

Childhood Consumer Experience and the Financial Literacy of College Students in Malaysia

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The purpose of this study was to investigate the impact of personal and family background, academic ability, and childhood consumer experiences on the financial literacy of college students in Malaysia. The sample comprised 2,519 students in 11 public and private colleges in Malaysia. Financial literacy was measured with a 25-item test of financial knowledge. On average, students answered less than half of the questions correctly. Methods of analysis included bivariate t tests, analysis of variance, and multiple regression analysis. The childhood consumer experience of discussing family finances with parents has a substantial positive relationship with financial literacy. Students of Chinese ethnicity, who live on campus, and who attend private colleges are less likely to be financially literate.

Keywords: childhood consumer experience; financial literacy; Malaysian college students

This study of college students' financial literacy is motivated by concern about how young Malaysians obtain knowledge to handle credit and other important aspects of personal finances as the Malaysian economy develops. Malaysians have a variety of cultural and ethnic backgrounds that may affect the process for acquiring financial knowledge from their families, schools, and through diverse childhood consumer experiences. Obtaining better knowledge about specific influences on college students' financial literacy is necessary to design more effective financial education programs. Hence, the main objective is to investigate the impact of personal and family background, academic ability, and childhood consumer experience on financial literacy.

Rapid economic development, since independence in 1957 has brought drastic changes for young Malaysians, including increased income (Economic Planning Unit, 2006) and expansion of consumer markets (Department of Statistics

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Malaysia, 2005). However, the expansion of consumer credit and recent economic troubles suggest the need for better household financial management. Consumer credit card use increased from Malaysian Ringgit (MR) 10.2 million in 2003 to MR 12.8 million in 2006 (Central Bank of Malaysia, 2009a). Data from the Central Bank of Malaysia (2009b) indicated that the numbers of individuals who declared bankruptcy increased from 11,685 in 2001 to 16,251 in 2004.

Malaysian college students became a lucrative consumer market segment as the number of students enrolled in tertiary education tripled between 1999 and 2005 (Department of Statistics Malaysia, 2008). As the standard of living among Malaysians has improved significantly and stimulated changing lifestyles, college students today are granted greater freedom from their parents to make their own shopping and consumption decisions (Kamaruddin & Mokhlis, 2003). Inadequate knowledge of personal finance may increase conspicuous consumption and lead to poor financial management. According to Bodvarsson and Walker (2004), and Lyons (2003, 2004) poor financial management can affect students' academic performance, mental and physical well-being, and even their ability to find employment after graduation. Previous studies in the United States and other countries have shown that college students had inadequate financial knowledge and might have been poor managers of their finances (Chen & Volpe, 1998; Markovich & DeVaney, 1997; Murphy, 2005).

Because the Malaysian consumer market has changed tremendously, the role of parents for monitoring their children's consumption habits has become more critical and parents' characteristics may also be related to the development of their children's financial knowledge and behavior (Clarke, Heaton, Israelsen, & Egget, 2009). Consumer socialization research suggests that much of the consumer behavior among adults is learned during preadult years through the influence of socialization agents (Moschis & Moore, 1984). Thus, what college students have learned and experienced in the past could affect their knowledge of personal finance much more than is currently understood. Furthermore, Malaysia's ethnic diversity and potentially related differences in family experiences suggests a need to understand the impact of ethnic background on college students' financial literacy. A considerable amount of previous research on young Malaysians has been devoted to the impact of ethnicity on academic achievement (Hashim, O'Neil, & Hocevar, 2002; Ismail & Awang, 2008), consumer socialization (Kamaruddin & Mokhlis, 2003), and financial knowledge concerning educational loans (Abu Bakar, Masud, & Md. Jusoh, 2006).

LITERATURE REVIEW

Not much is known about financial knowledge and behaviors among young Malaysians. Therefore, this discussion focuses on literature about college students' financial literacy elsewhere and what has been learned from two studies of Malaysian adolescent consumers.

Childhood Consumer Experience

Danes (1994) investigated parental perceptions of children's financial socialization. Parents were asked at what age they would share information or

become involved with the child in several financial activities. For complex financial activities (such as knowing about insurance, and having their own checking account) most parents believed that children should be engaged at the ages of 15 to 17. More than half of the parents thought children at age 18 or older were ready to be responsible for their own checking account, credit cards, and other personal loans. Hira (1997) studied financial attitudes, beliefs, and behavior of college students from three personal finance classes, supplemented by a state-wide sample for Iowa in the United States. Hira found that individuals express different money behaviors and beliefs because of the different ways in which money was handled in their family. The majority of students indicated that their mother and father were the most important source of influence on money beliefs and attitudes. About one third of the students identified their friends as a strong influence on their money behavior. In terms of family money communication, about two thirds of the students said that finances were never discussed with children in their families.

Personal and Family Background

Past research has commonly found that male college students had higher levels of financial literacy than their female counterparts (Chen & Volpe, 1998, 2002; Markovich & DeVaney, 1997). Murphy (2005) found that undergraduate business majors were more financially literate than nonbusiness majors and that those who were from more educated families scored better than those from less educated backgrounds. The Jump\$tart College Survey (Mandell, 2008) also found that financial literacy was monotonically related to parents' education levels. Other research has demonstrated the importance of controlling for class year (Avard, Manton, English, & Walker, 2005) and the impact of academic abilities to understand how financial literacy varies (Chen & Volpe, 1998; Murphy, 2005).

Abu Bakar et al. (2006) examined students' knowledge and attitudes regarding educational loans in Malaysia. They found that Chinese students and students from a rural area, and those in their senior year tended to have higher mean scores about educational loan knowledge. Kamaruddin and Mokhlis (2003) conducted a study of 934 adolescents in Malaysia on the topic of consumer socialization, sociostructural factors and decision-making styles. They found that compared to Malays, Chinese youngsters were less likely to interact with parents and peers. Their findings also suggest that Chinese adolescents were less brand-conscious, fashion-conscious, and recreation-oriented toward shopping activities than their Malay counterparts. Adolescents who lived in suburban and urban areas were more likely to be brand-conscious and fashion conscious. Hence, college students in more urbanized areas and from Malay ethnicity background may be less concerned about financial knowledge for goals such as saving, versus consumption for brand and fashion purposes.

CONSUMER SOCIALIZATION FRAMEWORK

Previous research has emphasized that parents, peers, printed media, television commercials, and in-school education are the most important agents of

consumer socialization (Chan & McNeal, 2006; Moschis, 1987; O'Guin & Farber, 1989). Therefore, personal and family background, childhood consumer experience (savings account experience, and discussion of family financial matters with parents), and student characteristics may have significant impacts on financial literacy as an outcome among college students in Malaysia. Presumably, the earlier the students' involvement in financial activities, the better the impact for their financial knowledge. The student characteristics in this study include academic achievement (grade point average [GPA]) and year in college, which indicate cognitive ability and are expected to be positively related to financial literacy scores because that ability may improve test performance. Personal and family background includes gender, ethnicity, and place of origin, type of college, students' residence, and parents' education.

HYPOTHESES, SAMPLE, AND METHODS

Some general hypotheses are appropriate for this exploratory study:

Hypothesis 1: Financial literacy will be associated with ethnicity, gender, students' residence, type of college, place of origin, and parents' education.

Hypothesis 2: Students with greater academic achievement and more class years completed will have greater financial literacy.

Hypothesis 3: Financial literacy will be positively related to childhood consumer experience, and the earlier the experience the greater financial literacy.

Ethnicity is a predictor variable in the list for hypothesis testing because that characteristic may represent different family cultural practices and market orientations that influence financial knowledge. Including ethnicity helps to control for other unobservable characteristics that are associated with aspects of family background or experience prior to and during college. For example, Grable and Joo (2006) discussed racial differences in exposure to wealth accumulation and structural barriers in education for African Americans as reasons why that ethnic group of college students differs from non-Hispanic whites with respect to credit card debt and related financial behaviors. Although one study found ethnicity differences with respect to college students' knowledge about student loans (Abu Bakar et al., 2006), the reasons for that are unclear.

Sample

After receiving permission to conduct the study, a list of all public and private colleges in Malaysia was obtained. From the list, five public colleges and five private colleges were selected at random. In addition to the 10 randomly selected colleges, University Putra Malaysia was included in the study to assist the authors for planning educational programs. The survey consisted of 25 true and false questions concerning financial goals, financial records, saving, investment, retirement, banking system, time value of money, wills, insurance, education loan, and general knowledge on personal finance. The questions are shown in the appendix.

For each college, 350 students were selected randomly using the list of names obtained from the student affairs office. The number of questionnaires

distributed to the 11 colleges was 3,850. A total of 2,519 completed and usable questionnaires were returned by the students, resulting in a 65% response rate. The average response rates were: for the six public colleges, 72.8%, and for the five private colleges, 56.6%.

The main sources of missing data that caused reduction from the 2,519 respondents to an analysis sample size of 1,865 were analyzed. The results show that the most important reason for missing data is the dependent variable; 473 respondents did not answer all of the 25 questions about financial knowledge. Other variables that had high frequencies of missing data include childhood consumer experience reports. For example, 204 cases have missing data about discussing finances with parents.

Participants

Of the 2,519 students who responded to the survey, 40.4% are male and 59.6% are female students. The ethnic composition is Malay (67.2%), Chinese (21.6%), Indian (5.0%), and others (5.3%). The mean age of the respondents is 20.9 years with a standard deviation of 2.99. A majority of the students live on campus (71.7%). Most of the students report that they are in a public college (60.7%), and from a rural area (51.3%). About one third of the sample was sophomores. The average GPA is 3.00. More than half of the students in the sample are not employed (59%) and nearly all of them are not married (98.4%). The students report that 78% of their fathers and 70% of their mothers have a secondary education, or better (28% of fathers are college educated, and 22% of mothers). Regarding parental marital status, 55% of students report that their parents are married and living together, 21% report their parents are divorced, and 12% report their sole parent is a widow or widower.

Measurement of Variables

The measurement of all variables is defined in Table 1, which also provides descriptive statistics. The dependent variable, financial literacy, is measured by testing for correct answers on 25 questions concerning financial goals, financial records, saving, investment, retirement, banking system, time value of money, wills, insurance, education loan, and general knowledge on personal finance. The average score is 11.77, with a standard deviation of 3.66. The Cronbach's alpha statistic from reliability analysis of the financial literacy score is .70. Because most of the independent variables are qualitative characteristics, all of them were specified as categorical variables for ease of comparing their effects as predictors. Thus, the descriptive statistics for the independent variables are shown as category percentages.

Respondents were asked at what age they became involved in financial activities, which included having their own saving account, and discussing financial matters with parents. Response categories about when each of these financially related activities began were: < 7, 7–12, 13–15, 16–17, > 18 years, and "never." For both childhood consumer experience variables, two dummy variables were created to measure the timing of each experience relative to the age at which the most respondents began that experience. The reference group and most frequent category for when saving accounts began

TABLE 1: Measurement and Descriptive Statistics of College Students in Malaysia (N = 2,519)

Dependent variable			
Financial literacy	Correct answers for 25 financial knowledge questions: $M = 11.8$, $SD = 3.66$		
Independent variables (%)			
Personal and family background			
Gender	Female = 1, otherwise 0	59.6	
Ethnicity	Malay = 1, otherwise 0	67.2	
	Chinese = 1, otherwise 0	21.6	
	Indian = 1, otherwise 0	5.0	
	Other (reference group)	6.2	
	Place of origin	Rural = 1, otherwise 0	51.3
Type of college	Public university = 1, otherwise 0	60.7	
Student's residence	Stay on campus = 1, otherwise 0	71.7	
Father's education level	Elementary = 1, otherwise 0	19.7	
	Secondary = 1, otherwise 0	43.9	
	College degree = 1, otherwise 0	28.2	
	Graduate = 1, otherwise 0	5.7	
	No formal education (reference group)	2.5	
	Mother's education level	Elementary = 1, otherwise 0	23.5
		Secondary = 1, otherwise 0	48.4
College degree = 1, otherwise 0		20.0	
Graduate = 1, otherwise 0		1.5	
Academic ability	No formal education (reference group)	6.6	
	Grade point average < 2.50 (reference group)	24.0	
	Grade point average 2.50–3.00 = 1, otherwise 0	72.4	
	Grade point average > 3.00, otherwise 0	3.6	
	Year in college	Freshman = 1, otherwise 0	29.5
Sophomore (reference group)		32.9	
Junior = 1, otherwise 0		26.2	
Senior = 1, otherwise 0		11.4	
Childhood consumer experience	Own saving account 7 years = 1, otherwise 0	23.2	
	Own saving account 7–12 years (reference group)	37.0	
	Own saving account > 13 years or never, otherwise 0	39.8	
	Discuss finances with parents < 7 to 17, otherwise 0	38.0	
	Discuss finances with parents > 18, otherwise 0	32.5	
	Discuss finances with parents never (reference group)	29.5	

was age 7–12 years. The most frequent category for discussing finances was "never."

Analysis Procedures

The t tests were used to examine the significance of mean differences in financial literacy for predictors with two categories (e.g., gender) and analysis of variance to test for literacy mean differences with multiple category variables. Tests of hypotheses were obtained from ordinary least squares multiple regressions in a step-wise procedure. First, the personal and family background variables were used to predict financial literacy. Second, the academic ability variables were added as predictors while continuing to control for personal and family background. In the final stage the childhood consumer experience variables were added.

RESULTS

The average score on the 25-item test of financial knowledge is 11.77, that is, less than half of the questions were answered correctly. Tables 2 and 3, respectively, show the results of bivariate results of *t* tests and analysis of variance for the financial literacy scores. Students of Chinese ethnicity have lower mean scores than Malay, Indian, and the other ethnic groups, which is not consistent with a previous finding that Chinese students were more likely to have greater knowledge about educational loans (Abu Bakar et al., 2006) and were also better in mathematics achievement (Ismail & Awang, 2008). The bivariate results also demonstrate that students from private colleges have a lower mean score for financial literacy than students from public colleges. First-year students and those students who never had an experience discussing finances with parents are also more likely to have low financial knowledge scores. To summarize, the bivariate tests reveal that Chinese students, those from private colleges, freshmen, and those who had never discussed finances with parents have less financial knowledge. Financial literacy is not different with respect to gender, place of origin, students' GPA, residence (on- or off-campus), parents' education, and savings account experience.

Table 4 shows the results from the three multiple regressions. The first model included only personal and family background. In the second model, academic ability was added, and in the third model, childhood consumer experience was added. The table reports the results for standardized regression coefficients (β s). As shown in column 1, the regression model for personal and family background influences is significant, explaining 2.7% of the total variance in financial literacy ($R^2 = .027$, $F = 3.438$, $p < .001$). Financial literacy is significantly associated with: 'ethnicity, students' residence, and type of college. Chinese ethnicity has a greater effect size than for living on campus and public college. However, the negative coefficient indicates that Chinese ethnicity is associated with lower financial literacy. Students who lived on campus are more likely to have a low level of financial literacy. Public college students have greater financial literacy than students from private colleges. Gender, parents' education, and rural versus urban place of origin are not significant (and that remained the case in subsequent regressions).

The second regression focusing on academic ability explained 3.1% of the total variance in financial literacy ($R^2 = .031$, $F = 2.988$, $p < .001$). Four variables are significant ($p < .05$) or marginally significant ($p < .10$). The significant variables are ethnicity, students' residence, type of college, and year in college.

TABLE 2: *t* Tests of Differences in Financial Literacy Scores of College Students in Malaysia (N = 2,519)

<i>Personal and family background</i>	<i>Variables</i>		<i>p Value</i>	<i>T</i>
Gender	Male 11.62	Female 11.87	.147	-1.45
Place of origin	Rural 11.89	Urban 11.65	.136	1.49
Type of college	Public 11.96	Private 11.47	.004**	2.92
Student's residence	On campus 11.78	Off campus 11.74	.859	1.77

** $p < .01$.

TABLE 3: Analysis of Variance for Financial Literacy Scores of College Students in Malaysia (N = 2,519)

<i>Variables</i>	<i>Mean differences</i>	<i>p Value</i>	<i>F Value</i>
Personal and family background			
Ethnicity ab bc bd			
^a Malay	11.98	.000***	10.55
^b Chinese	10.96		
^c Indian	12.28		
^d Other	12.19		
Father's education level			
No formal education	11.96	.992	0.068
Elementary	11.71		
Secondary	11.76		
College degree	11.73		
Graduate degree	11.75		
Mother's education level			
No formal education	11.88	.993	0.062
Elementary	11.73		
Secondary	11.78		
College degree	11.70		
Graduate degree	11.77		
Academic ability ab			
^a GPA < 2.50	11.71	.063 [†]	2.761
^b GPA 2.50–3.00	11.84		
^c GPA > 3.0	10.98		
Year in college ab ac			
^a Freshman	11.43	.049*	2.620
^b Sophomore	11.94		
^c Junior	11.93		
^d Senior	11.68		
Childhood consumer experience			
Own savings account			
< 7 years	11.75	.130	2.043
7–12 years	11.99		
Never and > 13 years	11.63		
Discuss finances with parents ac bc			
^a < 7 to 17 years	11.88	.000***	9.376
^b > 18 years	12.17		
^c Never	11.28		

NOTE: The pairs of letters represent the means of the groups (e.g., ^a Malay, ^b Chinese, ^c Indian, ^d Other) that were significantly different from each other. For example, the letters **ab** show that the average for Malaysian students was significantly different from the average for Chinese students.

[†] $p < .10$. * $p < .05$. *** $p < .001$.

The academic ability variables do not improve explanatory power very much, but year in college (i.e., freshman) is marginally significant indicating that freshman students have lower financial literacy compared to sophomores. There is no effect of GPA on financial knowledge. Type of college is marginally significant, but the effects of ethnicity and campus residence are very similar to the first regression estimates for those variables.

The final regression that includes childhood experience is significant overall, explaining 4.0% of the total variance in the financial literacy scores ($R^2 = .040$, $F = 3.160$, $p < .001$). Significant and marginally significant predictors of variance

TABLE 4: The Effect of Personal and Family Background, Academic Ability, and Childhood Consumer Experience on Financial Literacy Scores of College Students in Malaysia

<i>Variables</i>	<i>Model 1</i> (<i>N</i> = 1,865)	<i>Model 2</i> (<i>N</i> = 1,865)	<i>Model 3</i> (<i>N</i> = 1,865)
Personal and family background			
Malay ethnicity	-0.017 (-0.367)	-0.011 (-0.236)	-0.016 (-0.335)
Chinese ethnicity	-0.170 (-3.599)***	-0.162 (-3.427)***	-0.163 (-3.438)***
Indian ethnicity	-0.002 (-0.070)	-0.001 (-0.022)	-0.003 (-0.089)
Stay on campus	-0.092 (-3.269)***	-0.091 (-3.214)***	-0.097 (-3.438)***
Public college (vs. private)	0.064 (2.342)**	0.051 (1.826) [†]	0.048 (1.740) [†]
Academic ability			
Grade point average (> 3.0)	—	-0.016 (-0.637)	-0.019 (-0.770)
Grade point average (2.5–2.99)	—	0.021 (0.751)	0.019 (0.688)
Reference group: < 2.50			
Freshman	—	-0.054 (-1.812) [†]	-0.044 (-1.471)
Junior	—	-0.011 (-0.398)	-0.011 (-0.401)
Senior	—	-0.034 (-1.339)	-0.036 (-1.402)
Reference group: Sophomore			
Childhood consumer experience			
Own saving account (< 7 years)	—	—	-0.017 (-0.666)
Own saving account (> 13 years or never)	—	—	-0.045 (-1.741) [†]
Reference group: 7–12 years			
Discuss finances with parents (< 7 to 16–17 years)	—	—	0.068 (2.462)*
Discuss finances with parents (> 18 years)	—	—	0.093 (3.371)***
Reference group: Never			
<i>F</i> ²	.027	.031	.040
Adjusted <i>F</i> ²	.019	.021	.027
<i>F</i> Value	3.438***	2.988***	3.160***

NOTE: Other (nonsignificant) predictors included parents' education, gender, and place of origin.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

in financial literacy include ethnicity, students' residence, and type of college, savings account experience, and having experience discussing finances with parents. Adding childhood consumer experience predictor variables does improve explanatory power for financial literacy. However, none of the academic ability variables are significant in this final stage regression. Students who have experience discussing finances with parents are associated with greater financial knowledge than those who never had that experience. The estimated effect size of discussing finances with parents at a later age (> 18 years, $\beta = .093$) is third in rank order of magnitude, after Chinese ethnicity ($\beta = -.163$) and nearly as large as for staying on campus ($\beta = -.097$). Students who never had their own saving account and began to save with an account after age 13 have less financial knowledge ($\beta = -.045$, $p < .10$) than those who began saving between the ages of 7–12. Ethnicity is a strong predictor of financial literacy with a negative coefficient indicating that Chinese students are associated with lower financial knowledge. Students' residence was significant demonstrating

that students who stay on campus have less financial knowledge. Type of college is marginally significant indicating that public college students in Malaysia have greater financial knowledge.

DISCUSSION

The descriptive analysis of financial literacy of Malaysian students reveals that students of Chinese ethnicity, students in private colleges, freshmen, and students who never discussed finances with parents in their childhood have less financial knowledge. The final regression provides confirmation for Chinese ethnicity, college type, and discussing finances with parents. An additional multivariate finding is that on-campus students have less financial knowledge. There is no multivariate evidence of gender, place of origin, or socioeconomic disadvantage for financial literacy.

The results for type and timing of childhood consumer experience demonstrate that discussing family finances with parents is a positive influence on financial literacy, which suggests that more involvement with important aspects of family finance could provide better knowledge and experience about money management among Malaysian college students. A study by Peng, Bartholomae, Fox, and Cravener (2007) found that investment knowledge score improved if the respondents held a bank account before age 18. This study's multivariate results are somewhat similar. Those who began a savings account between the ages of 7 and 12 have greater financial knowledge than those who began that practice after age 13 or have not yet opened a savings account (a marginally significant result).

The estimated effect of Chinese ethnicity is negative and greater in absolute magnitude than for any of the other predictor variables. It was not expected that ethnicity would be as important as it is, nor that the effect for Chinese ethnicity would be negative because Chinese students in Malaysia have been found to have higher mathematical achievement (Ismail & Awang, 2008), and they were also found to know more about educational loans (Abu Bakar et al., 2006).

College students who lived off-campus are more likely to have greater financial knowledge. It is reasonable to suggest that this association occurs because off-campus students probably have more financial responsibilities and liabilities. For example, costs associated with on-campus living (rent and utilities) are typically deducted from their educational loans or scholarships.

Students from public colleges are more likely to have greater financial knowledge. Under Malaysia's New Economic Policy, public universities are required to reserve an ethnic quota of at least 60% of university places for Malays and others of indigenous origins, which accounts in part for the fact that the majority of students in public college came from low- or middle-income families (Joseph, 2008). Perhaps, students from those less well-off families have greater financial literacy because financial strain led their parents to emphasize the importance of finances for a happy life. In contrast, most of the private college students came from upper-income families who provide for more of their typical expenditures so that the private college students may not be as motivated to learn about financial management. That stratification of college type according to family income may also explain why parents' education is not a significant predictor of financial literacy.

CONCLUSION

Policy Significance

This study provides evidence that financial illiteracy is a problem among college students in Malaysia. The average score on the 25-item test of financial knowledge is < 12 ; that is, less than half of the questions were answered correctly. Multivariate analysis demonstrated that financial illiteracy is concentrated among Chinese students, those who live on campus, and students at private colleges. Those results help to identify student population subgroups that would benefit the most from educational programs about money management. These are important findings because a typical assumption would be that socioeconomic advantage would be associated with greater financial socialization. Thus, Malaysian private, as well as public, college administrators and faculty leaders should consider how to monitor and improve financial knowledge for their students. Clearly, the main educational policy implication for Malaysia is that all kinds of college students have deficits in their financial knowledge and need better financial education.

The results may also be beneficial to financial counselors who work with students on a one-to-one basis at various stages of a student's study program. Malaysian colleges could take a more holistic approach when addressing the financial needs of their students. For example, student organizations and parents could contribute to students' financial knowledge, along with on-campus residence managers and campus service offices such as student affairs and financial aid.

The focus on childhood consumer experience also has implications for Malaysian family life educators and parents. Continuous education from parents could be important for newly affluent young adults in Malaysia even though they are entering a life stage that brings more financial independence. Although the reasons why Chinese college students tend to have less financial knowledge are unknown, that result indicates Chinese parents and youth educators should be informed that they need to encourage their children to learn more about personal financial management. In support of this recommendation, it is noteworthy that Kamaruddin and Mokhlis (2003) found that Chinese adolescents were less likely to interact with their parents and peers than Malay youngsters.

Study Limitations

The financial literacy instrument was developed primarily for Malaysian students, which makes it difficult to compare results directly to other tests of financial knowledge. Information about childhood consumer experience was self-reported. Thus, there is a need for corroborative evidence from parents and other educators in future studies. The explanatory power of the financial literacy regression is statistically significant but quite low—explaining $< 5\%$ of the variance in total scores. Hence, additional information is needed to provide a better description of how students learn about finances for more specific guidance for educators and policy makers. It may be particularly useful to include the work experience and sources and amounts of the students' current incomes (Chen & Volpe, 1998). Specific information about whether the students have had formalized consumer or financial education would also be valuable

(Bernheim, Garrett, & Maki, 2001; Peng et al., 2007). Finally, studies of college student and young adult financial behavior (e.g., Xiao, Noring, & Anderson, 1995) have shown that questions about experience with consumer debt can serve as good indicators of informal learning. Conducting studies with Malaysian adolescents to learn about their consumer financial experiences could be more informative than college students' retrospective reports about childhood experience. Because there is substantial variation in the age at which Malaysia's college students obtained consumer experience, further research is also needed to learn more about how that timing affects financial literacy.

APPENDIX: Financial Literacy Test True-False Questions

<i>Statement</i>	<i>True</i>	<i>False</i>
1. Buying goods on credit will reduce purchasing power in future		
2. The increase of the price of goods will reduce buying power		
3. Balance sheet shows your financial status		
4. Credit card holder can spend without limit		
5. We overspend when using savings to buy daily necessities		
6. The value of money can double after 10 years		
7. Savings is extra income after deducted expenses		
8. Interest will influence the future value of savings		
9. Income statement shows income and the expenses of a family in a specific period		
10. Will is unnecessary for a family		
11. Buying insurance is the best investment		
12. Savings account interest exceeds fixed deposit interest		
13. Life insurance protects policy holder from financial burden		
14. The longer the education loan is due the greater cost of financing it		
15. Unregistered business needs to pay income tax		
16. Owning a credit card will increase one's purchasing power		
17. One can spend more than 20% of their monthly income for installments		
18. Using credit card to get cash has the lowest finance charge		
19. All types of investments are profitable		
20. We can borrow to invest		
21. Motorcyclist do not need insurance		
22. Employment Provident Fund (EPF) ^a contribution are sufficient for retirement		
23. All Muslims must pay zakat ^b		
24. In Malaysia we only have a conventional banking system		
25. Family needs to save 3-month income for emergencies		

NOTE: a. The Malaysian Employees Provident Fund (EPF) Act of 1991 grants employees retirement benefits that are managed via a body that is intended to manage their savings.
b. Paying a small percentage of one's surplus wealth to charity for poor and needy Muslims.

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