

Al Rahahleh, Naseem M.

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Article

Financial Literacy Levels among Saudi Citizens across Budgeting, Saving, Investment, Debt, and Insurance Dimensions

Naseem Al Rahahleh 

Department of Finance, Faculty of Economics and Administration, King Abdulaziz University, Jeddah 21589, Saudi Arabia; nalrahahleh@kau.edu.sa

Abstract: This paper provides a comprehensive account of financial literacy among Saudi citizens. Responses to items about key aspects of financial literacy—i.e., budgeting, debt, saving, investment, and insurance—were elicited from a large sample of Saudi citizens through an online survey. The data from 887 completed surveys were subjected to a descriptive analysis, a T-test, and ANOVA. A high level of financial literacy was found among the respondents in relation to budgeting, debt, and saving, but only a moderate level in relation to investment and insurance. The study findings indicate that current efforts on the part of government agencies, schools, universities, and financial institutions focused on budgeting, debt, and saving should continue and that more attention should be paid to educating Saudi citizens in relation to investment and insurance.

Keywords: financial literacy; budgeting; debt; saving; investment; insurance; Saudi citizens; financial decisions



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1. Introduction

Financial decision-making and management can be confusing for consumers, given the complicated and dynamic nature of the financial industry in relation to its frequent introduction of new products and services and modifications to existing ones. As this is the case, financial literacy has become a concern in multiple contexts, which is reflected in programs offered at schools and universities and by the financial institutions themselves (Braunstein and Welch 2002; Lusardi and Mitchell 2011). It is also often the case that programs of this kind are designed and offered in a broader political and cultural context as governments worldwide seek to improve the financial literacy of entire populations (Atkinson and Messy 2011). The idea that financial literacy is a fundamentally important life skill is now widely acknowledged, given that researchers have shown that compared to people considered financially literate, those who do not meet a threshold for financial literacy are less able to manage emergency expenses and income shocks (Hasler et al. 2018), less likely to withdraw deposits from distressed banks (Guin et al. 2015), and less likely to pull investments out of the stock market before a crash (Guiso and Viviano 2015). It is evident that those with sound financial knowledge have a distinct advantage pertinent to financial decision-making, including acquiring and accumulating wealth through general planning and saving behavior (Ameriks et al. 2003) and selecting investments that fit their situation and goals with a good understanding of the risks involved (Bianchi 2018).

This investigation is presented in the context of a wealth of studies from the immediate past (e.g., Coppola et al. 2017; OECD 2017) that indicate financial illiteracy rather than literacy on the part of the populations of many countries worldwide. In addition, in some studies, certain socioeconomic groups—specifically women, people with a migrant background, and people with limited formal education—have been found to perform at an especially low level (e.g., Bucher-Koenen et al. 2017; Happ and Förster 2019). However, researchers have argued that the performance gaps in financial literacy derive from variations among individuals in relation to personality, including relative propensity to defer

gratification as well as socio-demographic background (Siegfried and Wuttke 2021), relative interest in fiscal and budgetary issues (e.g., Brown and Graf 2013; Winter et al. 2013), and different kinds of socialization patterns and educational backgrounds (e.g., Rinaldi 2017; Rudeloff 2019).

In the last few decades, governments of developed and emerging countries have recognized not only the impact of poor financial decisions on individuals but also their negative consequences for the socioeconomic outlook of the country as a whole (Gerardi et al. 2010). The importance of financial literacy is reflected in the High-Level Principles on National Strategies for Financial Education developed by the Organisation for Economic Co-operation and Development International Network on Financial Education (OECD/INFE), which was endorsed at the G20 meeting in 2012 (G20 2012).

International organizations such as the World Bank and the International Monetary Fund (IMF) have also focused on financial literacy in global contexts by urging governments and economic institutions to advance a financial literacy agenda (Danns and Danns 2017). In response, with the leadership of the G20 Group, some countries have taken steps to improve the financial literacy of their populations—with the number of countries offering targeted programs growing over time (Russia's G20 Presidency and OECD 2013). Specifically, in 2015, a total of 59 countries had made significant progress in terms of developing and operationalizing national strategies focused on improving financial literacy nationwide (OECD 2015). More countries joined this effort in the following five years, such that in 2020, more than 70 countries were in the design or implementation stage of a national strategy focused on financial literacy (Levantesi and Zacchia 2021). Against this background, the OECD issued guidelines—which include consideration of the needs of vulnerable groups—to support the efforts of participating countries (OECD 2020).

In Saudi Arabia, financial literacy is an important aspect of the country's Vision 2030. Specifically, in accordance with a broader focus on developing the financial sector, the Vision includes the Financial Literacy Strategy, which was released in 2019 and centered on fostering effective financial planning on the part of the nation's citizens as a whole.¹ A year later, the National Savings Strategy included in Vision 2030 was updated in an effort to address Saudi Arabia's household saving rate of 1.6% (Household Income and Expenditure Survey 2018)—one of the lowest among G20 countries and significantly lower than the global standard of 10% considered the minimum level for ensuring long-term financial independence.² In 2021, the Saudi government integrated the two strategies to result in the country's broad-based National Savings and Financial Literacy Strategy. Through this integrated approach, which is, however, currently under review, the government seeks to achieve financial well-being nationwide as a way to support the well-being of the citizenry in the broadest sense. In working towards this goal, the government has recognized the importance of ensuring that citizens are equipped to navigate the maze of financial decisions they face every day, given rapid changes and constant developments in the financial sector and the economy.

As one way of supporting this Vision 2030 strategy, the present study provides a comprehensive description of the ways in which and the extent to which Saudi citizens are financially literate in relation to some important concepts and services within the financial industry. The data for analysis were collected via an online survey instrument with items focused on the perceptions of a large sample of Saudi citizens on the main aspects of financial literacy. The study findings are directly relevant to supporting and informing the direction and emphasis of the integrated National Savings and Financial Literacy Strategy.

The concept of financial literacy is described in the literature in a number of related ways. At the most foundational level, Huston (2010) divided the concept into two very simple dimensions referred to as understanding and use: understanding refers to personal financial knowledge/ability, whereas use refers to a person's application of this financial knowledge/ability to managing his/her financial life. Researchers have also offered more specific descriptions of the concept. For example, financial literacy has been described as the ability to make simple decisions about debt contracts, including in relation to basic

knowledge of compound interest (Lusardi and Tufano 2015). A further consideration in the literature is that of potential, which is understood as pertaining to individual dispositions (knowledge and skills, motivations and interests, attitudes, and values). These dispositions are associated, in turn, with contextual characteristics that are important in determining the extent to which any given individual is able to manage financial decisions effectively (Aprea et al. 2016; Siegfried and Wuttke 2021). The concept of financial literacy also encompasses a person's ability related to making sound decisions pertinent to financial management overall (Servon and Kaestner 2008) and, more specifically, to evaluating new and complex financial instruments and then using them appropriately (Mandell 2008).

The most comprehensive description in the literature—one that covers understanding and management of financial affairs in regard to process, management, and decision-making over time, as well as the ability to respond to changing conditions—is as follows: “[Financial literacy is] a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate, short-term decision-making and sound, long-range financial planning, while [being] mindful of life events and changing economic conditions” (Remund 2010, p. 284). As the brief review presented indicates, the definitions of financial literacy used across the literature are similar. In addition, as Remund (2010) pointed out,³ the concept is generally broken down into the four general categories of budgeting, saving, investment, and debt (although Sabri et al. (2010) also include insurance), which are applicable to all individual contexts and to national economic development likewise. Further, as Remund argued, these categories constitute appropriate variables for use in testing the financial literacy of sample populations. In accordance with Sabri et al. (2010), in the present study, financial literacy is conceptualized in relation to the five stated dimensions of budgeting, saving, investment, debt, and insurance.

The purpose of the study is to provide a comprehensive account of financial literacy among Saudi citizens based on the five dimensions recommended by Sabri et al. (2010): budgeting, saving, investment, debt, and insurance. In other words, the study focuses on determining the extent and nature of financial literacy among the Saudi citizenry. The study also addresses the determinants of financial literacy in relation to demographics and surveyed sample characteristics.

In more detail, differences in financial literacy levels are tested in relation to gender, age, marital status, educational level, income, major, and employment sector. The main research questions are as follows: How financially literate are Saudi citizens? Are there differences in the surveyed sample associated with demographics and characteristics in regard to financial literacy level? The analysis is based on a sample of the Saudi population in reference to the financial literacy dimensions developed by Remund (2010) and Sabri et al. (2010) and a quantitative methodology is used in combination with a deductive approach to the analysis. The data were collected based on a 5-point Likert-type scale questionnaire from a sample of 887 people in Saudi Arabia, almost three quarters of whom were in the 18–34 age range. The findings are, therefore, both timely and highly relevant to conceptualizing and implementing needed changes in the country's National Savings and Financial Literacy Strategy and strengthening the infrastructure needed to effectively and fully support it.

The rest of the paper is organized as follows: Section 2 comprises an account of the method used to collect the data, together with a description of the measurement model. Section 3 presents the empirical results and a descriptive analysis of their implications. Section 4 consists of a discussion of the findings and recommendations for future related research directions.

2. Research Methodology

2.1. Methodology and Statistical Method

This study follows the descriptive approach using quantitative data collected through a questionnaire survey instrument. To provide a comprehensive account of financial lit-

eracy among Saudi citizens, the five dimensions recommended by Sabri et al. (2010), i.e., budgeting, saving, investment, debt, and insurance, are investigated, and a quantitative methodology is used in combination with a deductive approach to analysis. Accordingly, data were collected via a self-administered questionnaire made available online, which were then subjected to analysis using a quantitative descriptive approach.

The data were analyzed using the Statistical Package for the Social Sciences (SPSS v.26). Cronbach’s alpha was used to test the reliability of the scales, and mean and standard deviation (std.) values to establish the aggregate mean values. In addition, an Independent Sample T-Test and One-Way Analysis of Variance (ANOVA) provided comparisons based on the respondents’ demographics and characteristics.

2.2. Demographics and Characteristics of the Surveyed Sample

The demographic composition and other important characteristics of the sample are presented in Table 1. The sample was relatively diverse for the Saudi Arabian context such that it provided a basis for determining the nature and extent of financial literacy among Saudi citizens—with the important exception of gender, given that a large majority of the respondents were male ($n = 701$, 79.0%) with far fewer female respondents included in the sample ($n = 186$, 21.0%). In regard to age, most of the respondents were in the younger-generation categories: 18–24 years ($n = 321$, 36.2%), 25–34 years ($n = 335$, 37.8%), 35–44 years ($n = 171$, 19.3%), 45–54 years ($n = 46$, 5.2%), and more than 54 years ($n = 14$, 1.6%). In terms of marital status, as the majority of the respondents were young, more than half were single ($n = 464$, 52.3%), although married people also comprised a large proportion of the sample ($n = 393$, 44.3%) followed by those who were divorced ($n = 25$, 2.8%), widowed ($n = 3$, 0.3%), and in the category designated as other ($n = 2$, 0.2%).

Table 1. Demographics and characteristics of surveyed sample ($n = 887$).

Category	Group/Sub-Group	<i>n</i>	%
Gender	Male	701	79.0%
	Female	186	21.0%
	Total	887	100%
Age	18–24 years	321	36.2%
	25–34 years	335	37.8%
	35–44 years	171	19.3%
	45–54 years	46	5.2%
	More than 54 years	14	1.6%
	Total	887	100%
Marital status	Single	464	52.3%
	Married	393	44.3%
	Divorced	25	2.8%
	Widowed	3	0.3%
	Other	2	0.2%
	Total	887	100%
Educational level	Diploma or lower	408	46.0%
	Bachelor	404	45.5%
	Postgraduate	74	8.3%
	Other	1	0.1%
	Total	887	100%

Table 1. *Cont.*

Category	Group/Sub-Group	n	%
Yearly income in Saudi Riyal	Less than 20,000	432	48.7%
	20,000–99,999	163	18.4%
	100,000–149,999	64	7.2%
	150,000–199,999	36	4.1%
	200,000–499,999	34	3.8%
	500,000–999,999	9	1.0%
	1,000,000–4,999,999	7	0.8%
	More than 5M	2	0.2%
	Prefer not to say	140	15.8%
	<i>Total</i>	887	100%
Major	Accounting	96	10.8%
	Finance	119	13.4%
	Public administration	133	15.0%
	Marketing	30	3.4%
	Human resources (HR)	27	3.0%
	Management information systems (MIS)	19	2.1%
	Economics	58	6.5%
	Business administration	100	11.3%
	Other	305	34.4%
	<i>Total</i>	887	100%
Sector	Public sector	281	31.7%
	Private sector	240	27.1%
	Freelance	61	6.9%
	Student	267	30.1%
	Other	38	4.3%
	<i>Total</i>	887	100%
Sources of financial knowledge	Home	365	41.1%
	Training course	91	10.3%
	University major	165	18.6%
	Prior mistakes	135	15.2%
	Friends and colleagues	71	8.0%
	Relatives	27	3.0%
	Other	33	3.7%
	<i>Total</i>	887	100%
Income source *	Salary or wages is the only source of income.	566	58.2%
	Rent is the only source of income.	31	3.2%
	Salary and rent are the only sources of income.	48	4.9%
	I am a student and I do not have a source of income.	155	15.9%
	I am a student and I have a source of income.	86	8.8%
	Self-employment income is the only source of income I have.	68	7.0%
	Other	19	2.0%
	<i>Total</i>	973	100%

* Multiple answers were possible. Source: Author’s calculations.

In terms of the highest level of formal education, the largest proportion had a diploma or less ($n = 408, 46.0\%$), followed very closely by those for whom a bachelor’s degree (either having completed some work at this level or having earned the degree) was the highest level achieved ($n = 404, 45.5\%$), with postgraduate (either having completed some work at this level or having earned the degree) ($n = 74, 8.3\%$) accounting for a much smaller percentage and other accounting for a negligible percentage ($n = 1, 0.1\%$). For yearly income in Saudi Riyal, slightly fewer than half the respondents ($n = 432, 48.7\%$) had an income of less than 19,999, with much smaller proportions of the sample in all the other income categories as follows: 20,000–99,999 ($n = 163, 18.4\%$), 100,000–149,999 ($n = 64, 7.2\%$), 150,000–199,999 ($n = 36, 4.1\%$), 200,000–499,999 ($n = 34, 3.8\%$), 500,000–999,999 ($n = 9, 1.0\%$), 1,000,000–4,999,999 ($n = 7, 0.8\%$), more than 5M ($n = 2, 0.2\%$), and prefer not to say ($n = 140,$

15.8%). In regard to the source of income, the majority of the respondents reported salary or wages as their only source of income⁴ ($n = 566$, 58.2%), followed by students with a source of income ($n = 86$, 8.8%), then profit income from a business ($n = 68$, 7.0%), followed by salary and rent ($n = 48$, 4.9%), rent only ($n = 31$, 3.2%), and finally other ($n = 19$, 2.0%). However, some of the respondents were students reporting no source of income ($n = 155$, 15.9%).

For those with a bachelor's degree or some work at this level, the respondents had majored or were majoring in a number of subjects according to the following breakdown: public administration ($n = 133$, 15.0%), finance ($n = 119$, 13.4%), business administration ($n = 100$, 11.3%), accounting ($n = 96$, 10.8%), economics ($n = 58$, 6.5%), marketing ($n = 30$, 3.4%), human resources ($n = 27$, 3.0%), and management information systems ($n = 19$, 2.1%). However, the largest category was other ($n = 305$, 34.4%) with multiple subjects represented, including Arabic language, aviation science, banks and insurance, biology, business sciences, chemistry, computer science and IT, cosmetology, cyber security, data entry, dentistry, design, education and arts, engineering (various fields), engine maintenance, English language, geography, health, health management, history, interior design, Islamic religion, laboratory sciences, law, linguistics, management sciences, mass media and communication, math, medicine, networks, nursing, nutrition, occupational health and safety, pharmacy, physical therapy, professional education, project management, psychology, public relations, radiology, sciences, social service, statistics, teaching, translation, and zoology.

Further, there was significant diversity in terms of the sectors in which the respondents were employed: public sector ($n = 281$, 31.7%), private sector ($n = 240$, 27.1%), freelance ($n = 61$, 6.9%), and other $n = 38$ (4.3%), the latter of which reflected the respondents' answers of housewife, jobless, graduate, and retired. Further, students were included as a sector and constituted almost a third of the sample ($n = 267$, 30.1%). In regard to where they gained knowledge related to financial literacy, the respondents reported the following sources: home ($n = 365$, 41.1%), university major ($n = 165$, 18.6%), prior mistakes ($n = 135$, 15.2%), training courses ($n = 91$, 10.3%), friends and colleagues ($n = 71$, 8.0%), other ($n = 33$, 3.7%), and relatives ($n = 27$, 3.0%). The relatives category refers to uncles, aunts, cousins, nieces, and nephews, whereas the home category refers to closer relatives and in-laws. The other category encompassed self-education and searching and reading, including on the Internet and via social media, personal opinions, work, and previous experience.

2.3. Instruments Used

Responses to items about key aspects of financial literacy—i.e., budgeting, debt, saving, investment, and insurance—were collected using a self-administered questionnaire consisting of two sections. The first section comprised questions related to personal and demographic information, including gender, age, marital status, yearly income in Saudi Riyal, income source, educational level, major area of study, occupation, and source of knowledge relating to financial literacy. The second section comprised five categories designed to test the respondents' financial literacy relative to budgeting, saving, investment, debt, and insurance. All the scales comprised items developed by Sabri et al. (2010) and Remund (2010), modified slightly to fit the purpose of the present study. The scales are presented below:

Budgeting

1. An increase in the price of goods will reduce your buying power.
2. A balance sheet shows your financial status.
3. Older people with a fixed pension will suffer the most from high inflation.
4. One cannot spend more than 20% of monthly income on installments.

Investment

1. Stocks are, in general, more risky than bonds.
2. By buying a bond from company X, you do not own part of company X.
3. The value of money can double after ten years.

4. By buying a stock from company X, you have not lent money to company X.
5. The interest rate on Saudi treasury bonds is lower than the interest rate on most savings accounts.
6. The TASI increased recently to above 300 points.
7. If the interest rate rises, bond prices will decrease.
8. On the 31 of December 2021, Apple was not the world's most valuable company.
9. On the 31 of December 2021, Google was the world's most valuable company.
10. Not all types of investments are profitable.
11. Investments with high returns are not likely to involve a relatively low risk.

Debt

1. The longer a college loan is due, the greater the cost of financing it.
2. Owning a credit card will increase your purchasing power in the short run.
3. Using a credit card to get cash is not free of charge.
4. Credit cards are free to acquire.
5. Online credit card purchases are in principle always insured.
6. Buying goods on credit will reduce your purchasing power in the future.

Saving

1. Savings are not extra income after deducted expenses.
2. It is wise to save a part of your income for emergencies.
3. The value of money will affect the future value of savings.
4. It is wise to invest your savings in stocks or bonds.
5. Every savings account in the KSA is protected.

Insurance

1. Life insurance doesn't protect the policy holder from a financial burden.
2. Students need health insurance.
3. Motorcyclists need insurance.

The respondents were presented with a total of 37 items with response options on a Likert-type scale of 1 to 5 as follows: "1 = strongly disagree", "2 = disagree", "3 = neutral", "4 = agree", and "5 = strongly agree". The survey was hosted between 1 April 2022 and 30 August 2022 on Google form with an open link forwarded using the social media platforms WhatsApp and Twitter. No identifying information was collected such that the survey was anonymous in every respect.

2.4. Sampling, Data Screening, and Preparation

Data were collected via the questionnaire instrument from April 2022 to August 2022. A link to the questionnaire was shared via online channels such as email and social media. In total, 891 completed responses were received. No major outliers were found, although four questionnaires demonstrated regular patterns with the items scoring very low std. values were dropped from the analysis. The final sample subjected to analysis, therefore, consisted of 887 valid responses. Based on skewness and kurtosis values, no normality concerns were associated with the dataset. The skewness and kurtosis values were within the range of +2.2 and -2.2 proposed by [Sposito et al. \(1983\)](#), such that parametric analysis was valid for the data.

The data were also examined to determine whether any other bias issues were present. The scales were found to be free of any issue of this kind, as the explained variance was 33.862% and, therefore, below the 50% cutoff in relation to Harman's single factor ([Podsakoff et al. 2012](#)). Further, the non-response bias was checked using the independent samples T-test to compare significant differences between early and late responses. For this test, when only non-significant differences are found, a non-response bias is not detected. All five of the dimensions examined were free of non-response bias, as the results of the T-test for each were non-significant: budgeting ($T = -0.666, p = 0.505$), investment

($T = -0.871, p = 0.384$), debt ($T = 1.341, p = 0.180$), saving ($T = 1.747, p = 0.081$), and insurance ($T = -0.791, p = 0.429$).

2.5. Scale Reliability

The reliability of the instrument scales was verified through Cronbach’s alpha coefficients, with the minimum cutoff of 0.60 observed for the value of Cronbach’s alpha coefficient (Bougie and Sekaran 2019). Whenever Cronbach’s alpha coefficient was below this point, the given scale was revised by dropping identified items in order to improve reliability. A summary of Cronbach’s alpha coefficients for the original scales and the revised scales is presented in Table 2. After several revisions, the final scales had improved reliability as Cronbach’s alpha coefficients exceeded the 0.60 cutoff.

Table 2. Cronbach’s alpha coefficients ($n = 887$).

Aspect	Original Scale		Dropped Items	Revised Scale	
	N	Cronbach’s Alpha		N	Cronbach’s Alpha
Budgeting	4	−0.022	Item 4	3	0.668
Investment	11	−0.322	Items 1, 5, 6, 9	7	0.684
Debt	6	0.301	Item 3	5	0.731
Saving	5	0.345	Item 1	4	0.716
Insurance	3	0.784	/	/	/

Source: Prepared by author.

3. Descriptive Analysis and Findings

3.1. Levels of Financial Literacy among the Sample

In alignment with the most relevant published research (Remund 2010; Sabri et al. 2010), budgeting, saving, investment, debt, and insurance were used as the dimensions to determine the extent and nature of financial literacy in the sample population.

Next, a descriptive analysis is presented of the financial literacy of the sample based on the mean (the variable was measured on a 5-point Likert scale where 5 denoted “strongly agree”) and standard deviation (std.) values (equal to zero indicates that a questionnaire had all the same answers on all the Likert-type scale items). The mean values were interpreted based on the scale proposed by (Bougie and Sekaran 2019) as follows:

- Mean values within the range of 3.67–5.00 show a high level of agreement.
- Mean values within the range of 2.34–3.669 show a moderate level of agreement.
- Mean values within the range of 1–2.339 show a low level of agreement.

As indicated by Table 3, the level of financial literacy for all the dimensions was moderate, scoring an overall mean value of 3.50. In regard to the scores for the individual dimensions, budgeting had the highest financial literacy level (Mean (M) = 4.15), followed closely by saving (M = 4.10), and then quite closely again by debt (M = 3.87); however, the scores in relation to insurance (M = 2.76) and investment (M = 2.58) were significantly lower. Further, the std. values for all the dimensions were below 1 with the exception of insurance with a std. value above 1, indicating disagreement among the respondents for that dimension only.

Table 3. Mean and std. values for financial literacy dimensions for the Saudi sample ($n = 887$).

No.	Order	Aspect	Mean (M)	Std.	Level
1	1	Budgeting	4.15	0.72	High
2	5	Investment	2.58	0.68	Moderate
3	3	Debt	3.87	0.73	High
4	2	Saving	4.10	0.69	High
5	4	Insurance	2.76	1.13	Moderate
Overall Mean			3.5		Moderate

Source: Author’s calculations.

These results indicate a high level of financial literacy among the surveyed respondents in relation to budgeting, debt, and saving (Table 3). This was not the case, however, for either investment or insurance, for which financial literacy was found to be at a moderate level. Moreover, after testing was performed, a number of items were dropped because the scales were not adequate in terms of reliability. The items dropped comprise the following: “A person cannot spend more than 20% of his monthly income on installments”, “Stocks are in general more risky than bonds”, “The TASI increased recently to above 300 points”, “On the 31 of December 2021, Google was the world’s most valuable company”, “The interest rate on Saudi Treasury bonds is lower than the interest rate on most savings accounts”, “Using a credit card to get cash is not free”, and “Savings are additional income after deducting expenses”. Yet, a clear and accurate understanding of these items is necessary in order to be considered financially literate. Another point to consider is that disagreement was evident in most of the assessments (as the std. value is higher than one or very close to one for most items), which again indicates the need to improve financial literacy among Saudi citizens.

The Saudi citizens in the sample showed a moderate level of financial literacy (i.e., 3.5), which is worthwhile to consider in a general global context. That is, it appears that much of Europe and Asia are suffering from limited financial literacy (Chen and Volpe 2002; Marriott 2009). However, there are some exceptions: In one study, researchers found a high level of financial knowledge in a population of students in Turkey (Gerek and Kurt 2008); in another, similar results were reported for a population of youth in Bahrain (Pillai et al. 2010); and, in a study focused on Australia, results were mixed (Beal and Delpachitra 2003; Bird 2008).

In the face of definitional, conceptual, and methodological differences between all the relevant studies in the literature and the present study, it is not possible to offer direct comparisons between respective results. Yet, this study does constitute an original and vital part of putting together a comprehensive and nuanced picture of financial literacy worldwide as well as in Saudi Arabia. In particular, the literature includes several studies, for example, Chen and Volpe (2002) and Marriott (2009), through which data from western and non-western countries are analyzed to obtain a generalized international perspective on financial literacy among the young.

3.1.1. Budgeting: Financial Literacy Levels

For the budgeting dimension, the sample showed an overall high level of financial literacy (M = 4.15). A high level of financial literacy was found for the following items: “An increase in the price of goods will reduce your buying power”, “Older people with a fixed pension will suffer the most from high inflation”, and “A balance sheet shows your financial status”. Further, agreement was seen in the assessments as neither of the std. values was above 1.

The findings of the one-sample T-test provided support that the mean value of each item in Table 4 is significantly different from the proposed standard level of 3 (i.e., 3 = neutral on a Likert-type scale). For example, the mean of item 1 “An increase in the price of goods will reduce your buying power” equals 4.30, T-value = 44.46, and p-value sig. = 0.00, which is less than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of that item is significantly greater than the hypothesized value or the proposed standard level.

Table 4. Budgeting: Mean and std. values for financial literacy levels (n = 887).

No.	Order	Question	Mean	Proportional Mean (%)	Level	T-Value	p-Value	Std.
1	1	An increase in the price of goods will reduce your buying power.	4.30	86	High	44.46	0.00 *	0.86
2	3	A balance sheet shows your financial status.	3.96	79.2	High	28.84	0.00 *	0.9
3	2	Older people with a fixed pension will suffer the most from high inflation.	4.20	84	High	38.08	0.00 *	0.93
		Average mean for all items	4.15	83	High	47.39	0.00 *	

* The mean is significantly different from 3 at ($\alpha \leq 0.05$). Source: Author’s calculations.

3.1.2. Investment: Financial Literacy Levels

For the investment dimension, the sample showed an overall moderate level of financial literacy ($M = 2.58$). The sample did not have adequate financial literacy on most of the specific investment items given moderate to low values for most of them. A high level of financial literacy, however, was found for this item: “The value of money can double after ten years”. Yet, only moderate financial literacy was found for the following: “Not all types of investments are profitable”, “Investments with a high return are not likely to involve a relatively low risk”, “By buying a stock from company X, you have not lent money to company X”, and “By buying a bond from company X, you do not own part of company X”. On the other hand, financial literacy was found to be low for these items: “On the 31 of December 2021, Apple was not the world’s most valuable company” and “If the interest rate rises, bond prices will not increase”. Further, disagreement was seen among the respondents given that most of the items had a std. value above 1.

The survey sample performed well on certain constructs and poorly on others (Table 5). All the one-sample T-tests were significant given that each had a p -value below 0.05 such that the mean values differed from the proposed standard level of 3. Further, all the T-test results were negative with the exception of item 3 (“The value of money can double after ten years”), for which the T-test result was positive (i.e., higher than the proposed standard level of 3) such that this item had the highest mean value.

Table 5. Investment: Mean and std. values for financial literacy levels ($n = 887$).

No.	Order	Question	Mean	Proportional Mean (%)	Level	T-Value	p-Value	Std.
2	5	By buying a bond from company X, you do not own part of company X.	2.38	47.59	Moderate	−15.33	0.00 *	1.19
3	1	The value of money can double after ten years.	3.82	76.40	High	21.41	0.00 *	1.14
4	4	By buying a stock from company X, you have not lent money to company X.	2.44	48.80	Moderate	−13.46	0.00 *	1.25
7	7	If the interest rate rises, bond prices will not increase.	2.12	42.40	Low	−26.25	0.00 *	0.99
8	6	On the 31st of December 2021, Apple was not the world’s most valuable company.	2.32	45.40	Low	−18.95	0.00 *	1.07
10	2	Not all types of investments are profitable.	2.54	50.80	Moderate	−11.25	0.00 *	1.21
11	3	Investments with a high return are not likely to involve a relatively low risk.	2.50	50.00	Moderate	−11.76	0.00 *	1.26
Average mean for all items			2.58	51.60	Moderate	−17.83	0.00 *	

* The mean is significantly different from 3 at ($\alpha \leq 0.05$). Source: Author’s calculations.

3.1.3. Debt: Financial Literacy Levels

For the debt dimension, the sample showed an overall high level of financial literacy ($M = 3.87$). All the items in this dimension showed a high level of agreement, with the exception of “Credit cards are free to acquire”, for which a moderate level of agreement was found. Most of the std. values were above 1, indicating disagreement among the respondents (Table 6).

The findings of the one-sample T-test showed that all the test results were significant given a p -value below 0.05, such that the mean values were different from the proposed standard level of 3. Further, the study found that all the mean differences were positive (i.e., all the items had a mean value greater than the standard).

Table 6. Debt: Mean and std. values for financial literacy levels ($n = 887$).

No.	Order	Question	Mean	Proportional Mean (%)	Level	T-Value	p-Value	Std.
1	1	The longer a college loan is due, the greater the cost of financing it.	4.26	85.2	High	40.16	0.00 *	0.93
2	2	Owning a credit card will increase your purchasing power in the short run.	3.93	78.60	High	27.27	0.00 *	1.01
4	5	Credit cards are free to acquire.	3.62	72.39	Moderate	15.15	0.00 *	1.22
5	4	Online credit card purchases are in principle always insured.	3.71	74.20	High	19.67	0.00 *	1.06
6	3	Buying goods on credit will reduce purchasing power in the future.	3.88	77.60	High	25.21	0.00 *	1.03
Average mean for all items			3.87	77.40	High	35.59	0.00 *	

* The mean is significantly different from 3 at ($\alpha \leq 0.05$). Source: Author’s calculations.

3.1.4. Saving: Financial Literacy Levels

For the saving dimension, the sample showed an overall high level of financial literacy ($M = 4.10$). In addition, the mean values of all the items ranged from 3.91 to 4.38, which demonstrated a high level of financial literacy. Agreement characterized the responses, as most of the std. values were below 1 (Table 7).

Table 7. Saving: Mean and std. values for financial literacy levels ($n = 887$).

No.	Order	Question	Mean	Proportional Mean (%)	Level	T-Value	p-Value	Std.
2	1	It is wise to save part of your income for emergencies.	4.38	87.60	High	49.27	0.00 *	0.83
3	2	The value of money will affect the future value of savings.	4.14	82.80	High	37.80	0.00 *	0.90
4	4	It is wise to invest your savings in stocks or bonds.	3.91	78.20	High	25.88	0.00 *	1.04
5	3	Every savings account in Saudi Arabia is protected.	3.97	79.20	High	29.17	0.00 *	0.99
Average mean for all items			4.10	82	High	47.13	0.00 *	

* The mean is significantly different from 3 at ($\alpha \leq 0.05$). Source: Author’s calculations.

According to the findings of the one-sample T-test, all the test results were significant, given a p -value below 0.05 such that the mean values were different from the proposed standard level of 3. Further, all the mean differences were positive (i.e., all the items had a mean value greater than the standard).

3.1.5. Insurance: Financial Literacy Levels

For the insurance dimension, the sample showed an overall moderate level of financial literacy ($M = 2.76$). Financial literacy was found to be moderate for “Motorcyclists need insurance” and “Students need health insurance”. However, financial literacy was found to be low for “Life insurance doesn’t protect the policyholder from a financial burden”. All the std. values were above 1, indicating disagreement among the respondents (Table 8).

Table 8. Insurance: Mean and std. values for financial literacy levels ($n = 887$).

No.	Order	Question	Mean	Proportional Mean (%)	Level	T-Value	p-Value	Std.
1	3	Life insurance doesn’t protect the policyholder from a financial burden.	2.04	40.80	Low	−26.49	0.00 *	1.07
2	2	Students need health insurance.	3.04	60.80	Moderate	0.82	0.42	1.44
3	1	Motorcyclists need insurance.	3.21	64.20	Moderate	4.16	0.00 *	1.51
Average mean for all items			2.76	55.19	Moderate	−6.16	0.00 *	

* The mean is significantly different from 3 at ($\alpha \leq 0.05$). Source: Author’s calculations.

Three of the one-sample T-tests were significant given a *p*-value below 0.05 such that the mean values differed from the proposed standard level of 3 for item 1 (“Life insurance doesn’t protect the policyholder from a financial burden”) and item 3 (“Motorcyclists need insurance”), and the overall mean value. On the other hand, the one-sample T-test was non-significant for item 2 (“Students need health insurance”), given a *p*-value greater than 0.05, thereby indicating that the mean value was not statistically different from the standard.

3.2. Significant Differences between Financial Literacy Levels Associated with Demographics and Characteristics

The results reported clearly indicate that the Saudi citizens constituting the focal sample had a moderate level of financial literacy overall. Differences among the citizens, however, should be well-noted and addressed, given their demographics and characteristics.

To test for differences in literacy levels, an Independent Samples T-test and a One-Way Analysis of Variance (ANOVA) test were used, with the post-test LSD-Fisher also included in order to make multiple comparisons and identify significant groups.

3.2.1. Differences in Financial Literacy Levels according to Gender

According to the results of the T-test, gender did not have an effect on financial literacy, as the results of all the tests were non-significant with sig. values above the 0.05 level (Table 9).

Table 9. Differences according to gender using the independent samples T-test (*n* = 887).

Aspect	T Value	Sig.	Sig. Group
Budget	0.901	0.368	–
Investment	0.686	0.493	–
Debt	0.767	0.443	–
Saving	0.405	0.686	–
Insurance	0.120	0.905	–

Source: Author’s calculations.

3.2.2. Differences in Financial Literacy Levels according to Age

The ANOVA results showed non-significant differences in financial literacy levels for the budgeting and saving dimensions based on age, indicating that age has little, if any, bearing on literacy in these dimensions (Table 10). On the other hand, the ANOVA tests showed significant differences according to age for financial literacy levels relative to the investment, debt, and insurance dimensions, as the ANOVA test results for these dimensions were all significant. Further, the post-test LSD-Fisher showed that two of the older respondent groups, i.e., those in the 35- to 44-year age range and those older than 54 years had higher levels of literacy relative to investment and insurance than did the respondents in the 45- to 53-year age range and the younger age groups (i.e., 18–34 years). However, those aged 18–34 years had a higher level of literacy in relation to debt as compared with the older respondents.

Table 10. Differences according to age using the ANOVA test (*n* = 887).

Aspect	F Value	Sig.	Sig. Group
Budgeting	1.453	0.215	–
Investment	3.082	0.016 *	35–44 years, More than 54 years
Debt	3.620	0.006 *	18–24 years, 25–34 years
Saving	0.728	0.573	–
Insurance	3.931	0.004 *	35–44 years, More than 54 years

* Differences are significant at the $\alpha \leq 0.05$ level. Source: Author’s calculations.

3.2.3. Differences in Financial Literacy Levels according to Marital Status

Based on the ANOVA results, marital status has little, if any, bearing on financial literacy in the investment, saving, and insurance dimensions (Table 11). The ANOVA tests did, however, show significant differences in financial literacy levels according to marital status in the budgeting and debt dimensions. Additionally, the LSD-Fisher test showed that married respondents had a higher level of financial literacy relative to the budgeting dimension in comparison with the other groups and that those who were widowed or in the group designated as other had a higher level of financial literacy in the debt dimension in comparison with respondents in the other marital status groups.

Table 11. Differences according to marital status using the ANOVA test ($n = 887$).

Aspect	F Value	Sig.	Sig. Group
Budgeting	3.648	0.006 *	Married
Investment	2.286	0.058	–
Debt	2.734	0.028 *	Widowed, Other
Saving	1.377	0.240	–
Insurance	2.365	0.051	–

* Differences are significant at the $\alpha \leq 0.05$ level. Source: Author’s calculations.

3.2.4. Differences in Financial Literacy Levels according to Educational Level

The ANOVA results showed non-significant differences relative to educational level for financial literacy level for the budgeting, debt, and saving dimensions, indicating that educational level has little if any bearing on financial literacy in those dimensions (Table 12). However, the ANOVA results showed significant differences in financial literacy levels in the investment and insurance dimensions.

Table 12. Differences according to educational level using the ANOVA test ($n = 886$ **).

Aspect	F Value	Sig.	Sig. Group
Budgeting	0.741	0.477	–
Investment	4.255	0.014 *	Bachelor
Debt	2.956	0.053	–
Saving	0.106	0.899	–
Insurance	4.540	0.011 *	Bachelor

* Differences are significant at the $\alpha \leq 0.05$ level. ** One respondent was dropped due to reporting other education levels—that is, as there was only one respondent in this group, a post-test could not be performed. Source: Author’s calculations.

Further, the LSD-Fisher test showed that respondents for whom a bachelor’s degree (either having completed some work at this level or having earned the degree) was the highest educational level achieved had a higher financial literacy level in the investment and insurance dimensions in comparison with the respondents with either a lower or higher level of education.

3.2.5. Differences in Financial Literacy Levels according to Annual Income in Saudi Riyal

The ANOVA results showed non-significant differences in financial literacy levels in the budgeting, debt, saving, and insurance dimensions relative to annual income, indicating that it has little to no bearing on financial literacy levels in those dimensions (Table 13). However, the ANOVA results were significant for differences in financial literacy levels in the investment dimension, with respondents in the annual income categories of 20,000–99,999 and 200,000–499,999 showing a higher financial literacy level than respondents in the other income categories.

Table 13. Differences according to annual income using the ANOVA test ($n = 887$).

Aspect	F Value	Sig.	Sig. Group
Budgeting	1.135	0.337	–
Investment	3.402	0.001 *	20,000–99,999, 200,000–499,999
Debt	1.807	0.072	–
Saving	0.994	0.439	–
Insurance	1.729	0.088	–

* Differences are significant at the $\alpha \leq 0.05$ level.

3.2.6. Differences in Financial Literacy Levels according to Major

Non-significant differences according to major were found relative to the financial literacy levels for the budgeting and saving dimensions, as the results of both tests were non-significant. However, the results of the ANOVA tests were significant for differences in financial literacy levels according to major for the investment, debt, and insurance dimensions. The results of the post-test showed that the respondents who were majoring or had majored in finance, accounting, and business administration had a higher financial literacy level in the investment dimension as compared with the other respondents. Further, respondents with a major in finance or public administration had a higher financial literacy level in the debt dimension. Additionally, the respondents with a major in finance or business administration showed a higher financial literacy level in the insurance dimension in comparison with the other respondents (Table 14).

Table 14. Differences according to major using the ANOVA test ($n = 887$).

Aspect	F Value	Sig.	Sig. Group
Budgeting	0.545	0.823	–
Investment	3.688	0.000 *	Finance, Accounting, Business administration, Other
Debt	1.996	0.044 *	Finance, Public administration
Saving	1.477	0.161	–
Insurance	3.573	0.000 *	Finance, Business administration, Other

* Differences are significant at the $\alpha \leq 0.05$ level. Source: Author’s calculations.

3.2.7. Differences in Financial Literacy Levels according to Employment Sector

Based on the ANOVA results, the employment sector had little, if any, bearing on financial literacy level in the investment, debt, saving, and insurance dimensions (Table 15). However, the respondents employed in public and private sectors showed a higher financial literacy level in the budgeting dimension as compared to the respondents employed in the other sectors represented in the sample.

Table 15. Differences according to employment sector using the ANOVA test ($n = 887$).

Aspect	F Value	Sig.	Sig. Group
Budgeting	5.127	0.000 *	Public sector, Private sector
Investment	1.930	0.103	–
Debt	0.313	0.869	–
Saving	0.150	0.963	–
Insurance	1.643	0.161	–

* Differences are significant at the $\alpha \leq 0.05$ level. Source: Author’s calculations.

4. Discussion

The purpose of this paper was to provide a comprehensive description of financial literacy among Saudi citizens based on the five dimensions recommended by Sabri et al. (2010): budgeting, saving, investment, debt, and insurance. The study scope also encompassed an

account of the determinants of financial literacy in relation to demographics and surveyed sample characteristics. To meet the study goals and to answer the main research questions, data were collected using an online survey from Saudi citizens about some key information points important to determine the extent and nature of their financial literacy. ANOVA and a T-test were performed on 887 valid surveys as a basis for a descriptive analysis of the data. A high level of financial literacy was found among the surveyed respondents for budgeting, debt, and saving, but only a moderate level for investment and insurance. These results should, however, be considered in a more general context of testing; that is, a number of items were excluded given inadequate scale reliability, comprising four from the investment dimension (riskiness of the stock vs. bond, movement of the Saudi Tadawul Index (TASI), the interest rate in relation to bond and savings accounts, and if Google was the world's most valuable company) and one in each of the other dimensions: budgeting (personal income management), debt (APR on credit card), and saving (saving concept). However, there is no question that these items are directly relevant to ascertaining the ways in which a person is or is not financially literate and the level of that literacy. Furthermore, disagreement was found in most of the assessments, suggesting that greater emphasis needs to be placed on improving financial literacy among Saudi citizens.

The examination of financial literacy in relation to demographics and characteristics brought to light some important similarities across various groups as well as some important differences. In terms of gender, for example, Saudi citizens of both genders were found to have adequate financial literacy across the budgeting, debt, and saving dimensions, suggesting that the Kingdom of Saudi Arabia has made progress in educating both female and male citizens, which is tremendously promising for a country with a traditional culture in relation to the status of women. In addition, compared with younger respondents, older respondents were found to have a higher level of financial literacy in the investment and insurance dimensions. It is likely that this difference arose because these aspects of a person's financial life become more urgent as people take on the responsibility of families, acquire more resources as they advance further in their careers, and move towards or have already reached retirement. Further, compared with older respondents, younger respondents showed a higher level of literacy in the debt dimension, which is likely to be because they may have more need to take on or manage debt for many reasons, including for the purpose of establishing a business, buying a home, or paying off loans. Further, married respondents, those who have studied for a bachelor's degree (including those with a postgraduate degree), and those who have studied a finance-related major generally showed a higher level of financial literacy on most of the items. It is, therefore, necessary to focus educational efforts on citizens not included in those categories.

On this basis, in order to more strongly support Vision 2030, government agencies, schools, universities, and broadcasting entities should make a concerted effort to offer targeted practical programming focused on investment and insurance dimensions in particular. In fact, providing financial education has traditionally been seen as the key intervention for addressing ignorance and thus leading to better financial outcomes. According to a recent research study, wealth inequality is strongly associated with a lack of financial literacy (Lusardi and Morrison 2019) and education focused on this area ought to be viewed as an investment in the economy. For this reason alone, many steps should be taken to ensure that all citizens are educated in regard to financial decision-making and the vehicles available to them. At the university level, introducing a personal finance course focused on the five financial literacy dimensions is likely to prove highly impactful—especially if required of all undergraduate students. Courses focused on personal finance should incorporate broad knowledge and the skills needed for effective financial management in both the short- and the long-term, including content on the financial vehicles most people need to manage over a lifetime, such as pensions, savings accounts, mortgages, and insurance contracts (Lusardi and Mitchell 2014). Yet, there is also every reason to start this process much earlier in the context of formal education, with courses appropriately focused on each educational level so that children learn how to save and budget early in life.

Although this study constitutes a useful broad consideration of financial literacy in the context of the Kingdom of Saudi Arabia and is instructive in relation to the financial strategy of Vision 2030 and efforts to render specific actions associated with it as effective as possible, its limitations should be taken into account. That is, though broad scope is needed as a basis for further research, investigations are needed into specific populations with qualitative analyses of how the levels of financial literacy associated with them affect their lives. In particular, the literature includes few studies focused on secondary/high school students or college students—which is a gap of great importance given that there is every reason to begin financial literacy efforts at an early age. In terms of future inquiries, therefore, researchers could usefully focus on specific populations, especially youth, and consider how personal finance could be designed to deliver the greatest impact in formal education contexts. To continue creating a more general picture of financial literacy as a context for understanding specific populations, it will also be important to consider the determinants of financial inclusion in Saudi Arabia. The author of this study is currently investigating this area with a focus on providing the first evidence of the relationship between financial literacy and financial inclusion in quantitative terms for a sample of Saudi citizens.

5. Conclusions

The study findings clearly indicate that there is a need to continue and intensify public education efforts across multiple contexts, including early in life, to ensure that all citizens in Saudi Arabia achieve and maintain financial literacy over a lifetime (Morgan and Trinh 2019). Despite differences between the various categories based on demographics and other characteristics, all age groups could benefit from greater support in all the financial dimensions tested. It should be noted, too, that most of the items included in the survey tested very basic knowledge such that correct answers may reasonably be thought of as establishing only a minimum level of financial literacy. It is the case, too, that knowing the correct answers may have little to do with a person's ability to understand the options available, make sound financial decisions, or manage their financial lives. Addressing concerns of this nature would be a productive direction for future research.

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Notes

- ¹ Vision 2030 focuses on the development of three strategic pillars with the goal of building a thriving financial services sector to (1) enable financial institutions to support private sector growth, (2) ensure the formation of an advanced capital market, and (3) promote and enable financial planning. The main objectives of the third strategic pillar are to stimulate and bolster sustainable demand for saving schemes, to drive the expansion of savings products and channels available in the market, to improve and strengthen the savings ecosystem, and to improve financial literacy.
- ² The reasons underlying the observed low household saving rate are a low level of financial literacy and limited savings products available in the market, as well as a lack of data on household savings in secondary sources (KPMG in Saudi Arabia 2020).
- ³ According to Remund (2010, p. 288), “the operational definitions of financial literacy most commonly used in contemporary research fell within four categories—budgeting, saving, borrowing and investing—all of which are behavior or ability based [...]. Other dimensions that do not fall cleanly into the four categories include understanding and buying insurance [...] recognizing and avoiding abusive lending programs”. It is worth mentioning that Remund (2010) based his operational definition of financial literacy on previous studies (Chen and Volpe 2002; Morton 2005).
- ⁴ The minimum age for employment in Saudi Arabia is 15 years.

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