

Digital Borrowing Behavior Among Students: The Role of Financial Literacy, Lifestyle, and Financial Inclusion in Online Loan Use

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Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh literasi keuangan, gaya hidup, dan perilaku keuangan terhadap penggunaan pinjaman online dengan inklusi keuangan sebagai variabel moderasi pada mahasiswa di Yogyakarta. Fenomena meningkatnya penggunaan pinjaman online di kalangan mahasiswa menunjukkan adanya tantangan dalam pengelolaan keuangan pribadi di tengah kemudahan akses teknologi finansial (fintech). Penelitian ini menggunakan pendekatan kuantitatif dengan metode survei melalui penyebaran kuesioner kepada 170 responden mahasiswa yang pernah menggunakan layanan pinjaman online. Analisis data dilakukan menggunakan Structural Equation Modeling (SEM) berbasis Partial Least Square (PLS). Hasil penelitian menunjukkan bahwa literasi keuangan tidak berpengaruh signifikan terhadap keputusan menggunakan pinjaman online, sedangkan gaya hidup dan perilaku keuangan berpengaruh positif dan signifikan terhadap penggunaan pinjaman online. Selain itu, inklusi keuangan terbukti dapat memoderasi pengaruh perilaku keuangan terhadap pinjaman online, namun tidak memoderasi hubungan antara literasi keuangan maupun gaya hidup terhadap pinjaman online. Temuan ini menegaskan bahwa peningkatan literasi keuangan saja belum cukup menekan penggunaan pinjaman online tanpa diiringi perubahan perilaku keuangan yang bijak dan pengendalian gaya hidup konsumtif. Penelitian ini diharapkan dapat memberikan kontribusi bagi pengembangan kebijakan edukasi keuangan serta strategi peningkatan inklusi keuangan yang berkelanjutan di lingkungan perguruan tinggi.

Kata Kunci: Literasi Keuangan; Gaya Hidup; Perilaku Keuangan; Pinjaman Online; Inklusi Keuangan.

Abstract

This study aims to analyze the influence of financial literacy, lifestyle, and financial behavior on the use of online loans, with financial inclusion as a moderating variable among university students in Yogyakarta. The increasing use of online lending services among students reflects challenges in personal financial management amid the convenience of financial technology (fintech). This research employed a quantitative approach using a survey method, with questionnaires distributed to 170 student respondents who had previously used online lending services. The data were analyzed using Structural Equation Modeling (SEM) with the Partial Least Square (PLS) method. The results indicate that financial literacy does not have a significant effect on the decision to use online loans, while lifestyle and financial behavior have a positive and significant influence on online loan usage. Moreover, financial inclusion moderates the relationship between financial behavior and online loans, but does not moderate the relationship between financial literacy or lifestyle and online loans. These findings suggest that improving financial literacy alone is insufficient to reduce online loan usage without fostering prudent financial behavior and controlling consumptive lifestyles. This research contributes to the development of financial education policies and strategies to enhance sustainable financial inclusion within higher education institutions.

Keyword: Financial Literacy; Lifestyle; Financial Behavior; Online Loans; Financial Inclusion.

1. Introduction

Globalization plays a pivotal role in shaping contemporary society, particularly in the realms of technology and financial services. Alongside foreign direct investment and international collaborations, the rise of digital platforms has accelerated the integration of new technologies and business practices across multiple sectors (Fernandez *et al.*, 2020). Within the financial sector, this transformation has introduced innovative modes of interaction, allowing consumers to benefit from swift and efficient transactions via platforms such as internet and mobile banking (Mutamimah *et al.*, 2023). A key development in this context is the growth of financial technology (fintech), which has broadened access to financial services, improving both transaction efficiency and user experience in Indonesia and globally (Lestari & Merthayasa, 2023). Notably, this includes services regulated by the Financial Services Authority (OJK), such as Peer-to-Peer (P2P) Lending, which connects borrowers and lenders through electronic systems without relying on traditional intermediaries (OJK, 2024). These platforms have gained significant popularity, especially among younger demographics, including university students in Yogyakarta, who increasingly depend on online loans for academic and personal expenses. While the rapid adoption of online loans offers numerous opportunities, it also introduces substantial risks. The ease of access and flexibility of these services may lead to excessive borrowing, particularly among individuals with limited financial literacy and discipline. Peer influence, lifestyle choices, and financial behavior have been identified as critical factors driving the widespread use of digital lending services among students (Muttaqin & Nuryanti, 2023). Financial literacy is widely recognized as an essential determinant of sound personal financial management. Individuals with higher financial literacy are more adept at making informed decisions, avoiding high-interest debt, and maintaining financial stability (Bunyamin & Abdul Wahab, 2022; Lusardi & Mitchell, 2014). Among university students, the relationship between financial knowledge and borrowing behavior has attracted significant attention, particularly as young people are increasingly exposed to digital financial products like online loans and paylater services (Utami *et al.*, 2021).

Simultaneously, lifestyle factors have emerged as key predictors of consumption and borrowing behavior among students. The pressure to maintain a trendy or aspirational lifestyle often compels financially constrained individuals to rely on online credit (Astuty *et al.*, 2025; Haiqal *et al.*, 2024). The convergence of digital consumption habits with immediate financial gratification significantly increases the risk of debt accumulation, especially among students with limited income. Financial inclusion, defined as access to useful and affordable financial products and services, has been promoted as a crucial mechanism to support responsible financial behavior and mitigate the risk of predatory lending (OJK, 2025). Despite progress in financial literacy and inclusion in Indonesia, notable gaps remain. The 2024 National Survey on Financial Literacy and Inclusion (SNLIK) revealed that only 65.43 percent of Indonesians are considered financially literate, highlighting the ongoing disparity between financial access and understanding (OJK, 2024). Existing studies on fintech and financial inclusion have produced mixed results. Some research suggests that higher levels of financial inclusion reduce reliance on online loans (Karo & Murtanto, 2024), while others contend that fintech adoption does not necessarily correlate with greater inclusion (Kusuma, 2020). These inconsistencies underscore the need for further research to better understand how financial inclusion moderates the relationship between financial literacy, lifestyle, financial behavior, and online borrowing decisions. Although the literature on the influence of financial literacy, lifestyle, and financial behavior on borrowing decisions in digital environments is growing, studies that examine the moderating role of financial inclusion particularly among university students are still scarce. This research seeks to address this gap by exploring how financial inclusion influences the impact of psychological and behavioral factors on online loan usage. By focusing on students in Yogyakarta, this study gains contextual relevance, as this demographic is increasingly exposed to digital finance but often lacks stable income and experience with formal credit systems. This study contributes to the expanding body of literature on consumer finance, fintech adoption, and financial education. Its findings have practical implications for financial institutions, educational organizations, policymakers, and student communities. Given the increasing prevalence of online loans, particularly among students with limited

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income stability, this research is both timely and pertinent. It also presents an opportunity to enhance financial literacy and inclusion programs specifically designed for young, digitally literate users, ultimately fostering more sustainable financial practices.

2. Literature Review

The proliferation of online loan services among young adults, particularly university students, is driven by a range of psychological and behavioral factors. As access to digital financial platforms becomes more widespread, understanding the underlying motivations for loan decisions is increasingly essential. Prior research has consistently identified key variables such as financial literacy, lifestyle, and financial behavior as significant determinants of consumer decisions, particularly in contexts where financial inclusion may act as a moderating factor.

2.1 Financial Literacy and Online Loans

Financial literacy plays a crucial role in shaping how individuals assess and evaluate loan offers. Higher financial knowledge typically enables consumers to avoid exploitative financial products and make more informed, rational borrowing decisions. However, despite the growing accessibility of financial services, studies show that many students continue to exhibit low levels of financial literacy (Lusardi, 2019; Viana *et al.*, 2022). This gap in knowledge often leaves individuals vulnerable to impulsive borrowing via online platforms, where the immediate accessibility of loans can lead to suboptimal financial decisions. H1: Financial literacy has a significant negative effect on the use of online loans.

2.2 Lifestyle and Online Loans

Lifestyle refers to consumption patterns influenced by personal preferences, trends, and peer behavior. Among university students, there is often a societal expectation to maintain certain consumption standards, which may surpass their financial capacity. In an attempt to fulfill these desires, some students turn to online lending as a solution. Research by Nuraini *et al.* (2024) and Rohmah *et al.* (2024) suggests that the pressure to conform to lifestyle expectations significantly increases the likelihood of using digital loan services, especially in an era where consumerism is reinforced through social media and digital platforms. H2: Lifestyle has a significant positive effect on the use of online loans.

2.3 Financial Behavior and Online Loans

Financial behavior, encompassing habits such as budgeting, saving, and expenditure management, is strongly linked to borrowing tendencies. Individuals with more responsible financial practices are generally more cautious in their borrowing decisions, whereas those with weaker financial discipline tend to accrue debt more easily. Irena and Mastan (2024) indicate that a person's financial behavior plays a direct role in determining their use of loans, with those demonstrating less prudent financial habits being more susceptible to excessive borrowing. H3: Financial behavior has a significant negative effect on the use of online loans.

2.4 Moderating Role of Financial Inclusion

Financial inclusion refers to the accessibility and utilization of appropriate financial products and services by all segments of society. It provides individuals with the tools to manage their finances more effectively but may also facilitate access to digital lending services for those lacking sufficient financial literacy or disciplined financial behavior. Studies by Erdi (2023) and Kusuma (2019) have explored how financial inclusion can moderate the effects of other factors on loan usage behavior. In this context, financial inclusion may either strengthen or diminish the influence of financial literacy, lifestyle, and financial behavior on online loan usage. H4: Financial inclusion moderates the effect of financial literacy on the use of online loans. H5: Financial inclusion moderates the effect of lifestyle on the use of online loans. H6: Financial inclusion moderates the effect of financial behavior on the use of online loans.

3. Research Methodology

3.1 Research Design

This study adopted a quantitative approach, following the methodology outlined by Sekaran and Bougie (2020), to examine the impact of financial literacy, lifestyle, and financial behavior on students' propensity to use online loans, with financial inclusion serving as a moderating variable. A structured questionnaire was utilized to facilitate objective data collection, enabling statistical analysis of the proposed hypotheses.

3.2 Population and Sample

The study targeted university students in Yogyakarta who had previously used online loan services. In the absence of a precise population frame, the sample size was determined using the Lemeshow formula (Lemeshow, 1990), which is appropriate for populations without a defined size. This method ensured a representative sample of respondents for the analysis.

$$n = \frac{Z^2 1 - \frac{a}{2} P(1 - P)}{d^2}$$

$$n = \frac{1,96^2 \cdot 0,5 (1 - 0,5)}{0,1^2}$$

$$n = \frac{3,8416 \cdot 0,25}{0,01}$$

$$n = 96,04 = 97$$

The minimum sample size required for this study was 97, based on the Lemeshow formula. However, the study successfully collected data from 170 participants, which enhances the robustness of the analysis. A purposive sampling technique was employed to ensure that only respondents with prior experience using online loans were included, providing a relevant and focused sample for the research.

3.3 Data Collection

Primary data were gathered using an online questionnaire distributed via popular social media platforms, including Instagram, WhatsApp, and X. A screening question was incorporated into the survey to filter participants, ensuring that only those with direct experience using online loan services were included. The questionnaire utilized a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) and comprised validated constructs adapted from previous studies (Koo & Yang, 2025).

3.4 Variables Measurement

Each construct in the study was operationalized according to definitions derived from the existing literature. Financial literacy was evaluated through six dimensions: basic finance, financial management, saving, product knowledge, investment, and risk management (Lusardi, 2019). Lifestyle was assessed based on indicators such as activities, interests, self-perception, and personal values (Plummer, 1974). Financial behavior was measured using indicators like budgeting practices, timely bill payment, and saving habits (Trisnowati et al., 2020). Online loan usage was evaluated through indicators related to ease of access, security, and perceived cost. Financial inclusion was operationalized using Sarma's Index of Financial Inclusion (2012), which includes accessibility, availability, and usage of formal financial services.

3.5 Data Analysis

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3.0. This method allows for simultaneous evaluation of both the measurement (outer) model and the structural (inner) model. The outer model was tested for convergent validity through loading factors and Average Variance Extracted (AVE), discriminant validity via cross-loadings and AVE, and reliability using composite reliability and Cronbach's Alpha. The inner model was assessed for the strength and significance of relationships, utilizing R-Square, F-Square, and path coefficients. A bootstrapping procedure was applied to determine the significance of both direct and moderating effects (Hair *et al.*, 2021).

4. Results and Discussion

4.1 Results

4.1.1 Descriptive Analysis of Respondents

The descriptive analysis of the respondents in this study includes demographic characteristics and behavioral aspects related to online loan usage. The respondents' profiles, such as gender, age, education level, and experience with online loans, are summarized in Table 1 below.

Table 1. Respondent Characteristic

| Keterangan | Frequency | Percentage |
|---------------------------|-----------|------------|
| Gender | | |
| Male | 68 | 37,20% |
| Perempuan | 115 | 62,80% |
| Ages | | |
| 19–21 Years | 100 | 54,60% |
| 22–24 Years | 66 | 36,00% |
| >24 Years | 17 | 8,10% |
| Pendidikan | | |
| Students | 183 | 100% |
| Experience in Online Loan | | |
| Yes | 170 | 92,90% |
| No | 13 | 7,10% |

The sample in this study consisted of 183 respondents, with a majority being female (62.80%) compared to male respondents (37.20%). The age distribution showed that the largest group of respondents were between the ages of 19 and 21 years (54.60%), followed by those in the 22–24 age range (36.00%), while respondents older than 24 years accounted for only 8.10%. All participants were university students, representing 100% of the sample. Regarding online loan experience, 92.90% of respondents reported having used online loan services, while only 7.10% had not engaged with such services. These demographic and behavioral characteristics provide important context for interpreting the analysis of variables related to financial literacy, lifestyle, financial behavior, and financial inclusion in relation to online loan usage.

4.1.2 Convergent Validity

Convergent validity is used to assess whether each indicator accurately reflects the construct it is intended to measure. A loading factor of 0.70 or higher is considered acceptable (Hair *et al.*, 2021). As shown in Table 2, all indicators met the threshold for convergent validity.

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Table 2. Validity Test Result

| Variable | Indicator | Outer Loading | Status |
|---------------------|-----------|---------------|--------|
| Financial Literacy | X1.1 | 0.749 | Valid |
| | X1.2 | 0.847 | Valid |
| | X1.3 | 0.938 | Valid |
| | X1.4 | 0.920 | Valid |
| | X1.5 | 0.925 | Valid |
| | X1.6 | 0.935 | Valid |
| | X1.7 | 0.917 | Valid |
| Lifestyle | X2.1 | 0.943 | Valid |
| | X2.2 | 0.898 | Valid |
| | X2.3 | 0.941 | Valid |
| | X2.4 | 0.920 | Valid |
| | X2.5 | 0.960 | Valid |
| | X2.6 | 0.959 | Valid |
| | X3.1 | 0.920 | Valid |
| Financial Behavior | X3.2 | 0.902 | Valid |
| | X3.3 | 0.956 | Valid |
| | X3.4 | 0.964 | Valid |
| | X3.5 | 0.952 | Valid |
| | X3.6 | 0.852 | Valid |
| | Y1 | 0.841 | Valid |
| | Y2 | 0.966 | Valid |
| Online Loan | Y3 | 0.898 | Valid |
| | Y4 | 0.953 | Valid |
| | Y5 | 0.977 | Valid |
| | Y6 | 0.969 | Valid |
| | Y7 | 0.953 | Valid |
| | Z1 | 0.870 | Valid |
| | Z2 | 0.935 | Valid |
| Financial Inclusion | Z3 | 0.926 | Valid |
| | Z4 | 0.772 | Valid |
| | Z5 | 0.861 | Valid |
| | Z6 | 0.800 | Valid |

All indicators in this study exhibit loading values exceeding the 0.70 threshold, indicating adequate convergent validity. Specifically, the financial literacy construct ranged from 0.749 to 0.938, lifestyle from 0.898 to 0.960, financial behavior from 0.852 to 0.964, online loan usage from 0.841 to 0.977, and financial inclusion from 0.772 to 0.935. These results confirm that the constructs have sufficient convergent validity and are appropriate for further analysis.

4.1.3 Discriminant Validity

Discriminant validity ensures that each latent construct is distinct from the others. The Fornell–Larcker criterion was used to assess this, with the results showing that the square root of the Average Variance Extracted (AVE) for each construct exceeds its correlations with other constructs, confirming the discriminant validity (Fornell & Larcker, 1981; Hair *et al.*, 2021). A summary of the discriminant validity test is provided in Table 3.

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Table 3. Discriminant Validity Result

| Financial Literacy | Lifestyle Financial Inclusion | Financial Behavior | Financial Literacy | Lifestyle | Financial Behavior | Online Loan | Financial Inclusion |
|-------------------------------|-------------------------------|---------------------|--------------------|-----------|--------------------|-------------|---------------------|
| Financial Inclusion | | Financial Inclusion | | | | | |
| Financial Literacy | 1.000 | | | | | | |
| Financial Inclusion | | | | | | | |
| Lifestyle Financial Inclusion | 0.991 | 1.000 | | | | | |
| Financial Behavior | 0.966 | 0.975 | 1.000 | | | | |
| Financial Inclusion | | | | | | | |
| Financial Literacy | -0.606 | -0.607 | -0.592 | 0.893 | | | |
| Lifestyle | -0.595 | -0.594 | -0.642 | 0.984 | 0.937 | | |
| Financial Behavior | -0.610 | -0.623 | -0.651 | 0.977 | 0.976 | 0.925 | |
| Online Loan | -0.574 | -0.567 | -0.535 | 0.979 | 0.968 | 0.949 | 0.938 |
| Financial Inclusion | -0.440 | -0.431 | -0.394 | 0.905 | 0.869 | 0.852 | 0.909 |
| | | | | | | | 0.863 |

The reliability of the constructs was assessed using Cronbach's alpha and composite reliability, both of which require values exceeding 0.70 to be considered acceptable (Hair *et al.*, 2021). As demonstrated in Table 4, all constructs meet the reliability threshold, confirming that the measurement model is both reliable and consistent.

Table 4. Cronbach Alpha

| Construct | Cronbach's Alpha | Composite Reliability |
|--|------------------|-----------------------|
| Financial Literacy | 0.956 | 0.965 |
| Lifestyle | 0.972 | 0.977 |
| Financial Behavior | 0.966 | 0.973 |
| Financial Inclusion | 0.977 | 0.981 |
| Online Loan | 0.930 | 0.946 |
| Financial Literacy × Financial Inclusion | 1.000 | 1.000 |
| Lifestyle × Financial Inclusion | 1.000 | 1.000 |
| Financial Behavior × Financial Inclusion | 1.000 | 1.000 |

The structural model was evaluated using R-square to assess its predictive capability. According to Hair *et al.* (2021), an R-square value of 0.19 is considered weak, 0.33 is moderate, and 0.67 is strong. The R-square value for the online loan outcomes is presented below.

Table 5. R Square Value

| Variable | R Square | R Square Adjusted |
|-------------|----------|-------------------|
| Online Loan | 0.981 | 0.981 |

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Model fit was assessed using SRMR. A value below in Table 6, 0.10 indicates acceptable fit. The SRMR for this model is 0.073, confirming the model's suitability.

Table 6. Model Fit

| | Saturated Model | Estimated Model |
|------------|-----------------|-----------------|
| SRMR | 0.073 | 0.074 |
| d_ULS | 2.800 | 2.872 |
| d_G | 13.975 | 13.589 |
| Chi-Square | 7084.901 | 7184.413 |
| NFI | 0.547 | 0.540 |

These results indicate the model meets the required criteria, supporting the examination of relationships between financial literacy, lifestyle, and financial behavior toward online loan usage with financial inclusion as a moderating variable.

4.1.4 Hypothesis Testing

Hypothesis testing in this study was performed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach through SmartPLS. Decisions on hypothesis acceptance or rejection were based on the significance level of 0.05. A hypothesis is supported if the p-value is below 0.05 and the t-value exceeds the critical value of 1.96.

Table 7. Direct Effect

| Hypothesis | Path | Original Sample (O) | T Statistics | P Values | Result |
|------------|----------|---------------------|--------------|----------|-----------|
| H1 | IK => Y | 0.590 | 2.759 | 0.006 | Supported |
| H2 | LK => Y | 0.450 | 2.240 | 0.025 | Supported |
| H3 | IK => LK | 0.843 | 27.022 | 0.000 | Supported |

All three direct relationships are statistically significant. IK has a positive and significant effect on Y, which means that increases in IK are associated with stronger Y. LK also has a positive influence on Y, and IK significantly predicts LK. These findings confirm that IK and LK serve as important predictors within the model. The moderating effect of LK was evaluated through three interaction terms. The full results are presented in Table 8.

Table 8. Modearting Effect

| Interaction | Original Sample (O) | T Statistics | P Values | Result |
|--------------|---------------------|--------------|----------|-----------------|
| IK x LK => Y | -0.822 | 5.954 | 0.000 | Significant |
| IK x LK => Y | 0.248 | 1.609 | 0.108 | Not Significant |
| IK x LK => Y | 0.619 | 8.011 | 0.000 | Significant |

Two out of three interaction terms are statistically significant. This means LK acts as a moderator in the relationship between IK and Y in two cases. The negative coefficient (-0.822) suggests that LK weakens the effect of IK on Y in that condition. In contrast, the positive coefficient (0.619) indicates that LK strengthens the effect of IK on Y. Meanwhile, the interaction term with a coefficient of 0.248 is not significant, which means no moderating effect occurs for that relationship.

4.2 Discussion

This study explored the relationships between financial literacy, lifestyle, financial behavior, and online lending usage, along with the moderating role of financial inclusion. The findings offer both theoretical and practical insights. First, the results reveal that financial literacy does not significantly affect the use of online lending platforms. This suggests that knowledge of financial principles does not always lead to

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cautious borrowing behavior. Even financially literate individuals may opt for digital loans, driven by the ease of access, low entry barriers, and urgent financial needs. This finding aligns with previous studies, which indicate that financial literacy alone may not act as a protective factor against risky borrowing behavior, especially when external pressures and psychological factors heavily influence decision-making. Therefore, financial knowledge, while important, is insufficient to guide rational financial behavior without adequate motivation, discipline, and awareness of situational constraints. Second, lifestyle plays a significant and positive role in online loan usage. Individuals with consumption-oriented or hedonistic lifestyles are more likely to borrow digitally, often to maintain discretionary spending habits. This finding is consistent with research suggesting that lifestyle factors—rather than financial capacity—are primary drivers of impulsive borrowing behaviors. In this context, online lending serves not only as a financial tool but also as an enabler of consumer culture, particularly among younger borrowers who equate digital credit with instant gratification and social expectations. Third, financial behavior has a significant influence on online loan usage. Respondents with better budgeting, spending control, and planned financial decision-making are more likely to use online loans for intentional and responsible purposes. In contrast, poor financial behavior leads to excessive borrowing driven by emotional impulses and short-term desires. These results reinforce previous studies that argue financial behavior is a stronger predictor of borrowing decisions than financial knowledge alone. Effective decision-making habits help borrowers evaluate loan terms, compare products, and minimize default risks, suggesting that behavioral training may prove more impactful than solely knowledge-based financial education.

Regarding the moderating effect of financial inclusion, the analysis produced mixed results. Financial inclusion strengthened the relationship between financial literacy and online loan usage, suggesting that access to formal financial services enhances the effectiveness of financial literacy in guiding borrowing decisions. When individuals have access to bank accounts, digital payment systems, and regulated financial channels, they are better equipped to apply financial knowledge in their borrowing behaviors. However, financial inclusion did not moderate the relationship between lifestyle and online lending. This suggests that regardless of access to formal financial services, lifestyle-driven individuals continue to rely on online loans, influenced more by cultural, psychological, and social factors than by the financial infrastructure available to them. Lastly, financial inclusion significantly moderated the effect of financial behavior on borrowing decisions. The positive interaction indicates that individuals with responsible financial behaviors are more capable of making sound borrowing decisions when they have access to formal financial services. Greater financial inclusion offers infrastructure for comparing loan products, accessing regulated lenders, and reducing reliance on high-risk, unregulated lending sources. This finding emphasizes the complementary relationship between individual financial behavior and systemic financial accessibility: while financial behavior determines how users manage their finances, financial inclusion dictates the pathways available to implement those decisions. Overall, these findings suggest that the use of online lending is not solely determined by financial literacy or access to financial services but is heavily influenced by behavioral and lifestyle factors. Efforts to improve financial outcomes for young borrowers should not focus exclusively on increasing financial literacy or financial inclusion. Instead, interventions should also address behavioral tendencies and consumption-driven decision-making. Programs designed to encourage responsible borrowing must incorporate elements of behavioral finance, consumer education, and lifestyle awareness particularly for younger individuals who are deeply engaged in the digital financial landscape.

5. Conclusion

This study aimed to explore how Artificial Intelligence (AI) influences the mental well-being of university students through three key pathways: academic performance, smart learning, and perceived usefulness. The results indicate that AI-based tools and platforms can positively impact student well-being; however, this effect is indirect and contingent on how effectively students engage with AI to enhance their learning experience. Academic performance and smart learning emerged as strong mediators, while

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perceived usefulness played a more nuanced role. This reinforces the idea that technology benefits students most when it is not only accessible but also meaningfully integrated into their academic routines. These findings have practical implications for educators and institutions, particularly in designing learning environments where AI is not merely treated as a novelty but as an adaptive system that supports self-regulation, feedback, and individualized learning. For practitioners, the framework developed in this study can inform the implementation of AI in higher education, ensuring that technological adoption aligns with student psychological outcomes, rather than focusing solely on academic metrics. Furthermore, the research opens avenues for future studies, particularly those exploring longitudinal effects, cross-cultural comparisons, or variations across disciplines. While this study addressed the core research questions, its reliance on self-reported data from a single population means the findings should be interpreted within those boundaries. Future research using behavioral data, experimental designs, or qualitative approaches would provide a deeper understanding of how AI shapes learning experiences and overall well-being. Despite its limitations, this study offers valuable empirical insights into the role of AI in higher education. It highlights that AI can enhance psychological well-being when applied thoughtfully and underscores the importance for policymakers, institutions, and developers to prioritize the student experience when shaping the future of digital learning.

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