# FACTORS AFFECTING EDUCATIONAL LOAN DEPENDENCY IN ASEAN

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**Abstract.** The challenges concerning the stability of household finances and the sustainable future of national student loan programs have emerged due to the growing dependence on education loans that have resulted from the escalating cost of education in the ASEAN regions. Focusing on Malaysia and Thailand, this paper investigates the dominant variables that influence the dependence on education loans in ASEAN, which include household income, tertiary education enrollment, the rates of poverty, unemployment, and inflation. This research uses the empirical approach through multiple regression analysis to determine the connecting factors of dependency on educational loans and their socioeconomic and macroeconomic variables based on annual panel data ranging from 1997 to 2022. Some of the reliable secondary sources of the data collected come from World Bank, Department of Statistics of Malaysia, PTPTN Annual Reports and the documents issued by the Thailand Student Loan Fund. Some of the tests on preliminary research which ensure the reliability of the model come from descriptive statistics, correlation tests as well as diagnostic tests. The knowledge from this study would benefit policymakers, providers of education loans and post-secondary educational institution policymakers as they attempt to develop a sustainable financial structure for post-secondary education and improve student financial aid structures to reduce the excessive burden of loans taken by many post-secondary students.
**Keywords**: *educational loan, financial aid and poverty, educational financial aid, Malaysia, Thailand*

## Introduction

An educational loan is a form of debt utilized to finance education, particularly at the higher education level. Either the student or the parents may apply for the loan. Government bodies and private lenders, including commercial banks, also offer education loans. An education loan also known as a student loan, is a type of financial assistance that pays for tuition, housing, travel, and various educational costs. It enables students to seek higher education without immediate financial pressure. Repayment usually starts post-graduation, frequently featuring adaptable terms. The graph from (Yeap, 2023; Suratman et al., 2022) shows the swift rise in total debt backed by the Malaysian government for PTPTN student loans between 2008 and 2022. In 2008, the debt was roughly RM 11 billion, increasing significantly to about RM 24.2 billion in 2012 and RM 29.2 billion in 2013, then reaching nearly RM 40 billion by 2016 and staying at similar amounts until June 2022. The continuing elevated debt levels imply that the problem is structural instead of fleeting, indicating difficulties in the sustainability of the loan system and the possible fiscal consequences for public resources. The graph highlights the significance of comprehending the elements influencing education loan acceptance and repayment, as well as the necessity for

policies that guarantee fair access to higher education while sustaining the long-term viability of the PTPTN loan initiative.

Education loans are essential for increasing access to higher education, especially for students from low-income backgrounds. Nonetheless, issues like repayment problems, loan defaults and inconsistent access indicate that the existing systems might not completely fulfil their social and economic objectives (Boonchai, 2022). This study examines the elements influencing the uptake of education loans such as household income, tertiary education enrollment, poverty rate, unemployment rate and inflation rate to determine if these loan programs truly enhance equity and social mobility. Significant student debt can affect graduates' job decisions, economic stability and future financial habits, while low repayment levels threaten the viability of national loan programs (Johnjun and Supanut, 2022)

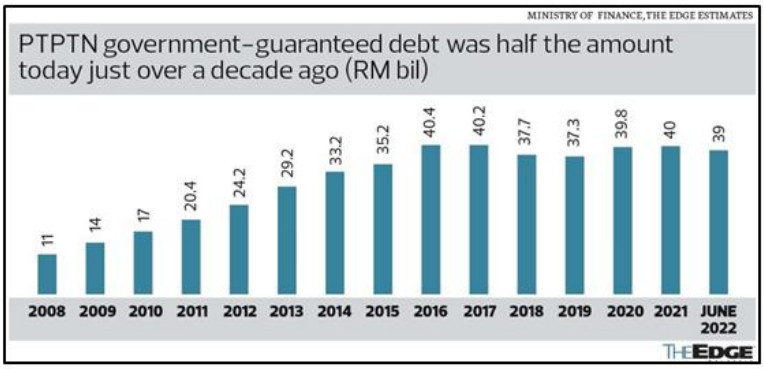


***Figure 1.*** *Growth of PTPTN student loan debt in Malaysia, 2008–2022.*

## *Literature review*

### *Human capital theory and education loan dependency*

Educational loan dependency signifies the dependence of students or families on loans to finance their higher education. Educational loans are financial resources that pay for tuition, housing, travel and various educational expenses. The increasing dependence on education loans has gained notice as it influences students' financial habits and economic stability after graduation. Human Capital Theory, introduced by (Becker, 1975) provides a fundamental framework for understanding individuals' decisions to invest in education. The theory posits that education is a form of investment in human capital, where individuals incur short-term costs such as tuition fees, living expenses and study materials in anticipation of long-term returns which include higher earnings, improved employability and increased social mobility. From this perspective, the decision to pursue higher education is driven by the expectation that the future benefits of education outweigh the immediate financial burden. Human Capital Theory thus supports the present research by offering a logical explanation of why students choose to finance their studies through loans when faced with immediate cost barriers but positive expectations regarding future returns.

### *Rational choice theory and education loan dependency*

Rational Choice Theory (RCT) (Opp, 2020), widely applied in economics and social sciences, posits that individuals make decisions by systematically evaluating the costs,

benefits and potential risks associated with each available option. According to this theory, individuals are assumed to behave rationally by choosing the option that maximizes their personal benefit while minimizing cost or loss. In the context of education financing, RCT suggests that students carefully assess the financial implications of taking an education loan, including the repayment requirements, interest rate and long-term impact on their economic wellbeing. RCT provides an important lens for understanding education loan dependency because it explains borrowing as a deliberate and calculated financial decision. When the cost of higher education is high and alternatives such as savings, family contributions or scholarships are insufficient, students may determine that taking an education loan is the most rational strategy to achieve their educational goals. Overall, RCT supports the dependent variable of the present study by conceptualizing education loan dependency as an outcome of intentional and rational financial decision-making.

### *Household income*

Household income is a critical aspect in the funding capacity of students to fund higher education. It is true that when families have low household income the students have higher chances of dependency on educational loan to fund their tuition fee, accommodation and other living costs (Mulyaningsih et al., 2025). In the ASEAN regions, such as in Malaysia and Thailand, the increase in household income has failed to match the growth in the cost of obtaining tertiary education, posing a financing challenge to students and making them become more dependent on loans (World Bank, 2024). Empirical data shows that learners in low-income families are more likely to assume more educational debt to acquire the tertiary education (Zulkifli et al., 2021). As an example, Malaysian families in the bottom 40 percent (B40) income table frequently must take PTPTN loans to finance the education of their children (Tok and Cheah, 2024). Although the patterns are comparable among the less affluent families in Thailand depend on governmental or personal loan programs, the situation is the same elsewhere. In addition, large levels of household debt may adversely affect the ability of students to pay off and future financial sustainability. Reliable income families are likely to find it difficult to cover loan payments, which may slow down the financial self-sufficiency of graduates and shrink the consumption rate of households (Tok and Cheah, 2024).

H1: There is a positive relationship between household income and educational loan dependency.

### *Tertiary education enrolment*

Students are often unable to pursue tertiary education due to several financial constraints. As students' enrolment decisions are very closely related to gaining access to financial aid, it becomes very necessary for tertiary education to be taken into consideration in this context. Although these phenomena occur on a global scale, they are especially relevant to developing and middle-income countries like Malaysia and Thailand, where there is a lack of public support for higher education. Based on higher learning institutions, studies suggest that many students greatly depended on PTPTN loans to provide their living costs as well as tuition fees (Hamid, 2021). Similarly, the student loan programs offered in Thailand support students by acting as a source of

funding for students with limited resources within their households. Evidence suggests that students confident about their college loans will complete their education, but others concerned about taking college loans may defer enrolment (Ab Hamid et al., 2024). The study above provides important insights into student behavior that are of key concern to the Malaysian and Thailand education systems, where fears about graduate employability and student debt remain prevalent despite more extensive research worldwide. In general, studies have indicated that the decision to enroll and the dependency on student loans are impacted by social, psychological, and economic factors, and the link between the educational loan dependency and tertiary education enrolment is highlighted.

H2: There is a positive relationship between tertiary education enrolment and educational loan dependency.

***Poverty rate***

Poverty rate is a significant factor in determining educational loan dependency in education financing in that financially weak households opt more to borrow to finance their education spending. Likewise, (Disney et al, 2023) also discover that poverty constrained households are highly dependent on formal credit because they have inadequate income and access to other financial resources. This interdependence on borrowing behavior gives solid conceptual backing to the fact that there is a positive correlation between poverty rate and the dependency on educational loans as education loans become a means that is important in the household that is in a constant financial predicament. Besides that, the financial strain caused by poverty undermines the capacity of households to cover education-related costs without any outside support, thus enhancing the dependency on loans as a means of financing. This is especially applicable in the ASEAN countries where income inequality and cost of living disparities remain in the way of financial resilience of households. This weakness supports the anticipation that the greater the poverty levels, the greater the educational loans dependency.

H3: There is a positive relationship between poverty rate and educational loan dependency.

***Unemployment rate***

Unemployment is defined by the Bureau of Labor Statistics as people who do not have a job, have actively looked for work in the past four weeks, and are currently available for work (Agboola et al., 2018). Studies on developing economies show that unemployment significantly affects financial decisions and debt accumulation, especially among young graduates who lack stable income sources (Azolibe et al., 2022). Youth unemployment limits the ability of graduates to achieve financial independence, making educational loans a long-term financial burden rather than a temporary support mechanism. In addition, empirical evidence from Kenya indicates a strong relationship between unemployment and non-performing educational loans, highlighting unemployment as a critical determinant of educational loan sustainability (Kipkemei Koech, 2021). All previous studies consistently find a positive relationship because higher unemployment reduces household income while simultaneously

encouraging greater participation in education, resulting in increased dependency on educational loans as a primary financing source.

H4: There is a positive relationship between unemployment rate and educational loan dependency.

### *Inflation rate*

According to empirical studies, growth in prices of essential items such as food, accommodation, transportation and utilities increase the cost of living among students significantly. Such financial strains tend to make students pursue other funding options such as taking part-time jobs or education loans to sustain their educations (Zulkifli, 2022). With the current inflation, the real household income reduces, and the families can no longer self-finance the education costs. Recent studies further show that inflation has a direct impact on the cost of higher education on its own. This highlights how inflation increases the cost of education fees through higher tuition-related and education-related expenses, increasing the financial strain on the students and households (Levine, 2023). As purchasing power declines, the difference between the cost of education and available financial resources in households grows, bringing in external financing options in the form of education loans.

H5: There is a negative relationship between inflation rate and educational loan dependency.

## Materials and Methods

This study uses panel data from 1997 to 2022 covering two ASEAN countries, Malaysia and Thailand. The data combines both cross-sectional and time-series elements, allowing comparison across countries over time. These countries are selected due to their similar centralized student loan systems and comparable socioeconomic structures. Secondary data for the independent variables namely household income, tertiary education enrollment, poverty rate, unemployment rate, and inflation rate are obtained from the World Bank database. Data on educational loan dependency are collected from official national sources, namely the Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN) for Malaysia and the Thailand Student Loan Fund (SLF) for Thailand, which are the main institutions managing student loans in their respective countries. The regression equation for this study is as follows: $\ln(ELD) = \beta 0 + \beta 1 \ln(HI) + \beta 2 (GER) + \beta 3 (PR) + \beta 4(UR) + \beta 5 (INF) + \varepsilon$ Where, ln (ELD) = Natural logarithm of Educational Loan Dependency, ln (HI) = Natural logarithm of Household Income, GER = Gross Enrollment Ratio for Tertiary Education Enrollment, PR = Poverty Rate (%), UR = Unemployment Rate (%), INF = Inflation Rate (%), $\beta 0$ = Constant term, $\beta 1$, $\beta 2$,…= Coefficient values, $\varepsilon$ = Error term (*Table 1*).

***Table 1***. *Measurement of variables.*

| Variable | Proxies | Notations | Measurements | Sources of Measurement |
|---|---|---|---|---|
| Educational Loan Dependency (Dependent Variable) | Educational Loan Dependency Ratio | ELD | ELD = Outstanding Student Loan / GDP | |
| Household Income | Household Income (%) | HI | HI = ln(Household Income) | World Bank (2023) |
| Tertiary Education Enrolment | Gross Enrolment Ratio | GER | GER = (Total Tertiary Enrolment / | |

| | | | | |
|---|---|---|---|---|
| Poverty Rate | Poverty Rate (%) | PR | Population of Official Tertiary Education Age Group) × 100 PR = (Population Below National Poverty Line / Total Population) × 100 | |
| Unemployment Rate | Annual Unemployment Rate (%) | U | U = (Unemployed Individuals / Total Labor Force) × 100 | Kipkemoi Koech (2021) |
| Inflation Rate | Consumer Price Index | INF | $INF = [(CPI_t - CPI_{t-1}) / CPI_{t-1}] \times 100$ | World Bank (2024) |

## Results and Discussion

Prior to the analysis of multiple regression model, two preliminary tests which are descriptive statistics analysis and correlation coefficient matrix analysis and several diagnostic tests will be performed.

### *Descriptive statistics analysis*

Educational loan dependency presents a mean of 3348.63 paired with a standard deviation of 1227.56. Scores extend from a low of 219.04 to a high of 6093.47. The maximum value suggests periods of higher loan demand, possibly due to rising education costs or economic disruptions such as COVID-19 pandemic while the minimum value reflects periods of lowering borrowing, which could be explained by the improvement of the household financial conditions or the increased access to other financing such as scholarships. The relatively high standard deviation of 1227.56, which implies a high dependence of educational loans over the years, and thus, a difference between economic trends, changes in policies and funding of education.

***Table 2***. *Descriptive statistics analysis.*

| Variable | Mean | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|
| ELD | 3348.63 | 1227.56 | 219.04 | 6093.47 |
| HI | 3.71 x 1011 | 2.03 x 1011 | 7.19 x 1011 | 8.89 x 1011 |
| GER | 38.46 | 8.43 | 19.04 | 53.73 |
| PR | 12.53 | 11.27 | 1.70 | 42.3 |
| U | 2.34 | 1.25 | 0.25 | 4.64 |
| INF | 2.30 | 1.90 | -1.14 | 7.99 |

### *Correlation matrix and VIF*

Based on *Table 3*, the correlation matrix indicates that all correlation coefficients among the independent variables are below the threshold value of 0.90, suggesting a low likelihood of multicollinearity. Educational loan dependency (ELD) is positively correlated with household income (HI) and tertiary education enrolment (GER), with correlation coefficients of 0.250 and 0.506, respectively. The strongest positive correlation is observed between household income and tertiary education enrolment (0.764), indicating a moderate to strong positive relationship. On the other hand, unemployment (U) shows a moderate negative correlation with tertiary education enrolment (-0.618) and household income (-0.476). Inflation (INF) exhibits relatively weak correlations with all other variables, ranging from -0.238 to 0.190. Overall, the correlation coefficients are weak to moderate in magnitude, indicating that the variables do not exhibit strong linear relationships with one another. This suggests that multicollinearity is unlikely to be a serious concern in the model. To further verify the

absence of multicollinearity, the Variance Inflation Factor (VIF) test was conducted. The VIF values for all independent variables range from 1.13 to 5.02. Although the VIF value for tertiary education enrolment (GER) is 5.02, it remains close to the commonly accepted threshold and does not indicate severe multicollinearity. The remaining variables, namely household income (HI), poverty rate (PR), unemployment (U), and inflation (INF), record VIF values of 3.87, 1.17, 1.87, and 1.13, respectively, which are well below the critical level. Therefore, the VIF results confirm that there is no serious multicollinearity problem among the explanatory variables, and all variables are suitable for inclusion in the regression model.

***Table 3***. *Correlation coefficient matrix analysis.*

| Category | ELD | HI | GER | PR | U | INF | VIF |
|---|---|---|---|---|---|---|---|
| ELD | 1.00 | 0.250 | 0.506 | -0.105 | -0.079 | -0.182 | NA |
| HI | | 1.00 | 0.764 | -0.184 | -0.476 | -0.183 | 3.87 |
| GER | | | 1.00 | 0.017 | -0.618 | -0.238 | 5.02 |
| PR | | | | 1.00 | -0.273 | 0.190 | 1.17 |
| U | | | | | 1.00 | -0.000 | 1.87 |
| INF | | | | | | 1.00 | 1.13 |

## *Multiple regression analysis*

Based on the OLS regression results in *Table 4*, household income is found to be statistically insignificant (t = 0.369, p = 0.714), indicating that it does not have a direct effect on educational loan dependency when other variables are controlled. Tertiary education enrollment is statistically significant at the 1 percent level (t = 3.099, p = 0.003) and shows a positive relationship, suggesting that higher enrollment leads to greater reliance on educational loans. Similarly, the unemployment rate is also significant (t = 2.859, p = 0.006) with a positive coefficient, implying that rising unemployment increases educational loan dependency. In contrast, poverty rate (t = 1.063, p = 0.293) and inflation (t = -0.286, p = 0.776) are not statistically significant, indicating that their direct effects are not supported in the model. In terms of model performance, the regression is statistically significant, as shown by the F-statistic (p = 0.000042), confirming that the independent variables jointly explain variations in educational loan dependency. The model has an R-squared value of 0.442 and an adjusted R-squared of 0.382, indicating that approximately 38–44 percent of the variation in educational loan dependency is explained by the included variables, reflecting a moderate level of explanatory power. However, the Durbin–Watson statistic of 0.670 suggests potential positive serial correlation in the residuals, which should be noted when interpreting the robustness of the estimates.

***Table 4***. *The OLS regression analysis.*

| Dependent Variables Independent Variables | Coefficient | t-statistics | Prob. |
|---|---|---|---|
| Household Income | 0.070068 | 0.368726 | 0.7140 |
| Tertiary Education | 0.022755 | 3.098949 | 0.0033 |
| Poverty Rate | 0.002817 | 1.063079 | 0.2933 |
| Unemployment | 0.086403 | 2.859094 | 0.0064 |
| Inflation | -0.004442 | -0.286316 | 0.7759 |
| R-squared | 0.442194 | | |
| Adjusted R-squared | 0.381563 | | |
| F-statistics | 7.293193 | | |
| Prob (F-statistic) | 0.000042 | | |
| Number of observations | 52 | | |
| Durbin-Watson Statistics | 0.670530 | | |

## Results and Discussion

The findings of this study indicate that educational loan dependency in ASEAN, particularly in Malaysia and Thailand, is largely influenced by structural factors rather than macroeconomic conditions. Tertiary education enrolment and unemployment rate are found to be statistically significant determinants. The positive relationship between enrolment and loan dependency suggests that as access to higher education expands, the demand for financial support increases, consistent with Human Capital Theory, where individuals invest in education expecting future returns. Similarly, higher unemployment increases reliance on loans due to weaker income stability and job prospects. In contrast, household income, poverty rate, and inflation are not statistically significant, suggesting that educational loans are no longer confined to lower-income groups but are increasingly utilised across different socioeconomic levels.

## Conclusion

In conclusion, the study demonstrates that educational loan dependency is more closely associated with higher education expansion and employment conditions than with traditional economic indicators. These findings carry important implications for policymakers and stakeholders. Governments should prioritise improving graduate employability and strengthening income-contingent repayment schemes to enhance the sustainability of loan systems and reduce default risks. Education loan providers should adopt more flexible repayment structures aligned with borrowers' financial capacity, while higher education institutions should expand alternative funding options such as scholarships and grants to reduce excessive reliance on loans. Expanding the scope to include more ASEAN countries and micro-level data would provide deeper insights into borrowing behaviour and long-term financial outcomes.

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## Conflict of interest

The authors confirm that there is no conflict of interest involved with any parties in this research study.

## REFERENCES

[1] Ab Hamid, H. (2021): Financing higher education in Malaysia: PTPTN and issues. – Preprint, Nagoya Universityc 17p.
[2] Ab Hamid, M.H., Ariffin, A.F., Yusri, M.Y. (2024): Assessment of factors influencing students' decision after secondary school: A study on the declining enrollment trend in tertiary education. – International Journal of Modern Education 6(21): 496-506.
[3] Agboola, S., Musa, I., Ibrahim, Z. (2018): Relationship between educational expenditure and unemployment rate on economic growth in Nigeria. – Education Journal 1(3): 100-110.

[4] Azolibe, C.B., Dimnwobi, S.K., Uzochukwu-Obi, C.P. (2022): The determinants of unemployment rate in developing economies: Does banking system credit matter? – Journal of Economic and Administrative Sciences 41(1): 300-319.
[5] Becker, G.S. (1975): Human capital: A theoretical and empirical analysis, with special reference to education. 2nd edition. – National Bureau of Economic Research, New York 268p.
[6] Boonchai, T. (2022): The study of factors influencing education loan granting and repayment at Rajabhat Universities in Northern Thailand. – Community and Social Development Journal 23(1): 1-17.
[7] Disney, R., McKay, A., Shabab, C.R. (2023): Household inequality and remittances in rural Thailand: A life-cycle perspective. – Oxford Economic Papers 75(2): 418-443.
[8] Johnjun, A., Supanut, A. (2022): Behavioral financial and loan repayment plan on Student Loan Fund: Case study in borrower's Pibulsongkram Rajabhat University. – Rajapark Journal 16(48): 234-248.
[9] Koech, B.K. (2021): Relationship between unemployment in Kenya and non-performing loans at Higher Education Loans Board. – Thesis, University of Nairobi, Kenya 56p.
[10] Levine, P. (2023): Inflation affects the price of everything-including a college education. – Brookings Institution 5p.
[11] Mulyaningsih, T., Miranti, R., Dong, S., Suryandari, R.T. (2025): Why are low-income eligible students reluctant to apply for financial aid? An empirical study from Central Java, Indonesia. – Asia Pacific Education Review 26(1): 247-261.
[12] Opp, K.D. (2020): Rational choice theory and methodological individualism. – In: Kivisto, P. (ed.) The Cambridge Handbook of Social Theory, Cambridge University Press, Cambridge 23p.
[13] Suratman, E., Mayudi, G., Hayet (2022): Impact of inflation and exchange rate on ASEAN income inequality. – International Journal of Business and Society 23(1): 390-403.
[14] Tok, H.L., Cheah, Y.K. (2024): Factors influencing students' cost of living: Evidence from Malaysian universities. – International Journal of Banking and Finance 19(1): 107-132.
[15] World Bank (2024): Inflation, consumer prices (annual %) – Malaysia. – World Development Indicators, World Bank 18p.
[16] World Bank (2023): Tertiary education. – World Bank, Education and Skills 1p.
[17] Yeap, C. (2023): The State of the Nation: PTPTN student debt an example of structural problem allowed to snowball. – The Edge Malaysia Weekly 1p.
[18] Zulkifli, I. (2022): How inflation affects Malaysian university students. – Cilisos 1p.
[19] Zulkifli, N., Bhuiyan, A.B., Haque, T. (2021): Multidimensional deprivation determinants among lower income group households in Selangor, Malaysia. – International Journal of Academic Research in Accounting, Finance and Management Sciences 11(3): 816-836.