Research on the Role Type of Artificial Intelligence and Consumers' Adoption Intention

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Abstract: With the rapid development of AI, People's interaction with artificial intelligence is increasing gradually, and AI has been able to further understand human feelings and dialogue. This article discusses that the different AI role type can cause people's different degree of belonging, and people have a strong sense of belonging to the friend AI. If consumers have a higher risk perception of AI, people will have more feelings of rejection of AI, and consumers will prefer their own subjective decision-making, so it is difficult to AI robot have more sense of belonging. With more and more interactions between humans and AI, studying the impact of AI role types on consumers' willingness to recommend adoption could help in the application of AI in enterprises.

Keywords: Artificial Intelligence Role Type; Sense of Belonging; Artificial Intelligence Risk Concept; Willingness to Adopt

1. Introduction

Artificial Intelligence (AI) has infiltrated into all aspects of our lives, from daily life to complex industrial applications. AI in natural language processing with technological breakthroughs, machines are gradually able to understand and respond to human language in more complex and intelligent ways. From chatbots to virtual assistants, AI systems are playing an increasingly important role in daily life, helping us to complete the most basic problems to decision-making. Artificial intelligence identity is an individual's perception of what kind of group he or she belongs to, and both play a crucial role in the positive evaluation of chatbots by customers [1].

Although AI has been able to completely replace consumers to complete tasks independently, changed the direct interaction between consumers and products. But AI is also a double-edged sword, a disruptive technology that creates a dividing line of uncertainty for consumers. And many consumers have a fear of artificial intelligence. Our empathy for robots increases as they become more similar to humans, but when that similarity reaches 95% or more, our liking for AI plummets.

Consumer's negative attitude towards AI is the product of the dualistic opposition between human and machine after the Industrial Revolution [2]. With the decline of employee response level, the influence of AI system reliability on customer brand recognition is more significant. This research extends the current body of knowledge about the role of AI in the development of service experiences and the relationship between customers and organizations [9]. Further understanding of the interrelationships among quality-of-service attributes, perceived value, cognitive and emotional trust, satisfaction, and customer loyalty of AI Robots in the context of relevant research on the contribution of chat robots to customer retention, most studies have shown that the quality of service of AI robots can positively affect customer loyalty through perceived value, cognitive trust, emotional trust, and satisfaction [10]. Customer experience in the age of artificial intelligence is being analyzed as AI improves customer experience in shopping, human trust and perception of artificial functions, the personalization and relationship commitment of AI enable consumers to enhance the customer experience in their interaction with AI [11].

2. Research Hypothesis

2.1 Artificial Intelligence Role Type

The role design of AI can be interpreted as a character or a virtual type of character and image, the character is essentially like a group of people collectively think of the next product [3]. The role that AI plays in daily life, first is assistant role, next is to want to make use of the advantage of AI effectively, send out its auxiliary function deeply.

Different types of AI robot roles can significantly improve consumer attitudes and buying behavior towards AI. Artificial Intelligence in human emotions to help consumers to make decisions, promote consumer mental health [5]. Therefore, it is the basis of hypothesis H1.

Based on the enthusiasm for friends, we often choose to buy the people around us have already bought things. The emotional bond between AI robots and humans if, like friends, People's trust in AI increases, then consumers will be more willing to adopt the products recommended by AI. But if the role of AI is merely that of an assistant, it is hard for humans to get close to it, seeing it only as a normal intelligent tool, without feeling anything for it. When the assistant of AI recommendation products, no empathy for AI, human adoption of AI recommendations will be greatly reduced. We therefore propose a hypothesis:

H1: Friend and assistant AI will have a positive impact on consumer adoption intentions;

H1a: Friend AI positively affects consumers' willingness to adopt;

H1b: Compared with friend AI, assistant AI has a lower impact on consumers' willingness to adopt.

2.2 Sense of Belonging

The sense of belonging is a kind of psychological need, which is connected with the sense of psychological security. Sense of belonging is a kind of internal relation among the groups to which an individual belongs, which enables an individual to delimit, identify and maintain a special group. In the process of AI interacting with humans, when AI recommends products to humans, when AI role types and friend types cause people to feel a higher sense of belonging, and choose the products recommended by artificial intelligence. Because artificial intelligence brings people emotional sustenance, and the emotional link between people.

The sense of trust and familiarity between consumers and AI robots can make consumers make positive purchasing behavior and positive emotion, and make consumers feel belonging, security and satisfaction. In this sense of belonging, it can enhance the acceptance of AI, complementing people's lack of sense in daily interpersonal communication, increase happiness. For the artificial intelligence robot from the Friends of a high sense of belonging and a sense of security. Because it is easier for humans to establish identity than AI, when humans establish identity with AI, consumers who recommend products to humans are more likely to adopt them. So we propose a hypothesis:

H2: The sense of belonging plays an intermediary role between the role type of AI and the consumer's willingness to adopt

H2a: For the friend AI will make consumers have a higher sense of belonging, and then consumers have a higher artificial intelligence recommendation adoption;

H2b: Consumers are less likely to adopt AI recommendations because they don't feel a strong sense of belonging to assistant AI.

2.3 Risk Concept in Artificial Intelligence

The application of artificial intelligence in society may lead to ethical and legal problems. Ethical principles such as the promotion of human reproduction, respect for the right to life, fair and just, reasonable control of risk and transparency [6]. According to previous studies, the average consumer may also be resistant to AI products due to the risk of AI substitution for humans [7].

The basic content of social cognitive theory is that human activity is determined by the interaction of three factors: individual behavior, individual cognition and other individual characteristics, and individual environment[8]. Social cognitive theory is applied in this study, in which there is a certain relationship between artificial intelligence recommendation and consumer's willingness to adopt.

Consumers with a high AI risk concept can completely rely on their own subjective will to buy, then any kind of role-based AI can’t make consumers feel a sense of belonging, because consumers do not need AI decision-making advice, and when people have a weak AI risk perception, AI recommendations will have an impact on consumers, the friend artificial intelligence role will let the consumer have the sense of belonging, thus enhances the consumer's adoption intention. It is therefore assumed that:

H3: AI Risk Perception moderates the relationship between AI role type and sense of belonging;

H3a: When People's AI risk concept is high, it will reduce the sense of belonging that the friend AI role type produces to the consumer;

Consumers with a high AI risk concept can completely rely on their own subjective will to buy, then any kind of role-based AI can’t make consumers feel a sense of belonging, because

consumers don't need AI decision-making advice, and when people have a weak AI risk concept, AI recommendations will have an impact on consumers, the friend-type artificial intelligence role will let the consumer have the sense of belonging, thus enhances the consumer's adoption intention. It is therefore assumed that:

H4: AI risk concept mediates the role of belonging between the type of friend AI role and the consumer's willingness to adopt.

To sum up, this study summarizes the three hypotheses mentioned above into a model, as shown in Figure 1.

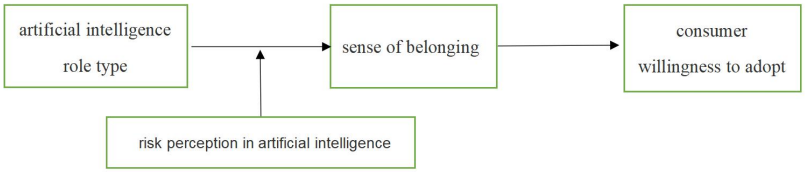


Figure 1. Examines the Model.

3. Research Methods

3.1 Data Source

A total of 212 questionnaires were collected, of which 4 incomplete questionnaires were excluded, 10 questionnaires with less than 30 seconds' filling time were deleted, and 5 questionnaires with unchanged filling contents were deleted, a total of 19 invalid questionnaires were eliminated, and 193 valid questionnaires remained, with a recovery rate of 91%. Among them, there were 109 females (56.2%) and 84 males (43.3%). The age distribution was mainly from 19 to 28 years old (71.1%), occupation type is mainly full-time students in the number of 138, accounting for 71.1%, the number of frequent use of artificial intelligence 50 people, accounting for 25.8%.

3.1.1 Variables and Measurement Tools

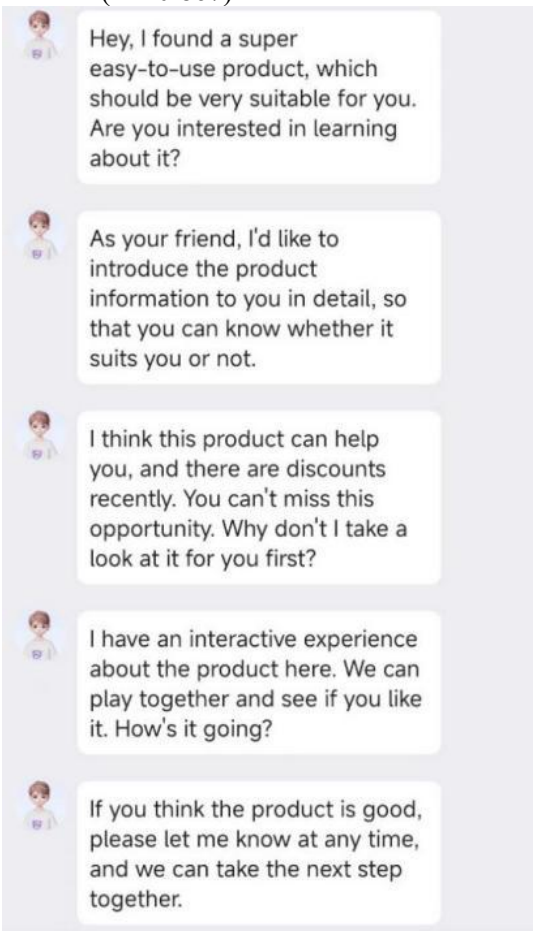
(1) Artificial intelligence role type

The image below simulates different types of AI robots using different sales pitches to recommend products to customers. In order to distinguish different types of AI characters, the language habits of AI manipulation are tested. First, read the experimental material before filling in the questionnaire. Suppose you are going to buy a product, recommended by the two artificial intelligence robots in the Figure 2.

Specific eight problems, divided into the friend type AI role measurement and assistant-type AI role measurement. The friend AI role measure included four questions: "When interacting with the AI, I feel close\ alienated, the AI understands my emotions\ improves my productivity, I expect the AI to be have emotionally like a friend\ assistant, and I think the AI is largely my friend\ assistant." All of these variables were measured using the Likert 5 scale, 1-5 respectively is strongly disagree-strongly agree. The reliability coefficient of friend AI ($\alpha = 0.861$) and assistant AI ($\alpha = 0.854$) were compared.

(2) Consumer willingness to adopt

The three measures of consumer willingness to adopt were" I prefer to use AI-recommended products, I recommend AI-recommended products to friends, and I prefer AI-robot services to traditional artificial services." The reliability coefficient of customer adoption intention ($\alpha = 0.867$).



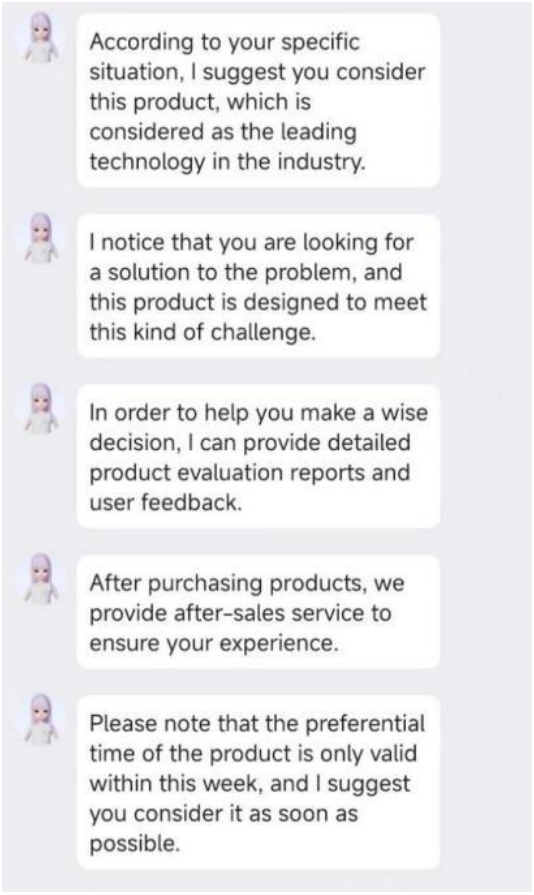


Figure 2. Stimulative Materials

(3) Sense of belonging

The sense of belonging was measured using the questions in Hagerty's sense of belonging scale combined with this paper to form the measure of artificial intelligence sense of belonging. The five questions of belonging were: "I think the AI robot cares about my thoughts, thinks about me, I treat the AI robot as my friend, I am happy with the AI, I feel warm from the chat with the AI robot, and I feel a sense of belonging from the chat with the AI robot." The reliability coefficient of sense of belonging ($\alpha = 0.877$).

(4) Risk concept in artificial intelligence

The research on the risk concept of artificial intelligence by using the article of researcher Martinez et al. (1998). The topics for measuring AI risk concepts are: "I think there are certain risks in AI. (2) I am worried that artificial intelligence will invade my privacy. The development of artificial intelligence threatens the uniqueness of human being. The development and application of artificial intelligence will destroy the unity of human society. In the long run, artificial intelligence will directly threaten the safety and happiness of human beings." The reliability coefficient of risk concept of artificial intelligence ($\alpha = 0.821$).

(5) Common method bias test

In this study, scales based on all variables were completed by the same person, and there may be common method bias. The results showed that 5 factors with eigenvalues greater than 1 were obtained without rotation, and the variance explained by the first factor was 26.69% (< 40%). It can be seen that the common methodological bias does not have much influence on the results of this study.

As shown in Table 1, KMO measure value is 0.860, greater than 0.8, indicating that the scale data is very suitable for factor analysis. The approximate chi-square value of Batley's sphere test was 2357.522, and the degree of freedom was 210. The P value was 0.000, less than 0.01, which passed the significance test with a significance level of 1%.

Table 1. KMO and Bartlett's Test

KMO sampling suitability quantity		0.860
Bartlett test of sphericity	Approximate chi square	2357.522
	Degrees of freedom	210
	Significance	0.000

3.1.2 Data Analysis and Hypothesis Testing

(1) Descriptive statistics and correlation analysis

The mean, standard deviation and correlation coefficient of the main variables are shown in Table 2.

Table2. The Mean, Standard Deviation and Correlation Coefficient of the Main Variables

Variable	1	2	3	4	5	6	7	8	9	10
1.Gender	1									
2.Age	-0.07	1								
3.Education	-0.02	-0.19**	1							
4.Tenure	-0.19**	0.65**	-0.14	1						
5.AI usage frequency	-0.19**	0.15*	-0.11	0.17*	1					
6.Friend AI	-0.20**	0.09	-0.12	0.21**	0.23**	1				
7.Assistant AI	0.22**	-0.28**	0.08	-0.29**	-0.27**	-0.09	1			
8.Sense of belonging	-0.11	-0.02	-0.09	0.02	0.21**	0.67**	-0.00	1		
9.AI risk concept	0.12	-0.13	0.01	-0.19**	-0.18*	-0.03	0.47**	0.03	1	

10.Willingness to adopt	-0.07	-0.08	-0.06	-0.12	0.18*	0.51**	0.15*	0.59**	0.08	1
M	1.56	2.34	3.03	1.70	3.52	3.02	3.47	2.92	3.10	3.19
SD	0.48	1.01	0.72	1.33	1.24	0.86	0.91	0.79	0.79	0.87

Note. *p < 0.05, **p < 0.01, ***P<0.001.

Descriptive and correlation tests for the mean, standard deviation, and correlation of all study variables are shown in Table 2. There was a significant positive correlation between friend AI and consumer's adoption intention (r = 0.51, p < 0.01). There was a significant positive correlation between friend AI and sense of belonging (r = 0.67, p < 0.01). There was a significant positive correlation between AI risk concept and assistant AI (R = 0.47, p < 0.01). There was a significant positive correlation between sense of belonging and willingness to accept (R = 0.59, p < 0.01). As expected, there were significant correlations between all centre-studied variables, so hypotheses could be tested.

(2) Model testing

Statistical analysis was performed with Amos software to test the significant validity of the hypothesis model. The results showed that the five-factor measurement model was in good agreement with the actual data (X2/df = 2.136, X2 = 245.631, DF = 115, CFI = 0.924, GFI = 0.864, TLI = 0.910, RMSEA = 0.077). The results showed that the five variables in the model had good discriminant validity. Two four-factor models (assistant AI and friend AI combined into one factor; sense of belonging and willingness to adopt combined into one factor) , three-factor model (assistant AI and friend AI combined into one factor, sense of belonging and willingness to adopt combined into one factor) were also compared, it fits better than four-factor model and three-factor model. As shown in Table 3, the results show that the theoretical five-factor model is most suitable for data.

Table3. Comparison of Measurement Models

Models	χ2	df	χ2/df	TLI	CFI	GFI	RMSEA
Five-factor model	245.631	115	2.136	0.910	0.924	0.864	0.077
Four-factor model	436.505	132	3.307	0.819	0.844	0.781	0.11
Four-factor model	694.396	116	5.986	0.606	0.664	0.635	0.161
Three-factor model	987.809	167	5.915	0.605	0.615	0.605	0.16

3.2 Hypotheses testing

3.2.1 Test of main effect and mediator effect

Models 1 and 4 in Table 4 show that among all the control variables, only the frequency of AI use significantly affected attribution (β = 0.125, p < 0.01) and consumer willingness to adopt (β = 0.129, p < 0.05) , model 5 shows that friend-type AI can significantly affect the adoption intention of consumers (β = 0.548, p < 0.001). The results of Model 6 show that the influence of assistant AI on consumers' willingness to adopt is lower than that of friend AI. It shows that compared with assistant AI, friend AI can significantly improve the willingness of consumers to adopt. Main effect H1 was proved.

In order to test the mediating effect of sense of belonging, hierarchical regression analysis was carried out according to Baron and Kenny [15]. In this method, three conditions need to be satisfied: (1) The influence of independent variables on mediating variables is significant; (2) The influence of mediating variables on dependent variables is significant; (3) The influence of independent variable on dependent variable is weakened or disappeared because of the addition of variable. If the above three conditions are satisfied, it is proved that the influence of the independent variable on the dependent variable is passed through the intermediary variable.

First, Model 3 examined the effect of role type on the sense of belonging. The results showed that the friend AI had a significant positive effect on the sense of belonging (β = 0.623, p < 0.001), assistant AI had no significant effect on sense of belonging. Second, in Model 6, the friend-type AI and the assistant-type AI have a significant impact on consumers' adoption intention, meeting the first and second conditions of the intermediary effect test. Thirdly, the independent variable and the intermediary variable were put into the regression model 7 to investigate the change of regression coefficient between friend-type AI and assistant-type AI. Comparing the regression coefficients of Model 6 and Model 7, the effect of friend-type AI on consumers'

adoption intention decreased from $\beta = 0.542(p < 0.001)$ to $\beta = 0.271(p < 0.01)$. This indicates that the sense of belonging plays a mediating role between the friend-type AI and the consumer's willingness to adopt, assuming that H2a is proved. However, the effect of assistant AI on consumer's adoption intention decreased from $\beta = 0.181(p < 0.01)$ to $\beta = 0.162(p < 0.01)$. Suppose H2b is proved. This indicates that the role type of AI mediates the effect of consumers' adoption intention. Suppose that H2 is proved.

Table4. Major and Intermediate Effects, Regression Analysis Results

Variable	Sense of belonging			Willingness to adopt			
	Model1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant term	3.086***	1.023**	0.859***	3.404***	1.593***	0.889	0.516
Controlled Variable							
Gender	-0.117	0.034	0.022*	-0.122	0.01	-0.04	-0.049
Age	-0.067	-0.011	-0.005	-0.024	0.025	0.05	0.052
Education	-0.092	-0.023	-0.023	-0.083	-0.022	-0.026	-0.015
Tenure	0.012	-0.075	-0.071	-0.1	-0.176	-0.16	-0.129
AI usage frequency	0.125**	0.052	0.058	0.129*	0.065	0.092	0.067
Independent variable							
Friend AI		0.624***	0.623***		0.548***	0.542***	0.271**
Assistant AI			0.048			0.181**	0.162**
Mediating variable							
Sense of belonging							0.435***
R^2	0.058	0.468	0.47	0.062	0.324	0.353	0.436
$\triangle R^2$	0.058	0.41	0.002	0.062	0.262	0.029	0.083
F	2.321	27.293	23.449	2.467	14.843	14.43	17.808
$\triangle F$	0.045	143.321***	0.671***	2.467	72.037***	8.408***	27.166***

Note. *p < 0.05, **p < 0.01, ***P<0.001.

3.2.2 Moderating effect test

Use hierarchical Regression analysis to test the moderating effect of AI risk perceptions. The test of moderating effect is divided into three steps: (1) Introducing control variable and model independent variable, Model 3 has been implemented in table 4. (2) Control variables, independent variables and adjustment variables are introduced. Sense of belonging was used as dependent variable in Model 8. The control variable, independent variable (friend AI and assistant AI) and moderating variable (AI risk concept) are introduced. (3) Finally, under the premise of the second step, the interactive term (friend AI*AI risk concept and assistant AI*AI risk concept) is introduced. The results showed that in Model 9, friend-type AI and AI risk perception had significant positive effects on sense of belonging ($\beta = 0.623$, $p < 0.001$) , model 8 and Model 9 after the introduction of the risk concept of AI moderator variables, the association between friend-type AI and sense of belonging was lower than Model 3 before the introduction of moderator variables. It shows that the stronger the consumers' risk concept of AI, the easier it is to reduce the sense of belonging of friend-type AI to consumers. Assume that H3a is validated. After Model 10 and Model 11 introduced moderating variables and interaction terms of moderating variables, the results showed that moderating variables had no significant effect on adoption intention. It shows that the risk concept of AI with moderating variables does not play a moderating role between AI role type and adoption intention. AI risk perception moderates the relationship between friend-type AI and sense of belonging. Suppose that H3 is proved. This means that when the AI role is assistant-type, consumers with higher AI risk perception will have a higher sense of belonging and acceptance when facing the products recommended by the assistant AI with a sense of distance. When the AI role is friend, consumers with lower AI risk perception are more likely to choose the friend AI that is close to them when they are faced with AI marketing products. On the whole, friend AI has a higher sense of belonging than assistant AI. The concept of low AI risk positively regulates the relationship between AI role type and sense of belonging.

3.2.3 Moderated mediation effect test

In this study, PROCESS macroprogram and Bootstrap method were used to test the

moderated mediation effect. The research results are shown in Table 6. For each standard deviation increase in AI risk perception, the indirect effect of friend AI on consumers' willingness to adopt via sense of belonging was 0.36(95% confidence interval = [0.2115,0.5225]), this indicates that the indirect effect of AI is significant when the risk concept is high. The indirect effect of friend AI on consumers' willingness to adopt via sense of belonging was 0.25(95% confidence interval = [0.1140,0.4243]) when each standard deviation of AI risk perception was reduced, this indicates that the indirect effect of AI is also significant when the risk concept of AI is low. Meanwhile, the results in Table 6 show that the INDEX judgment value for the moderated mediation effect was 0.0541(95% confidence interval = [0.0040.0.1093]). The above analysis shows that the risk concept of AI can regulate the intermediary role of the sense of belonging in the relationship between friend AI and consumer's adoption intention behavior. H4 has been proven.

Table 5. Moderating Effect Levels, Regression Analysis Results

Variable	Sense of belonging		Willingness to adopt	
	Model 8	**Model 9**	**Model 10**	**Model 11**
Constant term	0.822***	0.963	0.906	0.757
Controlled Variable				
Gender	0.022	0.011	-0.04	-0.03
Age	-0.006	0	0.05	0.05
Education	-0.023	-0.032	-0.026	-0.022
Tenure	-0.07	-0.077	-0.16	-0.157
AI usage frequency	0.059	0.053	0.092*	0.094*
Independent variable				
Friend AI	0.622***	0.613***	0.543***	0.544***
Assistant AI	0.034	0.045	0.184**	0.195**
Mediating variable				
Sense of belonging				
Moderating variable				
AI risk concept	0.02	-0.013	-0.009	0.012
Interaction term				
Friend AI* AI risk concept		0.144***		-0.103
Assistant AI * AI risk concept		0.057		0.005
R^2	0.47	0.459	0.353	0.36
$\triangle R^2$	0.002	0.016	0.029	0.007
F	20.432	17.263	12.561	10.232
△F	0.387***	2.9***	4.189***	0.945***

Note. *p < 0.05, **p < 0.01, ***P<0.001.

Table 6. Moderated Mediation Effect Analysis

Mediating variable	Mediator			INDEX of MODERATED MEDIATOR	
	Moderator	Effect	(CI)	Index	(CI)
Sense of belonging	Low AI risk concept	0.252	[0.1140,0.4243]	0.0541	[0.0040,0.1093]
	High AI risk concept	0.3602	[0.2115,0.5225]		
	Difference between groups （High-Low）	0.1083	[0.0079,0.2187]		

4. Conclusions

(1) Research conclusions

Artificial Intelligence Chatbots are changing the world of customer service and marketing as an emerging technology to catch adulterers. Based on social cognitive theory and empathy theory, this paper combines the role type of AI with consumers' sense of belonging, this paper discusses the influence and mechanism of different role types of AI on consumers' sense of belonging and willingness to adopt. Through distributing the questionnaire, we analyzed the questionnaire data and verified the related

hypothesis. H1 suppose a proof that people prefer the friend AI to the assistant AI role, increasing the willingness of consumers to adopt it. H2 shows that consumers prefer friend-based AI services because it gives them a greater sense of belonging than assistant-based AI. H3 verifies that when consumers have a higher AI risk perception, it will reduce the overall sense of belonging due to AI role. This type of consumers prefer assistant-type AI to serve for them. H4 verifies that the risk concept of AI can regulate the mediating role of the sense of belonging in the relationship between the friend AI and the consumer's adoption intention behavior, the concept of low AI risk can positively regulate the relationship between friend AI and sense of belonging, so as to promote the adoption intention of consumers.

(2) Theoretical contributions

Through reading a lot of domestic and foreign research on artificial intelligence theory, we find that the relationship between artificial intelligence and human identity, the willingness of customers to adopt more extensive research. However, there are few studies on the mechanism between recommendation and product type in artificial intelligence. In combing the research on AI recommendation products, this paper probes into the willingness of consumers to accept AI recommendation from the perspective of belonging, and determines the mechanism of empathy between AI and human, it is proposed that using this empathy can enhance consumers' willingness to adopt AI recommendations. Perfect the application of artificial intelligence recommendation in the field of marketing.

Consumers will be able to get more novel and convenient recommendation services from AI robots, and after Ai goes online, there will be more uniformity in the level of services and so on. On-line service personalization, facing the consumer each kind of question, the AI can provide the more personalized service. AI technology can help brand more marketing data to real-time judge, predict user needs, form a demand-oriented open way, enhance brand competitiveness.

When AI recommends a product to a consumer, without a sense of belonging, it becomes difficult to sell the product, which can affect the effectiveness of the recommendation. This paper discusses the influence of psychological distance on consumers' willingness to adopt, and solves the problem of man-machine integration from the human emotion, and relieves the human's feeling of threat and anxiety towards the artificial intelligent robot, it provides reference value for enterprises to use artificial intelligence recommended products in the future.

(3) Limitations and future prospects

This study lacks the method of using real experiment to verify the hypothesis, which may lead to some deviations in the experimental results. The hypothesis can be further tested in the future by collecting secondary data and using field experiments. In this paper, the role classification of Chatbots is limited to the assistant type and the friend type. In fact, chatbots play far more roles than these two types, future experiments could divide the AI role into servant, colleague, superior, and so on, and then study the impact on consumers. Finally, this study discusses the influence mechanism of the sense of belonging as a mediator and the risk concept of artificial intelligence as a moderator. Future research can continue to explore how the artificial intelligence recommendation system affects consumers' perceived autonomy, and how to balance automated recommendations and consumer control. You can focus on how to build and maintain consumer trust in AI, and how to protect consumer privacy and data security.

References

[1] Shen Pengyi, Li Jinxiong, Wan demin. “Moving by emotion” or “Convincing by reason”? Research on the influence of artificial intelligence chatbot role on customer emotional attachment[J]. Nankai management review, 2024, 1-20.

[2] Wang Xin, Zhu Hong, Jiang Di, etc. The impact of artificial intelligence product image of “Helper” and “Substitute” on consumer evaluation[J]. Nankai management review, 2021, 24(06):39-49+139+50-51.

[3] Xie Qingqing. Research on the creation of role design under the real-time dynamic of artificial intelligence[D]. Wuhan Textile University, 2023.

[4] Liu Wenho. A study on the identity and belonging of labor dispatch staff in commercial banks[D]. Yunnan Normal University, 2023.

[5] Liu Wei, Dong Yue, Li Chunqing. Robots

are not cold: a survey of the emotional relationship between consumers and intelligent social robots[J]. Foreign economy and management, 2024, 1-14.

[6] Tang Zhenghui, Zheng Libo. The ethical challenge and response of robot news production in the age of intelligent media[J]. Communication and copyright, 2024, (09):8-10.

[7] Eugina L.,Gabriele P. Man versus Machine:Resisting Automation in Identity-based Consumer Behavior[J]. Journal of Marketing Research, 2018, 55(6):818-831.

[8] Amabile T M. A Model of Creativity and Innovation in Organization[J]. Research in Organizational Behavior, 1988, 10(10):123-167.

[9] Ali, F. Hotel website quality, perceived flow, customer satisfaction and purchase intention[J]. Journal of Hospitality and Tourism Technology, 2016, 7(2):213-228.

[10] Chen Q, Lu Y, Gong Y, et al. Can AI chatbots help retain customers? Impact of AI service quality on customer loyalty[J]. Internet Research, 2023, 33(6): 2205-2243.

[11] Ameen N, Tarhini A, Reppel A, et al. Customer experiences in the age of artificial intelligence[J]. Computers in human behavior, 2021, 114:106548.

[12] Voss K., Spangeberg B. Grohmann. Measuring the hedonic and utilitarian dimensions of consumer attitude[J]. Journal of Marketing Research, 2003, 40:310-320.

[13] Siyi Chan. A study on the influence of chat robot communication style and service recovery measures on consumers' adoption intention [D]. Southwestern University of Finance and Economics, 2023.

[14] Martinez C., Stephan W., Y barra O., Schwarzwald J., Tur-Kaspa M. Prejudice toward Immigrants to Spain and Israel[J]. Journal of Cross-cultural Psychology, 1998, 29(4):559-576.

[15] Baron R M., Kenny D A. The Moderator-mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic and Statistical Considerations[J]. Journal of Personality and Social Psychology, 1986(51):1173-1182.

