Impact of consumer self-efficacy on online purchase intention in Henan province, China

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Abstract

This study examines the impact of consumer self-efficacy on online purchase intention in Henan province, China. Online shopping has become an increasingly popular method of buying goods and services in recent decades. However, little is known about the mediation effect of privacy concerns that affect the relationship between consumer self-efficacy and online purchase intention among online buyers. Therefore, this study aims to explore the research question, "How can consumer self-efficacy influence online purchase intention in Henan province, China?" to fill the research gap. A research model was developed based on social cognitive theory. Quantitative data from 530 valid questionnaires via an online survey in Henan province, China, were analyzed by Statistical Package for the Social Sciences (SPSS) 27 and Amos 23.0 to assess the research model. Findings show that privacy concerns and consumer self-efficacy are two important elements that promote purchase intention. Furthermore, privacy concerns play a mediating role in the relationship between consumer self-efficacy and purchase intention. Research presents theoretical relevance as it introduces new perspectives linked to the current literature on this topic. The practical implications are substantial, as they contribute to enhancing the impact of negotiating consumers' self-efficacy and conflict resolution on purchasing behavior.

Keywords: Privacy concerns, Purchasing intention, Self-efficacy, E-commerce, Social cognitive theory, Structural equation modeling.

1. Introduction

The rapid rise of Chinese online shopping is unexpected. The past two decades have been characterized by a series of national and international consumer issues and scandals involving unethical traders within the rapid development of e-commerce. Particularly, in today's online marketplace, the intricacy and diversity of goods and services have heightened the

complexity of consumer purchasing intention and decision-making [1]. Accordingly, consumers' self-efficacy refers to their belief in their ability to make wise shopping decisions during the decision-making process. Furthermore, it also plays a vital role in shaping purchase intentions by impacting consumers' beliefs, intentions, and behavior in the e-commerce market [2]. Since the beginning of the 21st century, with the rapid growth of e-commerce and the continual improvement of national income, along with the growth of consumer demand and the upgrade of consumption of residents, the online shopping industry has been strongly promoted [3]. Meanwhile, consumers' privacy concerns draw a lot of attention to e-commerce. As a result, all these changes present new challenges to online consumers, requiring the improvement of consumers' private awareness.

The changeable online markets, along with all the advanced technologies in the rapid development period, have prompted all stakeholders, particularly governments and consumer associations, to enhance consumers' trust by enabling them to become wise so that they can make themselves secure in the current complex, fierce market environment [4]. Despite the advancements in communication tools, such as social media, there still exists a limited awareness among consumers regarding their concerns. How can consumer self-efficacy influence online purchase intention through privacy concerns? This research question still has not received enough attention. For example, there is generally insufficient knowledge of consumer protection reported in China, especially involving unscrupulous online platform traders, and consumers' awareness level remains extremely weak [5]. In fact, Tajurahim, et al. [1] also demonstrated that consumers' self-efficacy is primarily important through online purchasing behavior when they encounter market fake information in the process of decision-making.

Previous studies have demonstrated multiple social and psychological factors that influence consumers' purchasing intentions and behaviors. It concluded that privacy concerns, brand awareness, trust, product types, and quality significantly impact the phenomenon [1, 6, 7]. However, all the papers lack empirical research on the extent to which consumer self-efficacy effectively influences purchasing intention. Thus, the present study aims to develop consumer self-efficacy by examining the influence of privacy concerns on online purchasing intention.

Existing literature has previously examined privacy, self-efficacy, and purchasing intention. However, the research contributes to the current literature in three ways. Firstly, we incorporate both consumer self-efficacy and privacy concerns into one model. With the rapid development of e-commerce, consumers with higher self-efficacy may impact online purchasing intention. Secondly, this study also contributes to the limited existing literature that examines both direct and indirect constructs influencing purchasing intention and the mediating impact of privacy concerns. Finally, the present study was conducted in the Chinese context, especially in the middle province of Henan [5]. Consequently, it is valuable to explore these constructs in the Chinese context.

This paper is structured as follows. The following section will present the theoretical foundations based on social cognitive theory and synthesize the existing literature. Then, three hypotheses will be formulated, drawing on the literature on online shopping development. This explanation will be tested by statistical data analysis on online consumers' shopping behavior (please see the discussions below for details) in Henan province, China. The final section concludes with a discussion of purchase intentions in Chinese e-commerce contexts.

2. Literature Review
2.1. Theoretical Foundations and Hypothesis

Social Cognitive Theory, which was developed by Bandura [8] further extensive development in the 1990s [9]. Based on the traditional behaviorist personality theory, this theory integrates cognitive components and forms an independent social cognitive theory, which represents a complex framework of understanding, predicting, and changing human behavior. It emphasizes the mutual relationship between personal factors, environmental influences, and individual behavior [10]. Meanwhile, social cognitive theory maintains that individuals do not merely passively accept external stimuli but actively process and interpret events. Individuals respond to events based on their perceptions, emotions, and expectations, which impacts their behavioral choices. In addition, Social Cognitive Theory (SCT) views humans as active subjects who make judgments about the interactions between the environment, personal factors, and the consequences of their behavior. Self-efficacy is a key component of SCT that influences adaptive self-regulation [11].

The current study focuses on self-efficacy, which refers to an individual's belief that they can accomplish a specific task. Such beliefs influence an individual's motivation, effort, and behavior, which also play a vital role in the execution and perseverance of behavior [11]. Individuals gradually establish their behavioral patterns by imitating others, obtaining experience, and learning knowledge [12]. Different from the traditional perspective, social cognitive theory indicates an individual's response to behavior is contingent on their perception of reinforcement, rather than solely dependent on their past reinforcement history. Consumers filter and regulate behavior in light of their memories, interpretations, and biases. Gan, et al. [13] demonstrated that individuals can modify their behavior under their perceptions and goals to attain better adaptation and performance through social media e-commerce. In this paper, this theory emphasizes the foundational role of consumers' self-efficacy in influencing their shopping behavior. According to Chauhan and Sagar [14] self-efficacy plays a crucial role in deciding consumers' behavior. Therefore, self-efficacy refers to an individual's confidence in their ability to achieve their goals. In addition, Sharma, et al. [15] demonstrated that consumers with high self-efficacy are less likely to limit choices because they have powerful belief in their abilities. Furthermore, it also explains how self-efficacy helps consumers manage and mitigate privacy concerns, enhancing their intention of making online purchases.

Consumer self-efficacy can also be defined as an individual's belief in their ability to perform tasks and achieve goals. Researchers have identified it as a significant influence on consumer behavior [16] and decision-making processes [15]. According to Social Cognitive Theory, self-efficacy refers to the level of belief in which an individual can influence the

outcome in a given situation [15]. Meanwhile, Sharma, et al. [15] demonstrated that consumer self-efficacy affects their decision-making. Based on the insights from the literature, the paper hypothesizes the following:

Hypothesis 1 (H_1): Consumer self-efficacy is negatively related to privacy concerns.

Hypothesis 2 (H_2): Consumer self-efficacy is positively related to purchase intention.

2.2. Privacy Concerns and Purchase Intention

In the context of e-commerce, privacy concerns refer to the level or degree of online shoppers worry about the degree to which their personal information or private data is abused or leaked by online platforms or other business companies [17]. Despite the continuous growth in online transactions, concerns about consumers' privacy continue to dominate online shopping behavior. Recent research has revealed unscrupulous online platform traders and data breach scandals so that online users increase their perceptions of risks and become more and more concerned about their privacy while shopping online [18, 19]. This research highlights how privacy concerns play a mediating role between consumer self-efficacy and purchase intention. As for consumers, privacy is considered the safety of protecting personal information and financial data. Bhattacharya, et al. [18] found that privacy concerns remain a crucial role in online shopping because consumers expect their data to be handled confidentially by platform e-tailers and businesses. In addition, Vimalkumar, et al. [20] demonstrated that privacy concerns are a negative attitude and belief, which could lead to a detrimental impact on an individual's negative intention toward a final decision. However, successful transactions and consumer satisfaction depend on a positive degree of privacy. In other words, privacy concerns may negatively impact purchase intention in the e-commerce market. These discussions formulate the following hypothesis:

Hypothesis 3 (H_3): Privacy concerns are negatively related to purchase intention.

2.3. Research Model

As noted above, in the context of online shopping intention, this study develops a model to examine the relationships among three constructs based on social cognitive theory: consumer self-efficacy, privacy concerns, and purchase intention. Coined by psychologist [21] SE emphasizes the individual skills in one's belief and capability to accomplish specific tasks and achieve desired goals. Previous research has extensively examined the relationship between consumers' self-efficacy and purchase intention. However, the current study also aims to explore the potential mediating role of privacy concerns. Therefore, Figure 1 presents a conceptual framework.
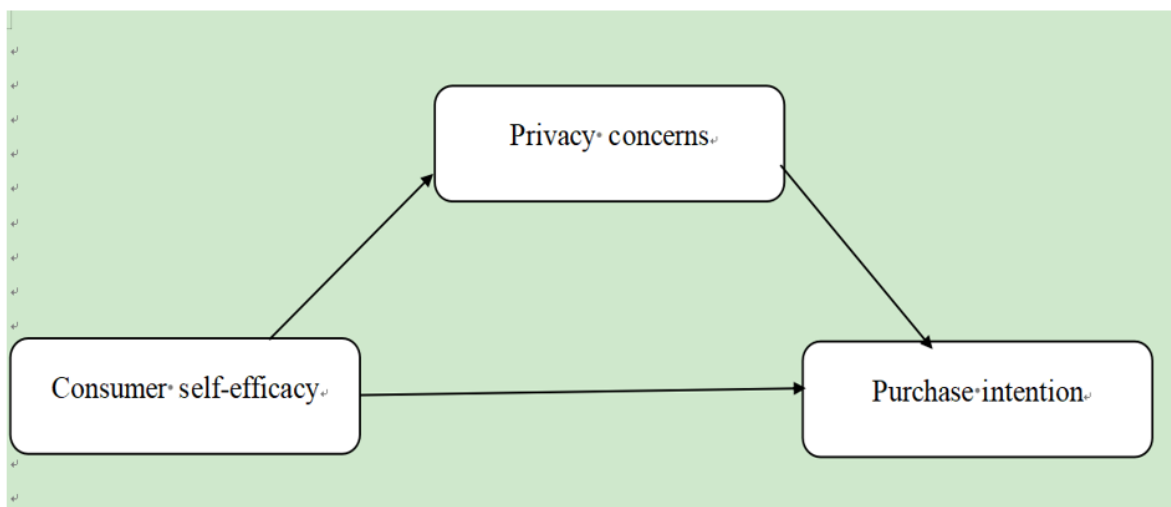

Figure 1.
Research model.
Note: Privacy concerns=PC, Consumer self-efficacy=CSE, Purchase intention=PI.

3. Data and Methodology

This article builds upon recent studies in understanding consumer self-efficacy, privacy concerns, and purchase intention, with a specific focus on Chinese online consumers. While grounded in established theoretical models, it departs from previous studies by concentrating on a localized context and applying more robust methodological frameworks. Prior studies, such as ; Ahmad, et al. [22]; Vo, et al. [23] and Zhu, et al. [24] examined global or Western markets, where consumer behaviors and privacy concerns are influenced by distinct cultural and environmental factors. In contrast, the present research focuses on consumers in Henan Province, China. The confluence of rapid digitalization and evolving privacy regulations has resulted in a distinctive perspective for e-commerce. The regulatory shift in China towards greater data protection provides a crucial context, as privacy concerns assume an increasingly pivotal role in influencing consumer behavior.

3.1. Sample Design and Research Tool

This study conducted quantitative research with the purpose of generalizing statistical results. The research design was chosen based on the research problems, aiming to determine the factors influencing consumer purchase intention. The questionnaire consisted of three parts. The first part has only one filter question, which will be stated in the following part.

The second part was designed to collect respondents' demographic information, such as gender, age, monthly income, and level of education. The final section included 15 items, each focusing on one of the three variables. Additionally, this study utilized a cross-sectional survey and correlational research design through a survey method. To investigate how Chinese consumer self-efficacy and its impact on their purchasing behavior, an online questionnaire was used.

A total of 600 respondents from all around Henan Province, China, participated in the study and were selected through a convenience sampling method from Wenjuanxing platform, a commercial technological platform. Firstly, the instrument was translated into Chinese, and a pilot test was conducted among 50 respondents before data collection to test the validity and reliability of the questionnaire. Then the research platform arranges 600 (in total) samples from Chinese online consumers in Henan Province based on census data. The benefits of utilizing this official dataset include the reduction of sample homogeneity and the guarantee of quality of respondents. This is mainly due to Wenjuanxing's implementation of quality control measures, which effectively exclude invalid responses. Meanwhile, the study implemented a filter question, 'Do you have an online shopping experience?' to ensure the quality of the data collected from respondents. Only if the respondents provide a positive response do they proceed with the following questionnaires.

It collected 582 valid responses in June 2024, which satisfy both statistical and theoretical generalizability. However, afterward, after data cleaning was conducted, a final sample of 530 respondents was used for further data analysis. Therefore, the study focused on explaining the phenomena based on valid responses rather than emphasizing the generalizability of the findings through a large number of respondents.

3.2. Measures

The variables with high internal consistency were adapted from previous studies. Koufaris [25] adopted the measures for consumer self-efficacy. For privacy concerns, the scale of the items was adopted from Luna and Vela [26]. The measurement of purchase intention was adopted from Hernandez, et al. [27]. The current study used a seven-point Likert scale for all item responses, ranging from 1 (strongly disagree) to 7 (strongly agree).

3.3. Data Analysis and Results

The study used SPSS 27.0 for data analysis. The relationships among the study variables were examined through regression analysis. The following section presents the findings of the data analysis. Table 1 presents the sample demographic statistics. A total of 530 valid respondents participated in this study. The majority of respondents were female (50.8%). The largest age group, representing 65.6% of the respondents, was between 34 and 45 years old. In terms of education, most respondents had a diploma or college degree (73.2%). Additionally, concerning economic status, the majority of respondents earned between RMB3000 and RMB4999 per month (41.7%).

Table 1.
Demographic analysis.

Variable	Frequency(n)	Percentage (%)
Gender		
Male	261	49.2
Female	269	50.8
Age		
20 and below	118	22.3
21-33	162	30.6
34-45	194	36.6
46-55	23	4.3
56 and above	33	6.2
Education		
Secondary school and below	89	16.8
Diploma or college	388	73.2
Bachelor	40	7.5
Master or PhD	13	2.5
Monthly income		
Less than RMB 3000	126	23.8
RMB 3000-4999	221	41.7
RMB 5000-6999	117	22.1
RMB 7000-7999	46	8.7
More than RMB 8000	20	3.8

Note: RMB stands for Renminbi (Abbreviated as RMB), which is the legal tender of China.

For statistical analysis purposes, the constructs were coded as follows in SPSS: Consumer self-efficacy was mentioned as SE, privacy concerns were mentioned as PC, and purchase intention was mentioned as PI. Other related scale items were numbered respectively. Table 2 illustrates the mean value and standard deviation for each construct. Furthermore, scholars commonly acknowledge that the acceptable range for proving a normal univariate distribution is between -2 and +2, as asserted by some scholars [28, 29].

Table 2.
Descriptive statistics.

Constructs	Mean		Std. deviation	Skewness		Kurtosis	
	Statistic	Std. error	Statistic	Statistic	Std. error	Statistic	Std. error
SE1	4.91	0.058	1.327	-0.588	0.106	-0.017	0.212
SE2	4.33	0.070	1.604	-0.179	0.106	-0.853	0.212
SE3	4.90	0.065	1.501	-0.549	0.106	-0.471	0.212
SE4	5.24	0.060	1.389	-0.852	0.106	0.604	0.212
SE5	4.32	0.061	1.396	-0.118	0.106	-0.686	0.212
PC1	4.87	0.059	1.369	-0.531	0.106	-0.232	0.212
PC2	4.34	0.071	1.625	-0.145	0.106	-0.893	0.212
PC3	4.81	0.070	1.606	-0.454	0.106	-0.672	0.212
PC4	5.20	0.064	1.468	-0.782	0.106	0.196	0.212
PC5	4.28	0.064	1.477	-0.033	0.106	-0.752	0.212
PI1	5.58	0.054	1.244	-1.215	0.106	1.489	0.212
PI2	5.51	0.056	1.287	-1.201	0.106	1.279	0.212
PI3	5.36	0.058	1.342	-0.852	0.106	0.414	0.212
PI4	4.95	0.063	1.456	-0.763	0.106	0.047	0.212
PI5	4.59	0.061	1.398	-0.510	0.106	-0.187	0.212

Note: Privacy concerns=PC, Consumer self-efficacy=CSE, Purchase intention=PI.

As shown in Table 3, Cronbach's α of all constructs is higher at 0.7, the values are 0.869, 0.841, and 0.812 respectively. Composite reliability (CR) scores for SE, PC, and PI were 0.889, 0.858, and 0.882; respectively, surpassing the required level of 0.70 assessed by Fornell and Larcker [30] and Mertler, et al. [31]. In addition, the Average Variance Extracted (AVE) measurement, which should be 0.5 or higher, shows the average value of the squared loadings of the indicators associated with the construct. The data reported in Table 3 indicates that AVE values for self-efficacy, privacy concerns, and purchasing intention were 0.629, 0.561, and 0.665, respectively. The values are all higher than 0.5. Thus, the analysis of the provided data indicates that each construct's corresponding indicators can account for a significant portion of the observed variations in each construct, suggesting a strong presence of convergent validity.

Table 3.
Reliability and validity.

Constructs	Items	Unstd.	S.E.	Z	P	Std.	Cronbach's α	CR	AVE
SE	SE1	1				0.609	0.869	0.889	0.629
	SE2	0.984	0.096	10.285	***	0.495			
	SE3	1.618	0.102	15.797	***	0.87			
	SE4	1.588	0.097	16.39	***	0.923			
	SE5	1.66	0.099	16.735	***	0.96			
PC	PC1	1				0.828	0.841	0.858	0.561
	PC2	0.711	0.06	11.774	***	0.496			
	PC3	0.744	0.059	12.566	***	0.525			
	PC4	1.155	0.045	25.493	***	0.892			
	PC5	1.169	0.045	25.704	***	0.897			
PI	PI1	1				0.898	0.812	0.882	0.665
	PI2	0.957	0.035	27.077	***	0.83			
	PI3	-0.115	0.053	-2.164	0.03	-0.095			
	PI4	1.238	0.033	37.743	***	0.95			
	PI5	1.199	0.031	38.648	***	0.958			

Note: *** stand for p＜p＜0.001.

3.4. Structure Model Assessment

Following the validation and reliability of the measurement model, the structural model underwent an assessment, as shown in Table 4.

Table 4.
Fit indices of structural model.

Fit index	χ^2/df	SRMR	RMSEA	GFI	AGFI	CFI	TLI
Reference value	<3.000	<0.080	<0.080	>0.900	>0.900	>0.900	>0.900
Test value	2.789	0.051	0.058	0.919	0.877	0.964	0.953

Note: SRMR=Standardized root mean square residual; RMSEA=Root mean square error of approximation; GFI=Goodness of fit index; AGFI=Adjusted goodness of fit index; CFI=Comparative fit index; TLI=Tucker-lewis index

According to Hair Jr, et al. [32] for the proposed assessment of structural model fitness, the goodness of the fixed index followed the criteria in Table 4. First, the Chi-square/degree of freedom(χ^2/df) should be below 3.0 [33]; second, the value of

RESEA and SRMR should be under the range of 0.08 [34]. Third, the CFI and TLI values should be above 0.90 of the proposed model [35]. Fourth, a value of GFI above 0.90 is acceptable [36] and the AGFI value of the fit index above 0.80 shows a goodness fit of the proposed mode [37]. The assessment of measurement model generated via AMOS23.0 is presented as follows: $χ^2/df=2.789$, RESEA=0.058, SRMR=0.051, CFI=0.964, TLI=0.953, GFI=0.919 and AGFI=0.877. Thus, the value efficiently illustrates the relationship among the constructs.

Table 5 demonstrates statistical significance for the path coefficient. These findings provide valuable insights into the strength and direction of the relationships among the variables, which facilitates hypothesis testing and model interpretation. Additionally, these findings offer valuable insights into the interrelationships among variables and illuminate their strength and direction.

Table 5.
Hypothesis testing.

Paths	Unstd.	S.E.	Z	P	Std.	Decision
H1:SE→PC	-0.638	0.034	-18.769	***	-0.632	Significant
H2:SE→PI	0.411	0.031	13.166	***	0.472	Significant
H3:PC→PI	-0.326	0.031	-10.544	***	-0.378	Significant

Note: *** $p < 0.001$.

A statistically significant relationship was observed between the first hypothesis (H1) and the third hypothesis (H3), both of which yielded negative values. This supports the notion that "Consumer self-efficacy is negatively associated with privacy concerns" and "privacy concerns are negatively related to purchase intention." The findings of this study suggest a significant correlation between the variables. This study's second hypothesis (H2) indicates that "Consumer self-efficacy is positively related to purchase intention." The findings presented in Table 4 indicate a clear and statistically significant relationship between consumers' self-efficacy and their purchasing intention. Furthermore, the p-value of less than 0.01 specifically demonstrates a positive correlation.

Therefore, all hypotheses are supported.

4. Findings and Discussion

This study makes a notable contribution to the field by examining the role of privacy concerns as a mediator between self-efficacy and purchase intention. The findings indicate that consumer self-efficacy negatively impacts privacy concerns and privacy concerns have a vital influence on purchase intention. Furthermore, the present study demonstrates that even when consumers have high self-efficacy, privacy concerns, can reduce their purchase intentions if they perceive a risk to their private data.

4.1. Discussion

This study provides critical insights into the relationship between consumer self-efficacy, privacy concerns, and online purchase intention in online shopping environments. By demonstrating the mediating role of privacy concerns, the research extends the current literature and identifies areas for further exploration. Although the findings are consistent with those of many previous studies, conflicting evidence from recent research indicates that the effects of self-efficacy and privacy concerns may be context-dependent [18, 20]. Furthermore, the results identify privacy concerns as a significant mediator, a finding that is consistent with some studies but contradicted by others, depending on the level of consumer trust in e-retailers [17] product type, and social environment [19]. Future research should explore other potential moderators, such as product type and platform trust, while supporting direct relationship between self-efficacy and purchase intention.

4.2. Theoretical Implications

Acknowledging the importance of consumers' self-efficacy for purchase intention in e-commerce marketing, the theoretical contributions of the study are threefold. Firstly, according to Social Cognitive Theory, consumer self-efficacy refers to the degree of belief consumers hold in their capability to determine purchase intention. Additionally, the study can provide a comprehensive analysis of how consumer self-efficacy influences online purchase intention through the mediating role of privacy concerns. This approach not only enriches the theoretical foundation of your paper but also offers practical insights for enhancing consumer confidence and promoting secure online shopping behaviors. Secondly, by focusing on Social Cognitive Theory, this paper aims to provide a comprehensive understanding of how consumer self-efficacy influences online purchase intention through the mediating role of privacy concerns. In our study, privacy concerns mediate how consumers' self-efficacy influences their outcome of purchase intention. Thirdly, the study also contributes to expanding privacy concerns. In the previous studies, consumer privacy is considered an independent variable [18, 38] and a moderating variable [19, 20, 39]. However, this research represents a new perspective on privacy literature in e-commerce marketing.

4.3. Practical Implications

The paper provides information and resources aimed at enhancing consumer self-efficacy to improve online shopping via privacy concerns. The study also offers specific and feasible insights for online platform retailers and policymakers. Firstly, the provision of tutorials, customer support, and clear information about security measures can achieve this. In addition, the design of user-friendly websites with robust security features can enhance consumers' self-efficacy and reduce perceived risks and privacy concerns. Secondly, the study suggests that displaying online users' positive reviews enhances

consumer self-efficacy and improves online transactions. Online platform retailers and businesses must reduce consumers' risk while they have online transactions through cybersecurity policies to alleviate consumers' privacy concerns. Ultimately, its crucial to secure the consent of consumers before monitoring their online shopping habits. They will be assured that no one, including AI, is tracking them to exploit their data.

4.4. Limitations and Future Research

Although this paper has drawn some valuable conclusions, it still has certain limitations like any other study. Firstly, the study failed to take into account the differences in the product category. Different product categories may exert diverse impacts on consumers' self-efficacy and privacy concerns, which in turn would have distinct influences on purchase intention. In future research, the boundary conditions for the formation of purchase intention can be looked into, along with whether the unique features of different product categories would act as a moderator for some variables. This would help us understand how consumers decide what to buy when it comes to product categories.

Secondly, regarding data collection, the sample range and sample size of the survey data may have implications for the results. Our study exclusively used WenJuanxing to collect samples from a single province in the central region of China. Follow-up studies can expand the sample scope and sample size of the data by surveying consumers of different occupations and in different regions to enhance the representativeness of the samples and combine the influence of demographic characteristics such as occupation and region with psychological factors to research to analyze the psychological mechanism of consumption of different groups, making the research of the issue more targeted. Finally, regardless of the countless benefits of shopping online in e-commerce marketing, undoubtedly there are also numerous negative consequences of online markets. From an online user's perspective, perceived Internet risk attracts the most potential negative outcome, especially in the AI area. Indeed, consumers' high self-efficacy and privacy concerns are causing increasing attention in the shopping decision-making process. Therefore, from a societal perspective, the potential dark sides of e-commerce should arouse considerable attention from both practitioners and academics to reduce perceived risks and enhance online transactions.

5. Conclusions

Previous studies in consumer purchasing intention research have empirically examined the development of intentions toward loyalty and trust [38, 40-42]. However, there has been limited research on the implications of consumers' self-efficacy and privacy concerns for purchase intentions. In other words, the current study only included purchase intention as an outcome variable. Furthermore, future studies should focus on consumers' behavior, such as online reviews and post-purchase behavior, especially since chatbots are widely used to select products and communicate with online shoppers. Specifically, past studies have primarily focused on investigating the determinants of purchase intentions from a rational perspective, such as attitude, perceived behavioral control, and social factors [42, 43].

The literature suggests that we may not perceive purchasing intention as a rational behavior, as the benefits of such purchases often extend beyond self-interest. Therefore, buying behavior is likely to be understood from the perspective of privacy concerns. Therefore, this study provides a comprehensive analysis in an attempt to define purchase intentions by examining the impact of privacy concerns and self-efficacy.

This study contributes to the existing literature on consumer self-efficacy and privacy concerns by exploring their impact on online purchase intentions, focusing on e-commerce behavior in Henan Province, China. The findings demonstrate that consumer self-efficacy has a significant influence on purchase intentions, both directly and indirectly through the mediating role of privacy concerns. This highlights the complexity of online consumer behavior. In line with Social Cognitive Theory, the results emphasize the pivotal role of consumer confidence in guiding online platforms to reduce privacy concerns and enhance purchasing intentions.

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