

Does Auto-Pay Reduce the ‘Pain of Payment’? A UX-Based Study on Spending Behavior in Digital Transactions

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Abstract

The research paper focuses on how auto-pay features and elements of user experience (UX) design, such as UX friction and financial nudges, affect the financial awareness and behavior of users regarding their subscription spending in the context of digital payment settings. The research approach to be adopted was a quantitative, introspective based study, that is, using a structured questionnaire would be used to gather primary data including 200 respondents on a 5-point Likert scale. All hypotheses have been operationalized in the form of comprehensive constructs indicating the holistic user experience and tested with the help of one-sample t-tests in SPSS. The results show that the users do not turn out to be less financially aware in auto-pay systems as thought before, and that they are relatively highly aware despite being automated. Nevertheless, the findings indicate that reduced UX friction will affect subscription expenditure highly, which underscores the effect of convenient design on consumer action. Moreover, UX-based financial nudges have proven especially useful in raising the financial awareness level, showing that the design interventions could be used very well to encourage user control. Altogether, the research highlights this role of UX design in determining financial behavior, and as convenience makes interactions, it might be possible to add more responsible and informed use of digital payment, combining it with elements that promote awareness.

Keywords: Digital Payment Systems, Auto-Pay Systems, UX Friction, Financial Awareness, Subscription Spending Behaviour, UX-Based Financial Nudges, Pain of Payments.

1. Introduction

The blazing development of digital financial technologies has essentially altered the manner in which people carry out transactions, which is as a result of conventional cash-based operations to technology-oriented and electronic payment systems. Online banking, mobile wallets, and automated billing systems create more convenience, speed, and accessibility in financial transactions. Nevertheless, these systems have had profound effects on consumer expenditure habits besides their practical advantages, as they have minimized the psychological expenditure involved in the transactional processes. The growing fame of digital payment platforms has brought about some new behavioral trends in which the convenience and the simplicity of transactions change buying choices and monetary consciousness (Shreya Kharbanda and Chanchal Chawla, 2025; Faizal Rizky Yuttama, 2025). This change reveals the necessity to consider not only the technological adoption but also the behavioral implications related to digital financial ecosystems.

The minimization of the pain of payment, which is a psychological feeling that normally accompanies monetary spending, is one of the most crucial behavioral changes that have taken place in digital transactions. By electronicizing payment systems, the role of touch is



minimized, and therefore more people would be willing to spend, and simultaneously less price sensitive. The fact that digital payments are easy, fast, and invisible the stream encourages spontaneous buying behavior and a lack of financial self-control. Also, cognitive biases, a lack of transaction salience, and immediate satisfaction are examples of psychological processes that also lead to online deviations in spending habits (Jasmine Thapa and Rewan Kumar Dahal, 2026; Faizal Rizky Yuttama, 2025). Consequently, there is a risk that consumers will spend more and less consciously than with the traditional measure of payment, which brings up significant questions of financial discipline and financial awareness.

Furthermore, User Experience (UX) and interface design have grown to be of superior relevance in influencing financial behavior in online platforms. Digital interfaces are not only transactional, but they are considered to be deliberately generated space which distress the decision of the user in an organized method in terms of layout, defaults and flows of interaction. The phenomenon of manipulative design, often also known as dark patterns, shows how the prompting elements of the interface design can weaponistically direct users to undesirable financial actions, like automatic subscription or excessive expenditure. These design approaches take advantage of cognitive constraints and behavioral biases and typically minimize user control over what they can purchase and how they spend money (Onkarnath, Shweta Batra & Loganathan Srinivasan, 2025; Rina Sa, 2025). Although such problems have increasingly attracted attention, to date, there is a lack of research specifically conducted on the segment of investigating how auto-pay systems, as well as the UX design, in general, contribute to the formation of the pain of payment and spending behavior. Thus, this research focuses on the correlation between auto-pay systems, UX design, and consumer spending behavior during digital transactions.

2. Literature Review

The growing literature concerning the problem of digital payments is a pointer of a significant shift in modifying consumer behavior ranging on the convenience and the simplicity of transactions the technology has transformed. The digital payment systems have been more than a tool of transaction to the behavioral platforms that determine the patterns of spending and the decisions in finance. It has been discovered that when the features are instant payment, reward and frictionless interface the probability that transaction frequency and price sensitivity will increase can be seen to be more likely. Using cashback and digital payment incentives as a common example, it has been discovered that digital incentives like cashback and discounts increase consumption by lowering the perceived cost and enhancing the perceived value and changing rational decisions-making (Shreya Kharbanda and Chanchal Chawla, 2025). Similarly, e-payment systems simplify the act of making purchases, which may lead to more and even more impulsive purchases, meaning the shift of the consumption patterns of deliberate convenience (Faizal Rizky Yuttama, 2025).

Digitally speaking, digital payment systems are known to play a potent influence in consumer cognition and emotional affect in transacting on money. The lesser pain of payment transformation theory explains why digitized forms of payment reduce mental opinion of resistance to expenditure that leads to greater spending and lower level of financial knowledge. The digital transactions are intangible and invisible and this reduces the degree of salience on

spending that makes the consumers less conscious about their spending. That is also facilitated by the application of cognitive biases such as immediate gratification, diminished desire to control, and decision-making based on heuristic, which ensure that people purchase impulsively online (Jasmine Thapa, and Rewan Kumar Dahal, 2026). Though it is stated in other studies that digital devices that exist on the online platform also provide the tool of financial account and budgeting, its usefulness has a strong dependence on its users and their financial literacy, i.e. there are not so many similarities in the behavioral outcomes of all users (Faizal Rizky Yuttama, 2025).

In addition to the aspects of psychology, the recent research assigns significance to the final contribution of UI/UX design in affecting the decision of consumers over the internet. Different digital interfaces have been designed specifically to dictate the actions of users, and often will rely on behavioral knowledge to influence the final decision-making. The concept of the dark patterns also focuses on the manipulative design features, such as the hidden charges, the forced further, and the misleading notifications, as it might lead the users to the unwanted financial decisions to spend more and their liberty (Onkarnath, Shweta Batra and Loganathan Srinivasan, 2025; Rina Sa, 2025). Despite the consistency in the literature to concentrate on adoption of digital payments, incentive and bias of behaviors, none of the studies has combined to have a single study touching on the impact of auto-pay systems and UX design on experience of pain of payment and later buying. Moreover, not much has been done to comprehend how such design-driven financial interactions can be shown in real-life situations in terms of subscription models, which indicates a severe gap in understanding the overall impact of automation and interface designing on consumer financial behavior.

3. Research Methodology

This research paper adheres to the quantitative and descriptive type of research in order to comprehend how the auto-pay systems, UX friction, and UX-based financial nudges affect people in terms of financial awareness and subscription spending behavior. Given the nature of the study which is user experience and perception, survey was employed in order to gather data. The information was gathered by use of a structured questionnaire which is distributed electronically to individuals who habitually use digital payment systems. Constituting approximately 200 valid responses, a total of 200 were also gathered. The sampling technique was convenience sampling since the respondents were identified on the basis of their availability and suitability to the research.

The questionnaire was based on three major hypotheses. Rather than maintaining a strong separation between variables, the hypotheses were addressed as a unit representing general user perception. This was done because, in UX design, users do not perceive an element such as friction, awareness, or nudges individually as they feel the element as a member of the entire interaction. Hence, several queries were organised according to each hypothesis in order to describe this general perception. All the answers were scored on a 5-point Likert scale, with 1 (Strongly Disagree) to 5 (Strongly Agree). Once the responses were gathered, the data entered into numbers and mean scores were determined in line with each hypothesis as the means of

all the answers to the pertinent questions taken in the individual respondents. This assisted in summarizing two or more answers in one value in each construct.

To carry out the analysis of data, SPSS (Statistical Package of the Social Sciences) was applied. One-sample t-test was used, in order to determine whether average responses were significantly lower than the neutral value (3) on Likert scale. This technique is appropriate since the research intends to know whether users tend to agree with the statements or tend to disagree with them.



Figure 1: This framework demonstrates that the level of financial awareness to the users depends on mode of payment, either auto-pay or manual mode of payment. Less contact in auto pay systems can result in decreased awareness as opposed to manual payments.

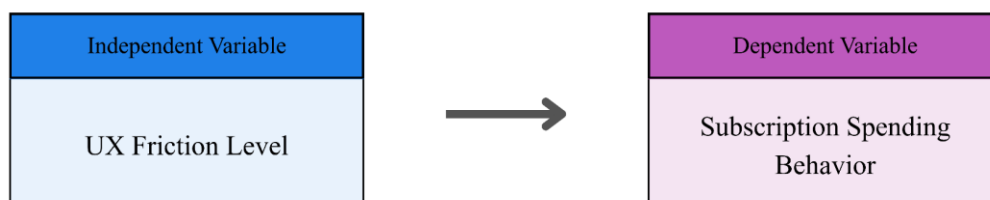


Figure 2: According to this framework, reduced friction on the UX e.g. in payment processes can make users more likely to become subscribers to the services, thus affecting spending behavior.



Figure 3: The framework displays how UX-based financial nudges, like reminders and notifications, can raise awareness of how people are spending their money and help them have greater financial control.

In the case of Hypothesis 1, the test was whether financial awareness is less than the level of neutrality. In the case of Hypothesis 2, it tested the hypothesis that lower UX friction increases

subscription spending among users. In the case of Hypothesis 3, it tested the hypothesis that financial awareness is boosted by UX-based financial nudges.

The level of significance was 0.05. The p-value below 0.05 was deemed statistically significant, which meant that the finding had not been by chance. Interpretation of the results was conducted based on the means as well as the significance level. The mean values that were greater than 3 indicated holding to the same opinion and those that were less than 3 indicated not. All in all, the study methodology is quite appropriate to the character of the research because it is concerned with perception and experience among users. Trying to address each of the hypotheses as a composite construct, and calculating the responses variation against a control, the study offers a workable perspective of the user behaviour within the provided digital payment systems.

4. Hypothesis Testing

H1: Users who use auto-pay systems demonstrate much lower financial awareness than users who make digital payments manually.

The hypothesis is that the use of auto-pay systems negatively affects the financial awareness of users. It is founded on the hypothesis that less contact with payments will create less cognitive attention, which will decrease the attention towards the spending pattern.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
H1_Mean	200	3.980	.4972	.0352

One-Sample Test						
	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
H1_Mean	27.873	199	.000	.9800	.911	1.049

The average financial awareness score is 3.980 that is quite higher as compared to the neutral value of 3. It means that most respondents tend to agree that they are more financially conscious, but not financially ignorant. A p-value 0.000 does not exceed the significant level of 0.05 and that is why the test result is statistically significant. As such, the null hypothesis is rejected.

The indication of direction of the mean however shows that the users are not as low on financial awareness, rather relatively high on it. This goes against the proposed hypothesis where the auto-pay users have less financial awareness.

Despite getting a meaningful result, the findings are not in line with the hypothesis. Rather, they point out that users are more financially aware even on the auto-pay systems.

H2: Reduced UX friction in auto-pay systems results in increased subscription expenditure by users.

The hypothesis evaluates the effect of smoother and easier payment experience (low UX friction) on the inclination of users to subscribe to services. It is premised on the fact that less effort and quicker transactions may lead to impulsive or even habitual subscriptions.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
H2_Mean	200	3.4488	.64984	.04595

One-Sample Test						
	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
H2_Mean	9.766	199	.000	.44875	.3581	.5394

The average between UX friction and subscription action amounts to 3.4488, which is higher than the neutral mark of 3. This shows that the respondents are mostly satisfied that, when reduced UX friction occurs, they are likely to subscribe to the services.

The p-value (0.000) is less than the significance level of 0.05, which means that the result is statistically significant. Thus, the null hypothesis is discarded.

The results confirm the hypothesis, which was the belief that the auto-pay systems with less friction (UX) require more money to be spent on subscriptions. This underscores the high impact of smooth and hassle-free user experience on consumer behavior in digital payment platforms.

H3: Financial awareness among users increases with the presence of UX-based financial nudges in the auto-pay systems.

This hypothesis discovers whether financial nudges engrained in user experience such as reminders, alerts and spending summaries can user's awareness of their financial actions. It shapes on the evidence that well-scheduled announcements and stimuli may improve attention to expenditure behaviors.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
H3_Mean	200	3.980	.4972	.0352

One-Sample Test						
	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
H3_Mean	27.873	199	.000	.9800	.911	1.049

The typical score for UX-based financial nudges and financial mindfulness is 3.980, particularly above the neutral borderline of 3, signifying that contributors usually trust such nudges to assist them become more conscious of their expenditure behaviors. With a p-value of 0.000 well underneath the 0.05 threshold the outcome is statistically substantial, chief to the refusal of the null hypothesis.

These marks make straight with the projected hypothesis, demonstrating that user experience-driven financial nudges expressively subsidize superior financial consciousness. This underlines the value of considerate design in determining user behavior and supporting better financial selections.

5. Discussion

The study results are interesting to examine the behavior of the users in digital payment systems, in particular, the auto-pay usage and UX design factors. In contrast to the first hypothesis that was put forth in Hypothesis 1, the findings show that auto-pay systems do not lead to a decrease in the financial awareness of the users. Rather, the average score indicates that the awareness of users is rather high. Perhaps, this may be attributed to the rise in the level of financial literacy, the perceived exposure to digital transactions, and the rising application of apps that give transaction history and summaries. It indicates the awareness and consciousness of users today on their spending habits even with automated payments.

Conversely, Hypothesis 2 results are robust in demonstrating that the less UX friction, the more the subscription spending. The high mean above the neutral implies that users are afraid to subscribe more when payment procedure is fast, easy and easy. This is in accordance with behavioral theories according to which decreased effort also decreases decision resistance, thus promoting more frequent or unusual actions. As a UX point, this demonstrates the ability of design simplicity and flow harmonization to directly affect the user behavior and expenditure patterns within digital environments.

Likewise, the results of Hypothesis 3 prove that nudges, which are based on UX, are important when it comes to increasing financial awareness in users. Additional characteristics like reminders, alerts, and spending summaries are something that seems to make users more



mindful of their financial affairs. This would imply that although automation might lead to less engagement, properly designed nudges can be used to remind a user and regain control alike. It is possible to conclude that, on the whole, the study highlights that UX design involves not only convenience but also reflects how people are directed in the process that contributes to the development of financial decisions in digital payment systems.

6. Recommendation

Resting on the results of the research, it is possible to suggest several positive tips to digital payment platforms and UX designers. To start with, not all users exhibit their low financial awareness when using auto-pay systems, and the platforms must continue supporting features of transparency, including transaction and spending histories, accessing payment information, and making them easy to view. These capabilities aid users to be aware of what is going on, and create awareness even where automation is a strength. An equal user experience can be achieved by increasing visibility as opposed to decreasing automation.

Second, as the ethical aspects of extremely seamless payment flows are quite controversial since reduced UX friction leads to a raise in subscription expenditure, companies must be cautious of the ethical consequences of making payment flows ridiculously smooth. Although the user experience is enhanced by simplicity and ease of use, they can cause impulsive or unwanted purchases when they are taken to a fault. Thus, platforms must strive to create responsible UX, convenience should be paired with control by the user. On the side of the user, optional confirmation steps can be added or subscription summaries can be added to better inform the user about their choices without reducing usability.

Finally, the high effectiveness of UX-based financial nudges implies the platform must proactively implement certain features, like payment notifications, alerts, and monthly spending reports. These nudges may serve as effective mechanisms to increase the level of financial awareness, as well as improve more appropriate financial behavior of the users. The designers are supposed to emphasize upon making these nudges relevant, timely, and not too intrusive to provide support to users. On the whole, by incorporating consideration of UX interventions, it is possible to achieve efficient yet user-concerned and cost-aware systems.

7. Conclusion

The aim of the research was to investigate the effect of auto-pay systems, UX friction, and UX-based financial nudges on online consumer financial awareness and subscription purchasing behavior in a digital payment setting. The results offer significant benefits of the impact of user experience design on financial behavior and decision-making.

These findings imply that there are no financial awareness differences between users of auto-pay systems, which could mean that users in the present day are fairly well informed and aware of their spending habits despite automation. Nonetheless, the research also notes that low UX friction is highly effective in boosting subscription expenditure, which is evident in the design being as seamless and effortless, which directly correlates with user behavior. The UX-based financial nudges were also found to be a vital factor in increasing the financial awareness level



and highlight the significance of design-based interventions to ensure that people are in control and can be aware of their surroundings.

All in all, it can be concluded that the UX design is an effective driver of financial behavior in digital systems. Although automation and convenience are being brought by convenience, they have to be accompanied with functions that encourage awareness and positive use. A more human-friendly and ethically balanced online payment process may be enabled through the incorporation of considerate UX features including nudges and tools of transparency.

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