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## Article

# Factors influencing the use of Buy Now Pay Later (BNPL) payments

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# Factors Influencing the Use of Buy Now Pay Later (BNPL) Payments

Krzysztof Waliszewski<sup>1</sup>, Małgorzata Solarz<sup>2</sup>, and Jakub Kubiczek<sup>3</sup>

## ABSTRACT

This article focuses on the fastest-growing consumer credit segment usually associated with e-commerce, but increasingly offered for brick-and-mortar shopping too. The purpose of the study was to identify how, and the extent to which, specific aspects of consumer behaviour – particularly in terms of attitudes towards money management, and socio-demographics – influence the use of BNPL. The reasons are socio-demographic, economic, psychological and technological. The article incorporates a broad literature review of the motives behind consumers' use of BNPL as well as an original empirical survey among a representative sample of Poles, conducted using the CAWI technique. The impact and strength of individual factors for choosing BNPL were identified via a logistic regression model. The statistical significance of the selected variables was then evaluated, followed by the elimination of non-significant variables from the model. It helped select statistically significant factors for using BNPL. Among 7 statistically significant variables, 3 relate to socio-demographic features of the respondents – level of education, income and gender. Personal innovativeness, inclination towards going into debt, as well as a family history of taking various loans slightly increase the probability of opting for BNPL. It had been presumed that propensity to save would have a negative effect, and that optimism would have a positive influence, on choosing BNPL; however, this presumption was not demonstrated. Nor do consumerism and impulsiveness in making purchases affect the likelihood of using BNPL. Of all the statistically significant factors underlying decisions to choose BNPL, the consumer's use of LendTech has the greatest impact, increasing the chance of using BNPL. This suggests that similar consumers constitute these two segments. LendTech (lending technology) is defined as part of the FinTech (financial technology) sector, which concerns the granting of digital loans by non-bank lending institutions in remote channels (Waliszewski et al, 2024).

## KEY WORDS:

buy-now-pay-later (BNPL), FinTech, LendTech, consumer finance, retail payments.

**JEL Classification:** D1, D15, O33.

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## 1. Introduction

The growth of e-commerce and the development of the financial services market towards financial technology (FinTech) offered by non-banks – not as strictly regulated as banks – together with changing consumer expectations in terms of making and deferring payments all explain the emergence and rapid growth of buy-now-pay-later (BNPL). Alt and Huch (2022) defined BNPL as process variant in economic transactions that decouples the pur-

chase and the payment. Typically, this applies to purchases on account, credit card payments as well as credit financing. BNPL services (e.g., Afterpay) are increasingly included in e-commerce presences to provide comprehensive coverage of customer journeys. For the purposes of this article, BNPL is understood as deferral of payments when purchasing goods and services offered by non-bank entities in e-commerce, such as: Klarna, Allegro Pay, PayPo. From 2019 through 2021, the number of BNPL loans offered in the U.S. by five major lenders (Af-

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firm, Afterpay, Klarna, PayPal, and Zip) grew more than tenfold, from 16.8 million to 180 million. Customers in Poland have been able to use BNPL since 2016. The fintech PayPo was the first to offer its services in this area. In the following years, big players joined: Twisto and Klarna, and recently also Allegro Pay and Revolut. Banks also offer their solutions, such as Alior Bank (Alior Pay) and PKO BP (PKO Pay later). In Poland majority of customers repay the deferred payment within the interest-free period, most often 30 days, and only 20-30% of customers convert it into an interest-bearing consumer loan repaid in installments. Most often, this loan is charged with a relatively high commission and an interest rate equal to the maximum permitted interest rate. The leader of the Polish BNPL market with approximately 70 percent share is PayPo, which last year completed 13.4 million transactions worth PLN 3.6 billion for 1.8 million clients. AllegroPay and Twisto are also becoming increasingly stronger players. BNPL is an innovative credit product that has experienced rapid growth in the past few years. BNPL allows consumers to split up the cost of a retail transaction, traditionally into interest-free instalments repaid over the span of some weeks (Chien 2023). BNPL, as a form of consumer credit, has also been a subject of public discussion, especially with regard to the risk of that younger generations just entering the labour and financial markets might especially incur too much debt. The 'free and easy' nature of BNPL can pose unforeseen risks for consumers. Therefore, BNPL has also attracted interest from regulators and supervisors, as recently reflected in the enactment of Consumer Credit Directive CCD2. The BNPL market has enormous research potential. Based on the literature review, the authors identified a research gap regarding the factors of BNPL use. Therefore, the purpose of the study was to identify how, and the extent to which, specific aspects of consumer behaviour – particularly in terms of attitudes towards money management, and socio-demographics – influence the use of BNPL. The factors identified and analysed here, based on an extensive literature review, are socio-demographic (gender, age, education, net income per household member), economic (consumerism, tendency to save or go into debt), psychological (op-

timism, mental accounting, propensity to replicate parents' borrowing behaviour) and technological (openness to technological innovation). Nine research hypotheses were formulated regarding what may encourage the use of deferred payments. The article uses the following methods: literature analysis, an original empirical study, a logistic regression model to analyse the findings of the primary study, and significance testing of the variables qualified for the model based on the literature review. Our research contributes to expanding the frontiers of knowledge in the field of finance and the behaviour of entities in the consumer finance market, providing valuable research results that can be used by academics as well as business managers and policy makers. Our research creates new theoretical perspectives on the factors that influence consumer adoption of BNPL. This is the first study concerning the Polish market and one of the first in the world dedicated to this rapidly growing innovative digital payment method. The article thus contributes to filling an existing research gap by providing new empirical data and interpretative perspectives in the field of consumer finance. Furthermore, the findings and insights of the article may lead to the development of new or modifications of existing theories that describe contemporary consumption patterns in the context of modern financial services. The authors experienced various limitations during their research, which in turn provided a starting point for identifying potential directions for further research.

## 2. Literature Review

While reviewing the literature in November 2023 using the resources of two leading international bibliographic databases – Scopus and Web of Science – the authors noted that the limited number of publications directly related to BNPL focus on a few research areas.

The first involves empirical analysis of BNPL transactions and their impact on the payment market from the point of view of both end users and service providers. Iwańczuk-Kaliska (2022) examines new trends in payment intermediation, including the role of banks and non-bank institutions, mentioning PayTech companies

offering BNPL. These firms, according to the researcher, will be the future of the retail payments market due to their ability to rapidly implement innovations and more effectively meet customer expectations. In contrast, Feng et al. (2023) and Liu et al. (2023) analyse how offering consumers the option to buy now and pay later affects pricing decisions and, consequently, profits for the producer and/or seller of goods and services.

Another research area identified from the literature review is the purchasing behaviour of BNPL users. Based on transactional data of customers in the U.S., Di Maggio et al. (2022) demonstrate that access to BNPL significantly increases consumer spending. Similar conclusions were also reached by Ji et al. (2023) when studying the Chinese population; moreover, these authors point out that BNPL, as a FinTech product, can reach consumers who previously had no access to credit or were credit-excluded. BNPL users appreciate this payment method for its convenience, easy access to credit and the option it gives them to spread payments over time without accruing interest (Relja et al., 2023). However, because it tends to involve digital innovation, it requires users to be open to new technology. This trait, known as personal innovativeness, is a personality attribute affecting attitude and behaviour (Chang et al., 2005). Balcazar and Rivas (2021) state that this variable describes individual inclination towards using a new technology, product or information system. According to Liéban-Cabanillas et al. (2018), it reduces personal resistance against using IT products and fear of innovation. For example, Hu et al. (2019), Tun-Pin et al. (2019) or Solarz and Adamek (2023), who investigated the importance of personal innovativeness for the acceptance of FinTech financial services, mention its strong relationship with, and direct impact on, the respondents' expressed intention to use such services.

The identification and analysis of the determinants of BNPL adoption by consumers has been conducted by researchers from India (Raj et al., 2024; Raj et al., 2023) and Australia (Cook et al., 2023). They unanimously indicated that users' intentions to use BNPL are positively

influenced by the perceived benefits and negatively by the perceived risks associated with this payment method. Additionally, Raj et al. (2023) demonstrated that, in particular, privacy concerns limit consumers' intention to use BNPLs, while trust in providers increases openness to these payment innovations.

In an attempt to explain the purchasing behaviour of BNPL users, some researchers draw on contributions from consumer psychology and behavioural finance, looking at, *inter alia*, the theory of gratification (immediate versus deferred), possession and loss aversion, and mental accounting or social leverage, manifested in the need to build social status. Relja et al. (2023) conclude that consumers opt for BNPL for reasons of psychological distance and a sense of ownership of borrowed money. Cost anxiety is alleviated by deferral of payment, and the separation of purchase from immediate benefit can make spending less 'real', thereby exacerbating the tendency to make impulse purchases that are unplanned and based on desire or immediate emotion, which ultimately leads to the purchase of goods that are not strictly necessary (Juita, et al. 2023). The interplay between impulsiveness and BNPL payments has been analysed by Keil and Burg (2023), Raj et al. (2023), Wulandari and Damayanti (2022), Juita et al. (2023) as well as Ah Fook and McNeill (2020), who prove that BNPL users are more likely to make impulse purchases than those who do not choose this payment option. In addition, Schomburgk and Hoffmann (2023) mention the need for consumers to develop mindfulness, meaning greater awareness of the financial decisions they make on an ongoing basis, because this – as they prove empirically – lessens the tendency to make impulse purchases and, when paired with an ability to exercise financial self-control, contributes to an improvement in overall consumer well-being.

Individuals who attach excessive importance to ongoing consumption are subject to a phenomenon that is referred to in the literature as present time preference, which involves a reluctance to defer the pleasure that might be derived from immediate consumption. In the context of BNPL, Abdelbara (2023) interprets this as an opportunity

for consumers to defer payments that affects their current and future wealth and well-being. Present time preference makes individuals seek to increase ongoing consumption, financed – the the help of BNPL – by future income, therefore reducing potential opportunities to accumulate financial surpluses in the future. The results of a survey conducted by Khan and Haque (2020) in Bangladesh indicate that more than 65% of respondents perceive BNPL as a threat to personal savings.

Di Maggio et al. (2022) explain the purchasing behaviour of BNPL users by the occurrence of a 'liquidity flypaper' effect derived from the concept of mental accounting, since the additional liquidity provided by BNPL leads to increased spending, mainly in the retail sector. Hahn et al. (2013) point out that consumption and payment are closely linked in consumers' minds. This relationship is explained by Thaler's (1985, 1999) model of consumer behaviour, which draws on contributions from cognitive psychology and microeconomics to demonstrate the impact of mental accounting on consumer choices. The theory offers an understanding of how people perceive their money. While conducting a systematic review of the literature on mental accounting, Silva et al. (2023) identified eight specific thematic areas for research, including a cluster devoted to financial decision-making regarding debt. Sussman and O'Brien (2016) examine how mental accounting influences the process through which people incur high interest debt while at the same time keeping accumulated savings that earn low interest. A similar relationship is also presented by Swacha-Lech and Solarz (2019), who analyse the behaviour of Polish consumers, who prefer to incur debt to raise cash for an unplanned expense rather than terminate a deposit for their children's future education (52% of respondents). Sharma et al. (2021) study the psychological concept of having borrowed money, while Tully and Sharma (2018) take the concept of mental accounting to analyse factors influencing inclination to borrow.

The findings of a study of BNPL users in Egypt show that this instrument, due to its convenience, flexibility and ease of access, changes consumers'

borrowing habits (Abdelbary 2023). The perceived attractiveness of this payment method increases the propensity to borrow. This is due to an effect known as the psychological ownership of money, defined as the degree to which people treat borrowed money as their own (Sharma et al., 2021). Zhou et al. (2023) argue that cash is perceived as wielding greater purchasing power than digital money, given its greater psychological ownership and smaller distance. In contrast, Sharma et al. (2021) argue that the psychological ownership of borrowed money positively influences consumers' willingness to go into debt with credit cards and loans, while Relja et al. (2023) confirm the existence of the above relationship for BNPL users in the UK. The latter often treat these payments as 'extensions of their finances' to offset shortfalls or to enable them to meet other obligations, while underestimating or ignoring the real costs and risks associated with debt. This mindset even leads some to claim that by using BNPLs they are 'saving money' (Relja et al., 2023).

Raj et al. (2023) identify that materialism – related to the desire to acquire and possess material goods as a means of self-expression, gaining social acceptance and building personal identity – has a significant impact on BNPL use (Lavuri et al., 2023). A shift in the general time preference throughout society – increasing value for present goods in relation to future goods – is responsible for behaviour referred to as consumerism, which leads to excessive consumption of material goods and services, resulting not from real but apparent human needs (Sroczynski, 2013).

Another theme that emerges in the literature is the impact of BNPL use on consumers' financial health – in particular, debt and liquidity issues. A study by Arisandy et al. (2023) indicates that the credit risk associated with BNPL is most pronounced for Generation Z, and stems from income insecurity or lack of employment; on the other hand, young people constitute the main BNPL group. The potential risk of over-indebtedness may be compounded by other forms of debt incurred concurrently, such as credit cards (Guttman-Kenney et al., 2023), or by the perception that BNPL is more a means of payment than a form

of credit, as noted in a publication by Cook et al. (2023). On the other hand, despite concerns about overspending and debt, Ji et al. (2023) found no evidence that BNPL leads to excessive household debt in China.

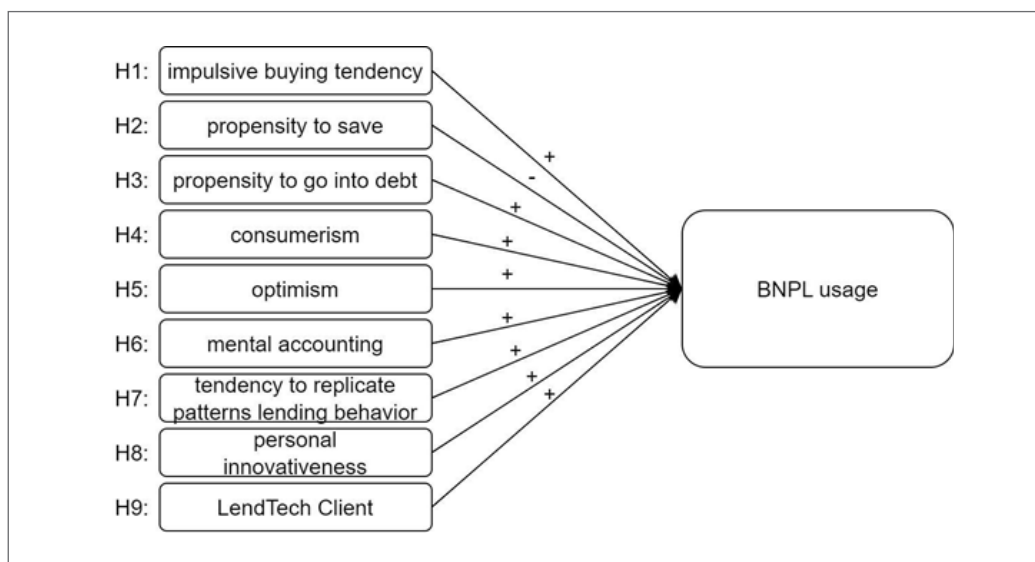
Debt susceptibility is also influenced by attitudes toward life, which may be optimistic or pessimistic. This, in turn, affects how financial health is evaluated, as well as one's subjective assessment of the ability to pay obligations on time (Świecka and Koziński, 2014). People who make purchases with deferred payment do not envisage the risk that in the future they might not be able to pay for the purchased goods or services. Brown et al. (2005) mention that overly optimistic financial expectations about the future influence growth in household debt, while Yang et al. (2007) additionally point out that the greater consumers' unrealistic optimism regarding how they will use their credit cards (in the sense of paying off the entire balance each month), the less sensitive they are to the cost of credit.

When considering the motives for using BNPL, it is worth noting the mechanism that underlies the social learning of financial behaviour, which

takes place in the formative years of life with the participation of parents, and is referred to as financial socialisation. Bakar and Bakar (2020) state that it refers to the process by which parents, intentionally or unintentionally, impart knowledge and skills in financial matters that shape and develop young people's skills, knowledge, attitudes and financial practices. Financial socialisation covers the main areas of personal financial management, such as earning, spending, savings, borrowing, and sharing (Danes, 1994). Of particular interest here is the tendency to replicate patterns of financial attitude and behaviour manifested by parents or guardians. Budget management or parents' positive inclination towards incurring debt often influence the development of such an attitude in a child (Koziński, 2012).

While reviewing the literature on the topic, the younger generation was noted to be the subject of many studies (Ah Fook and McNeill, 2020; Arisandy et al., 2023; Coffey et al., 2023; Cook et al., 2023). This indicates that this age group are the main users of deferred payments. Nevertheless, one can also find analyses conducted in terms of socio-demographic factors describing BNPL users.

**Figure 1**  
*Graphical Presentation of Tested Hypotheses*



Based on the literature review, the following hypotheses were formulated:

H1: BNPL is more likely to be used by people with a strong inclination towards impulse buying, compared to those with a weak propensity for such purchases;

H2: BNPL is more likely to be used by those with a weak tendency to save, compared to those with a strong tendency;

H3: BNPL is more likely to be used by individuals with a strong inclination towards indebtedness, compared to those with a weak tendency;

H4: BNPL is more likely to be used by those with a higher propensity for consumerism, compared to those with a lower propensity;

H5: BNPL is more likely to be used by optimistic rather than pessimistic people;

H6: BNPL is more likely to be used by people who perform mental accountancy rather than those who do not;

H7: BNPL is more likely to be used by those who tend to replicate their parents' borrowing behaviour, compared to those who tend not to;

H8: BNPL is more likely to be used by those with strong personal innovativeness, compared to those who lack personal innovation;

H9: BNPL is more likely to be used by LendTech customers, compared to non LendTech customers.

The above-mentioned hypotheses was presented on diagram 1.

### 3. Methodology

The purpose of the study was to identify how, and the extent to which, specific aspects of consumer behaviour – particularly in terms of attitudes towards money management, and socio-demographics – influence the use of BNPL. To this end, a dataset compiled by Waliszewski et al. (2023) was used to characterise LendTech customers. Meanwhile, according to the literature, the overlap between the LendTech and BNPL sectors may be verified. From a different perspective, the specificity of BNPL means that it can be classified as a LendTech segment. So, the use of this dataset is justified, as it also offers additional insight into

LendTech customers.

The dataset in question is up-to-date since it contains the results of a survey conducted in September 2022 (CAWI method) on a sample of 1,200 Poles, 200 of whom are LendTech customers. The study was conducted on behalf of Biostat on a quota sample of Poles, which reflects characteristics corresponding to the population of customers of lending institutions registered in Credit Information Bureau databases. The basic characteristics of the research sample and the subsample of LendTech customers are presented in (Waliszewski et al., 2023).

From the perspective of the research objective, BNPL users are the most relevant and defined as anyone who has 'bought now and paid later' at least once. The sample included 473 BNPL users and 727 people who had never used this payment method. This represents 39% and 61% of the respondents respectively, which constitutes an unbalanced sample. Because the assumptions of the logistic regression used to achieve the intended purpose, the unbalanced sample may cause the algorithm to better fit a group with a larger size.

Therefore, to even out the numbers, 473 people were chosen at random from the non-BNPL users, giving a total sample size of 946 respondents.

How, and the extent to which, specific aspects of consumer behaviour influence the use of BNPL was identified using a logistic regression model, with the following formula (Agresti, 2013):

$$P(Y = 1) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k)}}$$

where:  $P(Y=1)$  is represents the probability that the dependent variable  $Y$  equals 1;  $\beta_0, \beta_1, \dots, \beta_k$  are the model's parameters, where  $\beta_0$  is the intercept, and  $\beta_1, \dots, \beta_k$  for the predictor variables  $x_1, \dots, x_k$ .

This method was selected for its distinct advantages, particularly its ability to fully interpret the influence of individual variables. It allows for assessing both the strength and direction of each variable's impact on the phenomenon under investigation. Unlike linear regression, this approach does not rely on restrictive assumptions, such as the normality of the distribution of model residuals.



The endogenous variable is the use of BNPL, which equals 1 when the respondent is a BNPL user, or 0 otherwise. The exogenous variables, along with their description, the value assigned to them, and the phenomenon being measured, are all shown in Table 1.

The analysis began with a full model incorporating all variables. Statistically insignificant variables were subsequently removed

in a stepwise manner, using  $\alpha = 0.05$  as the threshold for significance. This iterative process concluded once all remaining variables in the model were statistically significant.

#### 4. Results

By including all variables in the full model, it was possible to verify the significance of their impact on the use of BNPL. The parameters of the full, calcu-

**Table 1**

*Variables Used to Model Being a BNPL User*

| Variable | Name   | Description   | Scale - Values  |
|----------|--|---|---|
| Y        | BNPL user  | Used BNPL at least once   | 0 – No, 1 – Yes   |
| x1       | Tendency to make impulse purchases (destimulant)               | I usually only buy what I have planned in advance   |   |
| x2       | Propensity to save (stimulant)                                 | There is no point in saving money; it is better to spend it on current needs  |   |
| x3       | Propensity to go into debt (stimulant)                         | I often go into debt to buy something more expensive or pay in instalments  | 7-point Likert scale:   |
| x4       | Consumerism (stimulant)  | If I want to buy something, I go for the opportunity; I will always find the money for it                                 | 1 - Strongly disagree,  |
| x5       | Optimism (stimulant)   | I am an optimist; I want to get the most out of life  | 2 - Disagree,   |
| x6       | Mental accounting (stimulant)                                  | I sometimes ended up taking out a loan because I did not want to dip into savings allocated for another, specific purpose | 3 - Somewhat disagree,  |
| x7       | Tendency to replicate parents' borrowing behaviour (stimulant) | My family home would take out loans, purchase on credit or run up a tab   | 4 - Neither agree nor disagree,   |
| x8       | Personal innovativeness (stimulant)                            | I like to use technological innovations   | 5 - Rather agree,   |
| x9       |  | LendTech Client   | 6 - Agree,  |
| m1       | Sex  |   | 7 - Strongly agree  |
| m2       | Age (ranges)   |   | 0 - non-customer, 1 - customer  |
| m3       | Education  |   | 0 - woman, 1 - man  |
| m4       | Net household income per person                                |   | 1 - 18-24, 2 - 25-34, 3 - 35-44, 4 - 45-54, 5 - 55-64, 6 - 65 or over               |
|          |  |   | 1 - lower, 2 - medium, 3 - higher   |
|          |  |   | 1 - up to PLN 2,000, 2 - PLN 2,001-4,000, 3 - PLN 4,001-6,000, 4 - above PLN 6,000. |



lated model are shown in Table 2

From the initial model, only 6 of the 13 variables proved to be statistically significant. During the next steps, 6 variables were removed:  $x_1$ ,  $x_2$ ,  $x_4$ ,  $x_5$ ,  $x_6$ ,  $m_1$ . In the model with the remaining variables, all are statistically significant. The estimation parameters of this model are shown in Table 3.

Subsequent steps slightly improved the accuracy of the classification from 69.6% to 70.4%, an increase of only 0.8 pp. The model finally included 7 variables, 3 of which relate to the socio-demographic characteristics of the respondents. The higher the level of education, and the higher the net household income per person, the greater the likelihood of using BNPL services on average. The older people are, the less likely they are to use BNPL, confirming the generational approach to payment innovation.

A tendency to go into debt and a family history of taking various loans slightly increase the likelihood of using BNPL. However, the anticipated effects of a propensity to save (negative influence) and optimism (positive influence) on choosing BNPL were not confirmed. Interestingly, neither consumerism nor impulsiveness in making purchases appears to significantly impact the likelihood of BNPL usage.

The model highlights that personal innovativeness, particularly openness to technology, positively influences the likelihood of using BNPL. Greater openness corresponds to a higher probability of deferring payments. Consumers who use LendTech are three times more likely to use BNPL compared to those who do not, based on the model's findings. This may lead one to assume that both segments consist of similar consumers.

## 5. Discussion

Previously published findings from a survey of LendTech customers (Waliszewski et al., 2023) show that  $\frac{3}{4}$  of digital loan customers make deferred payments. Therefore, using LendTech most influences the likelihood of opting for BNPL. The relevance of education to using BNPL can be linked to knowledge of how the consumer finance market works and the tendency of people with higher education to use credit cards, which operate in a similar way to deferred payments by building in a grace period when the consumer may enjoy free

credit. The inverse relationship between the probability of using BNPL and the consumer's age is also confirmed by other studies that have demonstrated that deferred payments are most often made by Generations Y and Z, who also happen to be the main participants in the e-commerce market. The link between income and likelihood of using BNPL may be due to another statistically significant characteristic: education. People with higher education earn more on average.

The underlying factors behind consumers' use of BNPL include personal innovativeness. This conclusion, based on our own research, concurs with discoveries made by Hu et al. (2019), Tun-Pin et al. (2019) or Solarz and Adamek (2023). More than half of the surveyed BNPL users (67.51%) declared themselves technophiles, while 20.47 percentage points fewer respondents (i.e. 47.04%), among the non-BNPL group described themselves as open and personally inclined to use new technologies. According to the authors, the potential that lies in the high percentage of people with personal innovativeness bodes well for the future development of the BNPL market, because this trait reduces resistance to, and fear of, using modern solutions (Balcazar and Rivas, 2021). Therefore, consumers' perception of the benefits of BNPL services will increase the likelihood that they will join the ranks of users.

The findings of this research confirm observations made by other researchers on the positive impact of debt propensity on the likelihood that consumers will opt for deferred payment financial instruments, such as credit cards or BNPL (Sharma et al., 2021; Relja et al., 2023). 24.15% of BNPL users reported incurring frequent debt in order to purchase a more expensive item or make instalment purchases, while only 8.57% in the non-BNPL group behave in this way. The respondents' inclination towards indebtedness may also be evidenced by the number of loans or consumer loans they have to repay; it turns out that 49.0% of BNPL users have this type of debt, with as many as one in five currently repaying two or more loans. In comparison, only 25.6% of non-BNPL users have consumer debt, and only 10.18% have more than one debt. Moreover, as many as 55% of BNPL users surveyed

**Table 2***Results of Logistic Regression Analysis – Full Model*

| Variable name                                      | Variable | B      | Exp(B) | p-value |
|--|----------|--------|--------|---------|
| Tendency to make impulse purchases                 | x1       | -0.035 | 0.966  | 0.543   |
| Propensity to save                                 | x2       | -0.005 | 0.995  | 0.925   |
| Propensity to go into debt                         | x3       | 0.287  | 1.332  | <0.001  |
| Consumerism  | x4       | -0.125 | 0.882  | 0.059   |
| Optimism   | x5       | 0.009  | 1.009  | 0.88    |
| Mental accounting                                  | x6       | 0.024  | 1.024  | 0.631   |
| Tendency to replicate patterns of lending behavior | x7       | 0.147  | 1.158  | 0.002   |
| Personal innovativeness                            | x8       | 0.194  | 1.214  | 0.001   |
| LendTech Client                                    | x9       | 1.112  | 3.040  | <0.001  |
| Sex  | m1       | 0.011  | 1.011  | 0.942   |
| Age (ranges)                                       | m2       | -0.094 | 0.910  | 0.056   |
| Education  | m3       | 0.337  | 1.401  | <0.001  |
| Net household income per person                    | m4       | 0.227  | 1.255  | 0.016   |
|  | const    | -2.556 | 0.078  | <0.001  |

Note: Classification accuracy: 69.6%; The formula of tested logistic regression model:

P (Y = 1)

$$= \frac{1}{1 + e^{-(2.556 - 0.035x_1 - 0.005x_2 + 0.287x_3 - 0.125x_4 + 0.009x_5 + 0.024x_6 + 0.147x_7 + 0.194x_8 + 1.112x_9 + 0.011m_1 - 0.094m_2 + 0.337m_3 + 0.227m_4)}}$$

**Table 3***Results of Logistic Regression Analysis – Model with Statistically Significant Variables*

| Variable name                                      | Variable | B      | Exp(B) | p-value |
|--|----------|--------|--------|---------|
| Propensity to go into debt                         | x3       | 0.051  | 1.347  | <0.001  |
| Tendency to replicate patterns of lending behavior | x7       | 0.047  | 1.159  | 0.002   |
| Personal innovativeness                            | x8       | 0.053  | 1.172  | 0.003   |
| LendTech Client                                    | x9       | 1.110  | 3.034  | <0.001  |
| Age (ranges)                                       | m2       | -0.048 | 0.905  | 0.040   |
| Education  | m3       | 0.347  | 1.414  | <0.001  |
| Net household income per person                    | m4       | 0.094  | 1.264  | 0.012   |
|  | const    | -3.042 | 0.048  | <0.001  |

Note: Classification accuracy: 70.4%; The formula of logistic regression model with statistically significant variables:

$$P (Y = 1) = \frac{1}{1 + e^{-(3.042 + 0.051x_3 - 0.047x_7 + 0.053x_8 + 1.11x_9 - 0.048m_2 + 0.347m_3 + 0.094m_4)}}$$

perceive loan products as necessary and useful, while 11 percentage points fewer non-BNPL users hold the same view. For 43.7% of respondents from the first group, loan products are a convenient tool for managing household finances, while only 23.8% of respondents from the second group share this view. In conclusion, both the attitudes of BNPL users toward loans or credit and their actual debt decisions clearly indicate that a propensity to go into debt drives the selection of these payment methods.

Confirmation of this study's findings is offered by a thesis formulated by Koziński (2012), who argues that budget management style and parents' favourable approach to debt influence the development of a similar attitude in their children. More than 40.5% of the surveyed BNPL users declared that their family home had a history of taking loans/credit or 'running up a tab' at the local shop, while this was the case for only 16.2% of the non-BNPL respondents. With regard to the latter, they also follow financial behaviour patterns from home, but in this case it is a question of avoiding debt.

A literature review revealed that the inclination towards making impulsive purchases and performing mental accounting are factors that should influence consumers' decisions to use BNPL. However, our own research did not confirm these relationships. Nevertheless, it is worth considering the reasons for this situation. According to Thaler (1985, 1999), people who perform mental accountancy make records in three separate mental accounts: current income, assets and future income. People easily allocate money in the current account to current expenses, while they are extremely reluctant to reallocate money from the asset account (e.g., money earmarked as savings) to the current account, whenever they need to make a payment for something they cannot cover. So, they prefer to take out a loan or pay on credit (Swacha-Lech & Solarz, 2019; Sussman & O'Brien, 2016). According to the authors, the research shows that BNPL users do not treat this instrument as a form of loan or consumer credit at all, but rather as a means of paying and registering the entire transaction in the mental current account. This perception of BNPL payments is in line with the findings of Cook et al. (2023).

A surprising discovery of the study was the ab-

sence of the 'tendency to make impulse purchases' variable among the factors underlying BNPL use. There is empirical evidence in the literature (see Keil & Burg, 2023) indicating that customers with a higher probability of impulsive behaviour are 13% more likely to buy when the BNPL option is available. Moreover, the possibility to use this instrument reduces the time to make a purchase decision, which also indicates that consumers are more impulsive. No impact of this variable in our study may be explained by the short history of this payment method on the Polish market. Among the BNPL users, only 40.17% declared that they regularly defer payment, compared to 15.83% throughout the entire research sample. While it is true that the majority of BNPL users do not make impulse purchases but plan them in advance (60.68%), when analysing only the regular payment deferrers, the percentage of planned purchases drops to 14%. Moreover, one in five of them (21.6%) mention that the most common reason for incurring debt is their reluctance to wait until they have saved enough money to buy a particular item. In comparison, this manifestation of impatience applies to only 17.5% of non-BNPL users. According to the authors, because the BNPL market is still in its infancy, it would be worth returning to this topic in a few years study the factors behind choosing deferred payment in Poland, once this option has become more common, in order to verify how a tendency to make impulse purchases impacts the use of BNPL services.

## 6. Theoretical and Practical Implications

The publication of this article contributes to expanding the frontiers of knowledge in the field of finance and the behaviour of entities in the consumer finance market, providing valuable research results that can be used by academics as well as business managers and policy makers.

Our research creates new theoretical perspectives on the factors that influence consumer adoption of BNPL. This is the first study concerning the Polish market and one of the first in the world dedicated to this rapidly growing innovative digital payment method. The article thus contributes to filling an existing research gap by providing new empirical data and interpretative perspectives in the field of consumer finance. Further-

more, the findings and insights of the article may lead to the development of new or modifications of existing theories that describe contemporary consumption patterns in the context of modern financial services.

The results of the research also have a practical dimension, as the recommendations formulated on their basis can be used by managers to more effectively attract and retain customers, as well as to develop the BNPL offer to better meet the needs and expectations of different market segments. Managers should focus their efforts on younger consumers, who are more likely to use BNPL than older generations of the population. Marketing strategies and products should be adapted to their lifestyles and purchasing preferences, taking into account their greater openness to new technologies and their tendency to use LendTech. Offering simple, fast and mobile shopping solutions can attract this rapidly growing group of consumers.

It is also worth noting that three variables determining the use of BNPL are related to indebtedness, these are: willingness to take on debt, replicating patterns of lending behaviour or being a LendTech customer. This may indicate the openness of potential BNPL users to all forms of indebtedness, but may at the same time increase the risk of financial problems related to the management of this debt. Hence, it should be the task of the state to introduce clear and understandable regulations on the activities of BNPL companies, which would set the legal framework for the operation of this type of service. These regulations should include requirements for contract transparency, settlement practices, as well as credit liability. These recommendations aim to highlight the need to create a sustainable environment for the development of BNPL services that simultaneously supports innovation and economic growth, as well as providing adequate protection for consumers.

## 7. Conclusions

The purpose of the study was to identify how, and the extent to which, specific aspects of consumer behaviour – particularly in terms of attitudes towards money management, and socio-demographics – influence the use of BNPL. The factors identified and analysed here are socio-demographic (gender, age, education, net income per household member), economic (consumerism, tendency to save or go into debt),

psychological (optimism, mental accounting, propensity to replicate parents' borrowing behaviour) and technological (openness to technological innovation). A logistic regression model was used to analyse gated empirical data on 1,200 consumers and helped select statistically significant factors for using BNPL (a satisfactory 70.4% of the variables qualified as significant). Of the 7 statistically significant variables, 3 relate to socio-demographic features of the respondents – level of education, income and gender. The higher the level of education, and the higher the per capita household net income, the greater, on average, are the chances that someone will opt for BNPL. The older someone is, the less likely they are to go for BNPL, which confirms the generational approach to payment innovation. Personal innovativeness, inclination towards going into debt, as well as a family history of taking various loans slightly increase the probability of opting for BNPL. It had been presumed that propensity to save would have a negative effect, and that optimism would have a positive influence, on choosing BNPL; however, this presumption was not demonstrated. Nor do consumerism and impulsiveness in making purchases affect the likelihood of using BNPL. Of all the statistically significant factors underlying decisions to choose BNPL, the consumer's use of lending technology (LendTech) has the greatest impact, increasing the probability of using BNPL by a factor of 3. In conclusion, the adopted research method verified five of the nine research hypotheses (cf. H3, H4, H7, H8, H9) and negated the remaining four (cf. H1, H2, H5, H6). The article provides conclusions that may be used by various stakeholders in the BNPL market – by the supervisory body to design optimal regulations, and by the e-commerce sector and BNPL service providers to better understand customers' motives for deferring payments, which can result in better tailored services.

## 8. Limitations

The authors experienced various limitations during their research, which in turn provided a starting point for identifying potential directions for further research. The first limitation is the study of a relatively new segment of the financial market, which is not yet used by a large percentage of the general population. So, the challenge is to reach people using BNPL. Consequently, any inferences regarding inclinations

to use it are based on a short period of time, which does not offer a full overview of the long-term trends and consequences of this phenomenon. It is therefore necessary to continue research in the years to come so as to be able to more accurately assess the impact of BNPL on the market and consumer behaviour. In addition, the data collected and used did not focus solely on BNPL and payment deferrers, but on the wider area of LendTech, and the sample size was quota-based and representative of the socio-demographic characteristics of customers of lending institutions. These characteristics corresponded to the population of customers of lending institutions registered in Credit Information Bureau databases. Therefore, a natural extension of the survey would be to conduct research on a nationwide sample, as well as triangulate other research methods. It is also worth noting that alternative models and estimation methods based on the dataset used could also be applied. Initial phase of BNPL market development in Poland creates the possibility of conducting a similar study in the future as the BNPL service becomes more widespread and comparing the results from the first phase of market development with a more mature phase in terms of determinants correlating with the use of BNPL.

The authors would like also note that economic reasons for BNPL usage that were not fully measured in the survey. Consumers who are credit constrained or have volatile incomes and expenditures may benefit from the ability to smooth out payments at a zero percent interest rate over a short period of time. Further research may explore factors influencing BNPL use among occasional users and those returning to use the BNPL.

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