The Impact of Consumer Confusion on Chinese Consumers' Delayed Choices in Online Shopping: The Mediating Role of Negative Emotions

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Abstract

This study investigates the impact of consumer confusion factors, including overload confusion, ambiguity confusion, and conflict confusion, on consumers' delayed choice within online shopping environments. Utilizing a convenience sampling method, data were gathered via online surveys from 451 Chinese participants who had engaged in online shopping and experienced decision delays during the past year. The analysis, conducted through structural equation modeling (SEM), aims to test hypotheses and develop a comprehensive model that captures complex relationships among variables. The result reveals that the consumer confusion factors including overload confusion (β=0.349), ambiguity confusion (β=0.333), and conflict confusion (β=0.248) significantly contribute to the consumers' delayed choice. In addition, these factors also influence the generation of negative emotions during the online shopping search process (overload confusion: β=0.334; ambiguity confusion: β=0.308; conflict confusion: β=0.276). Furthermore, it was found that negative emotions (β=0.295) have a direct positive effect on the delay in purchasing decisions. Additionally, negative emotions serve as a mediating factor between consumer confusion and consumers' delayed choice (delayed choice: β=0.245; ambiguity confusion: β=0.192; and conflict confusion: β=0.188). This research offers valuable insights for the management of online shopping platforms and vendors, suggesting that addressing conflicting messages and reducing consumer confusion are critical strategies for achieving success in the competitive online retail market.

Keywords: Chinses consumer, Consumer confusion, Consumer delayed choice, Negative emotion, Online shopping

Introduction

As of June 2023, China's online shopping population has surged to 884 million, as reported by Statista in 2024. According to Custom Market Insights (CMI), the China online shopping market was estimated at USD 1400 billion in 2022 and is anticipated to reach around USD 2300 billion by 2030, growing at a CAGR of roughly 9% between 2023 and 2030. This rapid growth is driven by the increasing adoption of e-commerce platforms, the expanding middle-class population, and the rising penetration of mobile internet (CMI, 2023). The progressive integration of e-commerce across urban and rural areas, coupled with the ramifications of the COVID-19 pandemic, has positioned online shopping as a pivotal element of consumer spending in China. In this digital ecosystem, the consumer decision-making process is increasingly centered around the analysis of information, with search outcomes becoming a crucial determinant of purchasing decisions. However, the exponential growth of e-commerce platforms has led to an information overload that does not necessarily enhance consumer satisfaction. Currently, most popular e-commerce platforms in China where many Chinese customers shop are Taobao, Tmall, JD.com, Pinduoduo and Little Red Book, etc. These platforms cover a wide array of consumer needs and preferences, making them highly popular among Chinese shoppers. The expansion of platform vendors, product offerings, and customer reviews has escalated the conflict between quantity and quality, complicating consumers' ability to evaluate information and raising the costs associated with information search. This abundance of choices does not guarantee increased consumer satisfaction. Theories of cognitive load and cognitive dissonance highlight the limitations of an individual's capacity to process information. When short-term memory is overwhelmed or when conflicting information triggers cognitive dissonance, individuals strive to mitigate this discomfort. The mounting volume of information, along with its ambiguous and contradictory nature, may induce consumer confusion, adversely impacting the online shopping experience and prompting consumers to defer decisions to evade the discomfort associated with cognitive overload and dissonance.

The current scholarly interest centers on elucidating the reasons behind consumers' tendencies to postpone their purchasing decisions within the realm of online shopping. Prior investigations into the behavior of choice deferral have categorized the influencing factors into three primary dimensions: attributes of the decision task (for instance, the size of the selection set, as discussed by Liu et al., 2017), personal attributes of the decision-maker (such as the extent of decision-making authority, according to Li & Jiang, 2019), and the environmental aspects of decision-making (including time constraints, as explored by Lu & Wang, 2018). Particularly regarding environmental factors, some researchers posit that consumer confusion— exacerbated by the rapid expansion of digital platforms providing an overwhelming variety of information—serves as a pivotal driver behind the delay in decision-making. In contemporary shopping contexts, the phenomenon of consumer confusion is intensifying, marked by an unprecedented influx of decision-relevant information (as highlighted in studies by Friedman, 1966; Mitchell & Papavassiliou, 1999; Schweizer et al., 2006; Walsh et al., 2007). Yet, the exploration of the nexus between consumer confusion and purchasing decision dynamics (such as the postponement or abandonment of purchases) has been scarcely addressed by Chinese scholars. Moreover, the intricate internal mechanisms that mediate the impact of consumer confusion on consumers' propensity to defer decisions remain largely unexplored. Recognizing consumer confusion as a precursor to delayed decision-making, this research endeavors to dissect the mediating role of negative emotions, thereby shedding light on the nuanced relationship between consumer confusion and procrastination in purchasing behaviors in the digital marketplace.

There are several reasons for choosing Chinese consumers as the subject of this study. First, China boasts one of the world's fastest- growing e- commerce markets. The rapid expansion presents a unique opportunity to study consumer behavior in a dynamic and evolving environment. Moreover, Chinese consumers represent a broad and diverse demographic, including different age groups, income levels, and regional backgrounds. This diversity provides a rich dataset for understanding how consumer confusion affects various segments of the population. Furthermore, the Chinese e- commerce market is characterized by intense competition and a vast array of products and platforms. This complexity can lead to higher levels of consumer confusion, making it an ideal context for studying its effects on purchasing decisions. Therefore, by focusing on Chinese consumers, the study aims to uncover nuanced insights into how consumer confusion influences online shopping behavior in a major and rapidly evolving market. It seeks to augment the existing corpus of knowledge on consumer behavior in e- commerce, offering valuable insights for marketers and online retailers to alleviate the implications of consumer confusion on purchasing decisions.

There are four objectives in the study, first, to test how consumer confusion (overloaded confusion, ambiguity confusion and conflict confusion) influence consumers' delayed choice; second, to test how consumer confusion (overloaded confusion, ambiguity confusion and conflict confusion) influence consumers' negative emotions; third, to test how negative emotions influence consumers' delayed choice; and lastly, to test whether negative emotions play a mediating role in the effect of consumer confusion on consumers' delayed choice.

Consequently, this paper positions consumer confusion as the independent variable and negative emotion as the mediating variable to scrutinize the effect of consumer confusion on the postponement of purchase decisions, aspiring to unveil the psychological dynamics underlying such consumer behavior. This endeavor seeks to furnish actionable recommendations for businesses and digital platforms, aimed at enhancing consumer satisfaction and fostering mutual success.

Cognitive Load Theory

In 1988, the cognitive psychologist John Sweller introduced the Cognitive Load Theory, extending the concept of mental workload, initially examined within educational psychology, to the broader field of cognitive psychology. Sweller posited that human cognition fundamentally entails the consumption of resources. During the processes of acquiring knowledge and solving problems, individuals engage in numerous cognitive operations, depleting their cognitive resources and thus generating cognitive load. According to Sweller (1988), this cognitive architecture comprises both a limited capacity working memory and an expansive long-term memory. Further research indicated that the burden on working memory stems not only from the inherent complexity of the material being learned but also from the influence of external instructional methodologies. Consequently, cognitive load has been categorized into three distinct types: intrinsic, extrinsic, and germane cognitive load (Sweller, 2010). Intrinsic cognitive load is related to the essential aspects of the subject matter that requires understanding. It is determined by the complexity of the content and the learner's prior knowledge and cannot be altered by instructional design. Extrinsic cognitive load, on the other hand, is associated with the manner in which information is presented and the instructional methods used, which can unnecessarily burden working memory. Germane cognitive load, previously referred to as associative cognitive load, facilitates the processing of intrinsic cognitive load by utilizing working memory resources to integrate new information with existing knowledge. This delineation suggests that an excessive extrinsic load can detract from the resources available for processing intrinsic load, thereby hindering effective learning. In the context of online shopping, consumers often face a substantial extrinsic cognitive load as they navigate through product pages, reviews, and other information. This not only consumes

significant working memory resources but also detracts from their ability to focus on the core aspects of their needs, potentially leading to postponed decision- making or even the abandonment of the purchase altogether.

The Theory of Experiential Marketing

The concept of the "experience economy" was initially introduced by Pine and Gilmore in the late 1980s, and they further elaborated on this emerging economic paradigm in their book titled *The Experience Economy*, published in 1999. This new economy is similar to the service economy but it focuses on the consumer's emotions rather than the product itself. Experience marketing has become increasingly important in the context of the experience economy, which focuses on providing a positive experience for consumers. Hauser (2011) defines experiential marketing as the actual customer experiences with a brand, product, or service that have the potential to drive sales and enhance brand image and awareness. Similarly, You-Ming (2010) emphasizes that experiential marketing is a face-to-face communication approach that aims to evoke customers' physical and emotional sensations. It involves creating experiences that are relevant, interactive, and immersive, allowing customers to feel and engage with a brand on a deeper level. In addition, Tynan and McKechnie (2009) assert that experience marketing can deliver sensory, emotional, cognitive, behavioral and relational value to customers, to which social and informational based value can be added. With changing consumer preferences, the satisfaction of the consumption process is no longer based solely on the functional attributes of the product, but also on intangible factors such as culture and values. The keys to experiential marketing are understanding what consumers desire and providing relevant products and services that foster positive consumer emotions (Schmitt, 2010). Therefore, this study applies the theory of experiential marketing to focus on consumer emotions across various dimensions. This includes capturing consumers' sensory experiences, such as visual, olfactory, and gustatory perceptions of products, as well as addressing the cognitive aspect of consumer identity, which involves establishing a fit between consumers and products during the consumption process, thereby influencing and shaping consumer behavior.

Cognitive Dissonance Theory

The proliferation of information in the digital age not only leads to information overload but also precipitates conflicts between differing viewpoints, thereby exerting an unseen pressure on consumers. This conflict of perspectives acts as a barrier to decision-making, a phenomenon well-explained by Cognitive Dissonance Theory. Developed by American social psychologist Leon Festinger in 1957, Cognitive Dissonance Theory explores the discomfort individuals experience when they hold two or more conflicting cognitions, or when their actions contradict their beliefs or attitudes. According to Festinger, human cognitions can exhibit three types of relationships: consonance, dissonance, and irrelevance, with consonance and dissonance being the primary focus due to their significant impact on psychological equilibrium (Morvan & O'Connor, 2017).

The theory posits that individuals naturally prefer their beliefs, attitudes, and behaviors to align harmoniously. However, inconsistencies among these elements frequently occur, leading to cognitive dissonance. This dissonance can arise from new situations or information that contradicts existing beliefs, or from inherent contradictions in an individual's daily experiences (Festinger, 1957). The presence of cognitive dissonance is inherently uncomfortable, prompting efforts to alleviate this discomfort, a concept supported by Croyle & Cooper (1983) who highlighted the negative emotional responses and strong motivational drive to resolve dissonance.

Cognitive dissonance is prevalent in various scenarios, including decision-making processes and post-purchase reflections, making it a significant area of study within marketing. In the context of online shopping, the diversity of information, including product descriptions, evaluations, and conflicting viewpoints, can lead to consumer confusion. This confusion hampers the ability to form clear judgments, thereby inducing cognitive dissonance. As online shopping continues to evolve, understanding the triggers and implications of cognitive dissonance in this realm becomes crucial for both consumers navigating the digital marketplace and marketers aiming to create more cohesive and satisfying online shopping experiences.

Consumer Confusion and Consumer Delayed Choice

The process of information search plays a crucial role in consumer purchasing decisions. It is widely recognized among scholars that information can lead to various forms of consumer confusion, including similarity confusion, fuzzy confusion, and overload confusion (Yu et al., 2019). However, the impact of product similarity confusion on consumers' decision to delay purchases may not always be significant due to personal experiences and other factors (Sun et al., 2019). In recent times, some researchers have pointed out the presence of contradictions and conflicts in online shopping information, such as discrepancies in online reviews and offers across different channels (Wang et al., 2020), which can induce consumer confusion and subsequently affect purchasing behavior, sometimes leading to deferred decision-making.

This study identifies overload confusion, ambiguity confusion, and conflict confusion as three distinct dimensions of consumer confusion. Overload confusion arises from an information-rich environment that overwhelms consumers, often exacerbated by the sheer volume of information and product choices presented by an increasing number of merchants on online platforms. This information overload can impose a cognitive burden on consumers, making decision-making more challenging and potentially leading to postponement or avoidance of purchases (Kim, & Lee, 2019).

Ambiguity confusion relates to a consumer's capacity to deal with unclear, misleading, complex, or ambiguous product-related information or advertisements (Walsh et al., 2007; Wang, & Shukla, 2013). Such ambiguity may compel consumers to reassess their perceptions or assumptions about a product or purchasing scenario, inducing cognitive dissonance, heightening perceived risk, and causing confusion that delays decision-making (Kim, & Lee, 2019).

Conflict confusion stems from the discomfort experienced due to contradictory information from various sources (Leek, & Kun, 2006). Research indicates that conflicting information, especially from online reviews, prompts consumers to seek additional data to aid in their decision-making process and mitigate the discomfort associated with cognitive dissonance. In such scenarios, consumers may doubt the accuracy of initial reviews, leading to postponed decisions (Wang, et al., 2020).

In summary, the influx of information from platforms, merchants, and products leads to overload confusion, fuzzy confusion, and conflict confusion among consumers during the online purchasing search. These types of confusion, as integral aspects of the decision-making process, significantly influence online purchasing behavior, where the negative stimuli associated with these confusions can cause consumers to delay their decisions. Therefore, this paper proposes the following hypotheses:

H1: Consumer Confusion (Overloaded confusion, Ambiguity confusion, Conflict confusion) positively influence consumers' delayed choice.

Consumer Confusion and Negative Emotions

Emotion represents a fluctuating subjective psychological state that varies according to time, location, and situational context. Initially, the surge in digital information surpasses consumers' cognitive capacities, leading to stress and negative emotional responses when the volume of information exceeds an individual's ability to effectively manage it (Ragu-Nathan et al., 2008). In the context of online shopping, the overwhelming influx of information facilitated by the internet and big data technologies results in overload confusion, necessitating continuous processing of diverse information. This constant demand on cognitive resources can trigger a range of negative emotions, including nervousness, irritability, unease, and fear.

Furthermore, the ambiguity and confusion stemming from merchants' information can induce cognitive dissonance in consumers, eliciting negative emotions during the online purchasing process (Mishra et al., 2021). The lack of transparency in the safety information regarding consumer food purchases, coupled with the presence of adulterated, fraudulent, and misleading information, heightens the uncertainty of consumer choices. This ambiguity in product information can amplify consumer confusion, leading to the emergence of negative emotions such as annoyance and anxiety (Jin et la., 2020).

Lastly, conflict confusion, arising from the receipt of conflicting information, also significantly impacts consumers' emotional states. Conflicting online review information and varying price data from different merchants and channels can lead to emotional turmoil, especially at the point of making a purchase decision, such as during the checkout process in a shopping cart (Wang et al., 2023).

In summary, the stimuli of information overload, ambiguity, and conflict are likely to provoke negative emotions such as irritation and anxiety during online shopping experiences. The intensity of these negative emotions correlates with the strength of the stimuli encountered; hence, this paper proposes the following hypotheses:

H2: Consumer Confusion (Overloaded confusion, Ambiguity confusion, Conflict confusion) positively influence negative emotions.

Negative Emotions and Consumer Delayed Choice

Emotions play a pivotal role in shaping human behavior, exerting a substantial influence on the actions of individuals. Within the spectrum of human emotions, both positive and negative feelings coexist, each influencing behavior in distinct ways. In the realm of consumer behavior research, Pappas et al. (2018) discovered that an uptick in negative emotions significantly dampens consumers' purchasing intentions, especially when positive emotions fail to reach a high intensity (Pappas et al., 2018). This finding underscores the potent impact of negative emotions on the decision-making process in shopping contexts. Kim & Lee (2019) further elucidated this phenomenon in their examination of online shopping behaviors, noting that consumers often navigate through a plethora of merchant and product information to make a purchase decision. The resultant confusion from such information stimuli can foster negative emotions, leading to adverse purchasing behaviors, including postponed decision-making. Similarly et al. (2021) investigated the behavior of shopping cart abandonment and observed that consumers' efforts to dismiss incongruent information not only fail to alleviate but sometimes even exacerbate negative emotions such as anxiety. This emotional response can prompt consumers to defer their purchasing decisions. The tendency to delay decision-making escalates in direct proportion to the intensity of negative emotions experienced. These insights into the interplay between emotions and consumer behavior provide a foundation for the following hypotheses:

H3: Negative emotions generated in the context of online shopping search positively influence consumers’ delayed choice.

Combined with the above analysis, emotion is also often used as a mediating variable to play a mediating role in the study of consumer purchase behavior. Based on this, the following hypotheses are proposed:

H4: Negative emotions play a mediating role in the effect of consumer confusion (Overloaded confusion, Ambiguity confusion, Conflict confusion) on consumers' elayed choice.

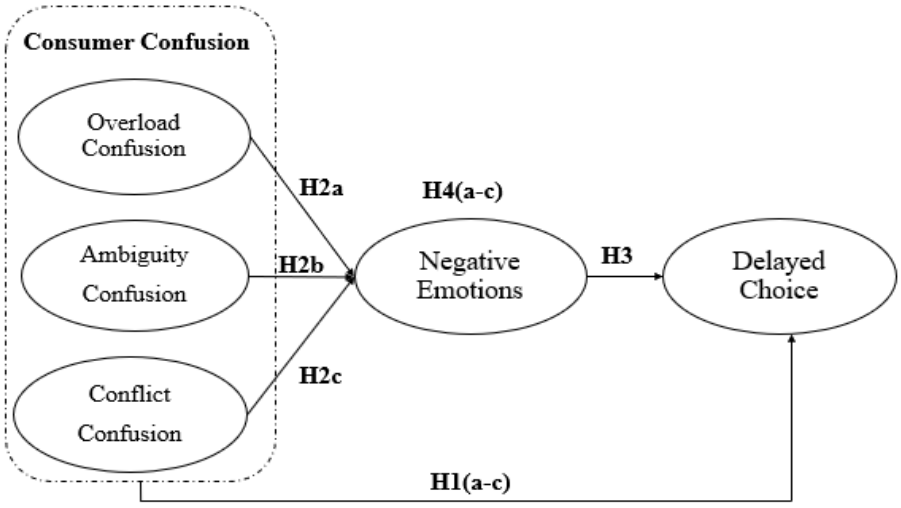

Figure 1 Conceptual Framework (Researcher, 2024)

Methodology

Participants and Procedure

This study employs a quantitative research design, utilizing an online questionnaire to collect data from Chinese users who have both engaged in online purchasing and experienced delays in making decisions on an online shopping platform within the past year. Given the challenge of accurately determining the actual size of the target population, this research will apply Cochran's (1977) formula to estimate the required sample size for the quantitative analysis. Aiming for a confidence level of 95%, the calculated sample size was determined to be 385. The survey garnered 473 responses. However, after excluding invalid responses (those that provided uniform ratings across all items), a total of 451 valid samples were secured for data analysis purposes.

Measurement

The questionnaire consisted of 3 main sections. the first of which consisted of a screen question designed to ensure that respondents had experienced delays in making decisions on an online shopping platform in past 1 year. The second part solicited demographic data from the participants, encompassing variables such as gender, age, educational background, length of experience with online shopping, and their preferred online shopping platform. The subsequent section was dedicated to assessing the five constructs outlined in the conceptual framework of this study. To construct measurement, items that had been pretested and validated in prior studies were incorporated, ensuring the robustness and relevance of the questionnaire. The development of the questionnaire adhered to the multiple-item method, with each question being rated on a five-point Likert scale that ranged from "1=strongly disagree" to "5=strongly agree". To provide clarity on the sourcing of these measures, Table 1 delineates the adaptation

of measurements from various scholars, showcasing the interdisciplinary effort in crafting a comprehensive tool for data collection.

Table 1 Source of Measurement Item in Questionnaire

Variable	Measurement Items	Source
Overload confusion (OC)	I do not always know exactly which product meet my needs best. There are so many brands to choose from that I sometimes feel confused. With so many stores, it's sometimes hard to decide where to buy.	Walsh, et al. (2007)
Ambiguity Confusion (AC)	The information I get from advertising often is so vague that it is hard to know what the product can actually perform. When purchasing a product, I need the help of customer service to understand the differences between the products. When purchasing a product, I feel uncertain about which product features that is particularly important for me.	Walsh, et al. (2007)
Conflict Confusion (CC)	Online shops provide inconsistent information on different platforms. There is conflicting information in the descriptions of the brand in the reviews (e.g. big/small color difference; good/bad fit, etc.). There are inconsistencies between the reviews in the shopping platform and the opinions of purchases recommended by the Q&A.	Walsh, et al. (2007)
Negative Emotions (NE)	This kind of shopping experience makes me tired. I am disappointed with this shopping experience. This shopping experience irritates me. This kind of shopping experience wears me out.	Babin & Attaway (2000)
Delayed Choice (DC)	Sometimes it is difficult to for me to make buying choices. Sometimes I choose to postpone my purchases. Sometimes there are so many choices in online stores that it takes me longer to make a choice.	Walsh, et al. (2007)

Data Analysis Methods

The data analysis was performed using Structural Equation Modeling (SEM) via AMOS 28.0 software, selected for its proficiency in evaluating the impacts of numerous variables within a multifaceted model concurrently (Hair et al., 2013). The utilization of SEM, which employs multivariate regression analysis throughout the model, is deemed particularly effective for the investigation of complex, layered conceptual frameworks. This methodological choice is due to SEM's ability to intricately map and accurately represent the interrelations and interactions among variables (Urbach & Ahlemann, 2010). Such a comprehensive analytical approach facilitates a thorough investigation of the proposed hypotheses, thereby elucidating the intricate dynamics inherent in the study's conceptual framework.

Results

Descriptive Statistics

Among the 451 valid responses, 66.2% are female, and 73.5% are aged 18-40. Most respondents (59.8%) work in private enterprises, with over 60% earning above 4,000 yuan. A significant 82.1% hold at least a bachelor's degree. All participants have experienced delayed online purchasing decisions, enhancing the questionnaire's reliability and relevance to studying online shopping behaviors.

Measurement Model

The analysis demonstrated high reliability for the survey instrument, with each construct's Cronbach's α exceeding the 0.7 threshold, indicative of strong internal consistency (Nunnally, 1978). Additionally, factor loadings for all constructs surpassed 0.5, confirming item reliability (Hair et al., 1995). Construct reliability was further established through composite reliabilities (CR) significantly above 0.7, and average variance extracted (AVE) from each construct was over 0.5, evidencing convergent validity (Fornell & Larcker, 1981). These results are summarized in Table 2, showing that Cronbach's α, CR, and AVE for each construct meet the established criteria, ensuring the survey's reliability and validity. The assessment of discriminant validity, following Fornell & Larcker's (1981) guidelines, revealed that the square root of AVE for each variable exceeded its correlation coefficients with other variables, affirming sufficient discriminant validity (Table 3).

Table 2 Results of Validity and Reliability Analysis

Construct	Indicators	Factor Loadings	CR	AVE	Cronbach's Alpha
Overload confusion (OC)	OC1	0.850	0.890	0.730	0.889
	OC2	0.864			
	OC3	0.849			
Ambiguity Confusion (AC)	AC1	0.812	0.845	0.646	0.844
	AC2	0.835			
	AC3	0.762			
Conflict Confusion (CC)	CC1	0.921	0.895	0.741	0.894
	CC2	0.751			
	CC3	0.901			
Negative Emotions (NE)	NE1	0.876	0.923	0.751	0.922
	NE2	0.863			
	NE3	0.838			
	NE4	0.888			
Delayed Choice (DC)	DC1	0.876	0.896	0.743	0.896
	DC2	0.850			
	DC3	0.859			

Table 3 Discriminant Validity

	(1)	(2)	(3)	(4)	(5)
(1) OC	**0.854**				
(2) AC	0.312	**0.804**			
(3) CC	0.369	0.388	**0.861**		
(4) NE	0.428	0.474	0.477	**0.867**	
(5) DC	0.369	0.337	0.399	0.439	**0.862**

Structural Model

Utilizing AMOS 28.0 software for structural equation modeling (SEM) based on the proposed conceptual model, the model's fit was initially evaluated using six key indices. The outcomes, presented in Table 4, demonstrate that all indices meet their respective threshold values, indicating a good fit for the model.

Table 4 Fit Indices of Measurement and structural models

Fit indices	χ2 /df	GFI	AGFI	IFI	TFI	CFI	RMSEA
Recommended	<3	>0.9	>0.8	>0.9	>0.9	>0.9	<0.05
Structural Model	2.811	0.903	0.878	0.952	0.945	0.952	0.046

Hypothesis Testing

The testing of hypotheses yielded significant results, as detailed in Table 5. Overload confusion ($\beta = 0.349$, $p < 0.001$), ambiguity confusion ($\beta = 0.333$, $p < 0.001$), and conflict confusion ($\beta = 0.248$, $p < 0.01$) all significantly positively influenced delayed choice, confirming hypotheses H1a to H1c. Additionally, overload confusion ($\beta = 0.334$, $p < 0.001$), ambiguity confusion ($\beta = 0.308$, $p < 0.001$), and conflict confusion ($\beta = 0.276$, $p < 0.01$) were found to significantly positively affect consumers' negative emotions, thereby verifying hypotheses H2a to H2c. In line with expectations, negative emotion ($\beta = 0.295$, $p < 0.001$) also significantly positively affected delayed choice, thus confirming hypothesis H3.

Table 5 Result of hypothesis test

Hypothesis	Path	β	Ustd.	S.E.	C.R.	p	Result
H1a	OC→DC	0.349	0.370	0.057	6.551	***	Accepted
H1b	AC→DC	0.333	0.362	0.058	6.249	***	Accepted
H1c	CC→DC	0.248	0.253	0.052	4.903	***	Accepted
H2a	OC→NE	0.334	0.357	0.050	7.112	***	Accepted
H2b	AC→NE	0.308	0.308	0.051	6.029	***	Accepted
H2c	CC→NE	0.276	0.301	0.051	5.905	***	Accepted
H3	NE→DC	0.295	0.342	0.058	5.887	***	Accepted

**P< 0.05; **P<0.01; ***P<0.001*

Mediation Effect

This study applied the SPSS PROCESS tool with a Bootstrap sampling of 5,000 and a 95% confidence interval to examine the mediating role of negative emotions between consumer confusion and delayed choice. The mediating effect of negative emotions on the relationship between overload confusion and delayed choice (effect = 0.245) is significant, as the 95% confidence interval excludes 0, confirming H4a. Similarly, for ambiguity confusion (effect = 0.192) and conflict confusion (effect = 0.188), the confidence intervals do not contain 0, validating H4b and H4c, respectively.

Table 6 Analysis of Mediating Effect

Paths	Effect	Bias-corrected 95% CI		Degree of Mediation
		Lower	Upper	
Indirect Effect				
H4a: OC→NE→CD	0.245	0.051	0.094	partially mediating
H4b: AC→NE→CD	0.192	0.042	0.116	partially mediating
H4c: CC→NE→CD	0.188	0.040	0.115	partially mediating

Discussions

This study delineates the various facets of consumer confusion encountered during online shopping—specifically overload, ambiguity, and conflict confusions—and investigates their impact on delayed choice, yielding several key findings:

Firstly, it was established that overload confusion, ambiguity confusion, and conflict confusion significantly contribute to the postponement of purchasing decisions by consumers. This aligns with prior research by Kim & Lee (2019), Leek & Kun (2006), and Wang et al. (2020), confirming the direct relationship between these types of consumer confusion and delayed choice behaviors. Secondly, the study further corroborates that consumer confusion elevates negative emotions among consumers, consistent with findings from Mishra et al. (2021), Jin et al. (2020), and Wang et al. (2023). The intensification of information overload, ambiguity, and conflict triggers adverse emotions such as irritation and anxiety, with the severity of these emotions escalating in direct proportion to the stimulus strength. Thirdly, negative emotions were found to have a positive influence on the propensity of consumers to delay decisions, resonating with the insights from Pappas et al. (2018) and Mishra et al. (2021). This underscores the role of negative emotions as a pivotal factor motivating consumers to defer choices, particularly as these emotions intensify. Lastly, the study elucidates that negative emotions serve as a mediator between consumer confusion and delayed choice. The entanglement of consumers in a web of ambiguous, conflicting, and contradictory product information induces negative emotions such as disappointment and irritation. This emotional state diminishes patience with the online shopping process, leading to delayed decision-making. Overall, this investigation enriches the understanding of how different types of consumer confusion and the ensuing negative emotional responses contribute to delayed purchasing behaviors, offering a nuanced perspective on the dynamics of online shopping decisions.

Conclusion and suggestions

This study investigates the impact of consumer confusion factors, including overload confusion, ambiguity confusion, and conflict confusion, on consumers' delayed choice within online shopping environments. The findings contribute significantly to the realm of online shopping behavior, particularly in the context of delayed purchasing decisions. While existing literature predominantly centers on impulsive buying, live shopping, and purchase intent, there's a notable gap in understanding negative buying behaviors such as decision postponement. This research addresses this gap, enhancing the body of knowledge on delayed choice behaviors. Furthermore, it elucidates the underlying mechanisms of consumer delayed choice within online shopping, investigating the impact of consumer confusion and resultant negative emotions on decision postponement. Through the development and analysis of a theoretical model, this paper offers insights into the 'black box' of consumer behavior, rendering the process of delayed choice more transparent and comprehensible.

This study also has some managerial insights and suggestions. First, to alleviate overload confusion, platforms should refine product recommendation algorithms. This involves adjusting the volume and precision of recommendations by incorporating user preferences more accurately and allowing users to filter out unwanted product categories. Enhancing product labeling for precise filtering can also significantly reduce the overwhelming effect of excessive choices, thereby diminishing negative emotions such as irritation. Second, merchants can mitigate ambiguity confusion by ensuring the accuracy and clarity of product information. Utilizing customer service feedback, online Q&As, and community interactions can help identify and address areas of confusion. Effective communication, including straightforward language and transparency about product features, can prevent the exacerbation of consumer uncertainty. Third, to address conflict confusion, merchants should develop efficient mechanisms for resolving discrepancies and responding to consumer grievances promptly. Post-resolution, a thorough analysis to identify and rectify the root causes of conflicts, such as misleading product descriptions or discrepancies in product quality, is essential. By implementing these strategies, online platforms and merchants can enhance the shopping experience, reduce consumer confusion, and, consequently, decrease the likelihood of delayed purchasing decisions.

This research, while contributing valuable insights into the phenomenon of consumer delayed choice in online shopping, has certain limitations that warrant mention. Firstly, the research primarily investigates the impact of specific types of consumer confusion—overload, ambiguity, and conflict—on delayed purchasing decisions. This focus does not encapsulate the entire spectrum of potential confusion sources, suggesting that future studies could broaden the scope to include additional dimensions of consumer confusion and enrich the understanding of its effects. Secondly, the methodology employed is exclusively quantitative. Future research could benefit from incorporating qualitative methods, such as in-depth interviews, to garner more nuanced insights into consumer perceptions and decision-making processes. Lastly, the current analysis centers on the relationship between consumer confusion and delayed choice, without considering other possible factors influencing postponement behaviors. Subsequent investigations are encouraged to explore a wider range of influences on delayed choice, further expanding the literature in this field.

New knowledge and the effects on society and communities

In the context of online shopping, consumers often face a substantial extrinsic cognitive load as they navigate through product pages, reviews, and other information. This not only consumes significant working memory resources but also detracts from their ability to focus on the core aspects of their needs, potentially leading to postponed decision-making or even the abandonment of the purchase altogether. Moreover, as online shopping continues to evolve, understanding the triggers and implications of cognitive dissonance in this realm becomes crucial for both consumers navigating the digital marketplace and marketers aiming to create more cohesive and satisfying online shopping experiences. This research findings confirmed that the positive relationship between consumer confusion and purchase decision delays through negative emotions, it revealed the underlying mechanisms of consumer delayed choice within online shopping. It helps us to predict the outcomes of negative factors that influence online behavior. Moreover, it offers practical implications for addressing and mitigating consumer confusion issues within the realm of online retail services. Online retailers should keep their information base on consumer changes up to date. The findings provide valuable insights for marketers and online retailers, guiding them in efforts to alleviate consumer confusion, mitigate negative emotional responses, and ultimately reduce the incidence of delayed purchasing decisions.

References

Babin, B. J., & Attaway, J. S. (2000). Atmospheric Affect as a Tool for Creating Value and Gaining Share of Customer. *Journal of Business Research, 49*(2), 91-99. Retrieved from https://doi.org/10.1016/S0148-2963(99)00011-9

CMI. (2023). *China Online Shopping Market 2024–2033.* Retrieved from https://www.custommarketinsights.com/report/china-online-shopping-market/

Cochran, W. G. (1977) *Sampling Techniques.* (3rd ed.). John Wiley & Sons, New York.

Croyle, R. T., & Cooper, J. (1983). Dissonance arousal: Physiological evidence. *Journal of Personality and Social Psychology, 45*(4), 782–791. Retrieved from https://doi.org/10.1037/0022-3514.45.4.782

Festinger, L. (1957). *A theory of cognitive dissonance.* Evanston, IL: Row, Peterson.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. Retrieved from https://doi.org/10.2307/3151312

Friedman, M. P. (1966). Consumer confusion in the selection of supermarket products. *Journal of Applied Psychology, 50*(6), 529–534. Retrieved from https://doi.org/10.1037/h0024048

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. *Long Range Planning, 46*(1-2), 1-12. Retrieved from https://doi.org/10.1016/j.lrp.2013.01.001

Jin, H., Lin, Z. B., & McLeay, F. (2020). Negative emotions, positive actions: Food safety and consumer intentions to purchase ethical food in China. *Food Quality and Preference, 85*(11), 103981. Retrieved from https://doi.org/10.1016/j.foodqual.2020.103981

Kim, J.-O., & Lee, E.-J. (2019). The effects of choice and information confusion on negative emotional responses and purchase avoidance behavior of internet fashion consumers. *The Journal of the Korean Society of Knit Design, 17*(2), 1-13.

Leek, S., & Kun, D. (2006). Consumer confusion in the Chinese personal computer market. *Journal of Product & Brand Management, 15*(3), 184-193. Retrieved from https://doi.org/10.1108/10610420610668621

Li, X. M., & Jiang, S. Y. (2019). The impact of power on delayed choice. *Advance in Psychological Science, 27*(3)*,* 447–452. Retrieved from https://doi.org/10.3724/SP.J.1042.2019.00447

Liu, T., Ma, J. W., Li, X., & Chen, Y. W. (2017). The influence of selection set size on online shopping decision-making attitude and behavior. *Journal of Psychological Science 40*(2)*,* 463–470. Retrieved from https://doi.org/10.16719/j.cnki.1671-6981.20170232

Lu, C. B., & Wang, C. S. (2018). Do Abundant Promotional Products Cause Too Much Choice Effect? The Moderating Role of Time Pressure. *Business Management Journal, 40*(3), 109-127. Retrieved from https://doi.org/10.19616/j.cnki.bmj.2018.03.007

Lu, C. H. B., & Wang, C. H. S. H. (2018). Will too many promotions lead to too many selection effects? moderating effect of time pressure. *Economic Management Journal, 40,* 109–127. Retrieved from https://doi.org/10.19616/j.cnki.bmj.2018.03.007

Mishra, S., Malhotra, G., & Tiwari, S. R. (2021). Moderating effect of cognitive conflict on the relationship between value consciousness and online shopping cart abandonment. *International Review of Retail, Distribution and Consumer Research, 31*(5), 511 - 530. Retrieved from https://doi.org/10.1080/09593969.2021.2002386

Mitchell, V., & Papavassiliou, V. (1999). Marketing causes and implications of consumer confusion. *Journal of Product & Brand Management, 8*(4), 319-342. Retrieved from https://doi.org/10.1108/10610429910284300

Morvan, C., & O'Connor, A. (2017). *An Analysis of Leon Festinger's A Theory of Cognitive Dissonance*. Macat Library. London. Retrieved from https://doi.org/10.4324/9781912282432

Nunnally, J. C. (1978). *Psychometric theory.* (2nd ed.). McGraw-Hill, New York.

Pappas, I. O., Kourouthanassis, P. E., Papavlasopoulou, S., & Chrissikopoulos, V. (2018). Emotions in Motion: The Combined Effect of Positive and Negative Emotions on Personalised E-Commerce. *International Journal of Online Marketing. 7*(1), 64-77. Retrieved from https://doi.org/10.4018/IJOM.2017010104

Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The Consequences of Technostress for End Users in Organizations: Conceptual Development and Empirical Validation. *Information Systems Research, 19*(4), 417-433. Retrieved from https://doi.org/10.1287/isre.1070.0165

Schweizer, M., Kotouc, A. J., Wagner T., & Rudolph, T. (2006). Scale Development for Consumer Confusion. *Advances in consumer Research, 33*(1), 184-190. Retrieved from https://www.alexandria.unisg.ch/handle/20.500.14171/84008

Statista. (2024). *Number of online shoppers in China from 2012 to the first half of 2023(in millions).* Retrieved from https://www.statista.com/statistics/277391/number-of-online-buyers-in-china/

Sun, J., Sun, X. Y., & Jia, Y. (2019). An Exploration of the Effect of Consumer Confusion on Purchase Decision Delays. *Journal of Commercial Economics. 4*(3)*,* 70-72. Retrieved from https://doi.org/10.3969/j.issn.1002-5863.2019.04.020

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science, 12*(2), 257–285. Retrieved from https://doi.org/10.1207/s15516709cog1202_4

Sweller, J. (2010). Element interactivity and intrinsic, extraneous, and germane cognitive load. *Educational Psychology Review, 22*(2), 123–138. Retrieved from https://doi.org/10.1007/s10648-010-9128-5

Urbach, N., & Ahlemann, F. (2010). Structural Equation Modeling in Information Systems Research Using Partial Least Squares. *Journal of Information Technology Theory and Application, 11*(2), 5-40. Retrieved from https://aisel.aisnet.org/jitta/vol11/iss2/2/

Walsh, G., Hennig-Thurau, T., & Mitchell, V. (2007). Consumer confusion proneness: scale development, validation, and application. *Journal of Marketing Management, 23*(7-8), 697 - 721. Retrieved from https://www.tandfonline.com/doi/abs/10.1362/026725707X230009

Wang, Q., & Shukla, P. (2013). Linking sources of consumer confusion to decision satisfaction: the role of choice goals. *Psychology and Marketing, 30*(4), 295-304. Retrieved from https://doi.org/10.1002/mar.20606

Wang, S., Cheah, J., & Lim, X. J. (2023). Online Shopping Cart Abandonment: A Review and Research Agenda. *International Journal of Consumer Studies. 47*(2), 453-473. Retrieved from https://doi.org/10.1111/ijcs.12876

Wang, Y. B., Min, Q. F., & Lin, Z. K. (2020). Consistency between attitude and purchase intention under peer conflict in response to online reviews. *Science Research Management, 41*(11), 173-181.

Yu, J., Park, Y., & Jin, Y. (2019). The effects of word-of-mouth information characteristics on consumer confusion and purchasing behavior. *Journal of Product Research, 37*(5), 203-213.