpretive label for the observed pattern linking checking, reliability appraisal, and correction; it is not a directly measured change in trust over time. The negative paths from exposure to reliability and checking indicate that greater exposure may coincide with erosion rather than repair. The pattern labelled *trust repair* is most evident where checking is maintained and sources are judged reliable enough to support correction. Individuals may actively evaluate information while becoming sceptical under repeated exposure. For information research, the contribution is to connect source evaluation and sharing with corrective action in one model rather than treating trust, exposure, and response as separate topics.

Fact-checking behaviour as everyday trust work

In this study, checking with trusted sources was the operational indicator closest to fact-checking. It was positively associated with perceived media reliability ($\beta = 0.398$) and correction engagement ($\beta = 0.667$), and it also had a positive indirect association with correction through perceived reliability. These results place checking at the centre of the modelled route to correction. They are consistent with research showing that attention to source quality and accuracy can improve misinformation judgement (Agley et al., 2021; Pennycook & Rand, 2019). The model does not identify which interpersonal or institutional source was decisive in each case, but the coding framework included health professionals, public health authorities, established news sources, and knowledgeable contacts. Accordingly, the finding concerns routine verification across trusted sources rather than reliance on one universal authority.

Reliability and harm as complementary mechanisms

Perceived media reliability and perceived misinformation harm were associated with different behavioural outcomes. Reliability was positively associated with correction engagement ($\beta = 0.378$), whereas perceived harm was strongly associated with information-sharing behaviour ($\beta = 0.827$). The model therefore distinguishes a credibility-related route to correction from a harm-related route to sharing. This interpretation is consistent with evidence that perceived risk, emotional salience, and moral concern can increase information engagement and diffusion (Brady et al., 2017; Laato et al., 2020). However, the information-sharing indicator did not distinguish verified from unverified content in every sharing episode. The positive association between perceived misinformation harm and information-sharing behaviour should therefore be interpreted as greater reported circulation of health information when harm was perceived, not as proof that all shared information was accurate or corrective.

Exposure, lower reliability, and reduced checking

Greater exposure to misinformation was associated with lower perceived media reliability and less checking with trusted sources. Repeated encounters with contradictory claims may therefore coincide with lower confidence in information sources or reduced checking. Information fatigue is one possible interpretation, but it was not measured in this study. Research on misinformation shows that familiarity and repeated exposure can affect perceived accuracy, while overloaded information environments can make evaluation more difficult (Ecker et al., 2022; Malik et al., 2023). Exposure also had a weaker $p < .10$ association with perceived harm. The results indicate two patterns associated with greater exposure: heightened concern about harm and reduced confidence or checking. The cross-sectional model cannot determine which pattern occurs first or whether an unmeasured factor produces both.

Demographic and contextual variation

The multigroup results indicate possible heterogeneity, but they do not justify firm claims about country, education, age, or length-of-residence differences. Several nominal path differences appeared; yet each analysis divided the sample into small and unequal subgroups and involved many paths. The safest interpretation is that the associations among exposure, appraisal, and behavioural response may differ across contexts. The period analysis is especially sensitive to composition because only eighteen interviews belonged to the pandemic wave. Larger studies should pre-specify subgroup hypotheses, recruit balanced groups, and directly measure migration pathway, language proficiency, and information-source use before drawing comparative conclusions.

The subgroup analysis was not adjusted for the number of comparisons and was not powered to detect stable interaction effects. A nominally significant difference may therefore reflect sampling variation, particularly when one subgroup contains few cases. The selected rows in Table 6 are a navigation aid rather than a separate evidential tier: Appendix 4 contains the complete output, including non-significant comparisons. Directional labels describe only which first-listed or second-listed group had the larger estimated coefficient under the stated subtraction rule. They should not be interpreted as rankings of groups or as evidence that demographic characteristics determine information behaviour.

Correction engagement and wider trust formation

The positive associations between checking with trusted sources and correction engagement and between perceived media reliability and correction engagement suggest that correction engagement was most closely related to routine checking and perceived reliability. The indirect association from checking with trusted sources to correction engagement through perceived media reliability further indicates that checking may relate to correction partly through stronger confidence in reliable media or institutional information. Within the framework, this pattern is

compatible with everyday trust maintenance: people who report more checking and higher reliability also report more correction. The data do not show how individual corrections unfolded in conversation, whether recipients accepted them, or whether correction improved trust over time.

Correction should therefore be interpreted as a reported behavioural tendency rather than a demonstrated reduction in misinformation. Existing research shows that peer correction can occur within trusted messaging networks and that accuracy prompts can improve sharing decisions (Bode & Vraga, 2021; Pennycook et al., 2020; Vijaykumar et al., 2022). The present results extend this literature by identifying checking and perceived reliability as correlates of correction engagement in a multilingual immigrant sample, while leaving the effectiveness of corrective acts for future study.

Practically, the results suggest the value of communication strategies that make verification easier rather than placing responsibility solely on individuals. Health authorities and service providers can publish consistent multilingual information, identify update dates and evidence sources, and work with trusted community intermediaries. Community-based correction initiatives should provide links that can be checked and should acknowledge uncertainty when evidence changes. Prebunking, debunking, and accuracy-oriented prompts may complement these measures (Pennycook et al., 2020; Siebert & Siebert, 2023). These recommendations follow from the modelled associations and related literature; they were not tested as interventions in this study.

The practical implication is not that every community member should become a fact-checker. Verification requires time, language access, digital skills, and confidence that an authoritative source will answer the question. Communication systems can lower this burden by presenting a clear claim, its evidence status, the date of the latest update, and a direct route to further explanation. Corrections should be designed for circulation within the same channels in which doubtful claims are encountered. A multilingual correction that can be forwarded, discussed, and checked is more usable than a technically accurate statement that remains difficult to locate or interpret. Because this study did not test interventions, these proposals should be evaluated with community partners before implementation.

Limitations and future research

This study has several limitations. First, the model used seventy-two cases and was five cases below the a priori target of seventy-seven. This limits precision, generalisability, and statistical power. The multigroup analyses divided the sample into still smaller and unequal cells and examined numerous paths; their nominal p values should be treated as hypothesis-generating. Replication requires larger, balanced samples and pre-specified subgroup tests.

Second, the indicators were derived from retrospective self-reports. They represent what participants recalled and expressed during interviews, not directly observed checking, sharing, or correction. Social desirability and recall may have affected the scores. Digital-trace, diary, or observational designs could examine actual information episodes and their sequence.

Third, qualitative statements were transformed into one seven-point score for each construct for each participant. This procedure inevitably reduced context and depended on interpretive judgement. Primary coding and scoring were completed by one researcher, with co-author review of the framework and selected cases rather than independent double-coding of the full dataset. The resulting single indicators cannot be compared directly with validated multi-item questionnaire scales, and internal consistency or measurement-model validity cannot be established. Future research should test the proposed relationships with independently developed and validated measures.

Fourth, the sample was educationally selective and combined different migration histories. Migration pathway and legal status were not harmonised across interview waves and could not be included in the model, even though forced migration and institutional experiences may shape trust. The period indicator contrasted eighteen pandemic-wave interviews with fifty-four later interviews and combined temporal context, interview emphasis, and potentially different sample composition. It therefore cannot separate the influence of COVID-19 salience from changes in participants, recruitment channels, or wider information conditions. Country of residence is likewise a broad contextual marker and does not directly measure language proficiency, service access, media use, or institutional trust. These omitted dimensions may account for some observed subgroup patterns and should be measured explicitly in future pre-specified models.

Finally, the stimulus–organism–response framework foregrounds exposure, appraisal, and behavioural response but does not fully represent relational, institutional, emotional, or historical dimensions of information practice. The cross-sectional design cannot establish causal or temporal order. Future studies should combine larger longitudinal surveys with focused qualitative analysis, balanced country samples, and direct measures of migration pathway, language, source use, and correction outcomes. Within these limits, the study offers an exploratory account of how checking, reliability, perceived harm, sharing, and correction are related in a multilingual Nordic immigrant sample.

Conclusion

This study used a qualitative-to-quantitative transformation to examine how six coded information-behaviour indicators were related in a sample of seventy-two immigrants in three Nordic countries. The strongest associations linked harm with sharing and linked checking and reliability with correction. Exposure was negatively associated with reliability and checking. These results indicate that misinformation response is associated not only with exposure but also with source evaluation and harm appraisal, which were related to reported sharing and correction in this sample. The framework is useful but partial. The evidence remains exploratory because the sample was modest, the indicators were interpretively derived, and subgroup sizes were uneven. Larger longitudinal studies with validated measures are needed to test the proposed pathways and the effectiveness of multilingual, community-linked correction strategies.

The results also show why checking and correction should not be treated as interchangeable practices. Checking was associated with perceived reliability and correction engagement, whereas perceived harm was most strongly associated with information-sharing behaviour. Communication support should therefore help people identify credible sources, compare claims, and pass on clear corrections in forms that are accessible across languages. This interpretation remains limited to the coded associations observed in this sample and requires testing with independently developed measures and larger, more balanced samples. Such support should also be evaluated with migrant communities to determine whether translated guidance is understandable, credible, and usable across institutional websites, messaging applications, and interpersonal networks.

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