Exploring Buy Now, Pay Later Using the 2023 SHED Dataset

Catherine Komen, Texas Tech University[1]
Loren Flood, Texas Tech University; The American College of Financial Services[2]
Stuart Heckman, Texas Tech University[3]

Abstract

Buy Now, Pay Later (BNPL) is one of the newest short-term credit options available in the marketplace today. It is designed to be an interest-free way of splitting the cost of a good or service into smaller payments, to be repaid in full over the course of six weeks. BNPL has seen exponential growth over the last five years, yet it is still a highly unregulated form of credit. This paper seeks to explore the profile of the typical BNPL user, as well as the financial attitudes and beliefs, with the ultimate goal of answering the question of whether BNPL is a prudent financial practice utilized by the financially savvy or a predatory form of credit designed to target the financially vulnerable. This paper uses the 2023 Survey of Household Economics and Decision-Making (SHED) to attempt to answer these questions. Finally, this paper advocates for regulatory bodies in the United States to devise legislation to protect the most vulnerable from some of the most potent risks of BNPL products, including loan stacking and overextending.

Motivation

Buy Now Pay Later (BNPL) is one of the newer forms of point-of-sale financing available in the United States marketplace and worldwide. BNPL first appeared around 2015 and started gaining traction in the United States around 2019. There are five main providers in the BNPL marketplace today: Afterpay, Affirm, Klarna, PayPal, and Zip (formerly Quadpay). Between 2019 and 2021, the number of short-term loans issued by the top five BNPL lenders increased by 970 percent (Shupe et al., 2023). The payment terms differ slightly among providers, but it is a method of splitting online retail purchases into smaller installments. While the Consumer Financial Protection Bureau, CFPB (2021) acknowledges that there is no single definition of BNPL, the terms are typically where the borrower will pay 25% upfront, with the remaining balance spread into biweekly payments over the course of six weeks.

Consumers who use BNPL typically do not incur fees or interest charges; however, they may incur late charges. According to the Consumer Financial Protection Bureau (2021), approximately 10.5% of BNPL borrowers incurred at least one late fee. Late charges vary based on the lender and the borrower's state of residence, and they typically range between $7-10 (CFPB, 2022). BNPL may seem like a financially prudent way for borrowers to smooth their consumption in a less costly way than by using traditional credit products, but there are risks such as loan stacking and over-extending. Currently, the BNPL lenders do not report to the credit bureaus, nor does the application for a BNPL loan register as a hard inquiry on a person's credit report. Additionally, the BNPL lenders utilize a "low and grow" strategy, whereby they will approve a loan in a small amount to a first-time borrower. As the borrower displays responsible repayment, the lender will increase the loan approval limit. In 2021, the credit approval rate across the five lenders was 73% (CFPB, 2022).

There are two ways that consumers can utilize BNPL: when checking out at participating online retailers or through the lender's app, where consumers are given an approved limit and can spend at any retailers that appear within the app's ecosystem. The danger of BNPL financing is the risk of taking out many loans through different BNPL providers, a practice known as loan stacking. This is easy to do since one BNPL provider cannot see other BNPL loans a person may have outstanding due to the lack of reporting to the credit bureaus. Additionally, BNPL users are at risk of overextending their borrowing. For example, there is an 85% higher merchant average order value when using BNPL than other payment

---

[1] Catherine Komen (Catherine.Komen@ttu.edu), Director, Financial Wellness & Literacy/Red to Black, Academic Innovation & Student Success
[2] Loren Flood (Loflood@ttu.edu), Assistant Professor, Academics
[3] Stuart J. Heckman (Stuart.J.Heckman@ttu.edu), Associate Professor of Practice, Ph.D. Program Director

methods (CFPB, 2022). Further, users utilizing BNPL through the BNPL app spend a staggering 72% more per transaction than when shopping online (CFPB, 2022). Finally, “Retailers offering BNPL options encourage those borrowers to become buyers—and they do! BNPL users, for example, have a 36% higher purchase frequency than regular shoppers” (CFPB, 2022). This ease of access to short-term loans can lead to irresponsible financial behaviors.

We seek to explore whether BNPL lenders prey on the financial well-being of those who use it to determine whether interest-free BNPL is a predatory practice aimed at targeting the vulnerable or a prudent financial practice used by the financially savvy. Conflicting information exists on the profile of the average BNPL user. In a study by The Federal Reserve Bank of New York, Aidala et al. (2023) conclude that consumers with unmet credit needs or access to credit are more financially vulnerable and use BNPL disproportionately. In their study, the Federal Reserve Bank of Philadelphia mentions that “BNPL users did not cite lack of credit access as a primary reason for choosing BNPL as a payment option” (Akana, 2022, p.1). This study aims to understand the typical profile of consumers likely to use BNPL by exploring their financial attitudes and behaviors that would ascertain the prudency or predatory nature of BNPL payment. The research question we seek to answer is which behavioral aspects play a role in BNPL purchases that indicate prudence or vulnerability in household consumption.

Theoretical framework

Life-Cycle Hypothesis

According to Modigliani and Brumberg (1954), consumers maximize their utility by choosing the optimal consumption level given their preferences and the resources available now and in the future. The Life-Cycle Hypothesis suggests that individuals maximize their utility over time through intertemporal decision-making involving trade-offs between current and future consumption. BNPL payment offers the opportunity to make purchases without paying the full amount upfront. The tradeoff of acquiring an item or service with flexible payments aids smooth consumption as the theory pivots to determining the optimal consumption pattern. The assumptions are criticized as unrealistic due to their failure to accommodate psychological concepts, such as thriftiness and refraining from consumption (Wärneryd, 1989). The paper will explore why individuals use BNPL by examining the lens of accessibility to credit, age, education, or other influencing attributes.

Behavioral Life Cycle Hypothesis

The Behavioral Life-Cycle Hypothesis (BLC) was first proposed by Shefrin and Thaler (1988); it incorporates three important behavioral aspects that they claimed to be missing in the Life-Cycle Hypothesis in the analysis of household consumption, namely, self-control, mental accounting, and framing. This study will focus on self-control, which is assumed to be a costly investment of willpower to postpone consumption to a future affordable period. Shefrin and Thaler (1988) proposed a dual preference framework in which the planner and doer function exist within the same individual; the former is long-term oriented, while the latter is short-term. By postponing consumption to a future period, a planner will seek mechanisms to support their ability to delay gratification, such as saving and creating mental accounts of allocating income. The doer will pursue immediate gratification and often fall prey to luring payment models; the BNPL decision is influenced by the consumer’s inability to delay gratification due to a lack of self-control, impatience, and present bias (Thaler & Shefrin, 1981; O’Donoghue & Rabin, 2015). Gathergood (2012) found that although self-control explained over-indebtedness, most financial burdens were associated with financial illiteracy and self-control problems. Consumers with low financial literacy find financial products confusing; Disney and Gathergood (2013) and Ru and Schoar (2016) found that most credit providers target the less financially knowledgeable with their products. A report from one of the largest BNPL providers disclosed that only 36% of its loans had zero interest (Ledbetter, 2023). Most American households are familiar with using credit cards because the product has existed for many years. However, BNPL has not been studied to understand the benefits and disadvantages of utilizing it as a credit system. We seek to understand the profile of BNPL users while examining their short-term traits and long-term financial behaviors from the perspective of the Behavior Life-Cycle Hypothesis.

Literature review

Life-Cycle Hypothesis

The life-cycle hypothesis is a foundational theory that has influenced many other theories seeking to explain human behavior. An article by Papich (2022) explores how BNPL affects financial well-being through the lens of consumption smoothing. Papich suggests that many Americans do not have access to credit, which begs the question of whether increased access to credit (through BNPL financing) would cause them to overextend themselves financially by taking on more debt than they can repay. Papich suggests that increases in credit access should smooth consumption for a fully rational person, but many may overextend themselves by acquiring more debt than they can repay. Using event study data, Papich tests whether different groups acted the same way before BNPL became available as they do after BNPL availability. Contrary to much of the literature on the subject, Papich concludes that BNPL access did reduce financial distress (total past due, number of current delinquencies, and total public records), measured in young people under the age of 40. Additionally, when the demographic groups were analyzed, the results concluded that no group's financial stress increased due to BNPL access. Finally, the results show an increase in credit score (average of 1.6 points) when consumers had access to BNPL. The reduction in financial distress is "likely due to the increased ability to smooth consumption when BNPL is available" (Papich, 2022, p. 31).

BNPL, when properly utilized, should be able to help an individual smooth their consumption; however, when consumers "refinance" their interest-free BNPL loan by making payments with their credit card, their financial well-being may be negatively impacted. Guttman-Kenney et al. (2023) look at the prevalence of BNPL use on credit cards in the United Kingdom (U.K.), using credit card transactions from multiple banks and credit card issuers. They find that, in the U.K., 19.5% of active credit cards in December 2021 had at least one transaction from a BNPL lender. In addition, it is estimated that 26% of U.K. users use a credit card for their BNPL purchases. This is estimated to be 22% in the U.S., Guttman-Kenney et al. (2023) and is reported to be 10% according to data from the Federal Reserve Bank of New York (Aidala et al., 2023). A staggering 47.7% of the BNPL transactions made on credit are by consumers between 18-39 years old, and the trend of using credit for BNPL purchases increased 21.4 times from January 2019 to December 2021. These findings are worrisome as those 18-39 are earlier in their life cycle and are more vulnerable than those older. As the BNPL users in this age group attempt to smooth their consumption across time periods, they are less likely to pay their credit card balance in full each month than the older groups, thereby incurring interest. While regulators have yet to create any policy prohibiting such practices, Capital One has blocked BNPL purchases from being used on their credit cards (Kaye, 2020).

Behavioral Life Cycle Hypothesis

Self-Control

Self-control is an element of the Behavioral Life-Cycle Hypothesis, and we deem it an important mechanism in moderating the use of BNPL short-term credit offerings. Self-control issues can be seen in the difficulty of delaying gratification and acting in the present in a way that does not align with a person's long-term goals. Due to the lack of BNPL providers reporting to the credit bureaus, BNPL may be viewed as a threat to consumers lacking in self-control, as they may resort to loan stacking or overextending themselves by taking out more loans than their monthly income can support. The Federal Reserve Bank of Kansas City published a report in 2021 citing a poll on BNPL users that found that 45% of respondents said that they use BNPL to purchase items that would not fit in their budget (Backman, 2021; Alcazar & Bradford, 2021).

The CFPB conducted research based on their Making Ends Meet survey and found that BNPL users were more likely to be Black or Hispanic, female, and under the age of 35, with household incomes between \$20,000-\$50,000. Further, BNPL users are more likely to be heavily indebted, have credit card balances that are not paid in full each month, have past due bills, utilize high-interest credit alternatives such as personal loans, pawn shops, and payday lenders, have lower credit scores, and a higher credit utilization ratio compared to non-BNPL users (Brennan, 2017; Shupe et al., 2023). In addition, the Federal Reserve Bank of Philadelphia has found that most BNPL users use short-term loans for convenience and cost rather than not having access to credit (Doubinko & Akana, 2023).

In a working paper, Ackert et al. (2024) compare the willingness to incur debt on credit or BNPL when the terms are opaque. The authors gave student participants five different scenarios: whether they would decline the purchase, use BNPL or credit to fund the purchase of groceries, a patio, a wedding, a birthday, or a vacation. Additionally, they use the following statement for the BNPL disclosure:

> The retailer offers a buy now, pay later plan called Payafter. If you make the first payment today, the items are immediately sent to you. Two weeks later, you pay the second interest-free installment. Two weeks after that, the third interest-free installment is due. Four weeks later, you pay the fourth and final interest-free installment. If you miss a payment, future purchases may not be approved, and Payafter charges a late fee equal to 20% of the value of the order (Ackert et al., 2024, p. 5).

The credit card disclosure in the study stated, "You use your credit card with interest on the outstanding balance. Your credit card charges an annual interest rate of 24.99%" (Ackert et al., 2024, p. 5). The research results find that participants were more inclined to make a purchase when offered BNPL (48.10%) compared to credit cards (38.46%). Additionally, they found that the participants in the study were more likely to finance the vacation with BNPL than a credit card (significant at $p<0.001$) (Ackert et al., 2024).

While there isn't a vast body of literature on BNPL, studies on credit card behavior and self-control have been conducted that may shed light on the self-control issue as it pertains to BNPL. Tanaka and Murooka (2012) reviewed time inconsistency and self-control problems and how they impacted saving and consumption decisions; citing work conducted by Gross and Souleses (2002), they found an instant rise in debt when credit limits were increased. Additionally, they concluded that "the elasticity of debt to the interest rate is larger for decreases in interest rate than for increases" (Tanaka & Murooka, 2012, p. 27). Finally, Tanaka and Murooka (2012) cite work conducted by Meier and Sprenger (2010) that found that people who are time-inconsistent are not only more likely to have credit card debt (15%), but credit card debt is 25% higher than their time-consistent peers. These studies highlight the risks of overextending that BNPL can pose to the naïve consumer lacking self-control.

Mental Accounting

"One method of exerting self-control is to use mental accounts" (Heath & Soll, 1996; Shefrin & Thaler, 1988; Thaler, 1985, 1999; Soman & Cheema, 2002, p. 5). When mental accounting is applied to credit decisions, Swacha-Lech and Solarz (2019) present findings from Ranyard et al. (2006) that total cost is the most important factor in determining repayment plans. This may explain why the average balance of BNPL loans in 2021 was only $135 (CFPB, 2022) and why loan stacking and overextension may threaten the naïve BNPL consumer, especially given the 'low and grow' strategy that BNPL lenders employ.

Soman and Cheema (2002) conducted a study in which they tested student's propensity to spend by manipulating the amount of credit available based on a person's credibility (earnings potential), as assigned by a "rigorous scientific process." The participants in the high credibility group ($5,000) had a greater propensity to spend than those in the low credibility group ($2,000). In another study, the authors included students as well as participants between the ages of 36-70 and had similar findings; the less experienced students with high creditability and a higher credit limit exhibited a higher propensity to spend, while the older, more experienced participants had less propensity to consume when their credit limit was high. When consumers have increased their BNPL credit limit, they may mentally account for it as a reflection of their earnings outlook, encouraging them to spend more than they can afford today.

In a working paper on BNPL's user characteristics and effects on spending, the authors mention a "liquidity flypaper effect" where additional retail liquidity through BNPL "sticks where it hits" (Di Maggio et al., 2022, p. 1). Through their analysis, the authors found that total consumer spending increases by approximately $130 the first time a consumer uses BNPL, and this level remains elevated over the following 24 weeks. Mental accounting can play a role in tracking costs and benefits. Siemens (2007) conducted research on the satisfaction, perceived fairness, and behavioral intentions of various transactions where there is a delay in consumption and payment. The study simulated a BNPL scenario using real money by having participants watch a video and complete a 30-minute survey. Upon watching the video, participants were paid $5 and then had to complete the survey. Participants were assigned in groups that completed the survey immediately, with no delay, while the others had a three-day delay, a one-week delay, or a two-week delay. The study revealed that when there were delay conditions present, the participants were less satisfied, less likely to repeat the exercise, and viewed the transaction less fairly than the participants without delay; all the levels decreased as the time delay increased. The research finds that the benefit is more psychologically salient when the transaction cost and benefit are coupled.

In a Federal Reserve Bank of Philadelphia survey, Akana (2022) found that only 68.5% of BNPL users are satisfied or very satisfied compared to 81.1% of credit card users. Additionally, when asked about the likelihood of using the payment method in the future, 53.2% said they would use BNPL again, compared to 82.7% of credit card users (Akana, 2022). Through the lens of mental accounting, these results are not surprising considering Siemens' research on separating the cost and benefit in the transaction. A credit card balance is a lumping together of all purchases during a period where the consumer makes one payment, while BNPL loans can differ, and a consumer can have three additional payments for a single good or service.

Theory of Planned Behavior

There is an implicit assumption in the Theory of Planned Behavior that individuals have control over their actions and decisions. Tamara and Agustina (2024) conducted research on Shopee, PayLater (a BNPL service popular in Indonesia), and Gen Z (ages 18-26) users. They examined the impact of financial literacy and self-control, using education level as a mediator on financial management behaviors, as measured by consumption patterns, cash flow management, savings and investment behaviors, and credit management. Using the Shopee PayLater Malang Facebook group and other social media outlets such as WhatsApp, X (formerly Twitter), and Instagram, they administered questionnaires to interact with Gen Z consumers in their element. They conclude that the financial management behaviors (budgeting, investing, saving) of BNPL users are positively affected by financial literacy, self-control, and education level. When consumers have a higher level of financial literacy, they can better understand how various financial products work and how to use them responsibly. With a higher level of financial literacy, users also understand the need to save for tomorrow, allowing them to exert self-control to avoid consuming all their income today.

In their paper, Powell et al. (2023) explore BNPL usage in Australia and find that when the terms and conditions are reviewed and understood by BNPL users, it positively impacts financial well-being, which requires a moderate-to-high level of financial literacy. Corroborating the research by Tamara and Agustina (2024), Powell et al. (2024) also found that budgeting for purchases and lower impulse buying positively impact financial well-being, as did lower compulsive buying. A surprising finding was that using a debit card instead of a credit card for BNPL purchases did not significantly impact financial well-being.

The opposite of planned behavior is impulsive buying. Susanto et al. (2024) surveyed Gen Z Shopee users, seeking to answer the question of to what extent BNPL and hedonic motivation affect impulsive purchase decisions by Gen Z users on the Shopee e-commerce platform. They concluded that BNPL positively affects impulsive buying in Gen Z Shopee users. The authors also concluded that hedonic motivation, or the "internal drive that influences customers' purchasing decisions, carried out because it is considered enjoyable and personally satisfying" (Wang et al., 2022, as cited in Susanto et al., 2024), positively influences impulse buying. These findings provide support for the risks of overextending that BNPL products can have on users with low financial literacy, low self-control, and impulse control.

Hypothesis

The Consumer Financial Protection Bureau (2015) has defined financial well-being as:

> "A state of being wherein you have control over day-to-day and month-to-month finances, have the capacity to absorb a financial shock, are on track to meet your financial goals, and have the financial freedom to make the choices that allow you to enjoy life" (CFPB, 2015 p. 5).

We have outlined many risks associated with BNPL loans. Nevertheless, BNPL, when used responsibly, is generally the least expensive method compared to credit cards or even layaway (Alcazar & Bradford, 2021).

We therefore present the following hypothesis:

Financial Attitude

H1: Having $400 emergency cash is negatively associated with using Buy Now, Pay Later payment.
H2: Having $1,000 or more is negatively associated with using the Buy Now, Pay Later payment method.
H3: Household spending more than income is positively associated with using Buy Now, Pay Later payment.

Financial Behaviors

H4: Households with savings and investments over $50,000 are negatively associated with the Buy Now, Pay Later payment.

H5: Households on track for retirement savings are negatively associated with using Buy Now, Pay Later payments.

H6: Having saving behavior is negatively associated with using Buy Now, Pay Later payments.

H7: Having insurance plans is negatively associated with using Buy Now, Pay Later payments.

H8: Delayed purchases due to increased prices are negatively associated with using the Buy Now, Pay Later payment.

Method

Data and Sample

The study used the Survey of Household Economics and Decision-making (SHED) dataset for 2023 from the Federal Reserve Board. The dataset is nationally representative of United States households. The total population of the survey was 11,400 respondents. The study focused on households that had utilized the Buy Now, Pay Later (BNPL) payment to make purchases in the previous year. Respondents who responded “Yes” to patronizing BNPL were 1,455 of the survey population. In examining the financial attitudes and financial behaviors of BNPL users, the sample size was reduced to 9,965 respondents due to 1,839 missing responses in the household savings category. The study sought to understand the short-term financial attitudes and the long-term behavior that informs the household's use of BNPL. The BNPL users comprised 11.03% males and 14.5% females, totaling 628 and 827, respectively. Females utilized BNPL more compared to males. Those with less than a high school education were found to be the heaviest users of BNPL. On marital status, the separated, 23%, and single,16% individuals used BNPL more than other groups. Respondents with household incomes between $25,000 and $49,000 were the highest BNPL users at 16% compared to those with a household income of $150,000 and more, who only account for 8%. Black and Hispanic households had higher instances of BNPL usage at 20% compared to other races. Respondents between 18-24 years represented the highest BNPL consumers at 19% compared to other age groups. Finally, unemployed BNPL users were highest at 15% compared to working professionals.

Dependent Variable

The dependent variable, Buy Now, Pay Later (BNPL), is a new form of credit that allows users to pay for goods or services at a merchant outlet or using a mobile app. The Consumer Financial Protection Bureau (2023) refers to BNPL as an exclusively zero-interest, pay-in-four (or fewer) installment load that facilitates purchases at the point of sale. The dependent variable question specifically asked, “In the past year, have you used a “Buy Now, Pay Later” service to buy something? Households that responded “yes” were coded as 1, and those responses that responded “no” were coded as 0. The total sample of households that patronized BNPL was 1,455.

Independent Variables

The independent variables were classified into three categories: financial attitude, financial behavior, and demographic variables. The variable coding and sample proportions are reported in Table 1.

Financial attitude focuses on short-term aspects determining a household’s propensity to utilize BNPL. The financial attitude variables use responses from four questions on how they handle short-term financial needs and spending while examining the ability to handle emergency situations while having at least one banking mechanism. These questions inquire about the household's ability to have $400 cash in their accounts for emergencies, their spending capacity of living below/within their means, if they held a checking, savings, or money market account, the savings instruments as an account, and/or certificate of deposit of money market account. The access to $400 to handle an emergency, the presence of a checking, savings, or money market account, and having a savings or asset account, such as a certificate of deposit, are all binary variables measuring the household financial attitude. The household total spending is categorically coded, ranging from those who consume less than their income to those who exceed their income.

Financial behavior focuses on long-term aspects that examine behavioral aspects that aid or deter the use of BNPL. The household’s ability to handle emergencies was measured using the amount they could handle without strain and the amount of their savings and investment as categorical variables. The household's ability to be on track with their retirement savings plan, having a retirement account such as a 401(K), through an employer, IRA or Roth IRA, having a cash value in a life insurance policy, and their ability to delay their purchases due to increase of prices are binary variables. The delayed purchases variable is used as a moderator of self-control, as discussed in the Behavioral Life-Cycle Hypothesis in the literature review.

Several demographic variables were used as explanatory variables to examine the profile of BNPL users. These include education, age, ethnicity, gender, employment status, household income, and marital status. The employment status includes respondents who work full-time, part-time, or are unemployed. The marital status ranged from married to separated, divorced, or never married. The household income ranged from less than $10,000 to $150,000 and more.

Multivariate analysis

The results from the study using a nationally representative dataset provide further insight into the characteristics of individuals who patronize BNPL. The increase in payment options allows consumers to acquire products and services they typically would only be able to afford to pay for in full. The study sample size was 11,400; however, the probit regression used 6,369. The initial part of the analysis was to determine the short-term financial attitude and financial behavior of respondents who used BNPL for purchases. Compared to households who spend less than their income, those who spend the same and those who spend more are highly likely to use BNPL by 2 and 5 percentage points, respectively. Compared to those who can handle an emergency under $100, those who can pay between $1,000 and $1,999 and $2,000 and more are less likely to use BNPL by 7 and 9 percentage points. Compared to those with household savings and investments under $50,000, households with household savings between $50,000 and $99,999 and $100,000 and $249,999, respectively, are less likely to use BNPL by 4 percentage points. Households with savings and investments above $250,000 were insignificant compared to households with less than $50,000, and they are all unlikely to use BNPL. The “not sure” category is for households that did not indicate their household savings and investment category; they are, however, highly unlikely to use BNPL by 4 percentage points. The retirement savings being on track, possession of cash value insurance, and having investment assets were insignificant amongst those likely to use BNPL. Households that did not delay their purchase due to the increase in prices were highly likely to use BNPL by 4 percentage points.

The analysis indicates that age, ethnicity, gender, employment status, household income, and marital status are all significantly related to the likelihood of using BNPL for purchases. Compared to the respondents aged 18-24, those aged 25-34 are more likely to utilize BNPL by 4 percentage points. Compared to the White respondents, Blacks and Hispanics are more likely to purchase using BNPL with 8 and 7 percentage points, respectively. At the same time, there were no significant differences between the respondents identifying as other race/ethnicity and the White respondents. Compared to respondents with less than a high school education, respondents with a high school diploma, some college education, and those with a bachelor's degree and higher are less likely to use BNPL. Compared to male respondents, females are highly likely to purchase using BNPL by 3 percentage points. Compared to respondents who are employed full-time, those not employed are highly likely to patronize BNPL by 6 percentage points; those employed part-time were not significant compared to those employed full-time. Compared to those with a household income of less than $10,000, those between $25,000 and $49,999 are highly likely to use BNPL purchases by 5%. Respondents earning between $50,000 and $74,999 and between $75,000 and $99,000 are highly likely to use BNPL by 6 and 8 percentage points, respectively. Respondents earning between $100,000 and $150,000 and above $150,000 are highly likely to patronize BNPL by 6 and 8 percentage points, respectively. Compared to the married households, separated households are highly likely to use BNPL by 9%; the widowed, divorced, and never married were insignificant compared to the married respondents.

Discussion

BNPL is a relatively new financial offering with limited research into its usage and financial implications. When used responsibly, BNPL could effectively mitigate the high interest rates that credit cards charge when users float a balance. Conversely, due to the lack of credit reporting and easy access to financial capital, BNPL could be detrimental to a user's financial health. We sought to gain a better understanding of the profile of the typical BNPL user by exploring their financial attitudes and behaviors to determine whether BNPL usage is a prudent financial practice utilized by the financially savvy or a predatory practice where users with lower financial literacy were targets by Fintech firms offering BNPL.

Table 1 Binary probit results: Purchases using BNPL, 2023 SHED

Variable	Respondents (n=1,455)			
	Coeff	S.E.	p-value	AME*
Constant	-2.102	0.174	<0.000	-
Emergency Cash$400 (money in the account)	-0.005	0.046	0.908	-0.001
Household Total Spending (Less than Income)				
The same as income	0.118	0.051	0.021	0.024
More than income	0.219	0.058	<0.000	0.046
Emergency Handling Amount (Under $100)				
$100 to $499	-0.045	0.068	0.513	-0.011
$500 to $999	-0.059	0.079	0.459	-0.015
$1,000 to $1,999	-0.284	0.086	<0.001	-0.065
$2,000 or more	-0.434	0.080	<0.000	-0.092
Household Savings & Investments (Under $50,000)				
$50,000 - $99,999	-0.185	0.068	0.007	-0.038
$100,000 - $249,999	-0.188	0.072	0.009	-0.039
$250,000 - $499,999	-0.126	0.092	0.172	-0.027
$500,000 - $999,999	-0.199	0.109	0.068	-0.041
$1,000,000 or more	-0.191	0.126	0.128	-0.039
Not sure	-0.207	0.099	0.036	-0.042
Retirement Savings Plan-On Track	-0.050	0.053	0.343	0.008
Saving Behavior	0.040	0.055	0.463	0.008
Insurance planning	-0.037	0.052	0.479	-0.008
Inflation Delayed Major Purchase	0.166	0.037	<0.000	0.037
Education (Less than High School)				
High School	-0.066	0.092	0.473	-0.014
Some college	-0.021	0.094	0.822	-0.005
College and more	-0.134	0.099	0.176	-0.028
Age (18-24)				
25-34	0.213	0.090	0.018	0.044
35-44	0.101	0.094	0.284	0.020
45-54	0.106	0.099	0.287	0.021
55-64	-0.005	0.102	0.959	-0.001
65-74	0.035	0.141	0.804	0.007
75+	0.177	0.290	0.542	0.036
Ethnicity (White)				
Black	0.375	0.062	<0.000	0.084
Hispanic	0.321	0.056	<0.000	0.070

Others	0.100	0.075	0.180	0.020
Gender (Male)				
Female	0.145	0.043	<0.001	0.030
Employment (Working full-time)				
Working part-time	0.139	0.078	0.074	0.024
Not employed	0.303	0.067	<0.000	0.058
Household Income (Less than $10,000)				
$10,000 to $24,999	0.218	0.132	0.099	0.035
$25,000 to $49,999	0.308	0.123	<0.012	0.052
$50,000 to $74,999	0.335	0.126	0.008	0.057
$75,000 to $99,999	0.443	0.130	<0.001	0.080
$100,000 to $149,999	0.369	0.131	0.005	0.064
$150,000 or more	0.424	0.135	0.002	0.076
Marital Status (Married)				
Widowed	0.015	0.174	0.929	0.003
Divorced	0.039	0.073	0.590	0.008
Separated	0.382	0.136	<0.005	0.092
Never married	0.020	0.054	0.715	0.004
Log-likelihood	-2376.46			
Pseudo R-squared	0.088			

Source Unweighted regression of respondents who purchased using BNPL in 2023 Survey of Household Economics Decision-making. The reference groups are identified in parentheses. *AME Average Marginal Effects. The total sample size is 6,359.

Our demographic results of the typical BNPL user being Black or Hispanic females aged 25-34 who are unemployed and are separated but not divorced. Surprisingly, regarding individuals making less than $10,000, the analysis found that those who make between $25,000 and $99,000 have a higher likelihood of using BNPL purchases. These findings are consistent with findings conducted by others. For example, Akana (2022) of the Federal Reserve Bank of Philadelphia found that BNPL users are more likely to earn less than $75,000 annually, be under the age of 36, and be non-white than credit, debit, and P2P users. However, our findings differ from those of Akana, where Akana's research found that BNPL users were most likely to report employment. By analyzing the responses to the Making Ends Meet survey conducted by the CFPB, Schupe et al. (2023) found that "Black, Hispanic, and female consumers and those with household incomes between $20,000-$50,000 were significantly more likely to borrow using BNPL compared to white, non-Hispanic and male consumers, or those with household incomes below $20,000" (p.2). Regarding education level, Schupe et al. (2023) find that those with a high school diploma or less were less likely than those with a bachelor's degree to utilize BNPL, which is consistent with the research presented in this paper.

H1: Having $400 emergency cash is negatively associated with using Buy Now, Pay Later payment.

This hypothesis is not supported (p-value=0.908). However, the AME (-0.001) indicates that with an increase in emergency cash, the users are less likely to patronize BNPL. Powell et al. (2023) proposed a similar hypothesis in their research, postulating that planning and budgeting for purchases by BNPL users positively impacted a person's financial well-being. Their results were also supported, with two-thirds of survey respondents believing that planning for BNPL purchases was very important. Powell et al. (2023) also found that the respondents used different ways of budgeting. Some used more formal methods (46.4%), such as pen and paper, spreadsheets, or apps, while others (43.1%) used the less formal approach of mental accounting. The Federal Reserve of Kansas City conducted a poll in March 2021 and found that 45% of people who used BNPL did so because they could not otherwise afford the item in their budget. (Backman, 2021, as cited in Alcazar & Bradford, 2021). We suggest that having a separate emergency fund ties into the theories of the Behavioral Life-Cycle Hypothesis under Self-

Control, Mental Accounting, and the Theory of Planned Behavior. When someone has the wherewithal to save and earmark funds for an emergency, it takes diligence and self-control to stay committed to the goal and not spend the funds haphazardly while building and once in place. The act of saving for such a goal infers that the saver is planning for unknown events that have not occurred.

H2: Having $1,000 or more is negatively associated with using the Buy Now, Pay Later payment method.

For the second hypothesis, it was assumed that when a person has greater than $1,000, the need to rely on BNPL would be negative. Our findings support this hypothesis. When respondents had between $1,000 and $1,999, there was a negative association with BNPL usage (AME= -.065; p-value= 0.001). Additionally, when respondents had between $2,000 or more, the negative association with BNPL usage is (AME= -.092; p-value= 0.000). This is consistent with research conducted by the Federal Reserve Bank of New York, where they also found that BNPL users were more "financially fragile," as measured by the average likelihood of coming up with $2,000 when an emergency arose (Aidala et al., 2023). Aidala et al. (2023) also found that BNPL users (42%) were less likely to use savings when experiencing an unexpected financial burden compared to non-BNPL users (68%).

H3: Household spending more than income is positively associated with using Buy Now, Pay Later payment.

This hypothesis is supported. Household spending more than income is positively associated with using BNPL when spending is the same as income (AME=0.024; p-value=0.021) and when household spending is more than income (AME= 0.046; p-value=0.000). These findings were not surprising. According to the Life-Cycle Hypothesis, consumers make trade-offs between consumption today and tomorrow. Like using credit cards, BNPL is a new way to accomplish the same objective: to spend more today, hoping that one's income will be greater tomorrow, and one can maintain a similar standard of living across different periods. The danger of using products such as BNPL is overextending oneself and having difficulty repaying the balance in the future. Papich (2022) explored whether BNPL positively or negatively impacted the user's financial well-being. In support of the Life-Cycle Hypothesis, Papich concluded that BNPL access reduced financial distress, which was measured by the amount past due, number of delinquencies, and number of total public records) in users under age 40. Baeck and Hong (2004) asked whether households whose spending is greater than their income would be more likely to have debt than those whose spending is less than or equal to their income. While this research predates the availability of BNPL, the authors believe that the findings are still applicable today, as BNPL is just one more outlet where households can smooth their consumption across different periods. Baeck and Hong (2004) found that households who spent more than their income were more likely to have credit card debt than those who spent at or below their income.

H4: Households with savings and investments over $50,000 are negatively associated with the Buy Now, Pay Later payment.

This hypothesis is not supported. All p-values were insignificant at the 95% confidence interval, and all AMEs were negative. A potential reason for this hypothesis's lack of statistical support may be due to mental accounting. Because people place different values on different buckets of money, having a savings and investment bucket over $50,000 may be accounted for in the long term, but a person may still use BNPL products to fund their short-term or mid-term buckets, especially if the person struggles with exerting self-control in the present. In our review of the existing literature on BNPL, Swacha-Lech and Solarz (2019) discuss mental accounting vs. credit decisions. Citing Ranyard et al. (2006), they highlight, "The total cost is more important for repayment plan decisions since consumers often represent specific credit plans in terms of total mental accounts and recurrent budget period accounts are used to evaluate monthly repayments and anticipate future goals and hazards" (Swacha-Lech & Solarz, 2019, p. 8). Perhaps the decision to use BNPL boils down to how the bi-weekly payments fit within a person's actual or mental budget and are not contingent upon a person's net worth.

H5: Households on track for retirement savings are negatively associated with using Buy Now, Pay Later payments.

This hypothesis is not supported. The p-value was insignificant at the 95% confidence interval. Given the novelty of BNPL in the marketplace, the literature on the topic of the long-term financial well-being of BNPL users is not robust. However, given the profile of the most prolific user of BNPL as a person who is more likely to have various forms of debt, have a revolving balance on their credit card, have delinquent debts, and use pawnshops, payday lenders, or overdraft their accounts (Shupe et al., 2023), the authors encourage further research in the domain of the long-term financial health of BNPL users.

H6: Having saving behavior is negatively associated with using Buy Now, Pay Later payments.

This hypothesis is not supported. The p-value was insignificant at the 95% confidence interval. In a similar vein to hypothesis 4, the authors suggest that mental accounting may be responsible for the lack of statistical significance of the negative relationship between savings behavior and the usage of BNPL. There appears to be a gap in the literature examining the savings behaviors of BNPL users.

H7: Having insurance plans is negatively associated with using Buy Now, Pay Later payments.

This hypothesis is not supported. The p-value was insignificant at the 95% confidence interval, and the AME was negative. In reviewing the existing literature on BNPL usage, the authors did not encounter this question, which could be an opportunity for further research. It is surmised that a person who carries insurance, a judicious product where holders do not always reap a monetary benefit, would exhibit higher self-control tendencies and perform mental accounting acts.

H8: Delayed purchases due to increased prices are negatively associated with using the Buy Now, Pay Later payment.

This hypothesis is supported and is significant (AME= 0.037; p-value=0.000). When viewed through the lens of the theory of planned behavior, this finding is expected. The theory of planned behavior assumes that people make conscious decisions about their purchases and are not impulsive. In an article, Powell et al. (2023) cite the finding of Bellini et al. (2017), where when there is a higher level of pre-shopping preparation, such as comparing prices, there tend to be lower levels of impulsive buying. Observing the increase in price and making the conscious choice to delay the purchase until later so that the purchaser can either save more money or wait for the price to fall indicates planned behavior and self-control.

Limitations and Recommendations for Future Research

The 2023 SHED dataset had no financial literacy questions. Hence, the study utilized inflation literacy as a measure to establish awareness of price escalation and self-control. The dataset limitation on financial literacy and education of respondents could support the financial attitudes and behaviors. The BNPL purchase responses were limited to payments in 2022; the survey did not capture the frequency and their status. Hence, this study is limited to those who paid using BNPL in 2022. More research is necessary to substantiate the prudency of using BNPL for financially savvy households. Behavioral analysis using psychometric assessments in decision-making may enhance understanding of human response to incentivized purchases. Depending on the reference groups, the discussion may differ if a different group is selected in the analysis.

Conclusion

The impact of our findings suggests to the authors that BNPL is a predatory financial product that targets the financially vulnerable or fragile. With the overwhelming growth of BNPL over the past 5 years, 970 percent, according to Shupe et al. (2023), this paper serves as a call to action for regulatory bodies in the United States to do something to protect the nation’s most vulnerable. We propose that one of the most effective short-term changes that could be implemented in the BNPL marketplace is to require the reporting of BNPL user activity to the major credit bureaus to limit the risk of user overextension and loan stacking, which can severely negatively impact an individual’s financial well-being. We also suggest following Capital One’s example and blocking the ability to use a credit card for BNPL purchases.

References

Ackert, L. F., Khayati, A., & Kelani, Z. (2024). *Buy now, pay later loans, social norms, and consumer indebtedness.* https://doi.org/10.2139/ssrn.4734141

Aidala, F., Mangrum, D., & Van der Klaauw, W. (2023). *Who uses "buy now, pay later?"* (No. 20230926). Federal Reserve Bank of New York.

Akana, T. (2022). *Buy now, pay later: Survey evidence of consumer adoption and attitudes* (Discussion Papers (Federal Reserve Bank of Philadelphia) 22–02; Discussion Papers (Federal Reserve Bank of Philadelphia), pp. 22–02). Federal Reserve Bank of Philadelphia. https://doi.org/10.21799/frbp.dp.2022.02

Alcazar, J., & Bradford, T. (2021). *The appeal and proliferation of buy now, pay later: Consumer and merchant perspectives*.

Baek, E., & Hong, G.-S. (2004). Effects of Family Life-Cycle Stages on Consumer Debts. *Journal of Family and Economic Issues*, *25*(3), 359–385. https://doi.org/10.1023/b:jeei.0000039946.59422.5f

Bureau, C. F. P. (2015). Financial well-being: The goal of financial education, Consumer Financial Protection Bureau.

Buy Now, Pay Later: Market trends and consumer impacts. (2022). https://files.consumerfinance.gov/f/documents/cfpb_buy-now-pay-later-market-trends-consumer-impacts_report_2022-09.pdf

Consumer Financial Protection Bureau. (2019, May 30). *Financial well-being: the Goal of Financial Education | Consumer Financial Protection Bureau*. https://www.consumerfinance.gov/data-research/research-reports/financial-well-being/

Consumers rely on buy now, pay later amid record inflation, use credit to pay it off. (n.d.). Credit Karma. https://www.creditkarma.com/about/commentary/consumers-rely-on-buy-now-pay-later-amid-record-inflation-use-credit-to-pay-it-off

Di Maggio, M., Williams, E., & Katz, J. (2022). *Buy now, pay later credit: User characteristics and effects on spending patterns* (No. w30508). National Bureau of Economic Research.

Disney, R., & Gathergood, J. (2013). Financial literacy and consumer credit portfolios. *Journal of Banking & Finance*, *37*(7), 2246-2254.

Doubinko, V., & Akana, T. (2023). *How does buy now, pay later affect customers' credit?* (Discussion Papers (Federal Reserve Bank of Philadelphia) 23–01; Discussion Papers (Federal Reserve Bank of Philadelphia), pp. 23–01). Federal Reserve Bank of Philadelphia. https://doi.org/10.21799/frbp.dp.2023.01

For Retailers - Get new customers with Afterpay. (n.d.). www.afterpay.com. https://www.afterpay.com/en-US/for-retailers/stores

Gathergood, J. (2012). Self-control, financial literacy and consumer over-indebtedness. *Journal of Economic Psychology*, *33*(3), 590-602.

Guttman-Kenney, B., Firth, C., & Gathergood, J. (2023). Buy now, pay later (BNPL) ...on your credit card. *Journal of Behavioral and Experimental Finance*, *37*, 100788. https://doi.org/10.1016/j.jbef.2023.100788

Kaye, B. (2020, December 7). Capital One stops "risky" buy-now-pay-later credit card transactions [Review of *Capital One stops "risky" buy-now-pay-later credit card transactions*]. *Reuters*. https://www.reuters.com/article/business/capital-one-stops-risky-buy-now-pay-later-credit-card-transactions-idUSKBN28H0OQ/

Ledbetter, J. (2023, January 28). "Buy Now, Pay Later" Is the Victim of its Own Success. The New York Times. https://www.nytimes.com/2023/01/28/business/dealbook/buy-now-pay-later-struggles.html

Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. *Post-Keynesian economics*, *1*(338-436).and the consumption function: An interpretation of cross-section data. In K. Kurihara (Ed.), Post-Keynesian Economics (pp. 388-436). New Brunswick: Rutgers University Press.

O'Donoghue, T., & Rabin, M. (2015). Present bias: Lessons learned and to be learned. *American Economic Review*, *105*(5), 273-279.

Papich, S. (2022). Effects of buy now, pay later on financial well-being. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4247360

Powell, R., Do, A., Gengatharen, D., Yong, J., & Gengatharen, R. (2023). The relationship between responsible financial behaviors and financial wellbeing: The case of buy-now-pay-later. *Accounting & Finance*, *63*(4), 4431–4451. https://doi.org/10.1111/acfi.13100.

Ru, Hong, and Antoinette Schoar. 2016. "Do credit card companies screen for behavioral biases?' NBER Working Paper 22360. https://www.nber.org/papers/w22360

Shefrin, H. M., & Thaler, R. H. (1988). The behavioral life-cycle hypothesis. *Economic Inquiry*, *26*(4), 609-643.
Shupe, C., Li, G., & Fulford, S. (2023). Consumer use of buy now, pay later insights from the CFPB Making Ends Meet Survey. *Consumer Financial Protection Bureau Office of Research Reports Series*, (23-1).
Siemens, J. C. (2007). When consumption benefits precede costs: Towards an understanding of 'buy now, pay later' transactions. *Journal of Behavioral Decision Making*, *20*(5), 521–531. https://doi.org/10.1002/bdm.564
Soman, D., & Cheema, A. (2002). The effect of credit on spending decisions: The role of the credit limit and credibility. *Marketing Science*, *21*(1), 32–53. https://doi.org/10.1287/mksc.21.1.32.155
Susanto, D., Apriza, M. W., & Muthiarsih, T. (n.d.). *Usage of buy now pay later, dedonic motivation, and impulse buying among Gen Z in e-commerce Shopee*. *04*(02).
Swacha-Lech, M., & Solarz, M. (2019). Mental accounting in the context of savings and credit decisions. Evidence from Poland. *Argumenta Oeconomica*, *2*(43), 351–384. https://doi.org/10.15611/aoe.2019.2.15
Tamara, A. P., & Agustina, Y. (2024). Financial management behavior on buy now pay later users: Does education level mediate the effect? *Journal of Management*, *3*(3).
Tanaka, T., & Murooka, T. (2012). Self-control problems and consumption-saving decisions: Theory and empirical evidence. *Japanese Economic Review*, *63*(1), 23–37. https://doi.org/10.1111/j.1468-5876.2011.00549.x
Thaler, Richard H., and H. M. Shefrin. 1981. "An economic theory of self-control," Journal of Political Economy, vol. 89, no. 2, pages 392-406.
Wärneryd, K. E. (1989). On the psychology of saving: An essay on economic behavior. *Journal of Economic Psychology*, *10*(4), 515-541.

Acknowledgements

We wish to extend our sincerest gratitude to Dr. Stuart Heckman for his guidance on this paper.