The Transformation of Payment Method and Consumer Behavior Deviation: From the Perspective of Generational Difference

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Abstract. The paper is based on a cross-generation questionnaire survey investigating consumer spending habits, cash perception, and shifts in consumption behavior. The questionnaire comprises five sections, examining respondents' demographic information, preferred payment methods, variations in cash perceptions across different scenarios, and the shifts in cash awareness during the last ten years. Subsequently, the research performed data analysis and generational comparisons for each section. The survey encompassed respondents from various regions and age groups across China, while the proportions were consistent with the distribution of the market. It was finally revealed that spending had an upward trend over the last ten years due to the transformation of payment methods. Compared with other groups, the elderly and younger consumer groups exhibited a higher risk of impulse spending, with the spending amount showing more significant growth. The differences among consumer groups mainly lie in the fact that young people have a weaker perception of cash in small transactions, and therefore are more likely to make more small transactions. Since nowadays, existing policies focus more on the younger generation, like college students, education on consumption concepts for elderly groups is equally important.

Keywords: Digital Payment, Consumer Behavior, Generational Differences

1 Introduction

During the post-pandemic era, the development of the internet economy has accelerated, coinciding with further reforms in payment methods. By 2021, 91.3% of American consumers used digital payment as their main payment method. The profound shift in payment methods has diminished the 'pain of paying' associated with the traditional 'counting cash and paying in notes' perception, leading to increased impulse spending and influencing overall consumer behavior [1]. Existing research on consumer behavior related to impulse spending and digital payment mainly focuses on irrational consumption among college students and such behavior on online platforms [2]. Empirical studies indicate that with the low interest in digital inclusive finance, consumers' consumption desire tends to become uncontrolled as a result of income

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illusion and irrational spending. As a result, individual borrowing demand and debt levels have shown an upward trend, which is adversely affecting individual credit conditions [3]. Excessive impulse consumption results from a combination of changes in payment behavior, the rise of online shopping, and the widespread of consumerism. Such a consumption concept damages consumers' credit status significantly, therefore giving rise to adverse consequences such as excessive consumption. With the development of e-commerce, the online consumer groups have extended from the young generation to all ages. The acceptance of online shopping of middle-age and elderly consumers has experienced a significant increase. Mobile payment has penetrated into consumers' daily life rapidly, and exerted varying degrees of influence on consumers' cash awareness through multiple channels, such as sensitivity to payment amounts and hesitation during transactions, thereby further impacting consumption behavior.

Drawing on questionnaire results, the paper focuses on the analysis of intergenerational differences, thereby broadening the research direction in this field. The research investigates the impact of changes in payment methods on consumer behavior, as well as the heterogeneous effect among various age groups of consumers, showing significant guidance for enterprise market decisions and political guidelines for curbing group irrational consumption.

2 Literature Review and Theoretical Hypothesis

2.1 Potential Impact of the Evolution of Payment Methods

While proceeding with a transaction, consumer's expenditure amounts, purchase frequency, and the likelihood of excessive appending are likely influenced by digital payment methods. Among these impacts, the most direct impact is the overall growth in consumption expenditure. The fundamental distinction between mobile payment and cash payment lies in payment transparency and payment pain. Existing research indicates that the lower the payment transparency, the greater the consumption. Because of the reliance on online platforms, digital payment reduces payment pain and payment transparency, which strengthens the cashless perception, thereby reducing payment pain and resulting in an increase in overall consumption expenditure [4]. Payment pain mainly depends on four factors: concreteness, time delay, perception of payment amount, and the coupling of the payment method with mental accounting correlation of the mental account of payment method [5]. Since digital currency lacks the tangibility of cash, its settlement involves a time lag, using digital payment will reduce the perception of the monetary amount and blur the division of mental accounting. The endowment effect also suggests that individuals tend to overvalue their property when they possess it and undervalue it when they do not. Virtual currency exists primarily in online environments rather than in tangible form, creating an illusion of detached ownership., thereby reducing the valuation of spending amount [6]. Based on these theories, hypothesis H1 is proposed: The mainstream adoption of digital payment will lead to two main effects: firstly, it will notably increase the overall

consumption level, and secondly, it will increase the share of large-scale consumption in total expenditure.

2.2 The Evolution of Payment Methods

Since 1996, when Bank of China and China Merchants Bank began to establish the earliest online bank systems, the transformation of payment methods in China has strongly depended on internet services. After the the first online banking transaction in 1998, a series of third-party payment enterprises have emerged, further expanding the online payment platforms. Benefiting from the advancement of communication technologies, mobile phones have become popularized in less than ten years, pursuing the transformation from online banks to mobile banks. Based on continuous exploration and practice of the existing systems, a group of third-party payment platforms emerged around 2010. Through the integration with online shopping platforms, these services have infiltrated online payment into consumers' daily lives [7]. This evolution occurred in distinct stages, with the fundamental transformation largely accomplished within approximately a decade. As a result, different age groups of consumers have experienced different stages. Based on such differences, the paper proposes Hypothesis H2: The impact of the transformation of payment methods on consumers' consumption behavior shows intergenerational differences. There exists a difference in the degree of impact that comes from the transformation of payment methods among various age groups.

3 Research Methodology

3.1 Questionnaire Design

The study focuses on consumers' basic characteristics and the change of consumption behavior and habits of different age groups over the last ten years. Referring to existing scales of this field, the paper designed a questionnaire concerning the impact of changes in payment methods on consumption behavior. The questionnaire covers the following five parts: Part A is designed to reveal the basic characteristics of respondents. Part B investigates the usage of different payment methods and their evolution over the last decade. Part C measures the degree of respondents' cashless perception. Part D examines the preferred payment method of respondents and the impact of such payment on consumer behavior. Part E focuses on changes in cash perception and consumer behavior over the past decade. Parts of the questionnaire adopt a Likert scale. Part C and E use a 5-point scale ranging from 1 to 5, representing five levels from 'strongly disagree' to 'strongly agree'. The summary of the questionnaire is shown in Table 1.

Table 1. Basic information of questionnaire

Content	Design Purpose	Questions Involved
Basic Information	To understand the basic characteristics of the respondents	A1-A5

Payment Method Usage	To understand the basic characteristics of the respondents	B1-B2
Cashless Perception	To understand the degree of cashless perception among the respondents	C1-C9
Preferred Payment Method	To understand respondents' preferred payment methods and perceptions in specific payment contexts	D1-D7
Changes in Consumption Behavior Over the Past Decade Changes in Consumption Behavior Over the Past Decade	To understand changes in cash perception and consumption behavior among respondents over the past decade	E1-E4

Since the questionnaire was not entirely composed of scale items, reliability and validity tests were conducted only for Parts C and E. The calculation shows that the internal consistency reliability of these scale parts is satisfactory(Cronbach's Alpha = 0.910). As the remaining sections were designed to identify whether respondents are affected by the transformation of payment methods, the study employed alternative measurement approaches.

3.2 Questionnaire Subjects and Survey Methods

Considering that the transformation of payment methods goes through a long process, and in line with the core topic of this study, the respondents of the questionnaire have to be selected with emphasis on the width of age and the breadth of time span. The subjects of the questionnaire were focused on consumer groups across various age groups through the adoption of the online questionnaire platform Sojump and on-site distribution. The study conducted an anonymous questionnaire survey among consumers of all age groups across China from February 2 to February 3, 2026. A total of 325 questionnaires were collected, of which 306 were valid, with a valid response rate of 94.15%.

The questionnaire was distributed to respondents of all age groups nationwide, thereby insuring that the age distribution of respondents aligns with the structure of Chinese market consumers. While ensuring the coverage of various age groups, the nationwide distribution of respondents minimizes biases in consumption habits caused by regional differences. When examining the impact of cashless payment on consumption behavior, the research mainly focuses on its boosting effect on impulsive consumption. Impulsive consumption refers to the unplanned and irrational purchasing behavior that results from the stimulation of external factors, characterized by suddenness and non-necessity. Consumers with stronger self-control are less likely to make impulsive purchases[8]. To reduce the probability of impulsive consumption, it is important to divide the mental account correctly to develop better self-control ability since mental accounts label money and consumption behaviors differently through a kind of "self-deception" or "internal rules", thus creating an invisible buffer and

regulatory barrier for the self that often acts impulsively. Conversely, the convenience of digital payment makes it easier for consumers to blur the boundaries of mental accounting, weakens their valuation of monetary value, thus reducing consumers' reluctance of spending behavior, and leads to an increase in unplanned consumption [9]. Based on the above theory, the questionnaire survey conducts an analysis from multiple dimensions, including total consumption amount, size of single expenditure, differences in consumption behavior across various categories, and changes in consumption behavior over the past decade.

Respondents' basic information is shown in Table 2.

Table 2. Distribution of Valid Questionnaire Samples

Item	Category	Percentage
Gender	Male	37.25%
	Female	62.75%
Age	Under 19	12.09%
	19-29	30.39%
	30-39	15.03%
	40-60	36.27%
	Above 61	6.21%
Education	Junior high school or below	14.71%
	High school / technical secondary school	21.9%
	Bachelor's/college	55.23%
Monthly Disposable Income	≤ 3,000 yuan	31.37%
	3001-6000yuan	26.47%
	6001-10000yuan	28.1%
	≥ 10,001 yuan	14.05%
Current Occupation	Student	23.53%
	Enterprise Employee	21.24%
	Self-employed	12.09%
	Public sector (government/institution/state-owned enterprise)	16.34%
	Freelancer	8.82%
	Retired	17.97%

4 Analysis of Survey Results

4.1 Usage and their Change of Payment Methods

Over the past decade, the usage of electronic payment has experienced a significant increase across all age groups. (Table 3)

Table 3. Changes in Respondents' Frequency of Cash Use

Item	Options	Percentage (%)
B2. Change in frequency of cash payment compared with ten years ago	Increased significantly	11.76
	Increased slightly	15.03
	Remained basically unchanged	10.46
	Decreased slightly	23.86
	Decreased significantly	38.89

Among these age groups, one with the highest proportion of respondents believing that there is a significant decrease in cash use over the decade was the 19-29 age group (47.31%), followed by the 40-60 group (43.44%), and the 30-39 group (42.04%). Only 36.84% of the respondents aged above 61 consider that their usage of cash has experienced a significant decrease over the last ten years. Notably, 45.95 of respondents under 19 and 52.63% of those above 60 reported a slight decrease in cash use, indicating that the impact of the promotion of digital payment on the consuming habits of these two groups is relatively smaller.

4.2 Consumers' Cashless Perception

According to the result of C1, when choosing their payment methods, a considerable proportion of respondents(29.08%) held ambiguous attitudes toward the security problem. The difference in such proportions among different age groups was insignificant, suggesting that concerns over payment security may not be a major variable in this study.

As shown in Table 4, when asked whether they are unable to feel that money was being spent when using electronic, 32.68% of respondents agreed, and 28.1% strongly agreed. When asking whether the usage of electronic payment could reduce the sensitivity to consumption amounts, 32.35% agreed, and 31.7% strongly agreed.

In conclusion, among all age groups, changes in payment methods will weaken consumers' cash perception through weakening the perception of consumption, weakening the perception of consuming amount, and weakening the price perception (Table 4).

Table 4. Degree of Cashless Perception When Using Electronic Payment

Item	Options	Percentage (%)
C2. When using electronic payment, I cannot intuitively feel that money is being spent.	Strongly disagree	10.46
	Disagree	18.63
	Neutral	10.13
	Agree	32.68
	Strongly agree	28.1
C3. Compared with cash payment, electronic payment	Strongly disagree	9.8
	Disagree	16.34
	Neutral	9.8

makes me less sensitive to the amount spent.	Agree	32.35
	Strongly agree	31.7
	Strongly disagree	13.73
C7. Using electronic payment makes me pay less attention to price levels when consuming.	Disagree	20.26
	Neutral	14.38
	Agree	32.03
	Strongly agree	19.61

According to the result of C6, when asked whether it is more likely to make unplanned consumption when using digital payment, 39.22% of respondents agreed, and 22.55% strongly agreed. When asked whether they would reduce unnecessary consumption when using cash payment, 39.87% agreed and 21.9% strongly agreed, which reflects that electronic payment could increase impulse consumption, thus affecting consumers' consuming behaviors, leading to consumption behavior bias (Table5).

Table 5. Assessment of Impulsive Consumption

Item	Options	Percentage (%)
C6. When using electronic payment, I am more likely to make unplanned purchases.	Strongly disagree	10.46
	Disagree	15.03
	Neutral	12.75
	Agree	39.22
	Strongly agree	22.55

When conducting intergenerational analysis, the research found that, when asked whether they were more likely to do unplanned consumption when using digital payment, 42.11% of respondents aged 60 and above strongly agreed, which is the highest proportion among all groups, followed by the group aged 19 and below (29.73%). Despite the relatively small sample size, the results still reflect the facilitating effect of digital payments on unplanned consumption among the elderly group.

Meanwhile, when asked whether using cash payment would generally reduce unnecessary consumption, 42.11% of respondents aged above 60 strongly agreed, which was also the highest proportion among all age groups. This indicates the consumption behavior bias caused by digital payment is more significant on the oldest and youngest groups.

Considering that the development of electronic payment systems in China started roughly in 1996, and the basic popularization of digital payment was achieved before 2017, the time period of this transition that was experienced by consumers aged 19 and below was the shortest, thus their sensitivity to the change in payment methods was also noticeably lower.

Furthermore, consumers aged 19 and below have not fully established their consumer values. Since most of them have grown up under the influence of the cashless perception brought by electronic payment, they are more prone to impulsive consumption.

4.3 Respondents' Preferred Payment Methods and Perceptions in Specific Consumption Situations

The impact of the transformation of payment methods is slightly different under specific consumption scenarios. Overall, consumers prefer digital payment when making small, medium, and large purchases.

The pain of consumption caused by digital payment is significantly weaker than that of cash payment when making large payments, thus the cashless perception is stronger. When using cash payment, 33.33% of respondents agreed, and 26.14% strongly agreed that they are more reluctant when making large purchases. In contrast, 40.2% of respondents agreed, and 18.95% strongly agreed that digital payment could weaken their price sensitivity (Table 6).

Table 6. Cashless Perception in Large Consumption

Content	**Options**	**Percentage (%)**
D6. When purchasing high-value goods, I will feel reluctant to spend if I use cash.	Strongly disagree	14.71
	Disagree	15.69
	Neutral	10.13
	Agree	33.33
	Strongly agree	26.14
D7. When the consumption amount is large, using electronic payment will make me less sensitive to prices.	Strongly disagree	11.44
	Disagree	15.69
	Neutral	13.73
	Agree	40.2
	Strongly agree	18.95

From the perspective of intergenerational differences, when asked whether they would feel more reluctant when buying high-value goods with cash, 42.11% of respondents aged 60 and above strongly agreed, followed by 37.84% of those aged 19 and below. Since young consumers do not have mature consumption concepts, they could be influenced by consumerism and comparison psychology easily, which fosters their impulse consumption. While those aged 60 and above lack the ability to accept new consumption patterns, they are also more likely to engage in large consumption.

4.4 Changes in Respondents' Cash Perception and Consumption Behavior Over the Past Decade

Given that the transformation of consumers' daily payment methods has largely taken place in the last ten years, the questionnaire therefore focuses on this period. The results shows that impulsive consumption and the amount consumed have experienced an increase after the change in payment methods, while consumption pain has decreased. When considering the intergenerational differences, the conclusion is dissimilar to those of the former parts. While the proportion of consumers aged above 60 who agreed that they engaged in less large consumption ten years ago still is the largest among all groups (52.63%), the proportion of consumers between 19 and 29 is larger than that of

consumers under 19. Consumers aged between 19 and 29 generally began their employment over the past decade, leading to a more significant rise in their consumption level and thus a more pronounced increase in large-value consumption expenditure (Table7).

Table 7. Changes in Consumption Sensations Over the Past Decade

Item	Options	Percentage (%)
E1. Compared with now, did you have more unplanned consumption ten years ago?	Yes	36.6
	No	37.91
	Unsure	25.49
E2. Compared with now, were you more likely to ignore your daily or monthly expenditures ten years ago?	Yes	33.01
	No	40.2
	Unsure	26.8
E3. Compared with now, were you more hesitant when making large payments ten years ago?	Yes	37.25
	No	32.35
	Unsure	30.39
E3. Compared with now, were you more hesitant when making large payments ten years ago?	Yes	43.14
	No	31.7
	Unsure	25.16

5 Result and Discussion

5.1 Conclusion

The popularization of digital payment increases impulsive consumption, reduces consumption perception, and thus influences consumers' consumption behavior. Such impact is more pronounced among consumers aged under 19 and those aged over 61, and relatively weaker among those aged between 20 and 39.

In the past ten years, consumers aged 61 and above experienced greater changes in consumption habits. Meanwhile, consumers aged 19 to 29 showed more significant changes in consumption habits than those aged 19 and below. This is because the consuming power of consumers between 19 and 29 has seen a significant growth over the last decade, leading to a prominent increase in both large -scale consumption and overall consumption amount.

Notably, the survey shows that 37.84% of respondents aged under 19 reported that they tend to have more transactions of 100 yuan or less compared with ten years ago, indicating that this age group tends to engage in small purchases, but the frequency of such consumption is high, so the total amount that has been spent is higher. Since younger consumers generally have lower income, weaker consumption capacity, and less liquidity, they exhibit such consumption characteristics. Meanwhile, they have little experience with cash usage, so their cash perception is weaker, making their consumption more vulnerable when influenced by hedonism and consumerism.

5.2 Policy Recommendations

With the joint efforts of society and government, a series of measures have been taken to correct the inappropriate consumption concepts, such as overconsumption, impulsive consumption, and excessive consumption, among college students. There is already a considerable number of universities that have established research centers for the education of their students. Some of them focus on the education of consumption and compile relevant textbooks for assistance. Meanwhile, in terms of internet governance, relevant institutions have put their emphasis on regulation and publicity in order to strengthen the supervision of online content and inhibit the spread of consumerism and hedonism [10].

Comparing with college students, there are few measures targeted at the elderly groups. According to the past data, in 2013 and 2015, the urban-rural consumption ratios of the elderly population in China were 1.39 and 2.07, respectively, while their income ratios were 3.45 and 2.98, respectively, which indicates that the consumption scale of elderly residents in both rural and urban area exceeds their income scale during the period. Even with financial support from their children, the elderly generally faced a dilemma of living beyond their means [11]. The results of this study also show that the consumption behavior and cash perception of the elderly are significantly affected by payment methods. Therefore, it is crucial to strengthen the guidance of elderly consumers. On the one hand, policies should put effort into stimulating the consumption capacity of the elderly group and improving their living convenience through the implication of digital payment, which is also conducive to expanding domestic market demand. On the other hand, by strengthen inspections of products targeting the elderly and cracking down on illegal products, the market regulator could strengthen supervision over the senior consumer market. Such policies are able to help the elderly adapt to digitalization while preventing them from the negative impact of the transformation of payment methods [12].

6 Conclusion

This paper focuses on intergenerational research into the impact of evolving payment methods on consumer behavior. Through a questionnaire survey, the conclusion is drawn that consumers in different age groups have varying degrees of reduced cash perception when using electronic payments, leading to an increase in consumption amount. This effect is more significant for consumers under 19 and over 60 years old. In response to this effect, the government should strengthen supervision of the elderly market and prevent the spread of erroneous consumption views such as consumerism on online platforms, while ensuring existing education for young consumers. This paper expands the research on intergenerational differences in the field of consumer behavior, which is conducive to the protection of the elderly vulnerable groups in the development of the Internet economy.

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