



## Saudi Financial Literacy: Insights for Home Economics

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### Abstract

*Financial literacy is a current issue in home economics and higher education research. This paper concerns Saudi Arabia where investigations in general and into university students' financial literacy levels are new (absent in home economics) in a context where the national development plan (Vision 2030) depends on a financially literate citizenry. This quantitative exploratory study (summer 2020) involved respondents (N = 140, 91% female) from three Saudi universities (Eastern and Western provinces, convenience sampling) completing a Saudi-specific financial literacy web-based survey (28% response rate). Their low literacy rate (53%) was still 70% higher than the national average (31%) suggesting that university students may be predisposed to further improve their financial literacy if university-based curricula were provided with home economics primed to play a key role. Recommendations pertain to (a) mandating university financial education incorporating Saudi-specific financial literacy content, (b) focusing on knowledge gaps particular to university students and (c) adding financial literacy and consumer studies to Saudi home economics curricula.*

**KEYWORDS:** HOME ECONOMICS, FINANCIAL LITERACY, NATIONAL DEVELOPMENT, FEMALE SAUDI UNIVERSITY STUDENTS, UNIVERSITY CURRICULUM

### Introduction

Financial literacy is a current issue in home economics and higher education research, but “financial literacy is a complex topic that varies with regional ... contexts” (He, 2020, p. 3). This exploratory study about Saudi Arabia is timely because only a few authors (e.g., Attia & Engelhardt, 2016; Union of Arab Banks [UAB], 2017) have examined financial literacy for the Arab Region or the Middle East and Northern Africa (MENA) region (Lyons & Kass-Hanna, 2021), which includes Saudi Arabia where nominal related research exists (Albassami & Alyousif, 2019; Alghamdi et al., 2021). And we found no research that focused on home economics and financial literacy in Saudi Arabia, although the nation is embarking on an ambitious national development plan (*Vision 2030*) that is dependent on literacy and numeracy and a differently educated populace (Kingdom of Saudi Arabia [KSA], 2016).

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### Home Economics in Saudi Arabia

Education for girls was not available in Saudi Arabia until the 1960s. Since then, girls have been able to study home economics (called Family Education), which includes, in Saudi Arabia, nutrition and cooking, sewing (flat pattern and tailoring), and health education as well as aspects of childcare, family relations, and housing and home management. No mention was made of consumer studies, personal finance, or money management in the current (2013) Saudi Family Education curriculum, which is mandatory for Grades 1-11 (not grade 12) (Alharbi, 2021). The curriculum referred to “judging the economic use of resources in all aspects of family life” (Alharbi & Renwick, 2017, p. 115), but this does not constitute financial literacy of which there was no mention (Keri Renwick, personal communication, November 6, 2023).

Of the nascent English-language studies we did find related to home economics in Saudi secondary schools (Alharbi, 2021; Alharbi & Renwick, 2017; Kirk, 1988; Kirk et al., 1992), all referred to insufficient consumer-related content (which is not surprising given the historical lack of university faculty to teach the subject in teacher education programs) (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1988). Kirk (1988) reported that the 1986 secondary home economics syllabus said only that, “every Islamic home should be managed in the right way, paying attention to spending money wisely and saving for the future” (p. 151). Kirk et al. (1992) recommended that consumer management should be strengthened in Saudi’s home economics curriculum. Alharbi and Renwick (2017) critically analyzed the current (2013) curriculum and did not mention consumer-related content.

At the higher education level, “the establishment of the home economics programme at King Faisal University (KFU) [in 1979] was pioneering: it was the first home economics department set up within a [Saudi] university... KFU’s initiative motivated other colleges [in the country] to start similar programmes” (UNESCO, 1988, p. 1). The university launched the program because it “realized the importance ... of home economics in ... the overall development of the country” (UNESCO, 1988, p. 1). Housed in the College of Agriculture and Food Sciences, home economics constituted food and nutrition, home economics teacher education, and family and child development (UNESCO, 1988).

Those involved at the time recognized that PhD-level university faculty specializing in consumer studies and research were “most urgently needed” (UNESCO, 1988, p. 20). Our cursory glance at contemporary curricular offerings revealed a combination of food and nutrition, clothing and textiles, and resource management but no consumer studies or consumer finances. By association, Saudi home economics teacher educators are likely not learning consumer-related content to teach in public school (primary and secondary).

### Importance of Saudi Financial Literacy

Why does financial literacy in the KSA matter to home economics and in general? Because financial literacy impacts national development (Pearce, 2011; UAB, 2017; World Bank, 2016), and KSA (2016) is embarking on an ambitious economic future. Home economics also affects national development as well as financial literacy (McGregor, 2019; UNESCO, 1988). Saudi Arabia is aspiring to transition from an oil to a knowledge-based economy, which requires financially literate citizens with access to financial services (financial inclusion) (KSA, 2016; Saber, 2020). Bradshaw et al. (2019) suggested that KSA’s failure to successfully transition its economy could “become a significant source of geopolitical instability” (p. 2). By association, financially literate Saudi citizens thus benefit not only KSA but the entire world. This is a powerful opportunity for home economists to make a difference.

By way of background, with the unification of diverse and warring tribes into one nation called the Kingdom of Saudi Arabia, and the discovery of oil in the late thirties, KSA “turned itself from a desert nation to a modern, sophisticated state and [characterizes itself as] a major

player on the international stage” (Embassy of the Kingdom of Saudi Arabia, ca. 2016, para. 3; see also Alharbi & Renwick, 2017; Kirk et al., 1993). Other sources affirm KSA’s self-positioning in the global economy and international arena (see Bradshaw et al., 2019). In 2022, it was the largest crude oil exporter in the world and the third largest crude oil producer (Energy Information Administration, 2023).

Despite crude oil being the core of its economy for nearly a century, KSA is now diversifying and shifting to a knowledge economy (KSA, 2016) where knowledge-intensive activities (instead of physical inputs and natural resources) inform production (Powell & Snellman, 2004). Examples of business-related human services (provided internally or sourced externally) that rely on people’s intellectual capabilities include management consulting, research and development (R&D), information technology (IT), human resource (HR) management, accounting and financing, legal services, and marketing services (Organization for Economic Cooperation and Development [OECD], 2006).

“The world’s next great economic transformation is now taking place in Saudi Arabia” (Fadlallah, 2023, para. 2). Its success is partially dependent on improved citizenry literacy, thus the nation must “prepare a modern curriculum focused on rigorous standards in literacy, numeracy” (KSA, 2016, p. 40). Research expressly shows that a *financially* literate citizenry can also effectively contribute to a healthy and thriving economy and national development (Douissa, 2020; Western et al., 2012).

## Research Problem and Question

Our study joins nascent research addressing the lacuna of and call for Saudi-based scholarship around financial literacy (Alghamdi et al., 2021; Attia & Engelhardt, 2016; Khan & Tayachi, 2021; “Why financial education,” 2019). *Vision 2030’s* goal of a thriving, transitioned, more diversified knowledge-based economy (KSA, 2016) may be compromised if an entire generation (which spans 25 years) cannot prosper financially. University students constitute the next generation, which Khan and Tayachi (2021) described as youthful Saudi grownups aged 18-35. The research question guiding this exploratory study was thus “*How financially literate are Saudi Arabian university students, especially female students?*”

Why *female university* students? We felt justified in this research design choice for two reasons. First, because youth (aged 15-24 spanning high school and university undergraduate students) often have poor understandings of how to plan a financially secure future (Lusardi et al., 2010; Nidar & Bestari, 2012), the earlier they become financially literate, the better (Rose, 2020; Šoškić, 2011). Financial literacy is not yet being taught in Saudi secondary education (Alghamdi et al., 2021). High school is the optimal age (Morgan Franklin Fellowship, 2018) with higher education the next opportunity.

Second, only girls can take home economics in Saudi primary and secondary school up to Grade 11 (Saudi Arabia Education, 2023) with nominal chance of exposure to consumer studies. Al Jar (2021) reported that “life skills are taught as a compulsory subject in the Saudi secondary school curriculum in order to enable students effectively with the demands and challenges of everyday life” (p. 183). Al Jar (2021) defined *life skills* as “decision-making, problem solving, creative thinking, critical thinking, effective communication, interpersonal relationship skills, self-awareness, empathy, coping with emotions, coping with stress” (p. 185).

These life skills happen to be the basic processes taught within home economics education (National Association of State Administrators of Family and Consumer Sciences [NASAFACS], 2018). This recent curricular development suggests that all Saudi secondary students are exposed to general *everyday life skills* but not necessarily home economics *specialized content* such as consumer education, personal finances, and financial literacy. Of their own volition,

some Saudi home economics teachers may teach aspects of financial literacy to girls in secondary school many of whom are now university students.

Furthermore, Saudi university administrators previously “realized the importance ... of home economics in ... the overall development of the country” (UNESCO, 1988, p. 1). Only girls can take home economics in KSA (Saudi Arabia Education, 2023), and women are viewed as important players in Saudi’s national development process (Alsuwaida, 2016; UNESCO, 1988)—even more so since *Vision 2030* was implemented (KSA, 2016). Because financial literacy and home economics impact national development (McGregor, 2019; Douissa, 2020; UNESCO, 1988), and because home economics reaches mainly women in Saudi Arabia (Alharbi, 2021), it is important that home economists have insight into this phenomenon.

### Study Significance

This exploratory study about Saudi Arabia is important because, despite financial literacy being so low, and financial inclusion so lacking in the MENA region (World Bank, 2016), few studies have engaged with this dynamic. Our results will augment a fledgling but vital knowledge base about the financial literacy phenomenon in the Arab world for which there is burgeoning interest (Lyons & Kass-Hanna, 2021). As knowledge about MENA financial literacy is accumulated (in its infancy now), the general financial literacy knowledge base will also be enriched. On another front, Saudi home economics educators strive to balance “increasing engagement in global processes that are inherently Western against maintaining its particular cultural heritage as it is expressed in everyday life experiences [including personal finances]” (Alharbi & Renwick, 2017, p. 111). Results from our Saudi-specific study will feed into this home economics imperative.

## Literature Review

### Financial Inclusion and Financial Literacy

As noted, financial literacy varies with regional context (He, 2020), but generally it refers to “being educated about money and finance enabl[ing] people to make smarter money management decisions that lead directly to a financially secure future” (O’Connell, 2019, para. 8). This security depends on accruing “financial knowledge, understanding, skills, behaviors, attitudes, and values” (McGregor, 2020, p. 61; see also Alghamdi et al., 2021). The sister concept of *financial inclusion* is also relevant herein because Saudi Arabia is depending on financially literate citizens to help implement *Vision 2030* (KSA, 2016), and economic development is tied to financial inclusion (Pearce, 2011; World Bank, 2016).

Financial inclusion refers to all citizens having *access* to financial services (electronic and paper-based) especially (a) credit (cards, loans, lines of credit, mortgages); (b) bank accounts (checking and saving deposits); (c) payment services (debit cards, salaries, benefits, business transactions); (d) insurance (property, contents, life, credit/loan, mortgage, health, vehicle); (e) pensions; and (f) microcredit (Pearce, 2011). By association, being *literate* in these six aspects of personal finance predisposes people to access and use them responsibly. “Financial inclusion and financial literacy are inexorably linked” (UAB, 2017, p. 1). Lack of financial literacy hinders financial inclusion whose absence hinders national development.

### Saudi Financial Literacy/Inclusion Rates

Empowering citizens’ financial literacy is a proven principle for bolstering a nation’s financial inclusion and, by association, its national and economic development (Pearce, 2011). MENA’s overall 2020 financial inclusion rate was 20% with Saudi Arabia reporting a slightly higher rate (31%) (Fintechnews Middle East, 2020). This very low financial inclusion rate mirrors Saudi’s low (31%) financial literacy rate (Attia & Engelhardt, 2016; King Khalid Foundation [KKF], 2018;

KSA, 2020). Context wise, UAB (2017) reported that “the average financial literacy rate among studied Arab countries ... is 30.7%” (p. 1). Worldwide, 1.7 billion adults (virtually all in developing nations like KSA) remain outside the formal financial system (Demirgüç-Kunt et al., 2017).

Low rates on both indices (financial inclusion and financial literacy) present a barrier to KSA’s ambitious economic development vision. Inclusion is dependent on literacy. Inclusion in the formal financial system is paramount to national development because it bolsters citizens’ financial resiliency and prosperity (Demirgüç-Kunt et al., 2017). Lack of resiliency is concerning in the long term. Foremost, financial inclusion (and by association financial literacy) is paramount to the MENA region’s global competitiveness, employment creation, and increased personal incomes—KSA included (Khaled, 2010; Saab, 2017).

On another front, KSA is a gendered society making women’s financial literacy a significant concern given that *Vision 2030* acknowledged women as a “great asset” (KSA, 2016, p. 37) for nation development. Our interest in university students at Saudi women’s colleges is thus justified, especially as MENA women are more likely to be excluded from financial services (91%) than men (81%) with this lack of inclusion often tied to low financial literacy rates (Fintechnews Middle East, 2020; World Bank, 2016). Lacking access to personal financial services and resources while also being financially illiterate does not bode well for Saudi women’s involvement in national development, at least from a financial inclusion perspective.

### Saudi Financial Literacy Statistics

“A broader concern with financial literacy... among the [world’s] population as a whole is relatively new” (Orton, 2007, p. v.). Such is the case with KSA where little research has explored this phenomenon (Alghamdi et al., 2021). A concern for financial literacy is very recent (Alghamdi et al., 2021), and it became an imperative with the launch of *Vision 2030*, which depends on a literate citizenry for nation and economic development (KSA, 2016). Increased consumer debt negatively affects consumer spending and economic growth, especially in Saudi Arabia (Mousa, 2019).

Unfortunately, almost half (45%) of Saudi citizens have no savings, 80% have no investment plans, and they are borrowing at very high rates. Nearly half (43%) experienced an income drop in 2018 (and that was before the COVID-19 job fallout), one quarter were unable to pay utility bills, and one in five defaulted on loans (KKF, 2018; “Why financial education,” 2019). As of 2020, Saudi citizens, for the first time, now pay a 15% tax on all products (Saber, 2020). Regarding the related construct of income disparity, average monthly income in KSA is SAR11,983 (\$3,200USD). KPMG Al Fozan & Partners (2020) reported “a stark difference ... between the monthly household income of [Saudi] males and females with that of males being SAR6,526 [\$1,750USD] higher than that of females” (p. 15).

From a demographic perspective, Mian (2014) asserted that Saudi females and younger citizens (gender and age) were less financially literate than males and older citizens with no significant impact from employment status or education level. In contrast, Saber (2020) reported that demographics affected financial literacy in Saudi Arabia: age, gender, level of education, monthly income, years of experience, number of children, and marital status were statistically significant. Men (47%) were more financially literate than women (29%). In sharp contrast, Attia and Engelhardt (2016) reported that Saudi men and women were on par in terms of being financially literate. Age was not a predictive factor. The indeterminate impact of demographics on financial literacy in KSA merits further study.

Our study is about university students (Saudi youth aged 18-35). The Saudi Economic and Development Company’s (*SEDCO Holding*) (Fareed, 2012) nationwide survey of Saudi university-

age youth reported financial behavior indicative of low financial literacy. Paradoxically, very few (11%) respondents tracked their spending despite most (75%) saying they understood money management basics. Nearly half (45%) did not save any money with as many again (46%) depending on their parents for big-ticket items. A compelling 90% said they wanted to increase their financial knowledge (Fareed, 2012). Nonetheless, a decade later, Khan and Tayachi (2021) still reported a low (42%) financial literacy rate for youthful Saudi grownups (aged 18-35).

In a study that used the *MasterCard© Worldwide Index of Financial Literacy* (see Tan, 2011, for details), Saudi adult citizens scored highest in basic money management (65/100 points) followed closely by financial planning (64) and then investment (54) (reported in Attia and Engelhardt, 2016). KSA's *average* score was 62 compared to 61 for the Middle East overall with Egypt scoring highest at 69 and Qatar lowest at 56. A recent World Bank survey estimated that only 31% of Saudi adult citizens were financially literate, which is the lowest in the Gulf region (reported in KKF, 2018 and KSA, 2020).

Saudi Arabia was striving for a 34% financial literacy rate by 2020 (KSA, 2020), which would be higher than the global average for similar transitioning economics (28%) but low compared to advanced economies (55%) to which KSA aspires (KKF, 2018). High-income countries tend to have higher levels of financial literacy (Demirgüç-Kunt et al., 2017; Saab, 2017). The World Bank classified Saudi Arabia as a high-income MENA economy (one of six) (Lyon & Kass-Hanna, 2021), yet its 31% financial literacy rate is very low compared to the world's top-10 high-income economies (ranging from 63%-71%) (Attia & Engelhardt, 2016; Raul, 2018).

To complicate matters in the Arab world, Middle Eastern nations often report low financial literacy rates in concert with the MENA experience of "persistent gender inequalities" (MENA-OECD Governance Programme, 2015, p. 1; see also Xu and Zia, 2012). The UAB (2017, p. 1) commented on the connection between these two phenomena noting "the large and persistent gender difference as women have lower financial literacy rates than men in almost all studied Arab countries, with an average financial literacy of 33.5% for men and 27.7% for women." A study including the Middle East (Lebanon) reported "stark differences in [the] financial literacy of males and females" (Kokkizil et al., 2017, p. 153). They also found that Middle Eastern women with low education rates had low financial literacy rates.

### **Financial Literacy Initiatives in Saudi Arabia**

"The ultimate goal of financial education is to educate consumers so that they can make appropriate decisions and be responsible for them, assess their current financial situation, and manage their finances in such a way as not to be a burden to their families or society" (Sundarasan et al., 2016, p. 142). Many nations have been grappling with financial education for financial literacy for decades (Orton, 2007), but KSA's concern is very recent—within the last decade (Alghamdi et al., 2021; Saber, 2020). Consequently, Saudi initiatives to deal with financial literacy are in their infancy. Recommendations to address this aspect of KSA's national development include "raising financial awareness ... offering financial education... and changing the attitudes of the young" ("Why financial education," 2019, paras. 4, 8).

To continue, the Saudi Arabian Monetary Authority (SAMA) is committed to "promoting financial literacy and awareness among different segments in society and especially the youth" (KKF, 2018, p. 26). SAMA launched a *Financial Literacy Entity* (FLE) in 2017 designed to "coordinate and synchronize [national] efforts revolving around financial education" (KSA, 2020, p. 38). The Saudi Ministry of Education (MOE), which is responsible for primary and secondary schools (K-12), is only recently involved in initiatives focused on "spreading the culture of financial literacy" (Saudi Gazette Report, 2020, para. 6).

### *KSA Higher Education Financial Literacy Initiatives*

For decades, Saudi adults have pressured and influenced the younger generation to seek higher education to gain personal financial stability (Kirk, 1998). Currently, nearly two thirds (57%) of Saudi citizens attend higher education with more than half of them women (Kattan et al., 2016). But—financial literacy is not yet formally taught in KSA secondary or higher education (Alghamdi et al., 2021), and *Vision 2030* did not explicitly mention *financial* literacy just literacy and numeracy (KSA, 2016). Geddes and Steen’s (2016) advice applies to Saudi Arabia: “colleges and universities should consider developing robust programs that boost financial literacy” (p. 349) because low financial literacy disadvantages students after they graduate (Juliardi et al., 2019).

Our study thus concerns Saudi university students’ financial literacy levels. They are the next generation of workers and business owners both of which are pivotal to national development. This is a timely research thrust because Arab-region banks, central banks, governments, and nonprofit organizations have made progress in terms of addressing financial literacy levels but not so higher education institutions (UAB, 2017). UAB (2017) recommended integrating financial education and financial literacy programs into MENA university curricula (see also Nourse, 2013). But Saudi Arabia is slow to move in this direction.

To illustrate, only four Saudi universities (out of a possible 43) are working with *Injaz Al-Arab*, an Arab-world nonprofit organization that promotes financial literacy for youth (including university students). In contrast, United Arab Emirates (UAE) and Egyptian universities and colleges are working with banks to teach financial literacy. Jordan recently recognized higher education’s central role in bolstering financial literacy (Attia & Engelhardt, 2016; UAB, 2017). King Abdulaziz University (KAU), the highest ranked university in the Arab region, recently began focusing on improving its students’ financial literacy. Its financial clinic is an important, related initiative intended to promote “the culture of financial dealings ... through financial planning ... at the level of the individual and the family” (KAU, 2019, para. 6).

To be fair, the United States (US) Financial Literacy and Education Commission (USFLEC) (2019) similarly reported “there are few [higher education] institutions with mandatory financial literacy courses” (p. 19) (see also Geddes and Steen, 2016). That said, future curriculum designers and KSA university financial education and literacy initiatives also benefit from other nations’ experiences and curricular products. For example, the US created a comprehensive blueprint for improving financial literacy (USFLEC, 2006). The Financial Consumer Agency of Canada (FCAC) (2015) has a national strategy for financial literacy. At the international level, the OECD actively promotes financial education anticipating attendant financial literacy (2011, 2018b, 2019). The World Bank (2016) also focuses on financial literacy and its connection with national development.

### **Financial Literacy Test Score Benchmarks**

Saudi’s performance on OECD’s general *Program for International Student Assessment* (PISA) of abilities in reading, mathematics, and sciences is also relevant herein. In 2018 (the most recent test), more than half of Saudi youth (age 15, grade nine) achieved Level 3 or higher on the reading test, indicating they had enough knowledge to understand the majority of what a text is saying, although they may not understand its complexity. Three quarters of Saudi students obtained a Level 3 proficiency or higher in mathematics, meaning they could comprehend and recognize mathematical problems without complications (OECD, 2018a). These statistics work in favor of future Saudi university students learning any aspect of financial literacy that deals with (a) numerical calculations (e.g., credit interest, loan costs, and investment income) and (b) basic reading comprehension (e.g., contracts, invoices, receipts, and records).

The OECD has also created a PISA test specifically for *financial literacy*. Although not administered in the Middle East yet, it has been administered three times elsewhere (2012, 2015, and 2018) (OECD, 2019). This test has five proficiency levels with scores ranging from 1-1000 with Level 2 (400-475) considered baseline. In 2018, the average mean score was 489, which is proficiency Level 3 (OECD, 2018b), intimating that the international pass rate is unofficially 50% (actually, 48.9%). The National Financial Educators Council (NFEC) (2019) set the pass rate for its American teen and young adult financial literacy test at 70%. Most participants failed in 2019, scoring an average 67.8%. University-aged youth (19-35) scored just above the pass rate at 73.5%. Our exploratory results will be positioned against these benchmarks.

## Method

This quantitative, exploratory, cross-sectional study employed a survey instrument purposefully designed to collect data about Saudi-specific financial literacy competencies of university students. Exploratory research is appropriate when little is known about a phenomenon anticipating that others can be convinced of the merit of further investigation (Dudovskiy, 2016; McGregor, 2018). Ethics approval of the research design was obtained from Imam Abdulrahman Bin Faisal University.

## Sample Frame

Three universities in Saudi Arabia's Eastern and Western Provinces were selected using convenience sampling (i.e., familiar to the Saudi-based researchers). Known university contacts agreed to bring the web-based survey to their students' attention (approximately N = 500). Through emails containing the web address for the Google Survey platform website, students were invited to complete the online survey on their own time over the ensuing three weeks. Instrument completion constituted consent with anonymity assured (Interagency Advisory Panel on Research Ethics, 2018).

Initially, 200 respondents were targeted to ensure a high level of confidence. But because the survey was administered during the COVID-19 pandemic, wherein university program delivery instantly shifted to crisis distance education with attendant learner-transition stress, the target was adjusted to 100 respondents. The final sample frame of N = 140 exceeds the established confidence level, and it represents an acceptable response rate (28%) for a web-based survey, which normally ranges from 20%-40% (Van Bennekom, 2002). Also, 140 respondents fell within the required sample frame range for exploratory research (recommended N = 20-150) (Daniel, 2012).

## Data Collection Instrument

A purposefully designed survey instrument was administered. All six demographic-focused questions were designed with menu options allowing respondents to select "Prefer Not to Say" or "Not Applicable." Short answers further allowed respondents to offer additional details about themselves: age, sex, educational level, intended qualification, academic specialties, and funding. Tenure (housing) was not asked because the general practice is for Saudi university students to live at home until they graduate (Evanson, 2022; Atlas, 2020; Fareed, 2012), meaning they incur little to no housing or related costs as university students.

In addition to six demographic questions, the 40 questions in Table 1 reflect a combination of (a) 11 questions (Q.1 to Q.11) inspired by PISA (OECD, 2018a, b) and the Global Financial Literacy Excellence Center (GFLEC) (2020); and (b) 29 author-generated questions (Q.12 to Q.40) nine of which were Saudi specific (Q.20, Q.23, Q.24, Q.27, Q.28, Q.31, Q.38, Q.39, and Q.40). Q.1-Q.11 required respondents to first read for visual information and real-life context and then answer a multiple-choice question or write a short answer. Most of Q.12-Q.40 were



multiple-choice menu options coupled with three open-ended, short-answer questions. Bongini et al. (2018) recommended using a mix of question types to best measure financial literacy.

Table 1 Essence of Saudi University Students' Financial Literacy Survey Questions

Q.1	Invoices
Q.2	Cost of running a car
Q.3	Loan repayments
Q.4	Bank statements
Q.5	A new bank balance
Q.6	Mobile phone plans—Small print in contracts
Q.7	Mobile phone plans and bills
Q.8	Service terms and conditions
Q.9	Online shopping—Security and privacy
Q.10	Mobile phone bill
Q.11	Online payments—Security of transaction
Q.12	Simple interest
Q.13	Setting financial goals
Q.14	Differentiating between needs and wants
Q.15	Budgeting
Q.16	Financial record keeping
Q.17	Compound interest
Q.18	Inflation (cost of living)
Q.19	Savings and investments—Safe investments
Q.20	Savings and investments—Saudi government financial institutions that protect bank deposits
Q.21	Savings and investments—Characteristics of savings accounts
Q.22	Savings and investments—Dividends
Q.23	Consumer finances—Types of Saudi bank accounts
Q.24	Consumer finances—Retail consumer payment tools
Q.25	A financial calculation
Q.26	Time value of money (TVM)
Q.27	Income and spending—Sources of revenue for young people
Q.28	Income and spending—Deductions that reduce take-home income
Q.29	Credit and debt—Credit approval
Q.30	Credit and debt—Loan borrowing criteria
Q.31	Credit and debt—Saudi government financial institutions (credit bureaus)
Q.32	Credit and debt—Credit card payments
Q.33	Insurance—Purpose
Q.34	Insurance—Life insurance
Q.35	Insurance—As an investment
Q.36	Insurance—Health insurance policies
Q.37	Insurance—Car insurance
Q.38	Retirement—Contributions
Q.39	Retirement—Minimum monthly earnings
Q.40	Retirement—Saudi retirement age

Internal instrument test validity and reliability were ensured by having an award-winning, Canadian financial literacy expert vet the draft instrument (twice) after which changes were made to ensure it reflected financial literacy in general and Saudi culture-specific financial practices. This strategy ensured that the instrument measured the targeted construct (McGregor, 2018)—financial literacy *in* Saudi Arabia. The Arabic and English versions of the instrument were pilot tested with 20 Saudi university students and adjusted accordingly before

administration. Despite 40 questions, the total possible test score was 45 because three questions (Qs.2, 3, 10) contained multiple parts.

### Data Collection and Analysis

The data were collected in summer 2020 over a three-week timeframe (June 16-July 7) during COVID-19 mandatory online learning, as explained. The timed, online survey was administered across all three sites using the Google Survey platform. As expected with a web-based survey, most responses came back within a few days and then tapered off with a final sample frame of  $N = 140$ , which exceeded the confidence level benchmark ( $N = 100$ ) (Van Bennekom, 2002). Data were analyzed using descriptive statistics (frequency, percentage, mean, median, and range) with these numeric summary statistics considered an acceptable analytical protocol for exploratory research (Acheron Analytics, 2019). Descriptive statistics describe and summarize characteristics of the phenomenon anticipating that results and their interpretation will be compelling enough to inspire others to engage in more detailed research designs (McGregor, 2018).

## Results

### Demographic Profile

Respondents' average age was 25, ranging from 17 to 35+ years. Most (91%,  $n = 127$ ) were female indicative of the gendered nature of the convenience sample. The presence of males (9%,  $n = 13$ ) reflects rare instances when Saudi women's Colleges admit male students. Most (85%,  $n = 120$ ) respondents were studying for a bachelor's degree with the majority in their final year. A small percentage was in postgraduate studies. A full range ( $n = 21$ ) of specialties was identified (respondents could choose more than one) with the two most common being Education, and Sciences. Less popular specializations included Arts & Humanities, Business Administration & Finance, Medicine, and Information Technology (IT) & Computer Engineering. Almost half (46%) received government support. Over one quarter (27%) received financial aid from their families, and one in seven (16%) were self-funded. Less common funding sources included scholarships (6%) and student loans (2%). A nominal few selected a "combination of the above" suggesting virtually all students were dependent on one source of income (see Figure 1).

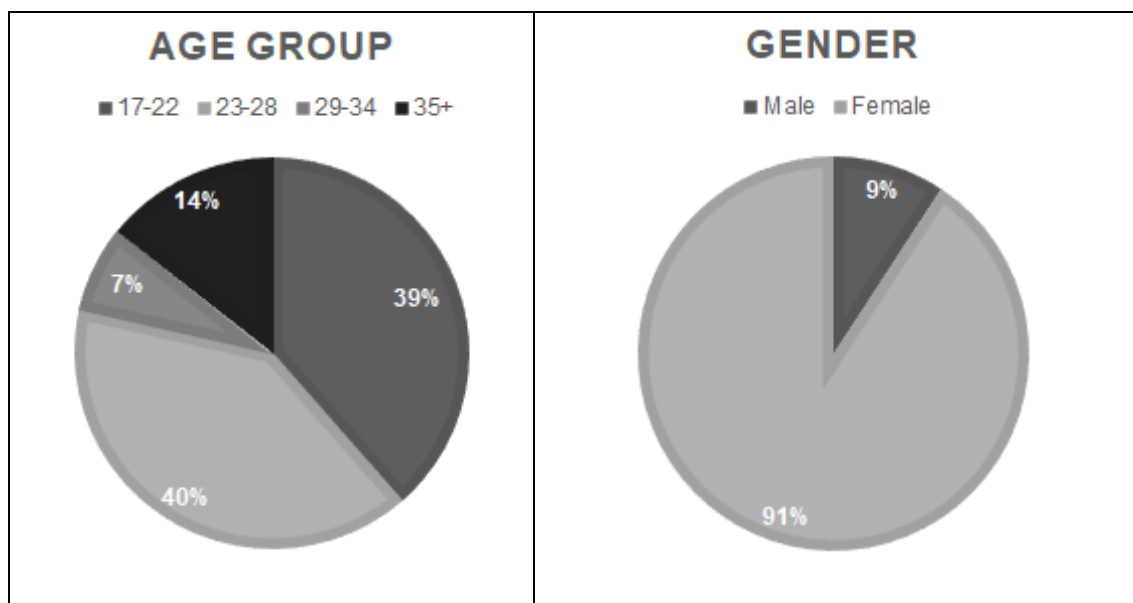




Figure 1 Demographic Profile of Saudi University Students' Financial Literacy Sample Frame (N = 140); Except for Age and Gender, Demographics are Presented Using Frequency Counts

**Overall Results**

Respondents scored as follows out of a possible 45 points: mean = 24, median = 24.5, and range = 5-43. Because the mean and median were the same, the distribution was deemed symmetric (not skewed), meaning both statistics can serve as a typical value (Illowsky & Dean, 2013). Given the average score of 53% ( $M = 24/45$ ), we judged respondents' overall financial literacy as poor. This result is somewhat higher than Khan and Tayachi's (2021) finding of a 43% financial literacy rate for Saudi youth aged 18-35, but it is still evidence of a lower-than-desired rate for success in personal finances. Saudi university students in this sample frame (mostly women) were considered financially illiterate.

Similar to Khan and Tayachi's (2021) reporting protocol, Table 2 illustrates the number of correct answers that respondents scored, question by question (see Table 1 for item descriptions). No question was answered correctly by everyone. About one third (30%,  $n = 12$ ) were answered correctly three quarters of the time or more (70-94%). These dealt with the cost of running a car, including car insurance (Q.2 and Q.37); mobile phone plans and bills (Q.7 and Q.10); and matters related to the general management of finances: budgeting, needs versus wants, simple interest, and types of bank accounts.

Table 2 Percentage of Correct Answers per Question for Saudi University Students' Financial Literacy Survey

Q	%	Q	%	Q	%	Q	%	Q	%
Q.1	58%	Q.2a	84%	Q.2b	94%	Q.2c	89%	Q.3a	66%
Q.3b	64%	Q.4	41%	Q.5	26%	Q.6	45%	Q.7	73%
Q.8	21%	Q.9	59%	Q.10a	93%	Q.10b	83%	Q.10c	75%
Q.11	43%	Q.12	75%	Q.13	25%	Q.14	77%	Q.15	81%
Q.16	54%	Q.17	35%	Q.18	33%	Q.19	26%	Q.20	61%
Q.21	36%	Q.22	66%	Q.23	74%	Q.24	40%	Q.25	51%
Q.26	46%	Q.27	29%	Q.28	45%	Q.29	35%	Q.30	21%
Q.31	52%	Q.32	64%	Q.33	54%	Q.34	48%	Q.35	61%
Q.36	39%	Q.37	79%	Q.38	24%	Q.39	19%	Q.40	39%

Questions correctly answered one half to two thirds of the time (50-69%) dealt with invoices, record keeping, financial calculations, loan repayment, credit cards and credit bureaus, online security, savings and investments (protected bank deposits, and dividends), and insurance as a principle and an investment. Respondents were as likely to know the answers to these items as not to know them. The remaining questions (52.5%,  $n = 21$ ) were answered correctly less than 49% of the time (19%-49%). Within that, questions rarely answered correctly (19%-30%) pertained to goal setting, bank statements, contract terms, income sources, loan borrowing criteria, safe investments, and retirement (see Tables 1 and 2).

Virtually all 29 author-generated questions (except for Q.30, loan borrowing criteria) prompted a "Do Not Know" (DK) response from someone—some questions more so than others. Respondents especially said they did not know about (in ascending order) safe investments (Q.19) (32%), inflation (cost of living) (Q.18) (34%), credit bureaus (credit and debt) (Q.31) (34%), health insurance policies (Q.36) (44%), retail consumer payment tools (consumer finances) (Q.24) (49%), minimum monthly retirement earnings (Q.39) (55%), and retirement contributions (Q.38) (57%). They were least likely (4%-11%) to choose DK for items pertaining to Q.12 simple interest, Q.13 setting financial goals, Q.14 differentiating between needs and wants, Q.15 budgeting, and Q.16 financial record keeping (see Tables 1 and 3). In other words, they *felt* they knew the answer to these questions.

The mean score on the 11 PISA-styled (Q.1-Q.11) real-life, contextual problem-solving questions was 54.8%. The mean score for the 29 multiple-choice-style questions (Q.12-Q.40) was 47.9%. Rounding up or down to the near 10s (i.e., 50%) prompted our conclusion that respondents performed just as well on multiple-choice questions as they did on real-life problem-solving questions albeit scoring very low on financial literacy.

## Discussion and Recommendations

Overall, this sample of Saudi university students comprising mostly women was not financially literate scoring on average 53% (24/45). As a benchmark, the unofficial pass rate for the OECD's (2018a) PISA financial literacy test was 50% with NFEC's (2019) at 70%. Our exploratory result suggests that these Saudi university respondents will be unprepared for the vagaries of managing their finances when they graduate. They will not be ready for unexpected and (un)predictable changes in their financial circumstances, which can lead to insolvency, unmanageable debt loads, and associated fiscal problems (Alghamdi et al., 2021; Juliardi et al., 2019; McGregor, 2020; Mian, 2014; USFLEC, 2019).

Furthermore, our results suggest that *Vision 2030*'s achievement of a thriving, transitioned, more diversified knowledge-based economy (KSA, 2016) may be compromised due both to a financially illiterate citizenry and the MENA-wide concern for financial inclusion that is inherently linked with financial literacy (UAB, 2017; World Bank, 2016). Seven recommendations are tendered with supportive discussion points.

### **Implement Mandatory University-level Financial Education Curricula**

As with NFEC's (2019) study, university students in our sample scored high (53%) relative to (a) Saudi citizens in general (31%) (KKF, 2018; KSA, 2020) and (b) a global transitioning economy rate of 28% (KKF, 2018). But 53% is still low compared to the NFEC (2019) 70% cut off. Our study's low rate is concerning because financial education is not currently available in Saudi K-12 or higher education curricula with related initiatives in their infancy (KAU, 2019; KKF, 2018; KSA, 2020; Saudi Gazette Report, 2020). With nearly two thirds of Saudi youth attending university (Kattan et al., 2016), it seems opportune to make financial education mandatory in Saudi universities' Foundation Year (preparation for fulltime disciplinary study). USFLEC (2019) concurred that financial literacy education must be mandatory.

This recommendation aligns with growing recognition of MENA universities' important role in financial inclusion and financial literacy (Nourse, 2013; UAB, 2017). Saudi university curriculum planners do not have to reinvent the wheel if they choose to implement this recommendation. They can turn to well-established financial education curricula and make them Saudi specific. OECD (2011, 2019) provides excellent examples.

USFLEC (2019) identified several best practices for delivering financial education at higher education institutions, practices that resonate with our Saudi results. Namely, any information provided should be timely, clear, and customized to the student population. The curriculum should be engaging, which is better ensured if it is mandatory not optional. Better yet, financial education concepts should be integrated across the entire curriculum as well as in a stand-alone course. And the curriculum must prepare students to meet their financial obligations when they graduate, obligations that will differ from those held as a student. Low financial literacy leads to an inability to manage finances upon graduation (Juliardi et al., 2019).

Study respondents (virtually all women) scored *very low* with more than a 50% failure rate, which is comparable to other Middle Eastern nations where women's financial literacy rates are also low (Xu & Zia, 2012). Preliminary descriptive analysis (not inferential) revealed that women in our study scored lower than men with a 60% failure rate, which is highly suggestive (albeit not statistically proven herein) of the acknowledged gender inequality throughout the MENA region (Kokkizil et al., 2017; MENA-OECD Governance Programme, 2015).

The respondents' low financial literacy level also resonated with (a) Mian's (2014) assertion that Saudi women are not financially literate and (b) the fact that MENA women tend to be excluded from financial services, which goes hand in hand with low financial literacy rates (Fintechnews Middle East, 2020; World Bank, 2016). Any efforts to integrate financial education into Saudi higher education curricula must thus accommodate women's current high financial exclusion and low financial literacy rates, especially as the architects of *Vision 2030* viewed women as a "great asset [for national development]" (KSA, 2016, p. 37).

### **Design Saudi Culturally Specific Financial Literacy Curricula**

Respecting that financial literacy is context specific (He, 2020), nine items in the instrument were custom designed for Saudi's context. Respondents scored well on only one item: Q.23 consumer finances (types of Saudi bank accounts) (above 70%, per NFEC's, 2019, benchmark). They scored very low (below 40%) on questions pertaining to, in descending order, (a) Saudi retail consumer payment tools; (b) sources of revenue for Saudi young people; and (c) Saudi

retirement issues (i.e., retirement age, contributions to retirement plans, and monthly retirement income).

Future designers of Saudi financial education university curricula must thus remain cognizant of the need to ensure test items are nation and culture specific (He, 2020; OECD, 2019). This cultural awareness matters because the financial literacy topics in question align with financial inclusion, which is necessary for successful national development (Demirgüç-Kunt et al., 2017; Khaled, 2010; Pearce, 2011; Saab, 2017) including KSA's (2016) *Vision 2030* (Saber, 2020). "Culture and social norms in Saudi Arabia are considered a major factor challenging ... [the] building [of] household wealth [and impacting financial literacy]" (Saber, 2020, p. 143).

### **Accommodate Financial Knowledge Gaps**

Respondents scored low on several financial concepts that university students *must* know to be financially resilient, secure, and prosperous. To illustrate, respondents could not explain a possible financial advantage of a prepaid phone plan, which is a common OECD (2018b) finding as well. Respondents herein may have underperformed on this financial concept because they also could not adequately differentiate between saving money and controlling how much to spend. Saudi Arabia's low scores on OECD's (2018a) PISA reading test might help explain this result.

Second, adults must be able to set financial goals (McGregor, 2020). Respondents scored low on this financial concept in that they only selected one or two reasons to explain why it is necessary to set financial goals despite *all* menu options being correct. Third, many scored low on which criteria to consider when borrowing money. Most notably, they incorrectly selected the criterion "The loan will give me a good enough return" not appreciating that loans are not investments that earn them money but credit instruments that cost them money.

Fourth, results confirmed that respondents did not know about Saudi retail payment tools. This makes sense with Fareed (2012) reporting that many (46%) Saudi youth relied on their parents for big-ticket items. Youth were not directly engaged in purchase transactions. However, given that university students will soon be gainfully employed and not living at home anymore (Evanson, 2022), it is imperative they learn about payment options and other aspects of consumer transactions before or while at university (Juliardi et al., 2019).

Finally, respondents were quite knowledgeable about mobile phones, which is fortunate because Fareed (2012) found that cell phones and travel accounted for most (80%) of youth's purchases. Future KSA financial literacy university curricular initiatives should heed and accommodate these and other nuanced, Saudi-specific gaps in students' financial literacy (He, 2020).

### **Consider High Number of "Do Not Know" Responses**

Analysis further revealed a high proportion of "Do Not Know" responses. Because not knowing may vary by (a) sociodemographic characteristic and (b) financial topic area (Durand & Lambert, 1988), future research about Saudi university students' financial literacy should control for these two independent variables. Future researchers can also encourage more substantive responses by including follow-up, open-ended questions that probe DK answers (Kuha et al., 2018). This strategy would nudge the research design into mixed methods (i.e., collecting quantitative and qualitative data to answer the same research question) (Bongini et al., 2018; McGregor, 2018).

The focus of the financial concepts scored as DK (see Table 3) suggests that respondents had poor knowledge in areas of personal finance that had nothing to do with their current stage of life especially savings and investing, insurance, and retirement. Although not particularly

damning in the short term, these skill sets *will* be needed when students are more firmly established after graduation. As university students, they need more immediate skill sets, so they can manage limited funds, mobile phone contracts, credit cards, and online shopping. Fortunately, respondents tended to score higher on these aspects of financial literacy compared to other elements although still with low scores (see Tables 1 and 2).

Table 3 Percentage of “Do Not Know” Answers per Multiple-Choice Question for Saudi University Students’ Financial Literacy Survey

Q	%	Q	%	Q	%	Q	%	Q	%
Q.12	11%	Q.13	4%	Q.14	4%	Q.15	6%	Q.16	10%
Q.17	21%	Q.18	34%	Q.19	32%	Q.20	18%	Q.21	26%
Q.22	21%	Q.23	19%	Q.24	49%	Q.25	21%	Q.26	25%
Q.27	25%	Q.28	29%	Q.29	24%	Q.30	0%	Q.31	34%
Q.32	19%	Q.33	13%	Q.34	26%	Q.35	24%	Q.36	44%
Q.37	15%	Q.38	57%	Q.39	55%	Q.40	16%		

That said, because most respondents were in their final year of study or postdoctoral students, they were nearing graduation when parental support may subside (Evanson, 2022). They will be financial novices in need of knowledge about insurance, taxation, mortgages, rental agreements, investing, financial planning, retirement planning, and wills and estate planning. For this reason, these topics should be included in Saudi-focused financial education university curricula and tailored to lifecycle-stage needs (Alharbi, & Renwick, 2017; Alghamdi et al., 2021; USFLEC, 2019).

### Recognize Paradoxical Nature of Saudi Financial Literacy

Respondents underperformed along many key aspects of financial literacy required for university students: understanding a bank statement, making financial calculations, understanding service terms and conditions, ensuring online shopping payment security, and basic credit and debt management. They also scored low on possible sources of income and on how taxation can reduce their take-home pay whether working part-time or full-time. All this knowledge is needed to properly budget (Saber, 2020), a skill on which they ironically scored high (81% chose the correct answer) while scoring low on setting financial goals (25% chose the right answer), which is the cornerstone of budgeting.

These results create a paradoxical picture of the contradictory state of their financial literacy. Fareed (2012) reported a similar paradox noting that Saudi youth *said* they knew about money management basics (75%) yet presented as financially illiterate. Paradoxically, despite their confidence, most Saudi youth (91%) indicated a keen interest in learning more (Fareed, 2012). Allgood and Walsrad (2016) reported that self-perceived financial literacy makes an important contribution to overall financial literacy. A high self-rating may reflect (a) a misplaced confidence in their overall financial knowledge or (b) an erroneous high degree of comfort with handling financial matters. Our sample had low financial literacy. Mudzingiri et al. (2018) reported that university students with low financial literacy are often overconfident in their financial behaviour. Future efforts to design financial education for Saudi university students should discern and accommodate financial literacy paradoxes.

### Add Personal Finances to Home Economics Secondary Curriculum

Consumer management, economics, personal finances, and related topics are not deeply entrenched in Saudi home economics curricula if at all (Alharbi, 2021). Financial literacy is not yet taught in Saudi secondary schools (Alghamdi et al., 2021). Because both women and home

economics can contribute to nation building, and because home economics traditionally teaches consumer studies and financial literacy (Alsuwaida, 2016; McGregor, 2019), consumer finances and financial literacy should be added to Saudi's home economics curricula (see Kirk et al., 1992). This will better prepare female students to cope with financial challenges they will encounter as university students and future Saudi citizens. Financial literacy should also be taught in Grade 12 to prime graduates for university-level financial literacy curricula.

High school is the optimal age to gain financial literacy (Morgan Franklin Fellowship, 2018) with higher education the next opportunity. We thus echo a decade's old call (nearly 40 years) for home economics to contribute to Saudi national development by adding consumer education and financial literacy to its university degree programs. In 1988, for example, KFU strove to improve its undergraduate home economics program so it could "effectively promote the participation of all citizens in the Development process of the country as indicated in the country's five-year Development Plan" (UNESCO, 1988, p. iii). This same report concurrently recognized the urgent need for academic faculty and researchers trained in consumer studies and related topics.

### **Research Design Adjustments**

The research instrument featured real-life, contextual, problem-solving questions, which should have led to higher scores (Bongini et al., 2018), but we judged respondents' performance as low. This result notwithstanding, "financial literacy research should be open to alternative and multiple approaches to obtain reliable measures of financial literacy that are able to capture the educational needs of different population groups and can help to design effective financial education programs" (Bongini et al., 2018, p. 1).

On a different note, the mixed messages in the literature around the influence of sex and gender on financial literacy in the Arab and MEMA regions (Attia & Engelhardt, 2016; KPMG Al Fozan & Partners, 2020; Mian, 2014; Saber, 2020), and the gender-segregated nature of Saudi society and higher education (MENA-OECD Governance Programme, 2015), prompted our recommendation that future research should examine the role of gender in KSA's university-level financial literacy and how this might affect curricular design.

### **Study Limitations**

Given its exploratory nature, interpretations and conclusions are constrained to this sample frame. That said, results support further investigation into this under-researched phenomenon (Dudovskiy, 2016; McGregor, 2018) in Saudi Arabia and the MENA region. Future studies should engage with larger, gender-balanced sample frames from more Saudi provinces (13 in total), Saudi universities (43 in total), levels of academic study, and academic specializations. Researchers should use probability sampling techniques and more sophisticated and robust descriptive and inferential statistics that affirm association and causation.

Researchers should also employ qualitative and mixed-methods research designs to dig deeper and wider into this phenomenon (Bongini et al., 2018; Author, 2018). Cross-national studies within the MENA region (19 nations in total) are also encouraged to bolster the region's financial literacy data set and knowledge base. On a final note, we used women university students as a proxy for financial literacy without knowing if they had actually studied it in secondary school. Proxies are commonly used in research when direct measures are unavailable (Rand & Caiels, 2015). Should financial literacy become formalized for Saudi secondary school (girls and boys), as others are recommending (KKF, 2018; KSA, 2020), future research should study its impact on university-level financial literacy rates.



## Conclusion


Citizens need *financial* knowledge, skills, attitudes, and behaviors along an array of content, processes, and contexts *and* the ability to use them as they access financial services. The success of KSA's (2016) national development plan (*Vision 2030*) depends on a financially literate citizenry with financial inclusion (both currently at 31%). By regional and global standards, the mostly female university students in this sample frame (part of the next generation of Saudi employers and workers) presented as financially illiterate along many dimensions of financial education.

That said, a 53% literacy rate was still 70% higher than Saudi's national average (31%) suggesting that university students may be predisposed to improve their financial literacy if mandated, university-based financial education curricula were designed and provided. "It is never too early to start learning basic concepts in finance and never too late to revisit the fundamentals and increase and deepen the body of knowledge about finances" (Šoškić, 2011, p. 1).


Results from this exploratory study about Saudi university students' financial literacy support further investigation into this under-researched Arab and MENA-region phenomenon. Saudi home economics educators can draw on our results and insights as they balance Arabic with Western views of financial literacy and embark on adding consumer-related competencies to the public-school Family Education curricula and university teacher education and home economics programs.

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