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Psychological Dependence on Cashless Payments: A Study on Digital Payment Addiction Among Young Consumers.

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ABSTRACT

That cash is less common in today's world, changing the way consumers spend and creating a significant change in consumer habits, especially for the younger generation. This study aims to address the psychological dependence that arises with the use of digital payment systems and to analyze the effects of perceived convenience in payment, less aversion to paying and habit on psychological dependence and preference for cashless payments. Data analysis was performed using quantitative research methodology which applied the Structural Equation Modeling (SEM). The results indicate that the extent of use and convenience are significant factors in psychological dependence, and the level of psychological dependence is a significant factor in preference for cashless payments. The less painful it is to pay leads to improved transaction preference and little impact on dependence. The study underscores the rising behavioral impact of digital payment technologies and the importance of responsible financial behavior and digital financial literacy of young consumers.

Keywords: *Cashless Payments, Psychological Dependence, Digital Payment Addiction, Young Consumers, FinTech, Digital Transactions.*

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Introduction

This worldwide shift from cash to digital payments has dramatically transformed the way money is stored, moved, and experienced. In decades of financial transactions, the payment system has shifted from credit cards and electronic funds transfers to mobile wallets, QR-based payments and contactless interfaces, making payments faster, easier and an integral part of everyday digital life

(N. Faraz et al.). With the advent of the FinTech innovations and the mobile payment system, consumers can now transact “anywhere and anytime,” and the mobile phone has emerged as the main financial conduit, driving cashless economies in both developed and emerging markets (Ahmad Daragmeh et al.). It has also changed the way consumers spend money with this digital

transformation. Digital and mobile payments are presented as less transparent and more convenient than cash, that makes for a “pain of paying,” which usually serves as a constraint on purchasing (Seldal M. M. Naeser et al.).

Since the physical nature of money has lost its salience and the frictionless flow of payments, there is a psychological distance from spending and a potential for higher willingness to pay, buy frequency and consumption. Empirical data indicate that mobile/digital payments have the potential of driving up consumption and are particularly appealing for consumers who are price sensitive and spend more on the basis of what can make their lives easier and more fun. New studies show the psychological implications of this frictionless world. The novel construct “Spendception” refers to the psychological barrier that is lowered when making digital payments, as well as how such payments are invisible and convenient, leading to greater amounts being spent that may not be fully accounted for by the individual. Research on digital payment technologies also signals that more transparent, easier-to-use payment options could “numb” consumers against the pain of paying, which could be detrimental to spending management and lead to financial vulnerability for certain groups. Although there are indications from Norway that mobile payment is not always the most vulnerable, there is a risk of overspending and mismanagement of digital payments, which is not sufficiently explored. The dynamics are particularly important for young consumers, who tend to be more tech-savvy, spend more time with their smartphones, and are early adopters of mobile and

FinTech payment solutions (Sharina Tajul Urus et al.).

Studies reveal that younger generations and “digital natives” are more inclined to use mobile payments, while lifestyle compatibility and digital habits significantly influence their payment decisions. Young adults, meanwhile, are also more prone to impulsive online shopping, less self controlled, and more responsive to persuasive online environments, which could suggest that smooth and convenient systems of payment could fuel problematic spending habits (Jussi Nyrrhinen and colleagues). While the use of cashless technologies is a trend that has picked up speed and there is emerging evidence that digital payments impact consumption and impulse buying, there has been little research that directly explores psychological dependence or addictive tendencies in relation to the continued use of digital payments. The literature on drivers of adoption (usefulness, ease of use, trust, social influence, culture) and economic outcomes generally do not include emotional dependence, compulsive payment habits or anxiety when switching to a digital option (Truong Tuan Linh et al.). This research thus centers on young consumers in their use of cashless payment systems and asks the following question: Does intensive and sustained use of digital payments lead to psychological dependence or quasi addictive behavior, including compulsive transaction checking, preference for digital payments even for small transactions, and a feeling of distress without digital channels? This study aims to shed light on the psychological dependence and possible addictive behaviors associated with cashless payment usage by young consumers and to examine how cashless payment

behaviors influence financial behavior, impulse purchasing and decision making in a high-tech, low friction context.

Theoretical Background

Digital Payments, FinTech and Adoption Models
Digital payment technologies (cards, e payments, mobile payments, QR, cryptocurrencies) are presented as essential FinTech innovations which will bring in inclusion and cashless economies (Sumit Agarwal et al.). Behavioral intention models based on social psychology dominate the research and theory on adoption: TRA/TPB describe intention in terms of attitude and subjective norms (Sumit Agarwal et al).

Perceived usefulness, ease of use, performance expectancy, social influence and facilitating conditions are important factors that determine the adoption, as highlighted in TAM and its extensions (TAM2, TAM3) and UTAUT/UTAUT2. The results of the meta analyses indicate that perceived usefulness, perceived ease of use, trust, perceived risk and social influence are strong determinants of mobile/digital payment intention, whereas habit is a strong determinant of continued use (Rizka Ramayanti et al).

Consumer Behavior, Behavioural Finance and Mental Accounting Digital payments change spending habits and payment behaviour but the majority of research concentrates on intention/use – not profound psychological impacts. The literature on financial literacy and financial payments indicates that digital payment use is associated with financial decisions and that the use of digital payments is considered as risky financial behaviour and therefore needs some knowledge to be managed. This is because there is not a direct relationship between investment and financial

behavior with the usage of everyday digital payments, even though concepts of behavioral finance are discussed in relation to investment and financial behavior.

Technology Addiction / Psychological Dependence
However, current studies of digital payment and FinTech are based on a “TAM” adoption lens and a trust–security lens, and do not employ the “addiction” frameworks. Concerns about security, privacy and data misuse are studied extensively (P V Ranjith), but there is almost no theorizing of digital payment “overuse”, compulsive checking, or withdrawal like anxiety. In the wider digital/online behavior field, there is evidence of impact of digital and mobile environments on consumer behaviour, however this is on social media, WOM and advertising and not on payment specific dependence.

Research GAP

Research Gap The emphasis on existing studies is put forward in the following points: The adoption determinants of the specific technologies (SMS, NFC, QR, P2P, banking apps, mobile wallets) based on **TAM/UTAUT model** • The technical, social, economic and legal challenges of digital payment technologies, along with systematic classification of digital payment types (K. Bala et al). India and other countries context work: policy push (demonetization, Digital India), infrastructure, financial literacy and trust (Mamta Rani) . The lack of research on the psychological and behavioral effects warrants further study• Lack of empirical attention to emotional dependence or compulsive use, or anxiety when digital options are not available; outcomes are typically “intention”, “adoption” or “continued use” rather than psychological dependence (A. Stephen)Behaviors –

general, financial behavior, not systematic integration of behavioral finance/mental accounting with digital payment in explanation of less awareness or self control of spending in cashless contexts. Deficiencies in behavioural economics aspects and long term behavioural impacts of digital payments are cited repeatedly in reviews. 3. Targets for the gaps of young consumers and addiction framing • Youth focused studies mostly analyze adoption (Gen Y/Z, students, young adults) and drivers such as lifestyle compatibility, social influence and financial literacy, but do not conceptualize or measure addictive or dependent patterns of digital payment use . Both bibliometric and review studies indicate that in the context of digital payments, the constructs TAM (trust, usefulness, behavioral intention) dominate the literature and that there is still no research on psychological dependency and maladaptive financial behavior. To describe why Your Study is novel. Against this backdrop, a study that: • Uses behavioral finance (mental accounting, self control), technology addiction theory and TAM/UTAUT in combination to digital payments; • Implements psychological dependence / addiction to cashless payments (compulsive use, distress without cash, overreliance) as separate from high usage; and • Conducts an empirical focus on young consumers, the heaviest and most tech immersed consumers, Focusing directly on an explicit gap in the literature of Q1–Q2, this paper provides a new behavioral–psychological dimension to the study of FinTech, which is mainly an adoption-focused research area.

Review of Literature

H1: Accepting the convenience of cashless payment leads to psychological dependence on cashless payment.

Convenience is a big factor in why consumers are switching from cash to digital and using it more and more. This paper by Zarin et al. reveals that perceived convenience has a strong and positive impact on intention to use cashless transactions, which in turn predicts actual use. As cashless payments become quicker, easier, and available “anytime anywhere,” users are more and more turning to these cashless channels to make their day-to-day purchases, thereby reinforcing their habit and/or dependence-like use. Others research shows that the ease of cashless payments improves the transaction experience and propensity to pay, further solidifying users' intention to continue using cashless methods over time. Overall, that means that when consumers perceive payments to be convenient, they can become very reliant and psychologically addicted to using cashless methods, especially among young consumers.

H2: Pain of paying is reduced → Psychological dependence

Research into the pain of paying found that electronic and contactless payments are “hurt less” than cash, and are felt to be less effective at stopping over-spending. Their results show that the more consumers use contactless payments, the less pain they feel in doing so, meaning that a vicious circle exists between greater digital payment use and less perceived pain. With digital payments, there is a lesser sense of loss, easier spending and less self-control, potentially leading to overuse. Similar research on Spendception found that digital payments remove psychological obstacles as well as visibility of transactions, causing a person to

spend more than they realize. By easing the pain of paying, digital payments are psychologically comfortable and can lead to dependency such as automatic use among young people.

H3: Addiction to use → psychological addiction

Pal et al. explore the usage of mobile payments and find that habit plays an important role in the actual use of mobile payment beyond intention: if a user makes a habit of using mobile payment, even when there are risks, they do so. Habit is not deliberate evaluation, it is repetition of action in the context (e.g., tapping the phone to pay). One of the psychological components of dependence is a feeling of “not being able to manage” without digital payment use, making it an expected way of doing things when it comes to everyday life. The findings that higher levels of contactless usage correlate with lower levels of pain at paying and lower levels of overspending control are consistent with the concept that the more people use contactless, the less they engage with the process of their spending, and the stronger the psychological bond they feel towards paying cashless.

H4: Perceived convenience → Cashless transaction preference

Research on payment choice reveals that ease of cashless payments directly influences users' transaction experience and willingness to pay, the higher the perceived ease, the better. In a Christmas market, it is found that perceived convenience of cashless payments has a significant positive effect on transaction experience, which leads to higher willingness to pay, thereby finding that convenient cashless options are preferred in real purchases. Similarly, Lai and Liew report that perceived convenience has a strong (mainly indirect) effect on intention to use a gamified mobile payment platform, mediated by perceived security 8. All

these positive experiences contribute to a positive cashless transaction preference over cash over time, particularly in fast and convenient environments.

H5: Minding less the pain of paying → Favoring cashless payment.

Broekhoff and van der Crujisen find that electronic payments (particularly contactless) cause a smaller payment pain than cash, and that cash is perceived as the most useful for avoiding over-spending, with contactless being the least useful. Consumers thus make digital ways synonymous with a more normalized and less unpleasant payment experience. Humans will opt for less painful states, so a technique less painful will be preferred. The results also indicate that the intensity of contactless is inversely related to the relative pain of paying contactless, implying that those who feel less pain are the ones who prefer and use contactless. Neuro and behavioral studies also reveal that mobile payment can even generate a “pleasure of paying” effect, thus making people more likely to purchase than with traditional payment. These mechanisms underlie a preference for cashless payments among users who experience less pain and more pleasure in paying electronically. Participants who are frequent users of cash are more likely to prefer cashless

H6: Habitual usage → Preference for Cashless transactions

The findings of Pal et al. suggest that habit, in addition to its direct effect on mobile payment use, reinforces the relationship between intention and buying, leading to their argument that the more behavior is ingrained in the habit, the more often people will opt for mobile payment as opposed to other payment options. Often, users of cash don't think about each purchase, but take it for granted that they're using a familiar approach that's most

often a digital one, making cashless transactions the "preferred" way to pay during their normal routine. Similarly, the development of digital payment ecosystems in Malaysia indicate that spending habits are not necessarily driven by the perceived features of digital payments (e.g., convenience, rewards) after a period of use, but rather by habit and lifestyle fit 19. Therefore, regular use helps to create consistent and long-lasting preference to cashless transactions, especially among the young who have their daily lives intertwined with smartphones and applications.

H7: Psychological dependence → Cashless transactions preference

There are few studies that explicitly mention "psychological dependence", but related concepts indicate that high psychological involvement with digital payments is linked to the clear preference for cashless payments. The Spendception framework shows that digital payment decreases the psychological resistance and visibility of the transaction, resulting in a higher frequency of buying and impulse buying and possibly a greater dependency on digital payment to meet the immediate demands for consumption 1. Digital transaction research indicates that digital transactions that are more convenient and processed instantly increase the frequency of digital transactions and decrease the amount of cash saved, suggesting those who commit to using digital rather than cash transactions for most purchases will prefer to make digital transactions first. With the users getting used to the convenience, ease and no pain in the process of digital payments, they might feel that cash is inconvenient or limiting which

further strengthens their preference towards cashless payments, which is indicative of a psychological dependence on cashless transactions.

Research hypotheses based on the research model include:

H1: There is a Significant effect of perceived convince on psychological dependence

H2: There is a Significant effect of reduced pain reduced pain of paying on on psychological dependence

H3: There is a Significant effect of habitual usage on psychological dependence

H4: There is a Significant effect of perceived convince on reference for cashless transaction

H5: There is a Significant effect of reduced pain reduced pain of paying on reference for cashless transaction

H6: There is a Significant effect of habitual usage on reference for cashless transaction

H7: There is a Significant effect of psychological dependence on reference for cashless transaction

RESEARCH METHODOLOGY

This research is quantitative and descriptive in nature because it aims to find out the level of psychological dependence of young consumers on cashless payments. The study will focus primarily on understanding the link between behavioral and psychological constructs like cashless preference, reduced pain of paying, perceived convenience, and habitual usage. A cross sectional method was adopted in which the data was gathered from the respondents at one particular time.

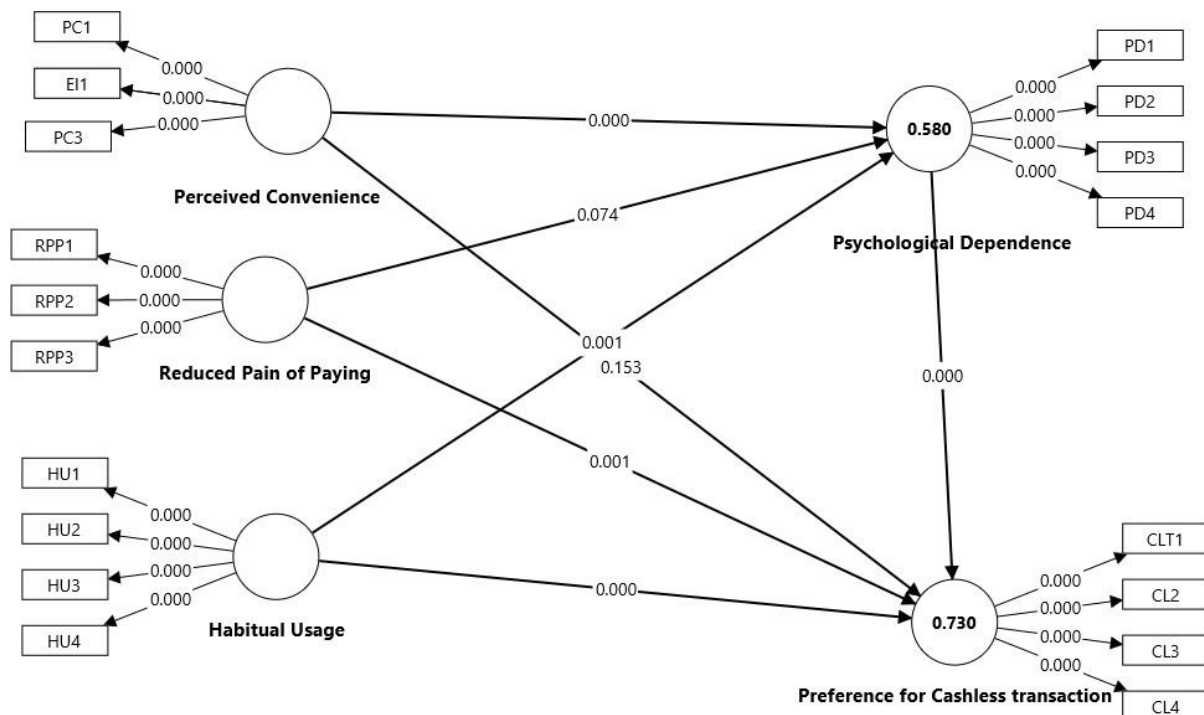


Figure: Bootstrapping results for Hypotheses Testing

The bootstrapping results show the correlation between the constructs tested. Frequent use had a significant positive relationship with preference for cashless payments and psychological dependence, suggesting that frequent experiences with digital payment systems promote comfort and reliance on an electronic payment system. This perceived convenience, however, does not significantly affect preference, meaning that people do not necessarily choose to adopt use because it is easy. However, it has a significant positive influence on

psychological dependence, such as making it more easier to depend on than to choose. Psychological dependence is a strong predictor of preference, which suggests that dependence translates to deeper behavioral choices. The negative side of paying is lessened to the extent that it is reduced, which impacts preference (consumers feel less discomfort when paying digitally), but not psychological dependence, meaning that whilst this helps it get adopted it does not necessarily translate into dependency.

Table: Hypotheses Testing

Constructs	Original sample (O)	Sample mean (N)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P values	Result
Habitual Usage -> Preference for Cashless transaction	0.561	0.561	0.077	7.241	0.000	Accepted
Habitual Usage -> Psychological Dependence	0.268	0.263	0.082	3.260	0.001	Accepted
Perceived Convenience -> Preference for Cashless transaction	-0.100	-0.100	0.070	1.428	0.153	Not Accepted

Perceived Convenience - > Psychological Dependence	0.420	0.416	0.088	4.746	0.000	Accepted
Psychological Dependence > Preference for Cashless transaction	0.324	0.319	0.077	4.230	0.000	Accepted
Reduced Pain of Paying -> Preference for Cashless transaction	0.173	0.177	0.052	3.309	0.001	Accepted
Reduced Pain of Paying -> Psychological Dependence	0.144	0.154	0.081	1.788	0.074	Not Accepted

The results of the hypothesis testing show that the use of cashless payment is in the center of consumer behavior. It is significantly and positively associated with preference for cashless transactions ($\beta = 0.561$, $p < 0.001$) and psychological dependence ($\beta = 0.268$, $p < 0.01$), suggesting that frequent use of digital payment systems increases comfort and psychological dependence. Interestingly, the degree to which the product is perceived as being easy to use is not a significant predictor of preference ($\beta = -0.100$, $p = 0.153$), indicating that ease of use does not directly influence the motivation to adopt the product. Regarding psychological dependence, it has a significant positive effect ($\beta = 0.420$, $p < 0.001$); in other words, convenience is reinforcing dependency, not preference. The psychological dependence is also a significant predictor of

preference ($\beta = 0.324$, $p < 0.001$), indicating that psychological dependence is also a strong determinant of behavioural preferences and addictive behavior. Lastly, although reduced pain of paying is statistically significant ($\beta = 0.173$, $p < 0.01$) and has a significant effect on preference, it is not significant to psychological dependence ($\beta = 0.144$, $p = 0.074$), suggesting that reduced pain of paying is important for preference but is not as important for psychological dependence.

In general, the hypothesis testing results suggest that cashless transactions are most strongly associated with both preference for cashless and dependency on cashless, and that perceived convenience and reduced pain of paying have more intricate relationships with dependency and preference.

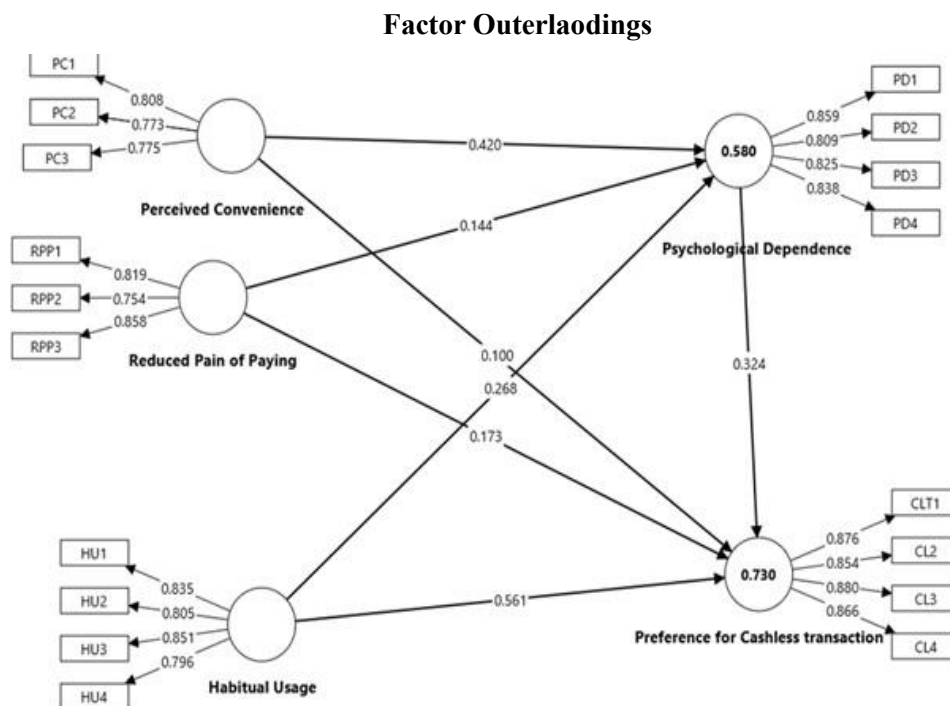


Figure: Outerloadings

Factor outerloadings indicate that each item highly reflects its construct and is consistently higher than the recommended value of 0.7. This shows the reliability and meaningful of the measurement items toward its latent variables. That is, the measured variables are well consistent with the theoretical constructs of habit use, perceived

convenience, preferred cashless payment, psychological dependence, and less pain of paying. This high dimensional alignment makes sure that constructs are being measured correctly, alleviating the danger of measurement error and making sure that the model is valid.

Construct Reliability and Validity

Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Habitual Usage	0.840	0.846	0.893	0.676
Perceived Convenience	0.791	0.792	0.865	0.615
Preference for Cashless transaction	0.892	0.893	0.925	0.756
Psychological Dependence	0.853	0.853	0.901	0.694
Reduced Pain of Paying	0.740	0.746	0.852	0.659

The reliability and validity analysis has been performed to ensure that the measurement model is

statistically sound. The Cronbach's alphas of all constructs are good, ranging from 0.74 to 0.89,

which are higher than the recommended value of 0.7. This means that the contents of each construct have a high level of correlation and measure the same underlying concept. Again, the composite reliability values ($\rho_c > 0.85$) suggest that the constructs are reliable across samples. All the average variance extracted (AVE) values are above 0.61, which indicates a convergent validity, that is,

all indicators measure the variance of their underlying constructs. These results together confirm the reliability and validity of the measures of constructs for the purposes of the current study. This enhances the trustworthiness of the model, and provides a reliable base for testing hypotheses and structure analysis later.

R Square

Outcome Variable	R-square	R-square adjusted
Preference for Cashless transaction	0.730	0.725
Psychological Dependence	0.580	0.575

The R-squares illustrate the amount of variance explained by the structural model. The R^2 value of 0.730 shows that 73 percent of the variance in consumers' preference for cashless payments could be accounted for by the predictors: habitual payment method use, perceived convenience, psychological dependence and reduced pain of paying. This demonstrates an extremely high level of predictive accuracy, meaning the model is able to effectively capture the drivers behind the adoption of cashless payments. The R^2 value of 0.580 indicates that 58% of the variance in psychological

dependence is accounted for by the variables of habitual use, perceived convenience and less pain when paying. Although lower than desired, this is a considerable degree of explanatory power, and confirms that the model has more than 50% of the variance of dependence. Overall, these results suggest that the constructs selected are highly appropriate and are very useful in the context of understanding the preference for cashless transactions and psychological dependence among young consumers.

F-Square

Constructs	Preference for Cashless transaction	Psychological Dependence
Habitual Usage	0.454	0.271
Perceived Convenience	0.309	0.209
Psychological Dependence	0.263	
Reduced Pain of Paying	0.243	0.220

The F-square values give information on the relative size of influence of each of the predictors

on the outcome variables. The most significant effect size was found for preference for cashless

transactions (0.454), meaning that recurrent experiences with digital payment systems is the factor with the highest impact on consumer preferences. Psychological dependence also makes a significant contribution (0.263), suggesting that dependence means increased behavioral choices. The moderates include perceived convenience (0.309) and reduced pain of paying (0.243), indicating they also have important roles although they are not as strong. Perceived convenience (0.209), followed by habitual use (0.271) and less pain of paying (0.220), are the three most influential factors for psychological dependence. This suggests that ease of use and comfort of cashless systems is the key element in determining reliance, as well as the habit of using them.

Overall, the F-square analysis confirms that usage has the highest level of significance for preference, perceived convenience is the strongest component of psychological dependence, and pain of paying is a moderate, but steady, influence for both preferences and psychological dependence.

Managerial / Practical Implications

Fintechs & Banks: Overcome the challenge of decreased visibility of payments through spending feedback mechanisms like dashboards, monthly spending reports, and alerts. Pre-empting large purchases and BNPL items with 'self-control' features, such as voluntarily setting spending limits, locking spending categories and cool-off timers, can help reduce impulsive spending.

Rewards and nudges to encourage responsible use, such as budget reminders and saving prompts, should be built into youth-centric products. Impulse buying can be promoted through convenience features like one-click or QR flows. To ensure that consumers are safely protected, but not unnecessarily inconvenienced or abused, ethical

design practices should be adopted, such as clear price displays, undo options, and default cart summaries. **Policy makers & Educators:** Digital financial literacy programs should address the psychological factors of cashless payments – such as less pain of paying, illusion of liquidity, and risk of digital addiction. Clear BNPL and pay-later offers may be protected with soft regulations to prevent over-dependence by young users.

Conclusion

The study shows that cashless transactions are more likely to be preferred by people who use them frequently and that it leads to a psychological dependence. This suggests that digital payment platforms become a habit after a certain time of using them. The most important part is that psychological dependence is a mediator between reliance and increased preference, emphasizing the danger of payment addiction among young consumers. Perceived convenience increases dependence, but is not directly responsible for preference, indicating that ease of use is not enough to win over. Overall, the findings indicate that digital payments are becoming a normalized way of payment, influencing consumer psychology and financial decision-making.

Limitations of the Study

The study has several drawbacks: Some limitations of this study include the limitation of a single country/region and the majority of the participants in the sample were young. This research may not be applicable to other age groups and to other cultural contexts. Self-reported, cross sectional survey data also does not allow for the determination of cause and effect in that psychological dependence and preference could reinforce over time. Moreover, the constructs of “psychological dependence” and

“preference” could overlap conceptually, which might create common method bias. The limitations indicated here suggest caution in interpreting the results and emphasize the need for more wide-ranging and varied research designs.

Recommendations for Further Study

Longitudinal and/or experimental designs in future studies would provide more evidence of causality around the changes in habit and dependence over time with digital payments.

Comparisons across countries would be useful to examine the relationship between cultural

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