**INTERNATIONAL JOURNAL
OF BANKING AND FINANCE**
https://e-journal.uum.edu.my/index.php/ijbf

FACTORS INFLUENCING STUDENTS' COST OF LIVING: EVIDENCE FROM MALAYSIAN UNIVERSITIES

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ABSTRACT

It is widely evident that cost of living among university students are increasing over time. That said, little is understood about factors associated with general expenses among students in Malaysian universities. The present study uses primary survey data (n = 454) to examine the correlates of the total amount of money spent by students in a month. An ordered regression model was used to shed light on factors contributing to different magnitudes of expenses. The explanatory variables consisted of demographic factors, financial knowledge, parental income, peer influence, and personality trait of conscientiousness. Findings from the present study showed that a large proportion of students spent between Ringgit Malaysia (RM) 201 and RM400 per month. Young, male students tended to spend more than older, female students. Expenditure was higher among Chinese students than Malays. Educational levels and income were found to correspond to spending. Having good financial knowledge was

associated with reduced expenditure. Students who were influenced by their peers were likely to indulge in high spending compared to those who were not. These findings have important implications for strategic planning and to assist policymakers, parents, and university authorities in formulating better intervention measures aimed at improving students' spending behaviour, thereby lowering cost of living.

Keywords: Cost of living, expenditure, expenses, students, university.

JEL Code: D0, D1.

INTRODUCTION

Cost of living is commonly referred to as expenses on all necessary goods and services, such as food and beverage, clothing, accommodation, and transportation. When price increases, people need to spend more to purchase the same quantity of goods and services as before, thereby leading to a surge in cost of living. This worrying issue related to the increasing cost of living, including spikes in the price of essential goods, has been fervently discussed lately in Malaysia and throughout the world. The COVID-19 pandemic coupled with the war between Ukraine and Russia are the root cause of this phenomenon (Maurya et al., 2023; Soria et al., 2023). According to data from the International Monetary Fund (2022), the global inflation rate increased from 3.2 percent in 2020 to 8.8 percent in 2022, while in Malaysia, the inflation rate rose from -1.1 percent in 2020 to 3.2 percent in 2022 (IMF, 2022). This appears to have a profound impact on the cost of living among university students (Razak, 2022). A study showed that 41 percent of Malaysians perceived that their cost of living has skyrocketed (Broom, 2021). It is indeed a burden to the people. The rise in cost of living has caused anxiety and stress to people, especially university students, who are without financial means. Students are struggling with the costs of tuition fees, food, rent and utilities (Abdul Latif, 2022). They are even forced to sacrifice their study time to work so as to supplement their daily expenses (Sazali, 2022).

Nowadays, university students' expenses are dissimilar from those in the past because in this era of digitalization, especially after the

Covid-19 pandemic, students need to acquire technological gadgets to attend online classes and obtain electronic learning materials (Segbenya et al., 2022). In addition, most of the university students' expenses go towards the purchase of essential goods which are currently being affected by inflation. Students are sensitive to the price of essential goods, especially food and accommodation, since most of their income sources are from the government and parents (Abdul Jalil et al., 2020). Worse still, some university students are forced to skip their meals due to the large increase in the price of food (Abdul Latif, 2022).

Apart from inflation, there are various factors affecting students' cost of living. These include financial literacy, peer influence, personal and parental income, as well as students' personality. Financial knowledge is important among university students in the sense that it can help to prevent any undesirable financial problems (Yew et al., 2017). Students without a stable income need to be able to discern between essential and unnecessary expenses to avoid overspending. Peer influence could also be a factor that influences students' cost of living (Fairfax County Public Schools, 2022). For instance, students may follow their friends to purchase expensive luxury goods, such as fashionable clothes to have a sense of belonging to the group (Fairfax County Public Schools, 2022). This is deemed as negative peer pressure. Furthermore, personality could affect students' spending behaviour. According to the analyses of over 2 million expenditure records from over 2,000 people, some personality traits can be inferred from how much money people spend on certain goods (Gladstone & Matz, 2019). People who are low in conscientiousness are likely to encounter financial problems and have low self-control (Baumeister, 2022; Zhang et al., 2019). Low self-control students tend to be influenced by their wants rather than their needs (Mustafa, 2017). If students have low self-control and do not control their spending behaviour, they may face over budgeting problems.

In Malaysia, 60 percent of the B40 students, i.e., the low-income students, in public universities face difficulty in paying for their tuition fees (Sani, 2019). Therefore, they may need to work part-time to cover their living expenses (Sani, 2018). This is a worrying phenomenon as it may contribute to hunger issues among students if they do not have enough money to purchase food (Mohd Jamil et al., 2020).

With these problems, students' health and academic performance may be affected (Andrews, 2018). In addition, many students were found to spend a lot of their money on needless pricey products, most notably expensive smartphones with the aim of keeping up with their peers (Sani, 2019). In a nutshell, the surge in the price of goods and students' poor financial management and knowledge are the main factors causing students to experience financial difficulties.

In light of the alarming financial issues faced by students, the present study intends to contribute to the literature by investigating the relationships between students' expenditure pattern and demographic characteristics, financial knowledge, parental income, peer influence, and personality trait of conscientiousness. Having a deep understanding of the factors affecting students' spending behaviour may assist the government in formulating better intervention measures directed toward reducing the cost of living among students. While some of these correlates have been explored in past studies, less is understood particularly concerning university students in Malaysia.

To our knowledge, a study by Omran (2016) is the only published article that examines the determining factors of spending behaviour within a sample of Malaysian university students. While this study provides comprehensive findings, there is still room for enhancement in its methodology. The present study intends to contribute to the literature by making the enhancement in several ways. First, to avoid omitted variable bias, the present study takes into consideration more comprehensive explanatory variables. These variables include demographic factors, financial knowledge, parental income, peer influence, and personality trait of conscientiousness. With the present study's findings, interventionists could better understand which groups of students to focus on. Second, cross-sectional data with a larger sample size is used for in-depth statistical analyses. Hence, more important findings for research and policy planning can be generated. Third, the present study devotes its attention to several large universities which are located at different regions in Malaysia. Although not nationally representative, the data can somewhat reflect the cost of living among students in areas with different urbanization levels. Lastly, the outcome variable of the present study, students' monthly expenditure is formatted as an ordinal variable. Therefore, by using an ordered regression, the present study is capable of shedding light on variables explaining the probabilities of having different magnitudes of expenses.

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INSIGHTS FROM THE LITERATURE

An in-depth review of previous empirical studies related to consumer expenditure found that age, gender, ethnicity, educational level, personal income, financial knowledge, parental income, peer influence, and personality were significant in explaining students' spending behaviour. There are various studies which found that age affected spending behaviour (Kumar, 2014; Omran, 2016; Qazzafi, 2020; Rani, 2014). People of different age groups are likely to have different spending behaviour. For instance, Mohamad et al. (2016) found that adolescents and young adults spent more than their older peers because they had less financial knowledge. Therefore, the present study hypothesizes that younger students tend to spend more compared to older students.

Previous studies pointed to the significant relationship between gender and spending behaviour (Kumar, 2014; Mohamad et al., 2016). Particularly females spent less than males. This may be attributed to the fact that females were more capable of managing their money and wealth when compared with males (Abawag et al., 2019; Dewi, 2022; Nadome, 2014). Moreover, preferences for goods seemed to vary across gender as males preferred more expensive goods, such as electronic gadgets, while females preferred cheaper products, namely clothes and bags (Mohamad et al., 2016). Given these findings, we anticipate female students to spend less than male students.

The association between ethnicity and expenditure behaviour is worth noting. Previous studies consistently found that the amount of money spent by consumers on goods and services depended on their ethnic backgrounds (Abawag et al., 2019; Kumar, 2014; Villanueva, 2017). More specifically, Asian students spent more than African Americans. There was also evidence suggesting that Malay students allocated less money to goods and services compared to their Chinese counterparts (Nadome, 2014). Based on these findings, a significant relationship between ethnicity and expenditure behaviour is expected.

The role of education in expenditure behaviour was explored in numerous empirical studies (Abawag et al., 2019; Kumar, 2014; Mohamad et al., 2016). It was noted that bachelor degree students were observed to have lower spending compared to diploma students. Furthermore, lower-level class students tended to spend more than

upper-level class students as they lacked experience in financial management (Villanueva, 2017). Similarly, Kamis et al. (2021) discovered a negative correlation between education and expenditure. Therefore, we hypothesize that education is negatively associated with monthly expenditure.

A study by Mohamad et al. (2016) showed a profound relationship between personal income and spending patterns. The authors claimed that the higher the income received by students, the more they spent on goods and services. Rani (2014), Niosi (2021) and Qazzafi (2020) provided similar findings that personal income was an explanatory variable of purchasing behaviour. Higher income consumers had higher purchasing power than lower income consumers and consequently were more capable of purchasing expensive products. Therefore, the present study postulates a positive association between income and total expenditure.

Chang et al. (2019) devoted their attention to university students and found that students with good financial knowledge spent less than those without such knowledge. The finding by Chang et al. (2019) concurred with Herawati et al. (2018) who observed that being knowledgeable about finance improved management of personal expenses and investment. Zulfaris et al. (2020) used data of a Malaysian university and likewise found that students tended to spend more wisely if they had better financial knowledge. The significant relationship between financial knowledge and spending behaviour was also evidenced in other Malaysian studies (Chuah et al., 2020; Wong et al., 2022). In light of these findings, we expect students with comprehensive knowledge about finance to spend less in relation to those having poor knowledge.

There appeared to be a positive relationship between parental income and expenditure (Chang et al., 2019). In other words, high parental income encouraged students to spend more. This was simply because parental income was a source of income for students. Numerous studies conducted elsewhere provided similar results (Herawati et al., 2018; Kumar et al., 2022; Nano et al., 2015). Therefore, a hypothesis that parental income is positively associated with spending is maintained in the present study. Peer influence was found to be an important determining factor of expenditure behaviour (Chang et al., 2019). In particular students were likely to have an urge to follow their peers' spending behaviour. As pointed out by Gulati (2017), positive or

negative pressure generated by peers may possess significant impact on students' purchasing decisions. Similar findings were observed by Zulfaris et al. (2020) and Kumar et al. (2022). Given these outcomes, we hypothesize that students who are influenced by their peers tend to spend more than those who are not.

The influence of personality trait of conscientiousness on buying behaviour was evidenced by Udo-Imeh (2015), using Nigerian data. Studies by Gladstone and Matz (2019) and Tarka et al. (2022) added to this finding by suggesting that conscientiousness not only affected expenditure but also savings. Students with low conscientiousness are especially more likely to spend than save. In view of these findings, the present study has come up with a hypothesis that low conscientiousness results in greater expenditure.

Figure 1

Conceptual Framework for Analysing Spending Behaviour among Students
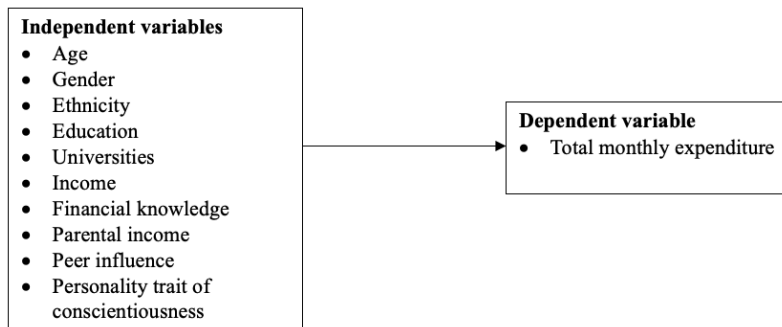
Although past published articles provided insightful findings related to factors associated with expenditure and financial behaviour among students in Malaysian universities, they were several drawbacks (Chuah et al., 2020; Kamis et al., 2021; Mohamad et al., 2016; Wong et al., 2022). First, they focused only on a single university, thus their findings may not be representative. Second, owing to the small sample size, estimated results from these studies may not be precise. Third, the data were collected before COVID-19 and the Russia-Ukraine war, therefore their findings could not reflect the current scenario. The purpose of the present study is to narrow this research gap by using a more robust methodological approach. This includes the use

of a larger sample size and more recent data and focusing on multiple universities. The conceptual framework used in the present study to examine spending behaviour among students is presented in Figure 1.

METHODOLOGY

Data

The present study was a cross-sectional, quantitative research. Primary data collection was done by using pretested, structured questionnaires. The questionnaires were divided into two sections, comprising open-ended and closed-ended questions. The closed-ended questionnaires included dichotomy and ordinal-polytomous questions. Section A pertained to respondents' demographic profiles, such as age, gender, and ethnicity, current year of study, university, monthly income, and monthly expenses. Section B dealt with factors influencing students' cost of living. The questions in Section B focused on financial knowledge, parental income, peer influence, and the personality trait of conscientiousness. All the questions had a five-point Likert scale with responses of 'strongly disagree', 'disagree', 'neutral', 'agree', and 'strongly agree'.

The universities of interest were Universiti Utara Malaysia (UUM), Universiti Malaysia Sarawak (UNIMAS) and Universiti Teknologi Malaysia (UTM). These three universities were selected as they represented three different states in Malaysia, namely Kedah, Sarawak and Johor. Cost of living, degree of urbanization and number of households with high- and low-income backgrounds varied across these states. The inclusion criteria were undergraduate and postgraduate students of all age groups, gender and ethnicity. Owing to budget and time constraints, the present study used non-probabilistic convenience sampling to collect data. A total of 150, 153 and 151 respondents from UUM, UTM and UNIMAS, respectively were surveyed. The survey period was from 16 October 2022 to 21 January 2023. Although the sample was not representative, it was up-to-date and the sample size was adequate for research. When the questionnaires were distributed to respondents for self-administration, the respondents were allowed to seek interpretation from surveyors. In UUM, the selected respondents were provided with a choice of hard copy or online questionnaires, whereas in UTM and UNIMAS,

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only online questionnaires were disseminated due to geographical constraints The questionnaires were developed using Google Forms and were distributed via email, Facebook messenger and WhatsApp. A small pilot study was conducted prior to the distribution of the questionnaires to minimize non-sampling errors.

Variables

The dependent variable of the present study, total monthly expenditure, was formatted as a categorical variable with ordinal outcomes. It was categorized into five levels: ≤RM200, RM201–400, RM401–600, RM601–800, and ≥RM801. This variable was formed based on a question asked in the questionnaire, 'How much is your monthly expenses?' Respondents answered by selecting from one of the five categories. These categories were developed based on the amount of money which the students received from *Perbadanan Tabung Pendidikan Tinggi Nasional* (PTPTN) and scholarships.

Based on our review of the findings from previous studies, the selected independent variables consisted of age, gender, ethnicity, and educational level. Respondents stated their age, and their responses were categorized into four groups: 19–20, 21–22, 23–24 and ≥25 years. In terms of ethnicity, the respondents consisted of Chinese, Indian, Malay, Sabah or Sarawak natives or others. Educational level indicated respondents' year of university study, which were segmented into five categories: Year 1, 2, 3, 4, and postgraduate. The postgraduate category comprised master's degree and Ph.D. In order to compare cost of living in different universities, the selected universities were included as one of the independent variables. Respondents also reported their income when asked 'How much is your total monthly income from all sources?' The possible answers were ≤RM100, RM101–200, RM201–300, RM301–400 and ≥RM401.

In addition, financial knowledge, parental income, peer influence, and personality trait of conscientiousness were treated as independent variables. All these variables were measured using five items with Likert scales and formatted as continuous variables. Each of the items had five values: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). These values were summed and used in the analyses. The maximum value of these variables was 25, whilst the minimum value was 5. The details of the items are presented in Table 2.

Statistical Analysis

A total of 454 respondents were included in the current analyses. According to Sekaran and Bougie (2016), a sample size of slightly less than 500 is appropriate for quantitative research. Prior to estimating regressions, descriptive statistics of all variables were calculated. For categorical variables, frequencies and percentages were presented, while mean and standard deviation were indicated for continuous variables. Since the dependent variable was an ordinal variable, ordered probit regressions were utilized to assess factors correlated with different levels of total expenditure. The marginal effect of each independent variable on the probabilities of spending ≤RM200, RM201–400, RM401–600, RM601–800, and ≥RM801 per month was estimated. The present study developed two regression models to identify the best model explaining student expenses. Model 1 consisted of all demographic variables. Model 2 added the following variables: financial knowledge, parental income, peer influence, and personality trait of conscientiousness. These two models were compared using information on pseudo R-squared and Akaike's information criterion (AIC). Additionally, variance inflation factors (VIFs) were used to detect potential multicollinearities. To ensure no model specification error, link tests by Pregibon (1980) were conducted. The significance level of $p < 0.05$ was selected. Statistical analyses were performed using Stata statistical software (StataCorp, 2019).

RESULTS

The majority of respondents spent around RM201–400 per month (36.1 percent), followed by those with a monthly expenditure of RM401–600 (24.9 percent), ≤RM200 (21.4 percent), RM601–800 (11.7 percent) and ≥RM801 (5.9 percent). Nearly half of the respondents were between 19 and 20 years old (47.1 percent), whilst only a handful were ≥25 years old (2.6 percent). Two-third of the respondents were female (66.3 percent). The ethnic breakdown consisted of 66.7 percent Chinese, 21.4 percent Malays, 6.6 percent Sabah or Sarawak natives, 3.7 percent Indians, and 1.5 percent from other ethnic groups. The sample comprised 47.1, 17.8, 12.8, 19.4 and 2.9 percent of Year 1, Year 2, Year 3, Year 4 and postgraduate students, respectively. The distribution by universities was rather equal. Almost half of the respondents had an income of ≥RM401 (44.3 percent) whilst only a small proportion had incomes of between RM301–400 (11.7 percent) and RM101–200 (11.5 percent) (Table 1).

Table 1

Summary Statistics of Demographic Variables

Variable	Frequency	Percentage
Expenditure (RM)		
≤200	97	21.4
201–400	164	36.1
401–600	113	24.9
601–800	53	11.7
≥801	27	5.9
Age (years)		
19–20	214	47.1
21–22	136	30.0
23–24	92	20.3
≥25	12	2.6
Gender		
Male	153	33.7
Female	301	66.3
Ethnicity		
Chinese	303	66.7
Indian	17	3.7
Malay	97	21.4
Sabah/Sarawak	30	6.6
Others	7	1.5
Education		
Year 1	214	47.1
Year 2	81	17.8
Year 3	58	12.8
Year 4	88	19.4
Postgraduate	13	2.9
University		
UUM	150	33.0
UTM	153	33.7
UNIMAS	151	33.3
Income (RM)		
≤100	75	16.5
101–200	52	11.5
201–300	73	16.1
301–400	53	11.7
≥401	201	44.3

Table 2

Summary Statistics of Financial Knowledge, Parental Income, Peer Influence, and Personality Trait of Conscientiousness Variables

Variable	Mean	Std. dev.
Financial knowledge		
I am good at managing my money.	3.57	0.95
I have a habit of saving regularly.	3.51	1.04
I often plan for future purchases.	3.74	0.96
I constantly update myself with economic and financial news.	3.11	1.07
I can deal with day-to-day financial tasks such as credit and debit cards and tracking expenses well.	3.55	1.00
Total	17.49	3.81
Parental income		
When my parents' income increases, I tend to buy expensive goods.	2.25	1.11
When my parents' income increases, the value of price will not be in my consideration during a purchase.	2.26	1.12
When my parents' income increases, I do not prefer to buy goods that are on sale.	2.25	1.10
When my parents' income increases, I tend to spend more than my usual spending amount.	2.25	1.12
When my parents' income increases, I will purchase necessities which has a relatively higher price.	2.30	1.12
Total	11.31	4.35
Peer influence		
I always seek my friend's opinion before I buy a product.	3.13	1.08
I am always involved in money spending activities with friends.	3.07	1.10
My friends influence my purchases.	2.76	1.16
I always buy the same product that my friends buy.	2.13	0.99
My friends influence me to buy trendy products.	2.18	1.11
Total	13.27	4.24
Conscientiousness		
I pay attention to details.	3.95	0.86
I make plans and stick to them.	3.65	0.92
I finish what I start.	3.81	0.89
I put my mind on the task at hand.	3.83	0.89
I do not need a push to get started.	3.33	1.06
Total	18.57	3.73

On average, respondents gave a rating of 3–4 points for each item in the financial knowledge component, amounting to a total of 17.49 points. The item with the highest point was, 'I often plan for future purchases.' The average points for parental income was 11.31. Each item was given around 2 points by respondents. The mean of peer influence component was 13.27 points. In this component, 'I always seek my friend's opinion before I buy a product' had the highest score (3.13). Among all the components, the average points for personality trait of conscientiousness component was the highest (18.57). 'I pay attention to details' had the highest value, whereas 'I do not need a push to get started' had the lowest value, but both items were in the range of 3–4 points (Table 2). A comparison between Model 1 and 2 found that Model 2 fitted the data better as it had lower AIC and higher pseudo R-squared. Moreover, Model 2 did not have any multicollinearity issue because its maximum VIF was low. In other words, there were no high correlations between age and years of education, and between other variables. Model 2 was also free from specification errors as its prediction squared was highly insignificant. Therefore, statistical inferences were made based on the estimated results of Model 2 (Table 3).

Table 3

Estimated Coefficients for the Ordered Probit Models

Variable	Model 1	Model 2
Age (years)		
19–20[#]	–	–
21–22	-0.349*	-0.352*
	(0.167)	(0.165)
23–24	-0.459	-0.471
	(0.305)	(0.294)
≥25	0.257	0.282
	(0.521)	(0.512)
Gender		
Male[#]	–	–
Female	-0.435*	-0.460*
	(0.117)	(0.117)
Ethnicity		

Variable	Model 1	Model 2
Chinese#	–	–
Indian	0.005	0.263
	(0.249)	(0.252)
Malay	-0.304*	-0.366*
	(0.150)	(0.150)
Sabah/Sarawak	-0.134	-0.028
	(0.209)	(0.219)
Others	0.441	0.578
	(0.550)	(0.577)
Education		
Year 1#	–	–
Year 2	0.384*	0.310
	(0.182)	(0.179)
Year 3	0.563*	0.579*
	(0.226)	(0.221)
Year 4	0.913*	0.845*
	(0.301)	(0.294)
Postgraduate	0.775	0.795
	(0.553)	(0.568)
University		
UUM#	–	–
UTM	0.139	0.182
	(0.130)	(0.130)
UNIMAS	0.230	0.179
	(0.149)	(0.148)
Income (RM)		
≤100#	–	–
101–200	-0.653*	-0.731*
	(0.253)	(0.253)
201–300	-0.173	-0.196
	(0.191)	(0.196)
301–400	0.235	0.243
	(0.198)	(0.203)
≥401	1.088*	1.039*
	(0.190)	(0.192)

(continued)

Variable	Model 1	Model 2
Financial knowledge	–	-0.031
		(0.018)
Parental income	–	0.007
		(0.014)
Peer influence	–	0.039*
		(0.015)
Conscientiousness	–	-0.023
		(0.018)
Pseudo R^2	0.149	0.166
AIC	1174.231	1159.839
Prediction squared	-0.053	-0.045
p-value	0.496	0.489
Maximum VIF	6.470	6.590

Note: Robust standard errors in parentheses. [#]reference groups. *$p<0.05$.

Respondents between 21–22 years old were 7.4, 4.3 and 1.5 percent less likely to spend between RM401–600, RM601–800 and ≥RM801 per month, respectively, than those who were between19–20 years old. They were also 8.6 percent more likely to spend ≤RM200. The probability of spending RM401–600, RM601–800 and ≥RM801 were 2.7–8.7 percent lower among females than males. Also, 9.7 percent and 8.2 percent of females were more likely to spend ≤RM200 and RM201–400 per month, respectively. If respondents were Malays instead of Indians, their probability of having a monthly expenditure of RM401–600, RM601–800 and ≥RM801 were reduced by up to 7.8 percent. These were followed by 4.3–9.3 percent increase in the probability of spending ≤RM200 and RM201–400 among Malay respondents. Compared to Year 1 students, Year 3 and Year 4 students were 10.3–18.3 percent less likely to have monthly expenses of ≤RM200 and RM201–400. Their likelihood of spending RM401–600 and RM601–800 was also higher. Respondents with income of between RM101–200 were 15.6, 7.1 and 2.2 percent less likely to spend RM401–600, RM601–800 and ≥RM801, respectively, than their counterparts having income of ≤RM100. However, compared to the same reference group, the probability of spending RM401–600, RM601–800 and ≥RM801 were 6.6–18.3 percent higher among respondents with income of ≥RM401. Holding all demographic factors constant, an additional score of financial knowledge increased

the probability of spending ≤RM200 by 0.7 percent, while a unit increase in the peer influence variable reduced the likelihood of spending ≤RM200 by 0.9 percent. Peer influence was also positively correlated with the likelihood of having an expenditure of RM601–800 and ≥RM801 (Table 4).

Table 4

Estimated Marginal Effects for the Ordered Probit Model

Variable	Expenditure (RM)				
	≤200	201–400	401–600	601–800	≥801
Age (years)					
19–20[#]	–	–	–	–	–
21–22	0.086*	0.046*	-0.074*	-0.043*	-0.015*
	(0.043)	(0.019)	(0.035)	(0.019)	(0.008)
23–24	0.123	0.049*	-0.100	-0.054	-0.018
	(0.087)	(0.017)	(0.064)	(0.028)	(0.010)
≥25	-0.055	-0.056	0.051	0.042	0.018
	(0.085)	(0.119)	(0.079)	(0.083)	(0.042)
Gender					
Male[#]	–	–	–	–	–
Female	0.097*	0.082*	-0.087*	-0.064*	-0.027*
	(0.023)	(0.026)	(0.022)	(0.019)	(0.010)
Ethnicity					
Chinese[#]	–	–	–	–	–
Indian	-0.052	-0.051	0.048	0.038	0.017
	(0.043)	(0.058)	(0.040)	(0.041)	(0.020)
Malay	0.093*	0.043*	-0.078*	-0.043*	-0.015*
	(0.042)	(0.014)	(0.034)	(0.016)	(0.006)
Sabah/Sarawak	0.006	0.004	-0.006	-0.004	-0.001
	(0.051)	(0.033)	(0.045)	(0.028)	(0.010)
Others	-0.095	-0.132	0.084*	0.093	0.050
	(0.063)	(0.158)	(0.040)	(0.105)	(0.078)
Education					
Year 1[#]	–	–	–	–	–
Year 2	-0.063*	-0.058	0.058	0.045	0.019

(continued)

Variable	Expenditure (RM)				
	≤200	201–400	401–600	601–800	≥801
	(0.033)	(0.039)	(0.030)	(0.028)	(0.014)
Year 3	-0.103*	-0.124*	0.093*	0.090*	0.045
	(0.030)	(0.058)	(0.025)	(0.039)	(0.027)
Year 4	-0.144*	-0.183*	0.122*	0.132*	0.073
	(0.038)	(0.074)	(0.026)	(0.050)	(0.042)
Postgraduate	-0.040	-0.191	0.093*	0.131	0.083
	(0.028)	(0.156)	(0.016)	(0.101)	(0.100)
University					
UUM[#]	–	–	–	–	–
UTM	-0.040	-0.030	0.036	0.025	0.010
	(0.028)	(0.023)	(0.025)	(0.019)	(0.008)
UNIMAS	-0.039	-0.030	0.036	0.024	0.009
	(0.032)	(0.027)	(0.029)	(0.021)	(0.009)
Income (RM)					
≤100[#]	–	–	–	–	–
101–200	0.214*	0.034	-0.156*	-0.071*	-0.022*
	(0.088)	(0.025)	(0.050)	(0.019)	(0.007)
201–300	0.048	0.026	-0.041	-0.024	-0.009
	(0.051)	(0.022)	(0.042)	(0.023)	(0.008)
301–400	-0.050	-0.045	0.046	0.035	0.015
	(0.038)	(0.043)	(0.036)	(0.031)	(0.014)
≥401	-0.224*	-0.165*	0.183*	0.141*	0.066*
	(0.043)	(0.034)	(0.034)	(0.030)	(0.018)
Financial knowledge	0.007*	0.005	-0.006	-0.004	-0.002
	(0.004)	(0.003)	(0.004)	(0.002)	(0.001)
Parental income	-0.002	-0.001	0.001	0.001	0.001
	(0.003)	(0.002)	(0.003)	(0.002)	(0.001)
Peer influence	-0.009*	-0.006*	0.008*	0.005*	0.002*
	(0.003)	(0.003)	(0.003)	(0.002)	(0.001)
Conscientiousness	0.005	0.004	-0.005	-0.003	-0.001
	(0.004)	(0.003)	(0.004)	(0.002)	(0.001)

Note: Robust standard errors in parentheses. [#]reference groups. *$p<0.05$.

DISCUSSION

To the best of our knowledge, the present study is perhaps the first to comprehensively explore factors associated with spending behaviour within a sample of students from different universities in Malaysia. Findings from the present study showed that demographic factors, such as age, gender and ethnicity were correlated with students' monthly expenses. Although financial knowledge and peer influence were found to be important variables, parental income and personality trait of conscientiousness did not have any significant influence on spending behaviour. This insignificant result might be due to the relatively small sample size and could be re-examined in future research.

In terms of age, students aged 21 to 22 years tended to spend less than their youngest counterparts. This finding is consistent with the evidence of Mohamad et al. (2016) and supports our hypothesis that age is negatively associated with monthly expenses. This may be attributed to the fact that older students, who have more experience in managing their budget, have better financial management skills compared to younger students. A likely reason why there is no difference in monthly expenditure between the oldest and youngest age group is that only a very small number of observations in the data belong in the oldest age group. Therefore, to gain a better understanding of age differences in spending behaviour, further studies may be required by increasing the sample size, especially older students as respondents.

Consistent with our hypothesis, gender was found to be associated with student expenditure. Female students particularly spent less than male students. Similar findings were evidenced in previous studies, which showed a negative association between the female gender and expenditure (Abawag et al., 2019; Dewi, 2022; Mohamad et al., 2016; Nadome, 2014; Villanueva, 2017). There are two plausible explanations for this outcome. Firstly, females often have better financial planning than males (Abawag et al., 2019; Dewi, 2022; Nadome, 2014). Furthermore, males are more willing to allocate a large proportion of their budget for expensive goods when compared with females (Mohamad et al., 2016). In terms of policy implication, it is worthwhile for the university authorities to devote their attention to improving the spending behaviour among students with a focus on male students. Male students should be provided with more information related to financial management and advice on not to overspend.

It is worth noting that a significant relationship existed between ethnicity and expenditure behaviour as Malay students had relatively lower expenditure than Chinese students. This interesting outcome concurs with our expectations and Nadome's (2014) finding. Other previous Malaysian studies also found ethnic differences in consumer expenditure behaviour, but they focused solely on health expenditure among the general population (Ang & Cheah, 2023; Cheah et al., 2021). Why Malays spent less than Chinese is not clear because in-depth interviews were not carried out, but culture or religion could be a plausible reason. We assume that owing to religious restrictions, Malays are not like Chinese, who can purchase all sorts of goods and services (Trinh et al., 2020). Therefore, in general, Malays spend less per month. Nevertheless, exploring the reasons in explaining ethnic differences in student expenditure could be a direction for future in-depth qualitative research. In the light of this finding, a well-designed policy directed towards promoting good spending behaviour among Chinese students could be implemented as it is cost-effective. The government could consider using various multilingual mass media in local universities to promote the benefits of establishing good saving habits. Additionally, Chinese spokespersons could be hired to highlight the disadvantages of excessive expenditure.

The present study found that Years 2, 3 and 4 students spent more when compared with Year 1 students. While education was significantly correlated with student expenditure irrespective of age and other demographic factors, its effect contradicted the present study's hypothesis as well as findings from previous studies (Mohamad et al., 2016; Villanueva, 2017), which suggested that higher educational levels led to lower expenditure. One can relate our contradicting finding to the fact that less educated students usually lack confidence in handling financial problems than their better educated peers and therefore spend more cautiously (Mohamad et al., 2016). Another plausible justification is that better educated students may have an inclination to devote a larger share of their spending to leisure and various goods and services (Bailey et al., 2008). In efforts to discourage better educated students from spending too much, the government could take the initiative to cooperate with non-governmental organizations (NGOs) in introducing various financial programmes at numerous local universities. These programmes could include competitions that motivate students to save money. More specifically, in these competitions, cash incentives and awards be given to students who manage to save a lot of money from their PTPTN. This kind of competition needs to be organized frequently

with the aim of providing students at all educational levels, especially Years 2, 3 and 4 students with an opportunity to participate.

In comparing between income groups, only students in the highest income group tended to spend more than those in the lowest income group, supporting the present study's expectation that income was positively associated with student expenditure. Likewise, findings from previous studies showed that monthly general expenses increased with income (Mohamad et al., 2016; Niosi, 2021; Qazzafi, 2020; Rani, 2014). The consumer theory can be applied to explain this phenomenon. Since consumers are trying to maximize their utilities, subject to their budget constraints, a rise in income leads to the budget line shifting outwards, thereby increasing demand for goods and services. As a result, the overall expenditure increases, even though prices of goods remain the same. Although the positive association between income and expenditure evidenced in the present study is not really strong given that not all the income categories are significant, it has important implications for policies and practices. As an intervention strategy aimed at lowering expenditure among high-income students, university authorities could collaborate with student societies on various low-risk investment activities. Students of all income levels, particularly those with a monthly income of RM401 or more are encouraged to participate in these activities to earn extra income through investment. The main purpose of these activities is to reduce students' expenditure on unnecessary goods and services, and enhance students' investment skills and knowledge, which can further improve student spending behaviour.

Financial knowledge was associated with student spending behaviour, but its association was weak as it only had a significant effect on low expenditure. More specifically, students were more likely to spend ≤RM200 if they had good financial knowledge, whereas there was no financial knowledge difference in moderate (RM201–600) and large expenditure (≥RM601) among students. This outcome is somewhat consistent with our hypothesis and findings from previous studies that better financial knowledge lead to less expenditure (Chang et al., 2019; Chuah et al., 2020; Herawati et al., 2018; Wong et al., 2022; Zulfaris et al., 2020). The explanation for this outcome is quite straightforward. Students with a sound understanding of finance are more capable of managing their wealth and less likely to overspend compared with their peers who have poor financial knowledge (Chang et al., 2019). Although this finding is important for policy planning, policymakers need to take note of the insignificant relationship between financial

knowledge and large expenditure. The present study could contribute to policymaking by suggesting that the Ministry of Higher Education Malaysia introduce financial management courses in all bachelor degree programmes throughout the country. These courses could be made compulsory so that students gain adequate financial knowledge to manage their finances.

As expected, peer influence was found to be a significant explanatory factor of student spending behaviour. This is in line with the findings of previous studies that peer influence resulted in increased expenditure among students (Chang et al., 2019; Gulati, 2017; Kumar et al., 2022). According to the conspicuous consumption theory, students tend to be influenced by their peers to consume goods which are not practically useful. A similar way to define this is to say that students are likely to follow their peers' spending behaviour by making non-essential purchases, thus leading to high spending (Chang et al., 2019). Furthermore, students may spend more money if they are involved in many activities with their friends. Therefore, it is crucial for parents to pay close attention to their children's spending behaviour. They need to take extra precaution to ensure that their children are not influenced by their peers and indulge in overspending. Additionally, parents should be instructed to understand the important role of parental involvement in nurturing students' saving habit. This kind of education could be provided through popular social media, such as Facebook, Instagram, and Twitter.

The present study has several limitations. First, although the sample provides up-to-date information on student spending behaviour, it is relatively small and not nationally representative. Nevertheless, to some extent, findings derived from the sample could reflect the current scenario of student expenditure in public universities in Malaysia. Besides, due to the nature of cross-sectional data, the causal effects of financial knowledge, parental income, peer influence, and personality trait of conscientiousness on student expenditure could not be thoroughly explored. Apart from that, self-report bias may occur because of social desirability. There is a possibility that respondents over-reported their financial knowledge and under-reported their parental income. Thus, to minimize these reporting errors, respondents were informed that they would remain anonymous, and that their information was used only for research purposes. Despite these limitations, one of the strengths of the present study is the use of a strong statistical approach and comprehensive data to produce insightful findings which are useful for research and policy planning.

In addition, the present study explored not only the correlations between student expenditure and demographic factors, but also with financial knowledge, parental income, peer influence, and personality trait of conscientiousness. It is recommended that future studies use nationally representative longitudinal data to establish causalities and generate imperative findings. These studies could also provide new findings by considering more demographic variables.

CONCLUSION

Excessive spending is associated with higher cost of living among university students. This may negatively affect students' academic performance and health. The present study is perhaps the first known study to comprehensively explore factors associated with spending behaviour among university students in Malaysia. The findings showed that age, gender, ethnicity, educational level, income, financial knowledge, and peer influence correlated with students' monthly expenditure. Particularly those with high expenditure were more likely to be 19 or 20 years old, male, Chinese, with a good economic background, high level of education, knowledgeable about finance, and inclined to peer influence. These outcomes have crucial implications for cost-of-living control policy in university settings. Educators, parents, and policymakers are advised to put more effort into improving students' financial management behaviour.

ACKNOWLEDGEMENT

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