

## **Appendix B –**

# **Research Synthesis “Financial Literacy of University Students”**

### **1 Overview**

As outlined in Chapter 2 (section 2.5.2), the amount of literature suggests a heightened scholarly interest in consumer financial literacy in recent years is clearly documented by the significant increase in the number of studies. However, this begs the question whether research interest has led only to an increase in studies or has also improved the individual quality of studies by addressing the shortcomings of earlier research noted by Huston (2010) and Remund (2010). Consequently, and building on the work of Huston, the review of how financial literacy research is conducted utilizing a structured research synthesis approach (Cooper, 2017) by examining relevant recent studies.

### **2 Synthesis Objective**

The research synthesis seeks to address the following questions:

- Do recent studies measuring consumer financial literacy of university students address the three main barriers to developing a standardized approach to measure financial literacy (lack of conceptualization and definition of the financial literacy construct, content of the instrument and instrument interpretation) noted by Huston (2010)?
- Is there a noticeable alignment towards use of a standardized approach to measure financial literacy in the studies examined?
- Consequently, evidence relevant to this synthesis is the methodological research approach utilized by scholars to measure financial literacy. Construct definition, instrument content as well as instrument interpretation constitute the variables of interest.

### **3 Study Selection**

As the terms “financial literacy” and “financial knowledge” have been established in literature and are frequently used interchangeably (Huston, 2010), initial search and identification of relevant studies was based on title as well as abstract searches for these terms in conjunction with the terms “college”, “university”, “graduates” or “higher education” using EBSCO databases. As an additional criteria, the search was limited to studies published in English language in peer reviewed journals covering the period 2008 to 2016, i.e. subsequent to Huston’s examination time frame.

Based on an initial assessment of identified studies by their abstracts, final selection of studies for inclusion in the paper was based on whether a study used a primary research set-up to measure financial literacy (or a closely related construct) for a target group of university students or predominantly young people. Studies focussing on financial literacy education interventions were also included to the extent that they included primary research measuring financial literacy. Studies that relied on identic data sets were combined so that the synthesis is based on the data set level rather than the individual study. 41 individual studies comprising 37 data sets (N=37) were identified through this literature search. Details of studies included in this synthesis are shown at the end of this Appendix. Although the sample of studies underlying this synthesis may not be complete, it should encompass a significant cross-section of relevant research published between 2008 and 2016.

### **4 Evaluation Framework**

The sample of studies was evaluated based on a logical analysis approach to construct validation which based on Pedhazur & Schmelkin (1991, cited in Huston, 2010) involves four main aspects: definition of construct, item content, method of measure and scoring/rating procedure. Consequently, the evaluation framework utilized is structured along similar categories and further detailed into sub-questions for coding as outlined in the following sections as well as summarized in Table 1 - Evaluation Framework.

#### **4.1 Conceptualization and construct definition**

The financial literacy construct (see Table 1, section A “Conceptualization and construct definition”) is assessed by whether a clear definition as foundation for the subsequent

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measurement is posited in the studies examined. Furthermore, the specific dimensions of the construct definition are noted: *Objective knowledge* refers to the knowledge dimension of actual (“objective”) knowledge of personal finance concepts and products acquired through education and/or experience (Huston, 2010). Furthermore, an application dimension (ability and confidence to apply or use knowledge); i.e. perceived “*subjective*” (*financial*) *knowledge*; is included (see Allgood & Walstad, 2016; Hadar, Sood, & Fox, 2013).

Furthermore, researchers included also *financial attitudes* and *financial behaviour* as distinct dimensions of financial literacy (see Atkinson & Messy, 2012). Dimensions termed differently in studies were allocated to appropriate categories (e.g. “values” was summarized as “financial attitudes” while “decisions” was included in “financial behaviour”). Dimensions identified that clearly did not relate to the four distinct dimensions outlined above were coded separately.

### **4.2 Instrument Content**

The studies were coded for financial content domain applying the categories previously utilized by Huston (2010): Basic concepts, borrowing and debt, saving and investing as well as protection and insurance (see Table 1, Section B. “Instrument Content”). Further, the number of instrument items as well as a measure of reliability (to the extent reported) was noted.

### **4.3 Assessment Approach and Data Collection**

Analysis of the assessment approach (see Table 1, section C “Assessment Approach and Data Collection”) coded whether the assessment approach was consistent with the financial literacy dimensions specified in the definition as well as noting research method, sample size and sampling method. Furthermore, note was taken of whether the study included implicitly or explicitly a financial education intervention.

### **4.4 Rating**

Financial literacy rating (see Table 1, section D “Financial Literacy Rating”) was examined to indicate whether and how studies defined “adequate financial literacy” respectively when someone was deemed “financial literate”. A clear and concise rating definition appears to be relevant, in particular as the question of what constitutes adequacy will most likely depend on the specific circumstances of the subjects being surveyed (Faulkner, 2015). In addition, the

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overall percentage of correct answers to financial knowledge tests was recorded. As prior studies focussing on college students generally find a low level of financial knowledge (Al-Tamimi et al., 2009; Chen & Volpe, 1998; Lusardi, Mitchell, & Curto, 2010; Volpe, Chen, & Pavlicko, 1996), it was noted whether a study drew a favourable or unfavourable conclusion on the overall adequacy of financial literacy in the specific population surveyed.

*Table 1 - Evaluation Framework*

Area	Question / Objective	Assessment Categories / Codes
A. Conceptualization and construct definition	A.1 Is the construct “Financial Literacy” defined?	0 = No definition 1 = Definition given 2 = Definition discussed (literature review)
	A.2 What dimensions are included in the “Financial Literacy” definition?	- Objective (Financial) Knowledge (OK) - Subjective (Perceived) Knowledge (SK) - Financial behaviour (FB) - Financial attitudes (FA) - Other (FL_O)
B. Instrument content	B.1 How many instrument items (questions) were used to measure FL?	Number of questions
	B.2 What FL content domains are evaluated?	- Basic concepts - Borrowing / Debt - Saving / Investing - Protection / Insurance / Risk Management
	B.3 Does the study include a reliability measure for the instrument?	- Numeric reliability measure (e.g. Cronbach's Alpha) - Not Reported (NR)
C. Assessment Approach & Data Collection	C.1 Are all FL dimensions covered as per definition given?	0 = No 1 = Yes 2 = no definition given
	C.2 What research methods are employed?	0 = not specified 1 = interview 2 = survey 3 = multi-method 4 = (quasi-)experiment
	C.3 What sample size was used?	N
	C.4 What data collection methods were used?	0 = NR; 1 = web-based 2 = paper based 3 = in person 4 = telephone 5 = interviews
	C.5 What sampling method was employed?	0 = non-random sample 1 = random sample
	C.6 Does the research design include a Financial Literacy Education Intervention?	0 = No 1 = Yes
D. Rating	D.1 Does the study explicitly specify how “adequate” financial literacy is defined?	0 = No 1 = Yes
	D.2 What is the average number of correct answers to the performance test?	% of correct answers Not reported NR
	D.3 Does the study draw an overall conclusion on the financial literacy level assessed?	NR = no conclusion made or reported 0 = FL overall deemed inadequate 1 = FL overall deemed adequate

*Summary of Information* provides information about each data set examined and exhibits the synthesis results for all evaluation categories.

## 5 Analysis

The following section contains the descriptive analysis of the results yielded by applying the evaluation framework. To the extent feasible, results are compared with Huston (2010).

### 5.1 Conceptualization and Definition

Table 2 - Analysis "A - Conceptualization and Definition"

A. Conceptualization and construct definition		
<b>A.1 Is the construct “Financial Literacy” defined?</b>		
Code		Frequency
1	Yes	59%
0	No	27%
2	Definition Discussed	14%
<i>N</i> =		37
<b>A.2 What dimensions are included in the “Financial Literacy”</b>		
<i>* If no specific definition given, the dimensions were deduced from the research design</i>		
Code		Frequency
<b>Dimensions</b>		
	- Objective Knowledge	100%
	- Subjective Knowledge	41%
	- Financial behaviour	32%
	- Financial attitudes	32%
	- Other	3%
<i>Others included: Numeracy</i>		
<b>No. Dimensions included in Definition</b>		
	Financial Literacy = Objective Knowledge?	30%
	2 Dimensions	35%
	3 Dimensions	32%
	4 Dimensions	3%
<i>N</i> =		37

## 5.2 Instrument Content

Table 3 – Analysis “B. Instrument Content”

<b>B. Instrument content</b>																																													
B.1a	How many instrument items (questions) were used to measure financial knowledge (performance test)?																																												
	<table border="1"> <thead> <tr> <th colspan="2"><b>Number of Items</b></th> </tr> </thead> <tbody> <tr> <td>Max</td> <td>60</td> </tr> <tr> <td>Min</td> <td>3</td> </tr> <tr> <td>Mean</td> <td>19</td> </tr> <tr> <td>Median</td> <td>18</td> </tr> <tr> <td>Mode</td> <td>8</td> </tr> <tr> <td></td> <td><i>N</i> = 35</td> </tr> <tr> <td></td> <td><i>Not Reported (NR)</i> = 2</td> </tr> </tbody> </table>	<b>Number of Items</b>		Max	60	Min	3	Mean	19	Median	18	Mode	8		<i>N</i> = 35		<i>Not Reported (NR)</i> = 2																												
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B.1b	How many other instrument items (other than financial knowledge questions) were used?																																												
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B.3 Does the study include a reliability measure (Cronbach's Alpha) for the instrument?

<b>Reliability Measure</b>	
Max	0.84
Min	0.63
Mean	0.77
Median	0.82
Yes; <i>N</i> =	9
No or Not Reported ( <i>NR</i> ) =	28

### 5.3 Assessment Approach and Data Collection

Table 4 - Analysis "C - Assessment Approach and Data Collection"

<b>C. Assessment Approach &amp; Data Collection</b>		
<b>C.1 Are all FL dimensions covered as per definition given?</b>		
	<b>Code</b>	<b>Frequency</b>
1	Yes	49%
0	No	24%
2	No definition given	27%
<b>C.2 What research methods are employed?</b>		
	<b>Code</b>	<b>Frequency</b>
0	not specified	0%
1	interview	0%
2	survey	86%
3	multi-method	5%
4	(quasi-) experiment	8%
<b>C.3 What sample size was used?</b>		
<b>Sample Size N</b>		
	Max	3,884
	Min	57
	Mean	752
	Median	472
	<i>N</i> =	37
<b>Response Rate %</b>		
	Max	98%
	Min	5%
	Mean	53%
	Median	48%
	<i>N</i> =	21
	<i>Not Reported (NR)</i> =	16
<b>C.4 What data collection methods were used?</b>		
	<b>Code</b>	<b>Frequency</b>
0	Not reported	37%
1	Web-Based	31%
2	Paper-Based	17%
3	in Person	9%
4	Telephone	0%
5	Interviews	6%
<b>C.5 What sampling method was employed?</b>		
	<b>Code</b>	<b>Frequency</b>
0	Not reported	47%
1	probability	33%
2	non-probability / convenience	19%
<b>C.6 Does the research design include a Financial Literacy Education Intervention?</b>		
	<b>Code</b>	<b>Frequency</b>
0	No	92%
1	Yes	8%



## 5.4 Rating

Table 5 - Analysis "D. Rating"

<b>D. Rating</b>		
D.1	Does the study explicitly specify how "adequate" financial literacy is defined?	
	<b>Code</b>	<b>Frequency</b>
	0 No	78%
	1 Yes	22%
D.2	What is the average percentage of correct answers to the financial knowledge performance test?	
	<b>Average of correct answers</b>	
	Max	77%
	Min	35%
	Mean	57%
	Median	59%
	Mode	55%
	<i>N</i> =	21
	<i>Not Reported (NR)</i> =	16
D.3	Does the study draw an overall conclusion on the financial literacy level assessed?	
	<b>Code</b>	<b>Frequency</b>
	0 FL overall inadequate	38%
	1 FL overall adequate	14%
	9 No conclusion / not reported	49%

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## 6 Summary of Information

Examined Studies		A. Conceptualization and construct definition					B. Instrument content											
No.	Reference	A.1 FL Definition	A.2 Financial Literacy Dimensions					A.2 Financial Literacy Dimensions - Assessment			A.3 Reference to Huston (2010)	B.1 Instrument Items		B.2 FL Content Domains				B.3 Reliability & Assessment
			Objective Knowledge	Subjective Knowledge	Behaviour	Attitudes	Other	No. Of Dimensions	FL = OK? 0= "FL not OK"	if other, specify		OK Questions Items	Other Items	Basic concepts	Borrowing Debt	Saving/Investing	Protection/Insurance	
		0 = No / 1 = Yes / 2 = Discussed (literature review)	0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes	Formula: Sum of Dimensions	0 = "FL not OK"	Specify dimension	0 = No / 1 = Yes	# / NR = not reported	# / NR = not reported	0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes	NR = not reported; numeric
1	AKBEN-SELÇUK, E., & ALTIOK-YILMAZ, A. (2014)	1	1	0	0	0	0	1	1		1	27	33	1	1	1	1	0.82
2	Al-Tamimi, H., & Bin Kalli, A. A. (2009)	1	1	0	0	0	0	1	1		0	18	NR	0	0	1	0	0.7
3	Altintas, K. M. (2011)	0	1	0	0	0	0	1	1		0	28	9	1	0	1	0	NR
4	Ameri, M., & Jarboui, A. (2015)	1	1	0	0	0	0	1	1		1	11	11	1	0	1	0	NR
5	Baleman, H., Eckert, C., Geweke, J., Louwère, J., Thorp, S., & Satchell, S. (2012)	0	1	1	0	0	1	3	0	Numeracy	0	9	5	1	0	1	0	NR
6	Bongini, P., Trivellato, P., & Zengua, M. (2012)	0	1	0	1	0	0	2	0		0	13	8	1	1	1	0	NR
7	Bruhn, M., Lara Ibarra, G., & McKenzie, D. (2014)	0	1	1	1	0	0	3	0		0	8	NR	1	1	1	0	NR
8	Çelikkol, M. M., & Çelikkol, H. (2015)	1	1	0	1	1	0	3	0		0	5	NR	1	0	0	0	NR
9	Cull, M., & Whitton, D. (2011)	1	1	1	1	1	0	4	0		1	5	16	1	0	0	0	NR
10	Eitel, S. J., & Martin, J. (2009)	0	1	0	0	0	0	1	1		0	31	NR	1	1	1	1	NR
11	Gerrans, P., & Heaney, R. (2016)	1	1	1	0	0	0	2	0		1	12	NR	1	1	1	0	NR
12	Hadžić, M., & Poturak, M. (2014)	2	1	0	1	1	0	3	0		0	NR	NR	0	0	0	0	NR
13	HECKMAN, S. J., & GRABLE, J. E. (2011)	0	1	1	0	0	0	2	0		0	20	NR	1	1	0	0	NR
14	Luksander, A., Béres, D., Huzdik, K., & Németh, F. (2014)	1	1	1	0	1	0	3	0		0	21	NR	NR	NR	NR	NR	0.63
15	Karas, I. E., & Kugu, T. D. (2016)	1	1	1	0	0	0	2	0		0	16	NR	1	0	1	1	0.8187
16	Kindle, P. A. (2013)	1	1	0	0	0	0	1	1		1	48	NR	1	1	1	0	0.8412
17	Kolodziej, S. (2014)	1	1	0	1	1	0	3	0		1	NR	NR	1	1	1	0	NR
18	Krechovská, M. (2015)	1	1	0	1	1	0	3	0		1	10	NR	1	0	1	0	NR
19	LaBorde, P. M., Motner, S., & Whalley, P. (2014)	2	1	1	1	0	0	3	0		0	60	NR	1	1	1	1	NR
20	Lee, F., & Hanna, S. D. (2014)	1	1	1	0	0	0	2	0		1	30	NR	1	1	1	0	NR
21	Lorence, J., Lawrence, D. J., Salsbury, S. A., & Goertz, C. M. (2014)	0	1	0	1	1	0	3	0		1	31	50	1	1	0	0	NR
22	Marriott, P., Pogue, M., & Oegerby, J. (2010)	2	1	0	0	1	0	2	0		0	36	NR	1	1	0	0	NR
23	Nano, D., & Cani, S. (2013)	1	1	0	1	1	0	3	0		1	23	19	1	1	1	1	0.766
24	Nano, D., & Polo, A. (2016)	1	1	1	0	0	0	2	0		0	21	NR	1	1	1	0	NR
25	ODJEMIR, A., TEMIZEL, F., SONMEZ, H., & ER, F. (2015)	1	1	0	1	1	0	3	0		0	7	15	1	0	0	0	NR
26	Pintye & Kiss, 2016	1	1	0	1	1	0	3	0		0	7	21	0	0	0	0	0.82
27	Rahim, Rashid, & Hamed, 2016	1	1	1	0	1	0	3	0		0	6	77	1	0	0	0	NR
28	Robb & Sharpe, 2009	2	1	0	0	0	0	1	1		0	6	NR	1	0	0	0	NR
29	Robb, 2011	2	1	0	0	0	0	1	1		0	6	NR	1	0	0	0	NR
30	Rosacker & Rosacker, 2016	1	1	0	1	1	0	3	0		0	25	NR	1	1	1	1	NR
31	Sabri, MacDonald, Hira, & Masud, 2010	0	1	0	0	0	0	1	1		0	25	NR					NR
32	SARIGÜL, 2014	1	1	1	0	0	0	2	0		0	22	7	1	1	1	1	0.84
33	SEYEDIAN & Yi, 2011	0	1	0	0	0	0	1	1		0	38	NR	NR	NR	NR	NR	NR
34	Shamhare & Rugimbana, 2012	1	1	0	0	0	0	1	1		0	3	NR	1	0	0	0	NR
35	Smith & Barbosa, 2014	0	1	1	0	0	0	2	0		0	3	NR	1	0	0	0	NR
36	Toth, Landarić, & Snow, 2015	1	1	1	0	0	0	2	0		0	10	NR	1	1	1	1	NR
37	Wagland & Taylor, 2009	1	1	1	0	0	0	2	0		0	23	28	1	1	1	1	NR
38	Xiao, Ahn, Serido, & Shim, 2014	1	1	1	0	0	0	2	0		0	8	9	0	1	0	0	0.67
39	Shim, Barber, Card, Xiao, & Serido, 2010	1	1	1	0	0	0	2	0		0							

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Examined Studies		C. Assessment Approach & Data Collection										D. Rating										
No.	Reference	C.1 FL Dimensions assessed					C.2 How are FL Dimensions assessed?				C.3 - C.9: Data Collection & Evaluation						Rating					
		Objective Knowledge	Subjective Knowledge	Behaviour	Attitudes	Other	All FL dimensions addressed	Objective Knowledge	Subjective Knowledge	Behaviour	Attitudes	C.3 Research design	C.4 Method	C.5.1 Sample Size	C.5.2 Response rate	C.6 Data collection	C.7 Sampling Method	C.8 Financial education intervention	C.9 Data Evaluation Method	Rating	Average number of correct answers to FL	Overall conclusion
		0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes	0 = No / 1 = Yes / 2 = no definition given	0 = not relevant / 1 = Performance Test / 2 = Self Assessment; Reported Knowledge / 3 = Performance Test + Self Assessment	0 = qual. / 1 = quant. / 2 = mixed methods	0 = not specified / 1 = interview / 2 = survey / 3 = multi-method / 4 = Quasi-Experiment	N	%	0 = NR: 1 = web-based 2 = paper based 3 = in person 4 = telephone 5 = interviews 6 = Focus groups	0 = not reported 1 = probability 2 = non-probability / convenience	0 = No 1 = Yes	0 = NR, not reported 1 = descriptive & regression models 2 = descriptive & regression models & additional methods	0 = No / 1 = Yes	%: NR	0 = no conclusion made 1 = FL overall inadequate 2 = FL overall adequate			
1	AKBEN-SELÇUK, E., & ALTÖK-YILMAZ, A. (2014)	1	0	0	0	0	1	1	0	0	0	1	2	853	48%	1	1	0	1	0	45%	0
2	Al-Tamimi, H., & Bin Kalli, A. A. (2009)	1	0	0	0	1	1	1	0	0	0	1	2	290	48%	2	2	0	1	0	41%	0
3	Alintas, K. M. (2011)	1	0	0	0	0	2	1	0	0	0	1	2	337	52%	0	0	0	1	1	39%	0
4	Amari, M., & Jarboui, A. (2015)	1	1	0	0	0	1	3	0	0	0	1	2	289	NR	0	0	0	0	0	NR	0
5	Bateman, H., Eckert, C., Geweke, J., Loureiro, J., Thorp, S., & Salchell, S. (2012)	1	1	0	0	1	2	1	2	0	0	1	2	1199	98%	1	1	0	2	0	NR	9
6	Bongini, P., Trivellato, P., & Zenga, M. (2012)	1	0	1	0	0	2	1	0	0	0	1	2	351	NR	3	2	0	2	0	55%	0
7	Bruhn, M., Lara Ibarra, G., & McKenzie, D. (2014)	1	1	1	0	0	2	1	3	2	0	1	3	1586	73%	5	1	1	2	0	NR	9
8	Çelikkol, M. M., & Çelikkol, H. (2015)	1	0	1	1	0	1	1	2	2	2	1	2	1807	86%	0	1	0	2	0	NR	9
9	Cull, M., & Whiston, D. (2011)	1	0	1	1	NR	0	1	0	0	2	1	2	472	94%	0	0	0	1	0	NR	0
10	Eitel, S. J., & Marfin, J. (2009)	1	0	0	0	0	2	1	0	0	0	2	3	204	NR	0	0	0	2	0	NR	9
11	Gerrans, P., & Heaney, R. (2016)	1	1	1	1	1	1	1	2	2	2	1	4	871	42%	1	2	1	2	0	NR	9
12	Hadzic, M., & Poturak, M. (2014)	1	0	1	1	0	1	2	0	2	2	1	2	128	43%	1	0	0	0	0	NR	9
13	HECKMAN, S. J., & GRABLE, J. E. (2011)	1	1	0	0	NR	2	1	1	0	0	1	2	80	NR	1	2	0	2	0	58%	9
14	Lukxander, A., Béres, D., Huzdik, K., & Németh, E. (2014)	1	1	0	0	0	0	1	2	0	0	1	2	1743	4.6%	1	1	0	1	0	55%	9
15	Karaa, I. E., & Kuğu, T. D. (2016)	1	1	0	0	0	1	1	2	0	0	1	2	916	46%	0	1	0	2	0	37%	0
16	Kindle, P. A. (2013)	1	0	0	0	0	1	1	0	0	0	1	2	1506	70%	1	2	0	2	0	70%	1
17	Kolodziej, S. (2014)	1	0	1	1	0	0	1	0	2	2	1	2	111	NR	0	0	0	2	0	NR	9
18	Krechovska, M. (2015)	1	0	0	0	0	0	1	0	0	0	1	2	600	NR	1	0	0	0	0	NR	9
19	LaBorde, P. M., Motner, S., & Whalley, P. (2014)	1	1	1	0	0	1	1	2	2	0	0	2	1203	9%	1	1	0	2	0	59%	0
20	Lee, E., & Hanna, S. D. (2014)	1	1	1	1	1	1	1	2	2	2	1	2	716	88%	0	0	0	2	0	57%	9
21	Lorence, J., Lawrence, D. J., Salisbury, S. A., & Goertz, C. M. (2014)	1	0	1	1	0	2	1	0	2	2	1	2	57	23%	2	2	0	0	1	77%	0
22	Marriott, P., Pogue, M., & Osgerby, J. (2010)	1	0	0	1	0	1	1	0	0	2	1	2	365	NR	0	0	0	0	1	35%	0
23	Nano, D., & Canti, S. (2013)	1	0	1	1	0	1	1	2	2	2	1	2	607	NR	2	1	0	1	1	60%	0
24	OZDEMİR, A., TEMİZEL, F., SONMEZ, H., & ER, F. (2015)	1	0	0	0	0	0	1	0	0	0	1	2	221	NR	5	1	0	2	1	NR	1
25	Pintye & Kiss, 2016	1	0	1	1	0	1	1	0	2	2	1	2	118	NR	2	0	0	2	0	73%	1
26	Rahim, Rashid, & Hamed, 2016	0	1	0	1	0	0	1	0	0	2	1	2	200	NR	2	1	0	NR	0	NR	9
27	Robb & Sharpe, 2009 Robb & James III, 2009	1	0	0	0	0	1	1	0	0	0	1	2	3884	24%	1	0	0	2	0	NR	9
28	Robb, 2011	1	0	0	0	0	1	1	0	0	0	1	2	1354	5%	1	0	0	2	0	NR	9
29	Rosacker & Rosacker, 2016	1	0	0	0	0	0	1	0	0	0	1	4	214	78.39%	3	0	1	1	0	70.4%	9
30	Sabri, MacDonald, Hira, & Masud, 2010	1	0	0	0	2	1	1	0	0	0	1	2	1865	48%	0	1	0	1	0	47%	0
31	SARIGUL, 2014	1	0	0	0	0	0	1	0	0	0	1	2	1099	NR	0	0	0	1	1	65%	0
32	SEYEDIAN & YI, 2011	1	0	0	0	0	2	1	0	0	0	1	4	113	NR	NR	0	0	2	1	72%	1
33	Shambare & Rugimbana, 2012	1	0	0	0	0	1	1	0	0	0	1	2	214	60.3%	3	2	0	0	1	NR	1
34	Smith & Barboza, 2014	1	1	0	0	0	2	1	2	0	0	1	2	380	NR	0	0	0	9	0	NR	9
35	Toth, Lanžarić, & Savov, 2015	1	0	0	0	0	0	1	0	0	0	1	2	608	NR	0	0	0	9	0	62.70%	9
36	Wagland & Taylor, 2009	1	1	0	0	0	1	1	2	0	0	1	2	165	NR	NR	0	0	1	0	61.50%	0
37	Xiao, Ahn, Serido, & Shim, 2014 Shim, Barber, Card, Xiao, & Serido, 2010	1	1	0	0	0	1	1	2	0	0	1	2	1100	81%	2	1	0	1	0	69%	9

Appendix B – Research Synthesis “Financial Literacy of University Students”