

The Influence of Typography on Perceived Aesthetic Quality, Readability, and Trust in Chinese Digital Media: A Comparative Study of Songti and Heiti Typefaces

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Abstract: Typography plays a critical role in shaping user perception and engagement in digital media environments. In the context of Chinese digital platforms, typefaces such as Songti and Heiti carry not only functional but also cultural and aesthetic significance. This study examines how different typographic styles influence perceived aesthetic quality, readability, cultural appropriateness, and trust among users. Using a quantitative research design, data were collected from 150 university students through a structured online questionnaire incorporating visual stimuli of representative typography samples. The findings indicate that Songti typefaces are perceived as more culturally resonant and trustworthy, while Heiti typefaces are associated with higher modernity and functional clarity. Readability ratings were high across both styles, although context-specific preferences emerged. The results suggest that typography is not merely a visual design element but a meaningful communicative tool that influences user cognition and emotional response. This study contributes to digital design literature by integrating aesthetic perception with cultural interpretation in Chinese typography and offers practical implications for designers, marketers, and platform developers.

Keywords: Typography, Chinese digital media, Songti, Heiti, aesthetic perception, readability, trust.

1. Introduction

Typography is a fundamental component of visual communication, shaping not only the readability of textual content but also users' cognitive processing and emotional responses. In digital environments characterized by information overload and limited attention spans, typographic design plays a critical role in influencing user engagement, usability, and overall experience (Banerjee et al., 2011; Lupton, 2014; Murnane et al., 2018; Santoianni et al., 2022). Beyond its functional role, typography also conveys subtle visual cues that affect how

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information is interpreted, evaluated, and trusted (Fogg et al., 2003). In the Chinese context, typography carries additional layers of cultural and aesthetic significance due to the historical depth and visual complexity of Chinese characters. Traditional typefaces such as *Songti* are deeply embedded in print culture and are often associated with formality, authority, and cultural authenticity. These characteristics stem from their long-standing use in books, official documents, and educational materials. In contrast, modern sans-serif typefaces such as *Heiti* reflect contemporary design principles and are widely adopted in digital interfaces for their clarity, simplicity, and screen adaptability. As such, different typefaces are not merely stylistic variations but carriers of distinct cultural meanings and communicative functions (Henderson et al., 2004; Meyrick, 2022). With the rapid expansion of digital ecosystems in China including e-commerce platforms, social media, and mobile applications typography has evolved into a strategic design element that shapes user perception of credibility, aesthetic appeal, and usability (Campos, 2023; Go & Mothelsang, 2024; Li et al., 2024). Prior research suggests that visual design elements, including typography, significantly influence users' judgments of trust and professionalism in digital environments (Fogg et al., 2003). However, despite the growing importance of typography in user interface design, empirical studies examining how specific Chinese typefaces affect user perception across multiple dimensions remain limited. Existing literature has primarily focused on readability and usability in Western typographic contexts, often neglecting the cultural and symbolic dimensions of non-Latin scripts (Gassas, 2023; Guidero, 2016; Ho Sang, 2025; SPEIANU, 2026). Furthermore, few studies have systematically examined typography as a multidimensional construct encompassing aesthetic, functional, and psychological factors within a single analytical framework (Amar et al., 2017; Järlehed & Jaworski, 2015; Poon, 2021; Thiessen et al., 2020). This gap is particularly relevant in the Chinese context, where typography is closely intertwined with cultural identity and visual tradition. To address these limitations, the present study investigates the influence of typography on four key dimensions of user perception: aesthetic appeal, readability, cultural appropriateness, and trust. By comparing *Songti* and *Heiti* typefaces within digital media contexts, this research aims to provide a more comprehensive understanding of how typographic choices shape user perception. In doing so, the study contributes to both design research and human-computer interaction literature by integrating cultural, psychological, and functional perspectives on typography.

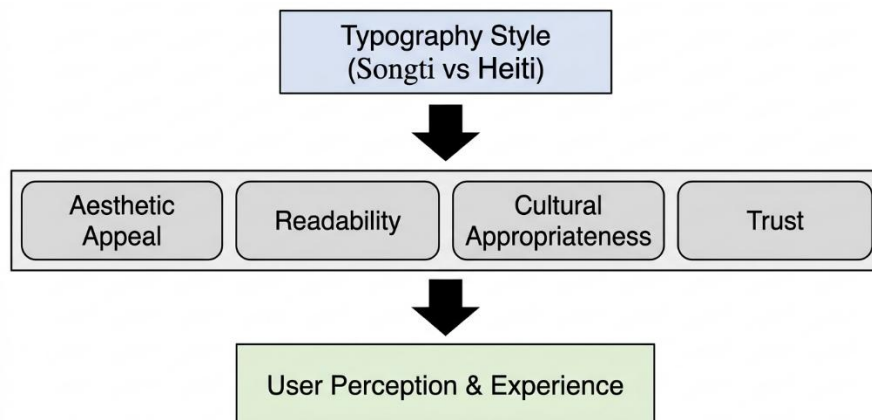


Figure 1. Conceptual framework

Figure 1 illustrates the conceptual framework of the study. It shows how typography style influences multiple dimensions of user perception, which together shape overall user experience. The model emphasizes that typography operates through both functional and symbolic pathways.

2. Literature Review

2.1 Typography and Visual Communication

Typography is a central component of visual communication, influencing not only the presentation of textual information but also users' cognitive processing and emotional responses. Prior research demonstrates that typographic features such as font style, spacing, and structure significantly affect readability, comprehension, and user engagement (Banerjee et al., 2011; Lupton, 2014; Ren et al., 2024). In digital environments, typography plays an additional role in enhancing usability and accessibility, shaping how users navigate interfaces and interpret information. From a human-computer interaction (HCI) perspective, typography contributes to cognitive load and reading efficiency. Serif fonts are traditionally associated with improved readability in print contexts due to their guiding strokes, whereas sans-serif fonts are often preferred in digital interfaces for their visual simplicity and clarity on screens (Banerjee et al., 2011; Huang, 2019). However, this distinction is increasingly nuanced, as readability is influenced not only by font category but also by contextual factors such as screen resolution, layout design, and user familiarity.

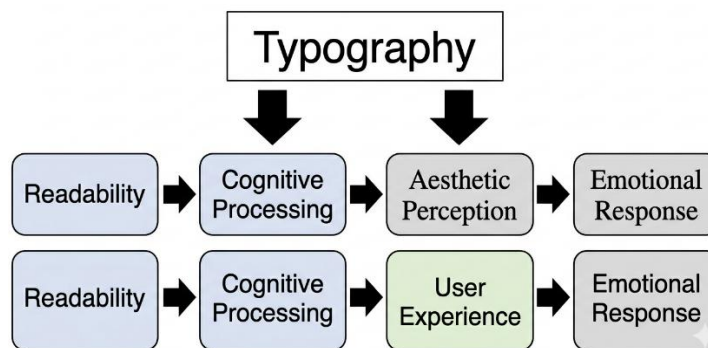


Figure 2. Typography in visual communication

Figure 2 demonstrates the dual pathways through which typography affects user experience: a cognitive pathway (readability and processing) and an emotional pathway (aesthetic perception). This reinforces the multidimensional role of typography in digital communication.

2.2 Cultural Meaning of Chinese Typography

Chinese typography occupies a unique position at the intersection of language, art, and culture. Unlike alphabetic systems, Chinese characters are inherently visual-symbolic, embedding cultural meaning within their structural form. Typeface styles such as *Songti* originate from traditional woodblock printing and are strongly associated with formal communication, educational contexts, and institutional authority. In contrast, *Heiti* reflects modernist design principles and is widely adopted in digital interfaces due to its minimalism and functional clarity (Li et al., 2026; Ouyang & Wang, 2025).

Typography, therefore, serves not only as a medium of communication but also as a carrier of cultural identity. Research indicates that typeface design can influence users' perceptions of authenticity, professionalism, and credibility (Henderson et al., 2004). In the Chinese context, traditional typefaces may evoke a sense of heritage and trust, while modern typefaces signal innovation, efficiency, and technological advancement. This duality highlights the importance of cultural context in typographic perception.

Table 1. Comparison of typeface characteristics

Feature	Songti	Heiti
Style	Serif	Sans-serif
Cultural Meaning	Traditional, formal	Modern, minimal
Trust	High	Moderate
Readability	High	High
Use Context	Print, formal	Digital, UI

Table 1 provides a conceptual comparison of Songti and Heiti typefaces based on their stylistic, cultural, and functional attributes. This table helps synthesize prior literature and clarifies the theoretical distinction between traditional and modern typographic forms in the Chinese context.

2.3 Aesthetic Perception and Readability

Aesthetic perception is a key determinant of user experience, influencing both emotional response and behavioral engagement. Visually appealing typography can enhance user satisfaction, increase attention, and improve perceived usability, whereas poorly designed typography may hinder readability and reduce user trust (Bhandari et al., 2019; Lindgaard, 2007; Mohamed, 2025; Pizzolante, 2025; Seifi & Moshayeri, 2024). Readability, in particular, is affected by multiple typographic variables, including font size, spacing, stroke complexity, and structural balance.

In the case of Chinese characters, stroke density and visual harmony are especially important due to their inherent complexity. Research suggests that simpler and more uniform typefaces improve legibility in digital contexts, particularly on smaller screens (Hussein & Rashid, 2025; Joyce; Tinker, 1963).

Importantly, aesthetic appeal and readability are not independent constructs. Instead, they interact dynamically, as visually pleasing typography can enhance perceived readability even when objective readability remains constant. This interplay underscores the need to examine typography from both functional and perceptual perspectives.

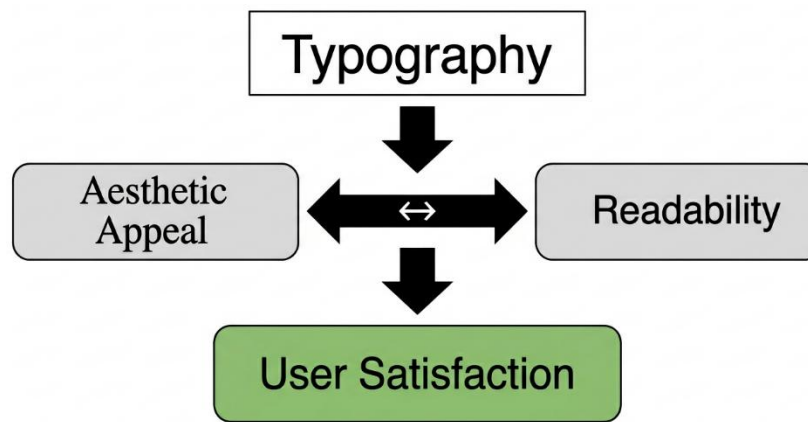


Figure 3. Aesthetic–readability relationship

Figure 3 illustrates the interaction between aesthetic appeal and readability. Rather than functioning independently, these two dimensions jointly influence user satisfaction, highlighting the importance of balancing form and function in design.

2.4 Typography and Trust

Typography plays a critical role in shaping perceived credibility in digital environments. Visual design elements, including font style, layout, and color, contribute significantly to users' trust judgments, often within milliseconds of exposure (Fogg et al., 2003). Typeface choice, in particular, can signal professionalism, reliability, and authority.

Formal and structured typefaces are generally associated with higher credibility, while overly decorative or unconventional fonts may reduce perceived trustworthiness. This effect is especially relevant in contexts such as e-commerce, online education, and digital media, where trust is a key determinant of user engagement and decision-making (Ekanayake & Wanniarachchi, 2024). In the Chinese context, the relationship between typography and trust may be further influenced by cultural familiarity. Traditional fonts such as Songti may enhance trust due to their association with institutional authority, whereas modern fonts such as Heiti may convey efficiency but not necessarily credibility (Kwok, 2019; Tam, 2010). This distinction highlights the need for context-sensitive typographic design.

2.5 Research Gap

Despite the growing body of literature on typography and user experience, several important gaps remain. First, most existing studies focus on Western typographic systems, limiting their applicability to non-Latin scripts such as Chinese. Second, prior research often examines typography from a single perspective such as readability or aesthetics without integrating multiple dimensions of user perception. Moreover, limited attention has been given to the cultural and symbolic meanings embedded in Chinese typefaces, particularly in digital contexts. The interaction between aesthetic perception, readability, cultural interpretation, and trust remains underexplored. To address these gaps, the present study adopts a multidimensional framework that integrates aesthetic, functional, and cultural perspectives. By examining the effects of Songti and Heiti typefaces on user perception, this research provides a more comprehensive understanding of typography in Chinese digital media.

3. Methodology

3.1 Research Design

This study adopts a quantitative research design to systematically examine user perceptions of different typography styles in digital contexts. A quantitative approach is appropriate for this research as it enables the measurement of perceptual constructs and facilitates statistical comparison across typographic conditions (Creswell & Clark, 2007; Creswell & Creswell, 2017; Harrison et al., 2020). A structured online questionnaire was developed to capture participants' evaluations of typography across multiple dimensions, including aesthetic appeal, readability, cultural appropriateness, and trust. This design allows for the standardized collection of responses and enhances the reliability and comparability of the data.

3.2 Sample

The study sample consisted of 150 university students recruited from various academic disciplines. This sampling approach ensures a diverse range of perspectives, including participants with differing levels of design knowledge and visual literacy.

University students were selected as the target population because they represent active users of digital media and are frequently exposed to diverse typographic environments. Their familiarity with digital interfaces makes them an appropriate group for evaluating typography in contemporary contexts.

Table 2. Demographic characteristics of respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	70	46.7
	Female	80	53.3
Age	18–20	55	36.7
	21–23	70	46.7
	24+	25	16.6
Field of Study	Design	50	33.3
	Engineering	60	40.0
	Others	40	26.7

Table 2 presents the demographic profile of the respondents. The sample consists of 150 university students with a relatively balanced gender distribution. The majority of participants fall within the 21–23 age group, representing typical university-aged users of digital media. The inclusion of students from design, engineering, and other disciplines ensures diversity in visual literacy and academic background, which is important for examining differences in typography perception.

3.3 Data Collection

Data were collected באמצעות an online survey platform. Participants were presented with a series of visual stimuli consisting of typography samples, including Songti, Heiti, and decorative font styles (see Appendix A). These samples were designed to reflect realistic digital media contexts, such as website interfaces or mobile applications.

Participants were asked to evaluate each typography sample based on predefined criteria. The use of visual stimuli ensures ecological validity, as it allows respondents to make judgments based on actual visual representations rather than abstract descriptions.

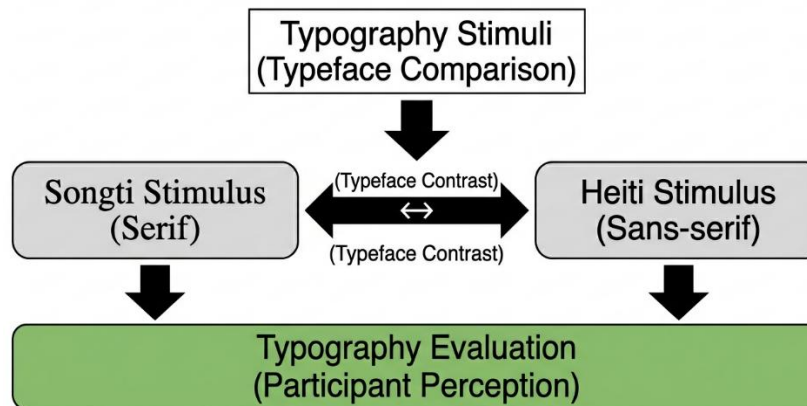


Figure 4. Typography stimuli

Figure 4 presents examples of the typography stimuli used in the experiment. Providing visual samples enhances transparency and allows readers to understand the basis of participants' evaluations.

3.4 Measures

The questionnaire consisted of multiple items measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Four key dimensions of user perception were assessed:

- Visual appeal (e.g., "This typeface is visually attractive")
- Cultural appropriateness (e.g., "This typeface reflects Chinese cultural identity")
- Readability (e.g., "This typeface is easy to read on screen")
- Trust (e.g., "This typeface makes the content appear credible")

These constructs were selected based on prior literature on typography, user experience, and visual perception (Lupton, 2014; Henderson et al., 2004; Fogg et al., 2003).

In addition to the quantitative measures, open-ended questions were included to capture qualitative insights regarding participants' preferences and interpretations of typography. This mixed-element approach provides deeper contextual understanding and supports the interpretation of quantitative findings.

Table 3. Measurement constructs and items

Construct	Sample Item	Source
Visual Appeal	"This typeface is visually attractive."	Lupton (2014)
Cultural Appropriateness	"This typeface reflects Chinese cultural identity."	Henderson et al. (2004)
Readability	"This typeface is easy to read on screen."	(Bernard et al., 2003)
Trust	"This typeface makes the content appear credible."	Fogg et al. (2003)

Table 3 summarizes the key constructs and representative measurement items used in the study. These constructs were derived from established literature in typography, user experience, and visual communication. The use of validated dimensions visual appeal, cultural appropriateness, readability, and trust ensures both theoretical grounding and measurement reliability.

3.5 Data Analysis

Data analysis was conducted using descriptive and comparative statistical techniques. Mean scores and standard deviations were calculated to summarize participants' evaluations of each typography style across the four dimensions. Comparative analysis was performed to identify differences in perception between Songti, Heiti, and decorative fonts. This approach allows for the examination of relative strengths and weaknesses of each typography style in terms of aesthetic, functional, and psychological impact.

Where appropriate, subgroup comparisons (e.g., by academic background) were also explored to identify variations in perception among different user groups. This provides additional insight into how prior experience and disciplinary context may influence typographic evaluation.

4. Results

The findings reveal statistically meaningful differences in user perceptions across typography styles, highlighting the multidimensional influence of typographic design on aesthetic, cultural, and functional evaluations. Songti typefaces received the highest ratings in terms of cultural resonance ($M = 4.30$, $SD \approx 0.70$) and visual appeal ($M = 4.20$, $SD \approx 0.75$). These results indicate that participants strongly associate Songti with traditional values, authority, and credibility. This reinforces the notion that serif-based Chinese typefaces carry culturally embedded meanings that extend beyond their visual form. In contrast, Heiti typefaces received comparatively lower ratings in aesthetic appeal ($M = 3.80$, $SD \approx 0.80$), but were consistently perceived as more modern, clear, and functionally efficient, aligning with their widespread use in digital interfaces.

Table 4. Descriptive statistics of typography perception

Variable	Songti (Mean)	Heiti (Mean)	Std. Deviation
Visual Appeal	4.20	3.80	0.75
Cultural Appropriateness	4.30	3.50	0.70
Readability	4.05	4.15	0.72
Trust	4.25	3.70	0.78

Table 4 presents the descriptive statistics comparing user perceptions of Songti and Heiti typefaces. Songti consistently scores higher in cultural appropriateness and trust, indicating its strong association with tradition and credibility. In contrast, Heiti shows slightly higher readability, reflecting its functional suitability for digital environments. These results highlight the trade-off between cultural symbolism and functional clarity in typographic design.

In terms of readability, both Songti and Heiti achieved high mean scores (overall $M = 4.10$, $SD \approx 0.72$), suggesting that both typefaces are effective for digital reading contexts. However, the absence of substantial differences in readability indicates that user preference is influenced more strongly by aesthetic and cultural factors than by purely functional considerations.

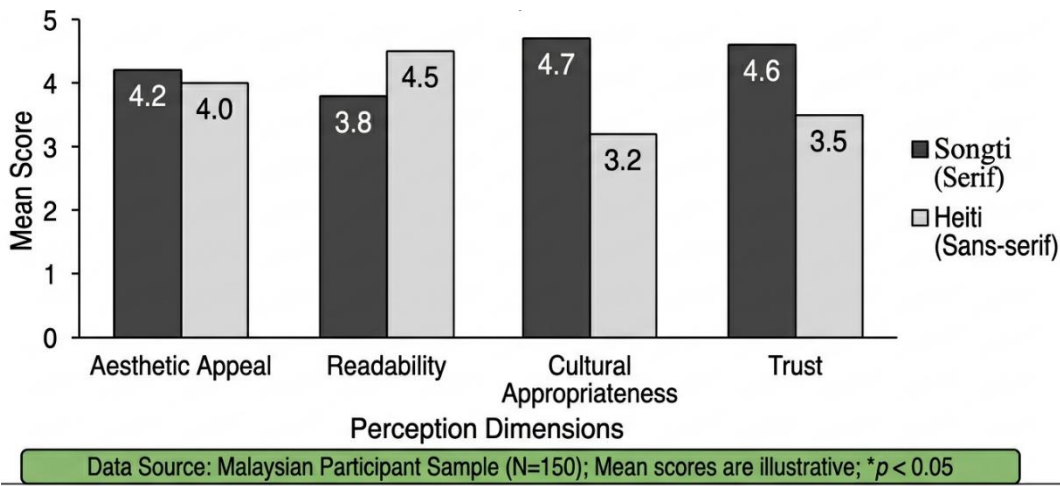


Figure 5. Mean comparison of typography perception

Figure 5 visually compares the mean scores of Songti and Heiti across the four perception dimensions. It clearly shows that Songti dominates in cultural and trust dimensions, while Heiti performs strongly in readability.

Further analysis revealed variation across academic backgrounds, indicating that user perception is partially shaped by disciplinary orientation. Specifically, students with design-related backgrounds showed a preference for Heiti, likely due to its alignment with modern design principles and minimalistic aesthetics. In contrast, students from engineering and non-design disciplines demonstrated a stronger preference for Songti, possibly reflecting familiarity and perceived credibility associated with traditional formats. This finding suggests that typographic preference is not uniform but context-dependent, influenced by users’ prior exposure, training, and cognitive expectations.

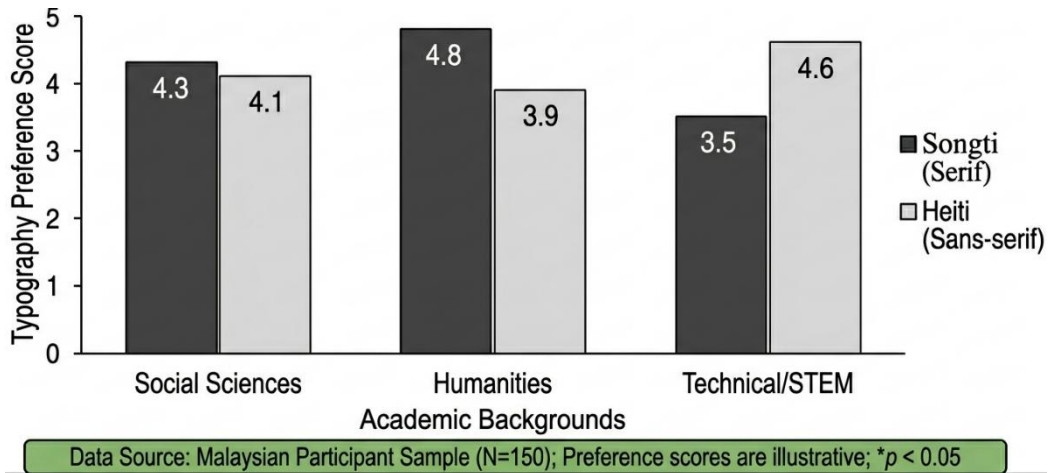


Figure 6. Typography preference by academic background

Figure 6 illustrates differences in typography preference across academic backgrounds. The variation suggests that user perception is influenced by disciplinary exposure and visual literacy. Taken together, the results indicate that typography influences user perception through both functional (readability) and symbolic (aesthetic and cultural meaning) dimensions. While both Songti and Heiti perform well in readability, their differences emerge more prominently in how

they communicate identity, trust, and modernity. This supports the argument that typography should be understood not merely as a technical design choice but as a strategic communication tool in digital environments.

5. Discussion

The findings of this study underscore the dual role of typography as both a functional tool and a symbolic communicative element in digital environments. While both Songti and Heiti typefaces demonstrated high levels of readability, their differences emerged more prominently in the domains of aesthetic perception, cultural meaning, and trust. This suggests that typographic effectiveness cannot be fully understood through usability metrics alone but must also be examined through cultural and psychological lenses. The strong performance of Songti in terms of cultural resonance and trust supports existing literature emphasizing the role of visual familiarity and cultural symbolism in shaping user perception (Henderson et al., 2004). As a typeface deeply rooted in traditional print culture, Songti appears to evoke associations with authority, credibility, and institutional legitimacy. These findings align with theories of visual semiotics, which posit that design elements carry culturally embedded meanings that influence interpretation beyond their functional properties. In this context, Songti functions not merely as a readable font but as a symbol of cultural continuity and trustworthiness.

In contrast, Heiti was perceived as more modern, clear, and functionally efficient, reflecting its alignment with contemporary digital design principles. Its simplified structure and minimalistic form make it well-suited for screen-based interfaces, where clarity and speed of information processing are critical. However, its relatively lower association with trust suggests that modernity and efficiency do not necessarily translate into perceived credibility. This highlights a potential trade-off between functional clarity and symbolic authority, particularly in culturally rich typographic systems such as Chinese. Furthermore, the results reveal that typographic perception is context-dependent and user-specific. Differences observed across academic backgrounds indicate that users' prior knowledge, training, and visual literacy significantly shape their preferences. Design-oriented participants demonstrated a stronger preference for Heiti, likely due to their familiarity with modernist aesthetics and usability principles. In contrast, participants from non-design disciplines showed greater affinity for Songti, possibly reflecting reliance on familiarity and conventional cues of credibility.

These findings contribute to the growing body of research suggesting that user experience is not solely determined by interface design but also by users' interpretive frameworks and cultural expectations. Typography, therefore, operates at the intersection of design, cognition, and culture, mediating how users perceive and evaluate digital content. Overall, this study advances the understanding of typography by demonstrating that its impact extends beyond readability to include aesthetic judgment, cultural interpretation, and trust formation. It highlights the need for designers to adopt a more holistic approach to typographic selection, considering not only functional performance but also the symbolic meanings conveyed by different typefaces.

6. Implications

6.1 Practical Implications

The findings of this study offer several important implications for designers, digital platform developers, and practitioners in visual communication. First, the results highlight the necessity of context-sensitive typographic selection. Designers should align typeface choices with the communicative purpose of the content. For instance, *Songti* is more suitable for contexts requiring authority, credibility, and cultural authenticity such as educational materials, official communications, and formal publications whereas *Heiti* is better suited for digital interfaces, mobile applications, and user-centered platforms that prioritize clarity and efficiency.

Second, the study underscores the strategic role of typography in shaping user trust and engagement. In digital environments such as e-commerce platforms, where credibility directly influences user behavior, typographic choices can serve as subtle but powerful signals of reliability. Incorporating culturally resonant typefaces such as *Songti* in key informational areas (e.g., product descriptions, policy statements) may enhance perceived trustworthiness, while *Heiti* can be used to optimize navigation and readability.

Third, the findings suggest that designers should consider user diversity, including differences in background, expertise, and visual literacy. Tailoring typographic design to target audiences can improve user experience and communication effectiveness.

6.2 Theoretical Implications

This study contributes to the literature by advancing a more integrated understanding of typography that combines functional, cultural, and psychological perspectives. While prior research has often focused on readability or usability in isolation, the present study demonstrates that typography operates simultaneously as a cognitive tool and a symbolic system.

Furthermore, the findings extend existing theories in visual communication and human-computer interaction by highlighting the role of cultural meaning and user interpretation in typographic perception. The distinction between *Songti* and *Heiti* illustrates how typefaces can embody different value systems tradition versus modernity and influence user judgments accordingly. By incorporating multiple dimensions of perception aesthetic appeal, readability, cultural appropriateness, and trust this study provides a more comprehensive framework for understanding typography in non-Latin scripts, particularly within the Chinese digital context.

7. Conclusion

This study demonstrates that typography plays a significant role in shaping user perception in Chinese digital media environments. The findings reveal that while both *Songti* and *Heiti* typefaces perform effectively in terms of readability, they differ substantially in their symbolic and perceptual impact. *Songti* is strongly associated with cultural authenticity, authority, and trust, whereas *Heiti* conveys modernity, clarity, and functional efficiency. These results highlight that typography is not merely a technical or aesthetic choice but a strategic communication tool that influences how users interpret and evaluate digital content. By integrating functional performance with cultural and psychological dimensions, this study provides a more nuanced understanding of typographic design. From a practical perspective, the findings emphasize the importance of aligning typographic choices with context, audience, and communication goals.

From a theoretical standpoint, the study contributes to the growing body of research that views design elements as carriers of meaning within user experience. Ultimately, developing effective and culturally responsive digital interfaces requires a holistic approach that recognizes typography as both a visual and symbolic system, capable of shaping perception, trust, and engagement in meaningful ways.

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Conflicts of Interest

The authors declare that there are no conflicts of interest related to this study

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Appendix A: Sample Screenshots of Typography Used in the Study

Note: This appendix presents representative screenshots of typography samples analyzed in the visual content analysis.



Figure A.1: Songti Typeface Example (People's Daily Online, 2010)

Description: This screenshot illustrates the use of the traditional Songti typeface on a Chinese news homepage. The typography emphasizes strong stroke contrast, pronounced vertical serifs, and a formal visual tone commonly associated with authoritative print and digital news media.



Figure A.2: Heiti Typeface Example (Taobao, 2025)

Description: This image shows the application of the Heiti typeface in product titles and pricing information. The font is characterized by uniform stroke weight, a clean sans-serif structure, and high legibility, reflecting contemporary digital design practices in e-commerce platforms.



Figure A.3: Decorative Typeface Used in a Festival Campaign (JD.com, 2022)

Description: This screenshot features a brush-inspired decorative display font used during a Double Eleven promotional campaign. The typeface blends traditional calligraphic elements with bold digital styling, creating a festive and culturally expressive visual identity.