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Methodological Construction and Validation for the Study of Intercultural Cognitive Differences in Niche Material Symbols

Construcción y validación metodológica del estudio de las diferencias cognitivas de los símbolos materiales minoritarios desde una perspectiva intercultural

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Abstract:
The fan is widely used in both East and West, but cultural differences lead to divergences in its usage and symbolic meanings. Studies on intercultural cognition face methodological inadequacies and generalized frameworks. This study constructs an exclusive methodological system for Niche Material Symbols, adopting a three-dimensional methodological model consisting of "research objective—method adaptation—data validation", along with four general measurement dimensions and a standardized process. The cognitive differences of "Spanish Fan Language" were verified through 131 online questionnaire survey samples, reliability, validity, and factor analyses confirm its scientificity and reusability. It breaks through traditional limitations, provides standardized solutions, enriches the methodological repository of

intercultural communication research, and contributes to the effective dissemination of cultural heritage.

Keywords:
Fan Language; Symbol; Methodology; Intercultural Communication

Resumen:
El abanico se usa ampliamente en Oriente y Occidente, pero las diferencias culturales generan divergencias en su empleo y significados simbólicos. Los estudios de cognición transcultural enfrentan insuficiencia metodológica y marcos generalizados. Este estudio construye un sistema metodológico exclusivo para símbolos materiales minoritarios, Se adopta un modelo metodológico tridimensional integrado por "objetivo de investigación —adaptación de métodos—validación de datos". cuatro dimensiones de medición y proceso estandarizado. Las diferencias cognitivas del "lenguaje del abanico español" se verificaron a través de 131 muestras de encuestas realizadas en línea., los análisis de fiabilidad, validez y factorial confirman su cientificidad y reutilizabilidad. Rompe limitaciones tradicionales, ofrece soluciones estandarizadas, enriquece el acervo metodológico de la comunicación intercultural y contribuye a la difusión efectiva del patrimonio cultural.

Palabras clave:
Lenguaje del abanico; Símbolo; Metodología; Comunicación intercultural

1. Introducction

In the context of globalization, intercultural communication has become a fundamental nexus for cultural exchanges, economic cooperation, and social interaction between different countries and regions. Cultural symbols in forms such as graphics, gestures, and language serve as essential carriers in the process of intercultural communication. However, groups from distinct cultural contexts often encounter cultural discount or misunderstandings during the transmission and interpretation of culture (Hall et al., 1972). At present, most studies on intercultural communication focus on explicit symbols such as language and graphics, whereas attention to minority material symbols is clearly insufficient. Although minority material symbols do not possess the same extensive diffusion capacity or public recognition as mass media symbols, they usually embody the historical memories, value expressions, and social norms of specific historical periods and cultural groups, thus constituting an embodiment of cultural diversity.

The "fan language" stands out as a typical minority material symbol, as it carries a unique cultural context. Taking the Spanish fan language of the eighteenth century as an example, during that specific historical period, women constructed a complete nonverbal system through diverse gestures: the opening and closing of the fan, the fan's relative position with respect to the body or face, and the motion of fanning. This system served to convey emotions and express social intentions; indeed, under the constraints of the religious and social norms of the time, it substituted verbal communication. At present, fan language appears repeatedly in Spanish cultural

activities such as tourism and cultural performances, yet culturally distinct groups exhibit certain divergences in their interpretation of its meanings.

Although studies on intercultural communication have yielded abundant findings, there remain obvious deficiencies in the field of minority material symbols. Existing research is scattered across superficial studies such as cultural history and design (Li et al., 2025; Zhou et al., 2022), rarely delving into their symbolic encoding and decoding mechanisms from a communication perspective, and even lacking empirical support. Similarly, specific methodological studies targeting this field are extremely scarce. In current research on transcultural symbolic decoding, some scholars employ surveys to obtain data on groups' symbolic comprehension (Zou et al., 2024), yet there is a lack of content pertaining to methodological design or model construction.

The present study takes Spanish fan language as the research case to explore public comprehension of the said language in a transcultural context. At the theoretical level, this study conducts an in-depth analysis of the transcultural decoding process of fan language, thus addressing the research gap regarding minority material symbols. In addition, it shifts the research focus from traditional explicit symbols to minority material symbols, expanding the research scope of intercultural communication. Meanwhile, the discussion on the applicability of research methods helps improve the methodological framework of intercultural communication studies, provides more specific and scientific insights for method selection in other similar studies on symbolic decoding, and promotes the continuous development and innovation of intercultural communication theory.

At the practical level, this study systematically analyzes Chinese audiences' comprehension of Spanish fan language and the existing problems in this regard, enabling communication practitioners to better design intercultural communication programs and improve the efficiency and effectiveness of cultural interpretation. In addition, the discussion on the conceptual guidelines for the applicability of research methods provides valuable reference for academics and practitioners in the field of intercultural communication in their research method selection. It helps them choose more scientific and effective approaches based on their specific research needs and communication objectives, enhance the quality of research and communication practices, and promote effective exchange and integration between different cultures.
In summary, this study aims to address the following two research questions (RQs):

> RQ1. How to construct a methodological selection model adapted to studies on the transcultural Niche material symbols?
>
> RQ2. Is it possible to develop a reusable general measurement dimension framework for studies on the transcultural Niche material symbols?

2. Literature Review

Studies on intercultural communication have consistently focused on the meanings of symbols in different cultural contexts and the variations in audience interpretation. The encoding-decoding model proposed by Hall et al. (1972) provides a theoretical

framework for understanding this process, emphasizing that information reception is not passive but rather agentive. Audiences may interpret symbols through dominant, negotiated, or oppositional readings (Scherer et al., 2011) —a perspective that proves particularly illuminating for analyzing the intercultural decoding of nonverbal symbols.

As early as Hymes' ethnography of communication studies (Farah, n.d., 1997; Hymes, 1964), academia pointed out that verbal and nonverbal symbols must be understood within their sociocultural contexts (Furley, 2023). This line of thought, which emphasizes contextuality, laid a solid theoretical and methodological foundation for subsequent studies on intercultural communication (Yu et al., 2025).

Against this backdrop, the fan language that emerged in Europe between the eighteenth and nineteenth centuries has become a unique case for observing the intercultural communication of symbols. Although historians concur that fan language was more of a construct than a widely used social tool in reality, and was romanticized in etiquette and marketing manuals (Abanicos Aparisi, 2025; Rosenthal, 2001), as a symbolic system with specific meanings, it reveals how social groups resort to nonverbal means to convey emotions and circumvent constraints in interactions (Davies, 2019). This phenomenon is closely aligned with the symbolic reproduction in contemporary intercultural communication. As Ye noted in his studies on cultural symbols in animation, cultural symbols in different cultural contexts are often reinterpreted by audiences based on their own experiences (Ye, 2022), thereby creating a theoretical resonance between this process of decoding and the way fan language is received in intercultural contexts.

At the methodological level, intercultural communication studies have historically oscillated between qualitative and quantitative methods. As a core qualitative method, in-depth interviews emphasize the exploration of meaning-making processes through interactions between researchers and interviewees (Osborne & Grant-Smith, 2021). They allow for the capture of participants' subjective perceptions and dynamic decoding pathways, thereby revealing how audiences continuously modify and reconstruct symbolic meanings in communicative activities. In contrast, surveys—as a prominent quantitative method—present the static distribution of audience comprehension through quantitative data derived from large samples, with an emphasis on data reliability and generalizability (Regmi et al., 2017; Olivos & Liu, 2024). This method can provide a macro statistical overview, yet the two approaches are not mutually exclusive. As scholars have argued in recent studies, combining both within a mixed-methods design enables a better balance between depth and breadth (OP Appiah-Kubi et al., 2023).

However, the complementarity of these methods does not obscure their respective limitations. While in-depth interviews can prompt further reflection among participants during interactions, researcher guidance and sample size constraints may compromise the generalizability and objectivity of findings. On the other hand, although surveys provide objectified data support, their fixed design tends to weaken audience agency and even elicit superficially constructed responses (Andrade, 2020; Heiervang & Goodman, 2011). This reality provides theoretical justification for the research method applicability guidelines proposed in this paper.

Through the empirical research practice of the case of fan language—a minority material symbol—it can be demonstrated that the complexity of intercultural communication requires multidimensional research strategies, and that the selection and combination of methodologies directly determine the depth to which a study captures the subjective agency of audiences.

3. Methodological Proposal for the Study of Transcultural Niche Material Symbols

This study focuses on the specific domain of cross-cultural differences in the Niche material symbols, proposing a generalizable and transferable quantitative research framework, as well as a methodological selection model for studies on the transcultural Niche material symbols oriented toward research objectives.

The study takes minority material symbols characterized by low recognizability and high cultural dependence as its core research object, and selects Spanish fan language as the specific application case. It sequentially implements research and analysis steps, including research design, data collection, and analytical procedures, aiming to identify group-level similarities and differences in cognitive perceptions and summarize existing problems. This methodological framework can provide reusable methodological guidance for analogous studies, such as the transcultural interpretation of traditional Chinese gesture culture and the communication of ethnic minority craft symbols.

3.1. Theoretical Foundation and Selection of Core Research Tools

The construction of this methodological framework is theoretically grounded in Hall's encoding–decoding model (1973). This theory posits that in intercultural communication, the construction of symbolic meanings is not a unidirectional process; instead, it involves audience decoding (dominant, negotiated, or oppositional) based on their own cultural contexts (Klaus Scherer, 2011). In the case of niche material symbols, their "niche nature" results in a weak audience cognitive foundation, while their "cultural dependence" renders the decoding process highly contingent on specific cultural contexts. Therefore, the research must prioritize two core questions: Do shared patterns exist in the way groups decode these symbols? How do cultural differences influence decoding outcomes?

Building on the two core questions identified above, the authors select the survey scale as the primary research tool.

Given that research on cross-cultural differences in the cognition of niche material symbols first requires clarifying the overall distribution—i.e., the universal distribution characteristics of such symbols among specific groups—the survey methodology, through the collection of large samples and datasets, can demonstrate differences in symbolic decoding across groups with varying gender, cultural context, and other variables by means of descriptive statistical analysis. This feature effectively circumvents the limitations of qualitative methods such as in-depth interviews, which are constrained by limited sample sizes, whereas interviews are more suitable for in-depth exploration of specific causal factors (Pramod Regmi, 2016). Furthermore, the

questionnaire design in survey scales can be highly "structured" and "dimensional", enabling the standardization of the research process. It also provides a unified dimensional framework for different research objects and guides survey design, ensuring the comparability of findings across studies on distinct niche material symbols. This advantage directly addresses a key current limitation in such research: "dispersed methodologies and findings that are difficult to cross-validate" (Fryer et al., 2016).

3.2. Survey Structure and Reliability Control

For research objects with high cognitive unfamiliarity, such as niche material symbols, overly detailed scales (e.g., 7-point or 9-point scales) tend to cause confusion among respondents in their evaluations. In contrast, the 5-point scale not only captures attitude differences across the spectrum of "strongly disagree – partially agree – strongly agree" but also reduces response burden and improves data validity (Olivos, F., & Liu, M., 2024). This design rationale aligns with the perspective of Pramod R Regmi, who, in Guidelines for Survey Design in Transcultural Cognition Studies, argues that "scale levels should be adapted to the cognitive complexity of the research object" (Pramod R Regmi, 2016). His study demonstrates that for the measurement of unfamiliar cultural symbol cognition, the reliability coefficient (Cronbach's α) of the 5-point scale is on average 0.12–0.15 higher than that of the 7-point scale.

To ensure the scientific rigor and validity of data, the present framework adopts a 5-point Likert scale to design the core survey items (1 = "strongly disagree" to 5 = "strongly agree"), and optimizes data reliability through the approach of dimensional presupposition + reverse item control.

3.3. Construction of the General Dimensional Framework

This framework posits five core dimensions: symbolic comprehension, emotional perception, cultural relevance, comprehension difficulty, and reflection on intercultural communication effects, as presented in Table 1. The proposed measurement dimensions are constructed around the cognitive patterns of niche material symbols, without specifying any particular symbol. This ensures that the dimensional proposition is transferable to other studies on niche material symbols.

Table 1
Measurement Dimension Proposition Table

Dimensions	**Core Measurement Objectives**
Symbolic comprehension	Measure the group's level of understanding of the surface meaning and deep semantic meaning of the symbols.
Emotional perception	Capture the accuracy with which the group perceives emotions/attitudes conveyed by the symbols (e.g., friendship, solemnity, distance).

Cultural relevance	Explore the group's perception of "the degree of connection between the symbols and the cultural context."
Comprehension difficulty	Evaluate the level of difficulty the group faces in understanding the symbols and identify cognitive barriers.
Reflection on intercultural communication effects	Measure the group's perception of "the feasibility of intercultural communication of the symbols," providing a basis for developing communication strategies.

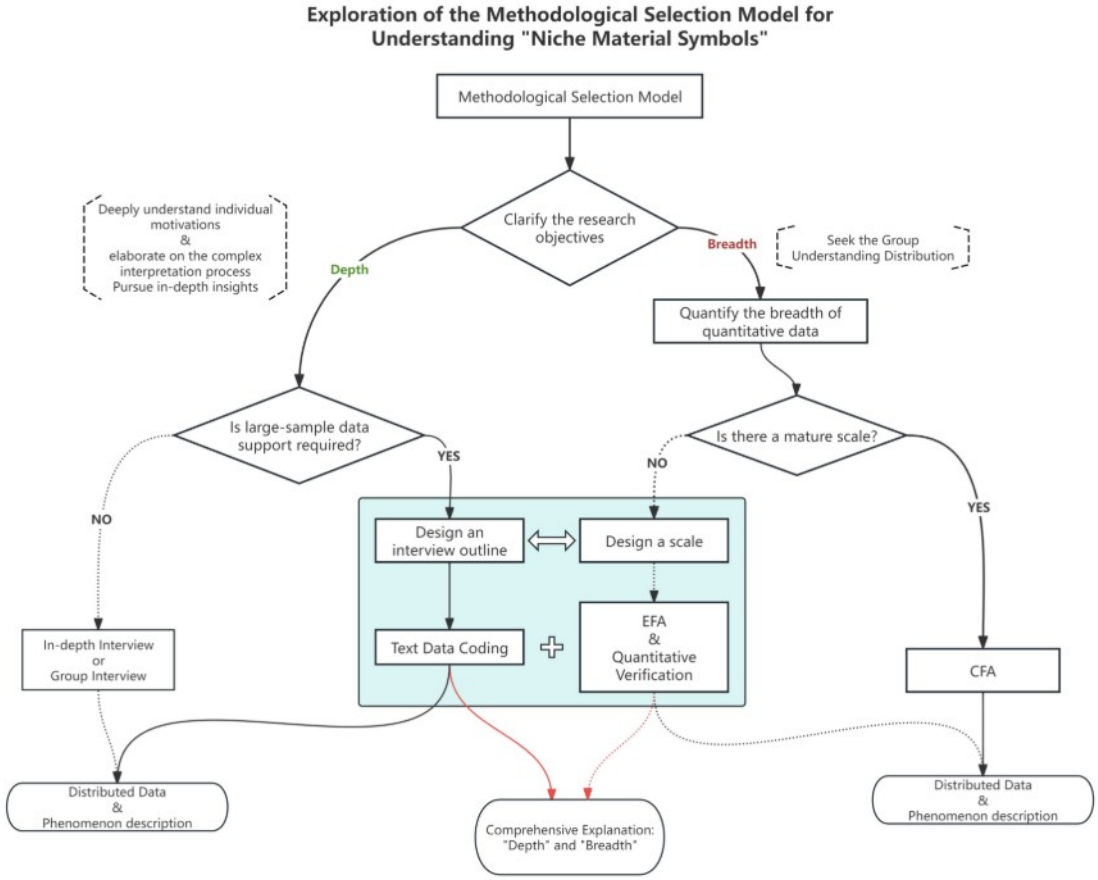
3.4. Construction Logic and Core Framework of the Methodological Selection Model for Niche Material Symbols

The methodological selection model for studies on the transcultural cognition of niche material symbols proposed in this paper primarily addresses the core issue of how to scientifically integrate research methods based on different research objectives. Its essence is to provide a precise adaptive decision-making framework—"research objective – method adaptation – data validation"—for niche material symbols as the specific research subject. Data analysis of Spanish fan language serves both as an application case of the model and a process to verify its effectiveness.

Owing to the fundamental "niche nature" of niche material symbols, sample acquisition proves challenging. Moreover, under the impact of transcultural barriers, data pertaining to subjects' cognitive differences are highly fragmented. As such, it is difficult to achieve research objectives using a single research method. On the other hand, another fundamental attribute of niche material symbols—"cultural dependence"—requires that research studies and experiments pay special attention both to the common characteristics of general patterns (macro perspective) and to an in-depth exploration of the dynamic cognitive processes of individuals regarding specific issues (micro perspective). Based on these premises, the present model takes "research objectives" as the core driver and, combined with the research characteristics of niche material symbols, constructs a three-level methodological selection framework, as illustrated in Figure 1.

Figure 1

Exploration of the Methodological Selection Model for the Comprehension of "Niche Material Symbols"



3.5. Core Dimensions and Decision Logic of the Model

The methodological selection model for understanding niche material symbols comprises three core dimensions: P1 "research objective", P2 "method adaptation", and P3 "data validation".

The P1 "research objective" layer is divided into two orientations: one is D1 "explore the group's cognitive distribution patterns", whose core need is to obtain macroscopic, quantifiable, and statistically representative data to identify general communication issues. The other is D2 "analyze the process of individual cognition formation", whose core need is to capture microscopic, dynamic, and personalized cognitive details, and delve into the underlying cultural drivers of comprehension differences.

As previously noted, studies on the transcultural cognition of niche material symbols can barely achieve their objectives using a single research method. Thus, from the two dimensions D1 and D2, the potential orientation D3 "validate the effectiveness of

communication strategies" is derived. Its core need is to materialize a closed loop of problem identification, problem-solving, and result feedback, requiring the combination of macroscopic data and microscopic feedback.

In the P2 "method adaptation" layer, corresponding core research methods can be matched according to the needs of the three orientations proposed in the P1 "research objective" layer. Additionally, the applicability boundaries and operational norms of each method are defined, as presented in Table 2.

Table 2
Research Objective Orientation Classification Table

Research Objective Orientations	**Core Adaptive Methods**	**Method Advantages**	**Application Scenarios**
D1: Exploration of group cognitive patterns	Survey method (based on Likert scale + factor analysis)	1. Large-sample data support, enabling quantitative presentation of group cognitive characteristics; 2. Extraction of general cognitive dimensions through reliability/validity validation and factor analysis grouping, with inter-symbol transferability; 3. High statistical efficiency of data, facilitating rapid identification of "high-consensus dimensions" and "high-difference dimensions".	Initial research stage on niche material symbols, used for preliminary diagnosis of communication issues.
D2: Analysis of individual cognition generation process	In-depth interview method (semi-structured interview guide)	1. Ability to activate respondents' implicit cognition and capture "interpretation logic based on individual cultural experiences"; 2. Allows researchers to follow up and delve into "cultural associations behind comprehension deviations"; 3. Can present the dynamic process of cognitive correction.	In-depth research stage on niche material symbols, used to explain "why group cognitive differences arise".
D3: Validation of communication strategy effectiveness	Mixed method (survey + in-depth interview)	1. Quantification of strategy effectiveness through surveys; 2. Complementation of	Communicative practice stage on niche material symbols, used for

		effectiveness details through in-depth interviews; 3. Materialization of a closed loop of "quantitative data validation + qualitative feedback optimization", avoiding the one-sidedness of single methods.	iteration and optimization of communication programs.

4. Methodological Application Example: Data Analysis and Results Based on Spanish Fan Language

This chapter documents the specific application case of the proposed quantitative research methodological framework and the methodological selection model for studies on the nition of niche material symbols, with Spanish fan language as the research object.

4.1. Research Implementation Based on the Framework and Model

First, the research team defined the primary objective of this study: to understand the overall cognitive status of Spanish fan language among Chinese groups from a transcultural perspective. This objective aligns with the core purpose of D1 "exploration of group cognitive patterns" under P1 "research objective", and P2 "method adaptation" was conducted for the experiment.

Given the cultural uniqueness of Spanish fan language, Chinese groups (non-Hispanic citizens or Chinese residents in Spain) were selected as the core research subjects. The sample included participants aged 18 to 60 with varying ages, educational levels, and degrees of cultural exposure. Following the standardized survey process, 133 questionnaires were distributed, and 131 valid responses were retrieved. In compliance with the requirements of P3 "data validation" in the methodological selection model, the authors and the research team used SPSSPRO to conduct reliability analysis, validity analysis, and factor analysis, ensuring the scientific rigor of the analytical process.

4.2. Validation of Model Effectiveness Through Data Results

Reliability and validity analysis data show that the Cronbach's α coefficient is 0.887 (>0.7), the KMO value is 0.863 (>0.8), and the Bartlett's test of sphericity yields $p<0.05$. These results indicate that the survey data are reliable and suitable for factor analysis, as presented in Tables 3 and 4.

Table 3
Cronbach's α Coefficient Table

Cronbach's α Coefficient Table			
Cronbach's α	Standardized Cronbach's α	Number of survey items	Sample size
0.887	0.895	17	131

Table 4
KMO Test and Bartlett's Test Table

KMO Test and Bartlett's Test Table		
KMO Value		0.863
Bartlett's Test of Sphericity	Approximate Chi-Square	1127.412
	df	136
	p	0.000

Through factor analysis (factor loadings ≥ 0.5), the initial 5 dimensions were grouped into 4 main factors: "cultural cognition and extension", "emotional comprehension and basic meaning understanding", "polysemy and misunderstanding risk", and "cultural context dependence".

Descriptive statistical analyses reveal that respondents show higher consensus in their understanding of "cultural dimensions", while their comprehension level of "meaning dimensions" is lower, with significant individual differences. This precisely identifies that "the primary challenge in the transcultural communication of fan language lies in emotional and semantic interpretation"—a finding that directly addresses the D1 research objective ("exploration of group cognitive patterns") and validates the "objective – method" adaptation of the model.

The results demonstrate that the framework and model can effectively capture research needs related to the cognition of niche material symbols.

5. Discussion

This study proposes a quantitative research methodological framework and a methodological selection model for studies on the transcultural cognition of niche material symbols, whose effectiveness has been validated through a specific practical case.

During the survey implementation, the authors observed that the questionnaire items can detect situations related to "polysemy" but fail to accurately distinguish between two independent concepts: "inherent polysemy of the symbol itself" and "polysemy-induced misunderstanding derived from cultural differences." These two concepts correspond to two independent measurement dimensions: "symbolic comprehension" and "cultural relevance." For example, "covering one's face with a fan" may inherently

have two meanings ("shyness" or "interest") or be misinterpreted as "rejection" by respondents unfamiliar with Spanish culture; survey data cannot effectively separate these two scenarios. In future research, questionnaire item design can be optimized by adding comparative questions such as "Could you clarify the meaning if you were aware of the cultural context?" to enhance measurement depth.

Second, while measuring the dimension of "emotional comprehension and basic meaning understanding" through questionnaire items can reflect the group's average level, it fails to capture the dynamic process of individual interpretation. For instance, statistical analyses may indicate that the group faces widespread comprehension difficulties, but the survey does not reveal whether "respondents interpret Spanish fan language under the influence of their experiences with Chinese fan culture." This limitation aligns with Andrade's (2020) conclusion regarding "the difficulty of structured questionnaires in capturing implicit cognition." In the future, "open-ended items on cognitive basis" can be added to the questionnaire (e.g., "What experience led you to interpret the meaning of this symbol?") or mixed methods can be selected in P2 "method adaptation," combining in-depth interviews to supplement details on dynamic cognition.

Despite certain limitations, the proposed framework and model still hold high practical value. Guided by the primary objective of this study, it differs from traditional studies relying on single quantitative methods—where some scholars use conventional questionnaires to investigate transcultural symbol cognition but face issues such as fragmented dimension design and lack of transferability. The core innovation of this study lies in constructing a general dimensional framework encompassing "symbolic comprehension," "emotional perception," and "cultural relevance." Through item adjustment and dimensional reuse, the framework can be adapted to studies on different types of niche material symbols, addressing the key limitation of traditional quantitative methods ("high specificity but low generalizability") (Gürbüz, 2017). For example, it can be transferred to studies on the cognition of various niche material symbols (e.g., action symbols, craft symbols, and pattern symbols) as well as other topics related to symbol communication.

6. Conclusions

This study focuses on the research context of cross-cultural cognitive differences in niche material symbols, with the core objective of constructing a scientific, generalizable, and transferable methodological framework, and validating its effectiveness through the case of Spanish fan language. This chapter presents conclusions centered on the methodology's core contributions, practical value, applicability limitations, and future expansion directions, clarifying the academic value and practical significance of the research from a methodological perspective.

The study has developed a reusable standardized quantitative research framework and a methodological selection model for studies on the transcultural cognition of niche material symbols. Addressing the characteristics of niche material symbols—"low recognizability and high cultural dependence"—it proposes a methodological selection logic centered on P1 "research objective", defining the decision pathway: D1

"exploration of group cognitive patterns" is adapted to the survey method, D2 "analysis of individual cognitive processes" to the in-depth interview method, and D3 "validation of communication strategies" to the mixed method. This proposal fills the existing gap of insufficient methodological systematicity in this field.

Taking Spanish fan language as the research case, the collection and analysis of data from 131 valid questionnaires demonstrate that the framework can effectively detect group cognitive distribution patterns and identify key comprehension difficulties. Furthermore, the data reliability (Cronbach's α=0.887) and validity (KMO=0.863) meet methodological standards, providing a reusable operational paradigm for future related studies.

Through reliability analysis, validity analysis, and factor analysis, the initial 17 items were grouped into 4 main factors: "cultural cognition and extension", "emotional comprehension and basic meaning understanding", "polysemy and misunderstanding risk", and "cultural context dependence". All items exhibited factor loadings ≥0.5 and appropriate communality, forming a transferable measurement dimension template applicable to different types of niche material symbols (e.g., action symbols, craft symbols, and pattern symbols). This template addresses the limitations of traditional studies characterized by fragmented dimension design and excessive specificity.

The methodological framework proposed in this study provides a standardized "design-to-analysis" process for transcultural cognition studies of niche material symbols. Researchers can directly reuse the general dimensional framework based on their specific research objectives, adapting it to different study objects with only adjustments to item wording—this significantly reduces research design costs. Additionally, the methodological selection logic helps avoid the issue of "misalignment between methods and objectives," enhancing the scientific rigor and specificity of research while providing precise guidance for communication strategy design. For example, for symbols with high scores on the "cultural context dependence" dimension, the strategy of "prior cultural context guidance" can be prioritized; for symbols with "difficulties in understanding meaning dimensions," communication effectiveness can be optimized through the strategy of "cultural association analogy," preventing blind spots in communication practice.

7. Future Plans and Limitations

For the subsequent phase of the project, the core logic of "quantitative method for problem identification + qualitative method for problem-solving + triangular validation of conclusions" will be adopted to conduct the second-phase qualitative research. Specific plans will focus on three aspects:

First, taking the 4 measurement dimensions extracted in the first phase of this study as key indicators, an interview guide will be designed for the second-phase research to delve into dynamic cognitive details that cannot be covered by quantitative research.

Second, the 3 communication strategies proposed in this study will be applied to communicative practice: after respondents complete the initial independent decoding,

the proposed communication strategies will be implemented to obtain information on respondents' cognition during the "recoding" of Spanish fan language meanings. This will validate the practical effectiveness of the proposed communication optimization strategies and analyze the specific role of different strategies in improving comprehension accuracy and reducing misunderstanding risks.

Third, triangular validation of the results from quantitative and qualitative research will be conducted. By comparing the consistency of conclusions from the two research methods across the 4 measurement dimensions, the comprehensiveness of data and conclusions will be verified; simultaneously, the scientific rigor of the conceptual guidelines for methodological selection will be validated, and the applicability of the "method selection determined by research objectives" logic in cross-cultural studies of niche material symbols will be clarified—providing a reusable methodological framework for future similar studies.

Nevertheless, this study has certain limitations: the sample size is relatively limited, and the cultural scope may not fully represent diverse interpretive frameworks. Additionally, survey validity is constrained by variations in participants' engagement levels.
Future studies can expand this model by adopting mixed methods, integrating emerging technologies such as virtual reality to conduct immersive symbolic interactions, and testing the framework in a broader cross-cultural context. These efforts will not only validate the model's applicability but also refine our understanding of how methodology mediates symbolic interpretation in intercultural communication.

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