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Study on Trust Construction and Conversational Experience Design of Financial Intelligent Virtual Assistants

Zhouping Xu

School of Design and Architecture, Zhejiang University of Technology, Hangzhou, China
2893945677@qq.com

Abstract. This study aims to explore how the design characteristics of intelligent agents can enhance users' trust and promote their continuous usage intention of financial intelligent virtual assistants. Through literature review and comparative analysis of multiple cases, this paper summarizes the practical modes of anthropomorphic design in financial conversational systems and puts forward three core design principles, namely "Moderate Anthropomorphism of Image", "Explicit Expression of Capability" and "Emotional Resonance". Furthermore, it refines the conversational interface design strategies suitable for high-risk financial scenarios, and verifies their effectiveness by using multiple regression analysis based on the questionnaire survey data of 263 financial service users. The results show that a more anthropomorphic appearance design, a more professional-oriented capability expression and a more affable linguistic style are important factors affecting users' trust. Among them, perceived professionalism and perceived affability have a direct and significant impact on users' usage intention. The conclusion indicates that the design strategies proposed in this study can effectively enhance users' trust and promote their continuous usage intention, providing theoretical support and practical guidance for financial institutions to develop more trustworthy intelligent assistant products.

Keywords: Intelligent Virtual Assistants, Trust Construction, Anthropomorphic Design, Conversational Interaction, User Experience

1. Introduction

With the in-depth integration of Generative Artificial Intelligence (GenAI) and Financial Technology (FinTech), financial services have entered the era of "Agent" interaction, and users have an enormous demand for intelligent consultants with decision-making assistance value [1,2]. According to the IDC Report 2025, the market scale of GenAI platforms and applications in China's financial industry had reached 914 million RMB in 2024, and it is expected to experience an explosive growth with a compound annual growth rate of over 40% by 2027. As the core link connecting financial institutions and users, intelligent virtual assistants have evolved from simple command response tools to important interactive media supporting complex financial consulting and risk assessment, becoming one of the key sources for financial institutions to improve user stickiness and optimize service paths.

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However, financial scenarios are inherently characterized by high risk and high uncertainty. When making key decisions such as asset allocation, users' psychological demands have shifted from pursuing operational efficiency to seeking security and trust. Most of the existing design of financial conversational interfaces focuses on function realization and information accumulation, without fully considering the driving effect of design characteristics on trust construction during the interaction process. As a result, users still generally have defensive psychology and a sense of uncertainty when facing algorithmic suggestions related to fund security [3,4]. This disconnect between design and users' psychological expectations limits the in-depth implementation of intelligent assistants in high-value business scenarios.

Therefore, this paper systematically sorts out the internal mechanism between the design characteristics of intelligent agents and trust construction, and refines the conversational interaction design strategies suitable for high-risk scenarios in view of the particularity of financial business. By constructing an experimental prototype and combining empirical research on users, it verifies the influence path of design elements on users' trust perception and continuous usage intention, aiming to provide a design framework with theoretical support and practical value for financial institutions to develop more trustworthy and professional intelligent assistant products.

2. Deconstruction of characteristics and practical analysis of trust construction for intelligent agents

2.1. The influence mechanism of intelligent agent interaction characteristics on trust

In the field of human-computer interaction, intelligent agents are no longer regarded as simple efficiency tools, but have gradually evolved into interactive subjects with social attributes. The Computers Are Social Actors (CASA) theory points out that due to the continuation of social instincts in the process of human evolution, when users interact with systems with social cues, even if they clearly know that the other party is a non-biological entity, they will unconsciously regard it as a social participant and apply social rules and expectations in interpersonal communication to give feedback [5,6]. This means that every design detail presented by an intelligent agent, from its image and appearance to language organization, and even the speed and logic of responses, will become psychological cues for users to evaluate trust perception and participate in users' cognitive judgment of the system's reliability and credibility.

Existing studies mostly explore the impact of artificial intelligence systems on users' perception and behavior from a single design characteristic perspective. At the level of visual representation, appearance design is considered the key to establishing initial trust, as it not only determines users' first impression of the system's capability but also directly affects the distribution of cognitive load [7]. At the level of communication feedback, the uniqueness of linguistic style [8] and the emotional rhythm contained in vocal expression [9] can significantly regulate the social presence in the interaction process, thus drawing users closer or pushing them away. At the core functional level, the transparency of the system's information processing and the way it handles uncertain issues form the underlying basis for users to evaluate its professional level [10].

However, in practical application scenarios, intelligent virtual assistants often interact with users through the comprehensive presentation of multiple anthropomorphic cues, forming an overall human-like experience [11]. This multi-cue interaction method is particularly crucial in financial service scenarios involving asset allocation and risk control. The image presentation, perceived professional capability and emotional expression of a system do not play a role independently, but jointly affect users' value judgment through cue synergy [12]. Although some studies have attempted

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to classify intelligent agent cues from the capability dimension and emotional dimension [13], existing explorations on the structural relationship and action mechanism of different design characteristics in high-risk application scenarios still mostly remain at the conceptual level. In the low error tolerance environment of financial decision-making, simple anthropomorphic expression may induce a sense of distrust due to expectation bias. Therefore, an in-depth discussion on how to achieve synergistic performance through appearance, task capability and linguistic style, and an attempt to construct a reference-worthy trust design framework, may provide certain ideas for the application and optimization of intelligent financial assistants in complex business scenarios.

2.2. Case analysis of typical financial conversational systems

The evolution of intelligent financial assistants shows a trend from single command response to multi-sensory synergy. Early systems mostly stayed at superficial functional feedback, while current conversational systems pay more attention to building in-depth user trust through the combined effect of visual cues, logical presentation and emotional regulation.

To deeply understand the application logic of the above theoretical dimensions in real products, this study selected six representative mainstream financial intelligent virtual assistants at home and abroad for comparative analysis. The samples cover built-in assistants of comprehensive bank APPs (e.g., China Merchants Bank Xiaozhao), assistants of third-party financial technology platforms (e.g., Ant Fortune Maxiaocai) and professional investment advisory robots (e.g., Betterment), etc. (Table 1). The research was mainly carried out around four dimensions: the degree of visual anthropomorphism, the way of capability demonstration, linguistic emotional expression, and interactive transparency and decision support. Data were collected through methods such as direct experience, interface disassembly and user comment sorting.

Table 1. Comparative analysis table of domestic and foreign mainstream financial intelligent virtual assistant cases

Platform	Source Type	Degree of Visual Anthropomorphism	Way of Capability Demonstration	Linguistic Emotional Expression	Interactive Transparency and Decision Support
China Merchants Bank Xiaozhao	Comprehensive Bank	Low (floating ball image with facial features)	Interpreting financial logic step by step, providing traceability of basic income and risk data	Moderately encouraging language (e.g., "This choice is quite steady!")	Medium (basic explanation + display of key parameters)
Industrial and Commercial Bank of China Gongxiaozhi	Comprehensive Bank	Medium (cartoon robot image)	Real-time data query + product matching recommendation + basic financial planning	Standardized greetings + task completion confirmation prompts	Medium (clear operation guidance, but insufficient in-depth decision-making basis)
Ant Fortune Maxiaocai	Third-party Platform	Low (abstract geometric image)	Visualization of asset allocation model + historical backtest data + Monte Carlo simulation	Neutral and professional language, providing encouraging prompts only at key nodes	Extremely high (complete decision chain + parameter adjustment interaction + scenario simulation)
Ant Fortune Zhi Xiaobao	Third-party Platform	Medium (floating ball image with facial features)	Providing personalized suggestions based on users' historical behavior, displaying basic algorithm logic	Contextual caring language (e.g., active risk reminders when the market fluctuates)	Medium to high (display of key parameters + risk grading prompts)

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Table 1. (continued)

Betterment	Intelligent Investment Advisory Service	Simplified UI with no concrete image	Goal-oriented asset allocation + visualization of tax-loss harvesting + automatic rebalancing logic	Progress prompt-based encouragement (e.g., "Your retirement goal completion rate has reached 68%") + risk balance prompts	Extremely high (fee transparency + step-by-step explanation of strategy logic + comparison of alternative schemes)
Wealthfront	Intelligent Investment Advisory Service	Simplified UI with no concrete image	Automated allocation + tax optimization + visualization of risk smoothing algorithm	Progress prompts to reduce anxiety + neutral supportive language	High (detailed reports + parameter adjustment + backtest data)

The comparative analysis shows that current mainstream platforms have reached some consensus on design strategies: at the visual level, they tend to adopt a low to medium degree of anthropomorphic design to maintain the rigor of financial services; in terms of capability demonstration, they focus on the explicit expression of capabilities, and strengthen users' professional cognition by using data visualization and logic traceability mechanisms; in emotional expression, they tend to adopt a restrained and contextual empathy method to balance the affability of interaction and the authority of institutions.

Combined with literature analysis and case research, this study summarizes these practical modes into the following three-dimensional design principles, which serve as the basis for subsequent strategy construction: (1) Moderate Anthropomorphism of Image (image design dimension): Excessively realistic human images should not be pursued in financial scenarios to avoid psychological resistance caused by expectation imbalance [14]. Mature cases mostly adopt neutral and minimalist visual symbols, aiming to balance the affability of interaction and the prudence of financial services, thus reducing users' defensive psychology; (2) Explicit Expression of Capability (task capability dimension): Trust often comes from mastery of the interaction process. Converting the complex back-end computing logic (such as asset allocation algorithms and market fluctuation analysis) into visual and interpretable feedback information can significantly enhance users' recognition of the system's professional level. This transparent processing method is the core to overcome anxiety about the technological black box and establish functional trust [15]; (3) Emotional Resonance (linguistic style dimension): Language is no longer merely a carrier of information, but a tool for building emotional connections. By integrating active care and emotional regulation into rigorous professional terms (such as soothing analysis when the market fluctuates sharply), intelligent agents can effectively reduce users' sense of technological alienation and establish psychological resonance based on decision support. The synergistic effect of the above three dimensions constitutes the basic framework for intelligent agents to build trust in financial scenarios, and also provides practical basis for the proposal of conversational interface design strategies in this paper.

3. Conversational interface design strategies based on trust construction

Based on the previous analysis of the design elements of intelligent agents and the mechanism of trust construction, this study translates the three key dimensions of appearance presentation, capability expression and language interaction into operable conversational interface interaction design strategies.

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3.1. Visual image strategy: forming a stable initial judgment

When users first contact an intelligent agent, the visual impression often takes effect prior to the functional experience and affects their judgment of the system's professionalism in a short time. Financial decision-making itself has risk attributes: if the interface presents an overly entertaining temperament, it is easy to weaken the sense of solemnity; if it is highly realistic, it may raise capability expectations and even bring psychological gap. Therefore, the visual expression should be controlled in a moderate anthropomorphism range, and simplified cartoon images, symbolic graphics or low-complexity 3D characters can be adopted, which can make the agent have basic recognizability without strengthening unnecessary anthropomorphic associations.

In terms of interface layout, the intelligent agent's image should focus on the functions of interaction prompts and identity recognition. By reducing the image proportion, fixing the display position or adopting lightweight avatar logos, users' attention is guided to focus on core decision-making information and analysis content, and the impact of visual interference on information understanding is weakened. In terms of interactive feedback, the interface needs to pay attention to rhythm, and build a clear interactive rhythm through micro-animations, state feedback and hierarchical information prompts. For example, displaying the system's receiving status in the input stage, presenting the processing progress status in the analysis stage, and highlighting key content in a structured and highlighted way in the result stage, all convey a stable and predictable feedback rhythm to users, which helps to improve the perception of system reliability and reduce users' waiting anxiety. Finally, adopt restrained color expression and use low-saturation cool colors to maintain a rational atmosphere, and distinguish information levels through appropriate emphasis only when involving risk alerts or key operations. This can make the overall visual system stable and restrained, which is more conducive to providing a clear starting point for trust judgment.

3.2. Capability perception strategy: strengthening the comprehensibility of the judgment process

In financial service scenarios, whether users trust the system often depends on whether they can understand how judgments are generated, rather than just whether the results are clear. If the interface only gives conclusions and the decision-making logic is hidden, trust will lack support. Therefore, the conversational content should present a from shallow to deep structure, placing the core conclusion at the front, while supplementing key data and reasoning basis, and retaining the complete analysis path for users to view further. Through the information expansion and folding mechanism, users can choose the reading depth according to their own experience, thus avoiding the concentration of cognitive load.

When facing complex models or algorithm results, flow charts or variable relationship diagrams can be used to show the connections between key factors, making the judgment path concrete without laying out technical details. In the context of asset allocation and risk assessment, introducing functions such as parameter adjustment and scenario simulation allows users to independently observe result changes after adjusting conditions, embedding understanding into the user experience. In addition, key investment suggestions need to be accompanied by explanations of data sources, hypothetical premises and applicable boundaries, and clarify decision-making conditions through risk grading and uncertainty prompts. When the judgment logic is clearly presented, the system's professional capability is no longer just an abstract impression, but can be transformed into an understandable and inspectable process.

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3.3. Linguistic and care strategy: balancing authoritative expression and affable support

Conversational language is the carrier of continuous interaction between users and intelligent agents, and also directly affects users' psychological sense of security. Financial decision-making is often accompanied by uncertainty: if the expression is too rigid, it is easy to aggravate tension; if it is overly emotional, it will weaken the professional image. Therefore, the linguistic style needs to match the risk level of the task. When the risk is low, keeping concise and clear helps to improve efficiency; when the risk gradually rises, more explanations and condition descriptions should be added; when involving major decisions, it is necessary to guide users to make choices on the premise of understanding through multi-scheme comparison and boundary prompts.

The system can provide contextual prompts combined with users' behavioral trajectory, such as actively providing risk analysis or strategy updates during market fluctuations, making caring behaviors correspond to real decision-making needs and enhancing users' recognition of the system's value. Emotional expression should be restrained, with a relatively clear sentence structure composed of reminders, explanations and suggestions, relieving anxiety while maintaining a professional attitude. In the long-term service process, the system can also gradually adjust the expression mode according to users' goals and risk tolerance, making the interaction style consistent. The stable context created by language provides continuous support for emotional trust, and also enables the authoritative image and affable experience to coexist within the same framework.

4. Design verification: quantitative analysis based on user research

To test the effectiveness of the above design strategies, this study distributed questionnaires through online platforms in December 2025, inviting users with financial management experience to conduct experience evaluation based on the design prototype produced according to the design strategies. After data cleaning, a total of 263 valid samples were collected. The sample shows that 92.3% of the respondents have used intelligent virtual assistant services, 61.2% are female, 75.6% are aged 18-35, 96.9% have a college degree or above, and 87% have more than two years of investment or financial management experience. From the perspective of demographic characteristics, the respondents are generally young and highly educated, and their financial management attitude is mainly prudent, which is consistent with the high-risk perception scenario concerned in this study.

In the data analysis stage, SPSS software was used to conduct scale reliability analysis, exploratory factor analysis and multiple linear regression analysis in turn. The results of reliability analysis show that the Cronbach's α coefficients of each latent variable are between 0.701 and 0.850, all reaching the acceptable standard, indicating that the scale has good internal consistency. The results of exploratory factor analysis show that the KMO value is 0.930, and the result of Bartlett's Test of Sphericity is significant (Sig < 0.001), indicating that the sample data is suitable for factor analysis. A total of 5 factors were extracted in the analysis, accounting for 69.1% of the total variance cumulatively. The standardized factor loadings of each measurement item on its corresponding factor are all greater than 0.60, indicating that the scale has good construct validity.

Through multiple linear regression analysis (Table 2), the anthropomorphic appearance, perceived professionalism and perceived affability in the design of intelligent virtual assistants all have a significant positive impact on users' trust in intelligent agents, and perceived professionalism and perceived affability further have a significant direct positive impact on usage intention. However, the direct effect of anthropomorphic appearance on usage intention is not significant, and its impact on users' usage intention is mainly exerted through the mediating mechanism of trust. On

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the whole, the empirical results support the effectiveness of the design strategies proposed in this study in enhancing users' trust and promoting usage intention.

Table 2. Results of multiple linear regression analysis

Independent Variable	Dependent Variable: Trust	Dependent Variable: Trust	Dependent Variable: Usage Intention	Dependent Variable: Usage Intention
	Regression Coefficient	Significance	Regression Coefficient	Significance
1. Anthropomorphic Appearance	0.165	0.009**	0.123	0.097
2. Perceived Professionalism	0.483	< 0.001***	0.402	< 0.001***
3. Perceived Affability	0.225	< 0.001***	0.228	< 0.001***

Note: "***" means $p < 0.001$; "**" means $p < 0.01$.

5. Conclusion

With the deepening of the involvement of intelligent assistants in financial decision-making, the value of interaction design is shifting from simple process optimization to in-depth trust construction. In scenarios involving asset security and risk assessment, shaping an intelligent agent image with professional depth and credibility through systematic design methods is of great research significance for reducing users' technological resistance in high-risk environments and establishing a stable human-machine connection.

Through the deconstruction of the interaction characteristics of intelligent agents, this study puts forward trust-driven elements covering three dimensions: visual expression, task capability and linguistic style. Empirical analysis shows that perceived professionalism is the core factor for trust establishment, and perceived affability plays an important regulatory role in enhancing interaction comfort and alleviating decision-making pressure. At the same time, as the entry point of initial interaction, visual image indirectly affects users' usage intention mainly by initiating initial perception. This finding indicates that design in financial scenarios should not blindly pursue the superficial phenomenon of anthropomorphism, but should establish a reasonable synergistic relationship among vision, logic and emotion.

On this basis, the study attempts to transform abstract psychological mechanisms into specific and operable conversational interface interaction strategies, and puts forward design paths from three aspects: image representation, explicit capability expression and linguistic adaptability. Preliminary verification through design shows that the above strategies can effectively improve users' recognition of the system's professionalism and significantly enhance their intention of long-term use. It can be seen that trust construction is not a single design result, but a comprehensive perception jointly shaped by information organization, interaction logic and visual feedback, and its design process has clear operability and methodological significance.

On the whole, this study deepens the understanding of the relationship between intelligent agent characteristics and trust in financial contexts at the theoretical level, and provides a structured reference framework for financial institutions to develop highly credible intelligent assistants at the practical level. Due to the limitations of the experimental environment and sample coverage, future research will further focus on the evolution law of trust in long-term dynamic interaction, explore the differentiated perception mechanisms of user groups with different financial literacy levels, and

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continuously evaluate the effectiveness of design strategies in real business scenarios, thus promoting the in-depth transformation of financial intelligent interaction design from focusing on operational efficiency to focusing on security and trust.

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