

SAMA Working Paper:

Measuring Financial Capability: The context of Saudi Arabia

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ABSTRACT

This paper aims to dig deep into the context of financial capability measurement in Saudi Arabia, its consumers, and their financial capability levels.

Based on a literature review, focus groups, and in-depth interviews, we developed a new scale for financial capability in Saudi Arabia. The resultant scale consists of 22-items covering five major dimensions namely, making ends meet; keeping track; planning ahead; choosing products; and staying informed.

In addition, we were able to reflect on the context of Saudi Arabia in a thematic approach. We present data collected for measuring financial capability in Saudi Arabia and provide policy recommendations. Both policy makers and senior executives in the financial sector can draw practical insights and useful lessons from this new 22-item scale for financial capability.

Keywords: financial capability; measurement; consumers; financial services sector; Saudi Arabia.

JEL Classification Numbers: G40, G41, G53, D1, D10, D14, D90, D91

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1. Introduction

As financial services are being increasingly developed in both depth and sophistication to match best practice standards, counting only on regulations is no longer sufficient. Consumers are increasingly expected to play a more active role in becoming financially capable to make suitable personal financial decisions for the sake of their future financial wellbeing.

With the proliferation of financial products and services and increasing complexity of the offerings, individuals have access to many options to address their financial challenges. Consumers are expected to take a greater control of their personal finances as opposed to reliance on state support (Xiao, et al. 2014).

Hence, financial capability is increasingly gaining importance and becoming a priority for policy makers as it plays a major role in securing financial stability, financial inclusion, and the healthy operation of financial markets (World Bank, 2013). Developing a measurement scale for financial capability for Saudi consumers is highly important for at least two reasons. The first reason is to use it as a diagnostic tool to help identify key problem areas and help inform the design of a national strategy for financial capability in Saudi Arabia; and second, to help in identifying potential target groups that need customized policy interventions and specific programs to improve their financial capability levels.

2. Concept of financial capability

“Financial literacy” and “financial capability” are often used interchangeably (Zottel et al, 2013). Nevertheless, financial literacy has traditionally referred to financial-related knowledge (Lusardi and Mitchel, 2006, 2014). For example, if someone is able to understand financial concepts such as “compound interest”, “inflation”, and “risk diversification”, then they will be considered financially

literate. Later on, financial literacy has been recognized as a component of financial capability (Sohn et al, 2012). According to Kempson et al (2005, p.2), “a person’s financial capability can be measured by examining their behavior”. However, it is important to point out that financial behavioral decision making is a result of key elements that make up the definition of financial capability such as knowledge, understating, skills, confidence, and attitudes as well as other variables such as experience, circumstances, and personality (Kempson et al, 2005). Mundy (2011, p. 8) highlighted its significance in the following way:

“People who are financially capable are able to make sound financial decisions for themselves and for their families; to make informed choices between different financial products and services; to budget and to plan ahead financially; to build up some savings; to avoid becoming over-indebted; to identify, and protect themselves against financial risks; to invest prudently; and to understand their rights and responsibilities.”

However, financial capability is still in debate in terms of how it is defined and operationalized (FSA, 2005; Taylor 2011; Xiao, et al, 2014). Some of the common definitions of financial capability are shown in Table 1, below:

Table 1. Financial Capability Definitions

Definition	Financial Capability
Noctor et al, (1992)	“The ability to make informed judgments and take effective decisions regarding the use and management of money.”
Taylor (2011)	“People’s ability to manage and take control of their finances.”
Kempson et al, (2013)	“The capacity to manage financial resources and use financial services in a way that best suits individual needs and the prevalent social and economic conditions”
Microfinance Opportunities, (2013)	“Financial capability is the combination of attitude, knowledge, skills, and self-efficacy needed to make and exercise money management decisions that best fit the circumstances of one’s life, within an enabling environment that includes, but is not limited to, access to appropriate financial services.”

However, the above-mentioned definitions share the following common elements about financial capability: a financially capable person is someone with the following characteristics (Source: Microfinance Opportunities (2013):

1. His or her attitude is that proactivity in managing one's finance is necessary;
2. Has the knowledge needed to empower him or herself to make pertinent decisions and act on them;
3. Skillful in turning knowledge into practice;
4. Believes and has confidence that he or she is able to act on that desire;
5. Has access to an environment that enables him/her to act on that desire.

This paper has a particular interest in financial capability from a behavioral-based perspective as opposed to knowledge-based perspective. This is in alignment with Kempson's statement of financial capability as "a person's financial capability can be measured by examining their behavior" (Kempson et al, 2005) as well as with Noctor's definition of financial capability as "the ability to make informed judgments and take effective decisions regarding the use and management of money" (Noctor et al, 1992).

In other words, someone's financial capability is manifested mainly in behaviors such as proactive saving, planning for the future, keeping track of his or her finances, participating in the financial system, and finally choosing an appropriate way to stay informed.

3. The Financial Sector Development Program

Saudi Arabia Vision 2030 through its Financial Sector Development Program (FSDP) aims to work on a strategic pillar of -among others- promoting and enabling financial planning. This pillar comprises four targets: 1) to stimulate sustainable

demand for savings schemes; 2) to expand on savings products and channels available in the market; 3) to develop the savings ecosystem; and 4) to strengthen financial literacy levels of Saudi citizens.

Given the low level of financial literacy in the kingdom and limited, uncoordinated initiatives to foster financial education (FSDP: Delivery plan 2020), the Saudi Arabian Monetary Authority (SAMA) is spearheading a national financial literacy initiative to coordinate and synchronize efforts for boosting financial education to ensure standard quality and consistency of materials and messages, as well as reach and scale.

Alkoholifey (2017), the Governor of SAMA, pointed out - during his inaugural speech - that financial literacy programs are going to be an important component of SAMA's consumer care efforts manifested in "SAMA cares" initiative.

The above-mentioned targets were meant to fill gaps such as lack of demand for savings products on the part of consumers; lack of savings products and channels offered by the financial sector as a whole; and low levels of financial literacy in the country as indicated by a recent study conducted by the World Bank. Financial literacy was found to be low in Saudi Arabia compared to other similar countries. About 30% of adults were considered financially literate (FSDP: Delivery plan 2020).

4. Methodology

For measuring financial capability, we followed a variation of Churchill's scientific methodology in scale development (Churchill, 1979). Therefore, we followed this 7-step process (Table 2):

Step-1:

Reviewing the literature on the topic of financial capability, we came to realize that financial literacy is a component of financial capability. In addition, we came to uncover the major dimensions of measuring financial capability. Five main dimensions constitute financial capability scales, have been used, namely, making ends meet, keeping track, planning ahead, choosing products, and finally staying informed. Financial capability measures behavioral financial decision making whereas financial literacy measures the extent to which someone is well versed in financial concepts and products.

Table 2: Methodology

Steps	Description	Results
Step 1 Literature review	Literature Review Surveying others' experiences in measuring financial capability of individuals. Such as UK Financial Services Authority (now two separate entities: Financial Conduct Authority and Prudential Regulation Authority since 2013) and World Bank	Understanding major dimensions and pertinent indicators to measure financial capability
Step 2 Conducting Focus groups	Focus Groups Reflecting on the literature review done in the previous step, major trigger questions were used in 8 focus groups to uncover the nature of financial capability in the Saudi context	Revealed 13 emerging themes to explain the context of Saudi Arabia as it relates to individual financial capability
Step 3 In-depth interviews With experts	In-depth interviews Using in-depth interviews, 11 experts were consulted on emerging themes and on	30 proposed survey items

	possible survey items for financial capability scale.	
Steps 4 Generating an initial pool of items	Item-pool Generation Drawing upon the previous steps. 30 survey items and 21 additional survey items were generated to measure financial capability of Saudis.	Developing a pool of 51 items for the scale of financial capability (see table 3)
Step 5 Purification of the item-pool	Testing face and content validity Assessment of the generated 51 items through the guidance of two expert judges who evaluated the items and the related dimensionality. Based upon two experts' judgment, the scale (survey) items were reduced to 28 for lack of clarity, redundancy, and/or incomplete wording.	The updated number of items as a result is 28 items for the scale of financial capability (see table 4)
Step 6 Pre-testing	PRETESTING The survey items have been translated into Arabic and then back translated to English. This was done to ensure precision in translation. The survey was pre-tested using a sample of 30 individuals to make sure it is free from typos and inconsistencies.	<ul style="list-style-type: none"> - Few items were slightly reworded - The survey's introduction was refined.
Step 7 Assessing validity	Assessing Reliability and Validity of the scale	<p>Using a convenience sample, survey administered using Survey Monkey software to facilitate data collection and data analysis. Final number of accepted surveys reached (n= 416).</p> <p>A final –item scale was found to be valid and reliable to measure consumer financial capability in Saudi Arabia</p>

Step-2: Building on the literature review conducted in the previous step, we conducted eight focus groups. We made sure that we include different demographic groups such as newly recruited individuals, executive-level individuals, females, and experts in the banking sector. We used a framework of four trigger questions to guide our discussions in these focus groups. This framework was used to help us uncover the nature of our context when it comes to individual financial capability. The trigger questions include: (1) how would you describe Saudis with financial capability/financial incapability? ; (2) How do Saudis make ends meet; keep track of their finances; plan ahead; choose products; and Stay informed ?;(3) What is unique about our culture, social norms and other related variables when it comes to financial capability? ; (4) What are Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis on this area of financial capability in the Saudi context?; and finally (5) What would you propose as potential question items for the survey covering each dimension of financial capability: making ends meet, keeping track, planning, choosing products, and staying informed?

Step-3: We conducted eleven in-depth interviews with experts to reflect on the emerging themes from the previous step of conducting the focus groups. In this step, we wanted to accomplish two objectives: (1) reflect on the emerging themes, and (2) solicit some items (survey questions) which experts think can help gauge consumer financial capability in the different dimensions of making ends meet; keeping track; planning ahead; choosing products; and staying informed.

Step-4:

At this point of time, we generated as many survey items as possible reflecting the various dimensions of the financial capability construct. We were able to generate a total of 51 survey items for the scale of consumer financial capability in Saudi

Arabia (see table 3). Of the 51 survey items, 30 items were generated during the in-depth interviews conducted with experts and the remaining items were generated during step-4, which aimed to generate as many as possible. All of these pool-items generated reflecting the previous steps from one through three.

Step-5:

Two experts' judgement was used to examine face and content validity of the 51-items constituting the pool of items generated in step-4 (see table 3). As a result, the scale items were reduced to 28-items for lack of clarity, redundancy, and/or incomplete wording in the deleted items (see table 4).

Step-6:

After translating the 28 survey items into Arabic, they were back-translated into English to ensure precision of translation. Then, the survey items were pretested using a sample of 30 individuals to make sure these items are free from typos, inconsistencies, or any major mistakes. As a result, few items were slightly reworded and the survey's introduction was refined.

Step-7:

Using a convenience sample, the 28-item survey was distributed using snowballing sampling to collect as many responses as possible in the time allotted. We made sure that respondents are holding a job and enjoy a steady income. We realize that having a job and a steady income might be significant when it comes to measuring someone's management of his or her finances. Each item was measured on a five-point Likert scale from "Strongly Disagree" to "Strongly Agree."

We used SurveyMonkey software platform to facilitate data collection as well as to facilitate data exporting to SPSS, which stands for the Statistical Package for Social Sciences. Finally, data collected was put to statistical testing to examine its

statistical validity and reliability. We were able to collect 460 responses. After cleaning the responses, only 416 responses were used for statistical data analysis.

Table 3: Financial Capability Measurement Scale (An initial pool of 51-items)

Factor 1: Making ends meet	
1	I can keep up with my bills and credit commitments at the moment
2	My income exceeds my expenses
3	I am very organized when it comes to managing my money day to day
4	I rarely run out of money before the end of the month
5	I rarely resort to others such as banks, family or friends for my daily money needs
6	I make sure my rented house is reasonably priced relative to my monthly income
7	I budget for my supermarket expenses in advance
8	I budget for my travel and entertainment expenses in advance
9	I make sure I don't spend money on unnecessary things
10	I make sure I spend reasonably on my kids' schools
11	I make sure I spend reasonably on my kids' entertainment
12	I am always sure that I will be able to handle all of my monthly financial obligations
13	I am always comfortable I will be able to handle all of my unexpected expenses in case of emergencies
14	I rarely exceed the limit of my credit card
15	When I pay with my credit cards, I always pay the balance in full and on time
Factor 2: Keeping Track	
16	I know precisely how much I will spend on a daily basis.
17	I know exactly how much money I have in my current account
18	I frequently check how much money I have in my account
19	I regularly check my bank account statement against my receipts
20	I regularly review in details my monthly bank statement
21	I easily spot any differences (variances) in my current account balance
Factor 3: Planning ahead	
22	I have a general saving account by which I allocate a proportion of my monthly income
23	I have allocated a portion of my monthly income as an emergency fund

24	I would not suffer financially for at least six months had I lost my main source of income
25	I am pretty sure I would not suffer financially to meet an unexpected major expense
26	I plan ahead financially for my travel and entertainment needs
Factor 4: Choosing products	
27	I have bought a real estate land
28	I subscribe to a mutual fund
29	I have bought a mortgage for my dream house
30	I have bought a consumer loan to buy a car
31	I have bought a farm
32	I have bought equity stocks for some of the best run companies in the Saudi Stock Exchange
33	I subscribe to a savings account within my bank
34	I have bought a protection and saving product from one cooperative insurance company
35	I have subscribed into an investment account in the capital subsidiary of my own bank
36	In my view, the best way to accumulate assets is through getting in debt
37	In my view, it is fine to get in debt to buy a generating asset
38	Early on in life, it is better to use debt to buy my first housing unit
39	I always buy equity stocks for long-term investment (at least 5 years and above)
40	I have invested in a REIT fund
41	I make sure I shop around before I buy any financial product
42	I conduct the needed comparisons between products of different financial services providers before I make the final decision
43	I get the best rates in the market before I make the final buying decision for a financial product
44	I shop around before making a decision on buying a financial product
45	I don't buy a financial product without shopping around
Factor 5: Staying informed	
46	I keep abreast of financial sector developments
47	I keep abreast of equity market developments
48	I keep abreast of real estate market developments
49	I subscribe to economy periodical updates from some of the economic research departments in banks and capital institutions
50	I turn to my friends and family members whom I think they have the needed expertise and experience for financial advice
51	I turn to professional bankers and/or investment advisors available at the financial institutions before I select a product

Table 4. Tentatively face –validated 28-items scale for financial capability scale in Saudi Arabia

Factor 1: Making ends meet	
1	I can meet all of my financial obligations such as bills and debt installments at the moment
2	My income exceeds my expenses
3	I rarely run out of money before the end of the month
4	I rarely resort to other sources such as family, friends, and or banks for my expenses
5	I budget monthly for different types of expenses such as groceries, entertainment, etc.
6	My credit card balance is always paid in full and on time
Factor 2: Keeping Track	
7	I know precisely how much I spend on a daily basis
8	I know exactly how much money I have in my bank current account
9	I regularly check how much money I have in my bank account
10	I regularly check my bank account statement against my receipts
11	I monthly review in details my credit card statements
Factor 3: Planning ahead	
12	I set myself long-term financial goals to achieve
13	I have a saving account to which I allocate a portion of my monthly income
14	I allocate a portion of my monthly income as an emergency fund
15	I can survive financially for at least six months had I lost my main source of income
16	I have a financial plan to buy my family's home
17	I plan ahead financially for my pleasure travel needs
18	I use debt to buy value-storing assets such as real estate, etc.
19	I have an additional retirement saving plan apart from government pension fund
Factor 4: Choosing products	
20	I subscribe to a mutual fund
21	I have a real estate mortgage to own a house
22	I am investing long term in individual equity stocks for some of the best performing companies in the capital market
23	I have bought a protection and saving product from a cooperative insurance company

24	I shop around before making a decision related to buying financial products
25	I consult an investment advisor/credit advisor before choosing investment or financing products
Factor 5: Staying informed	
26	I turn to official outlets for economic and financial market updates
27	I seek financial advice from trustworthy family members and friends
28	I frequently follow-up on developments related to my investments and financial products

5. Data Collection and Sample Profile

To validate the financial capability scale in the context of Saudi Arabia, we developed an electronic survey on Survey Monkey. The link to the survey was shared with Saudi consumers that hold a job and have a steady income, through various methods such as email, LinkedIn, WhatsApp etc. We received 460 filled questionnaires. After filtering out the non-pertinent or atypical cases, the final sample consisted of 416 respondents. **Table 5** provides the detailed demographics of the respondents.

Table 5. Sample demographics

Measure	Item	Frequency	Percentage
Gender	Male	219	52.6
	Female	197	47.4
Age	18-24 years	13	3.1
	25-34 years	115	27.6
	35-44 years	153	36.8
	45-54 years	107	25.7
	55 years and above	28	6.7
Education	High School	22	5.3
	2-year diploma	51	12.3
	4-year College	240	57.7
	Higher Education	103	24.8
Marital status	Married	326	78.4
	Single	90	21.6
N= 416			

5.1 Descriptive Statistics

Table 6. Summary Statistics

Financial Capability		Financial Capability	
Measure	Mean	Measure	Mean
Making Ends Meet		Planning ahead	
Meeting financial obligations	3.64	I set long-term financial goals	3.09
Income exceeds expenses	2.94	I have a saving account	2.82
I rarely run out of money monthly	3.24	I have an emergency fund	2.71
I rarely resort to other sources for my expenses	3.34	I can survive financially for at least six months	2.41
I budget expenses monthly	3.27	I have a financial plan to buy my family's home	2.72
Credit card balance is always paid in full monthly	3.58	I plan ahead financially for my pleasure travel needs	3.06
Keeping Track		I use debt to buy value-storing assets	2.84
I know how much I spend on a daily basis	2.36	I have an additional retirement saving plan	2.16
I know how much money I have in my current account	3.85	Staying Informed	
I check how much money I have in my bank account	3.77	I follow economic and financial market updates	2.97
I check bank account statement against receipts	2.69	I seek financial advice from family members and friends	3.51

I review in details my credit card statements	2.78	I follow-up my investments and financial products	2.97
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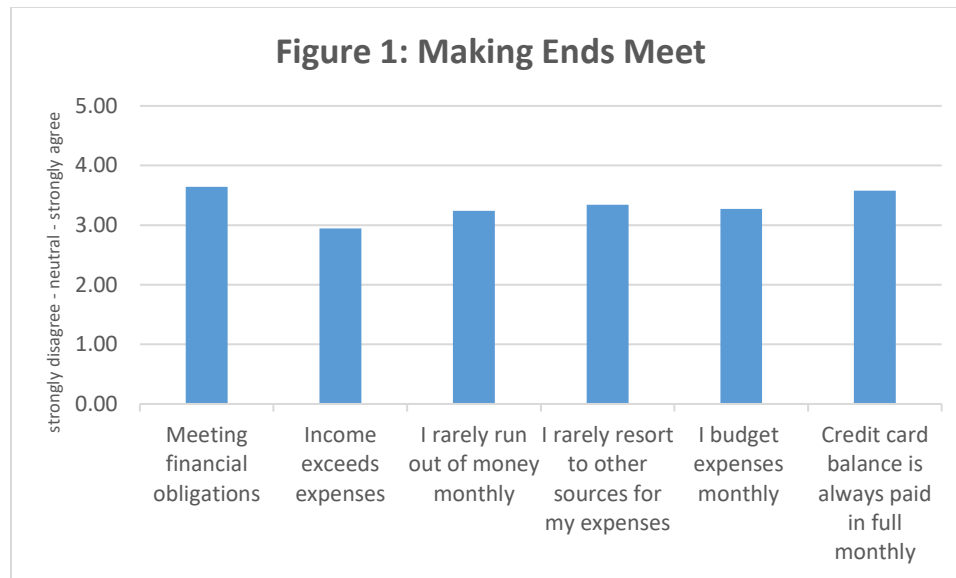
Choosing Products

I subscribe to a mutual fund	1.86
I have a real estate mortgage	2.35
I invest long term in individual equity stocks	2.03
I have bought a protection and saving product	1.70
I shop before buying financial products	3.38
I consult an investment advisor/credit advisor	2.50

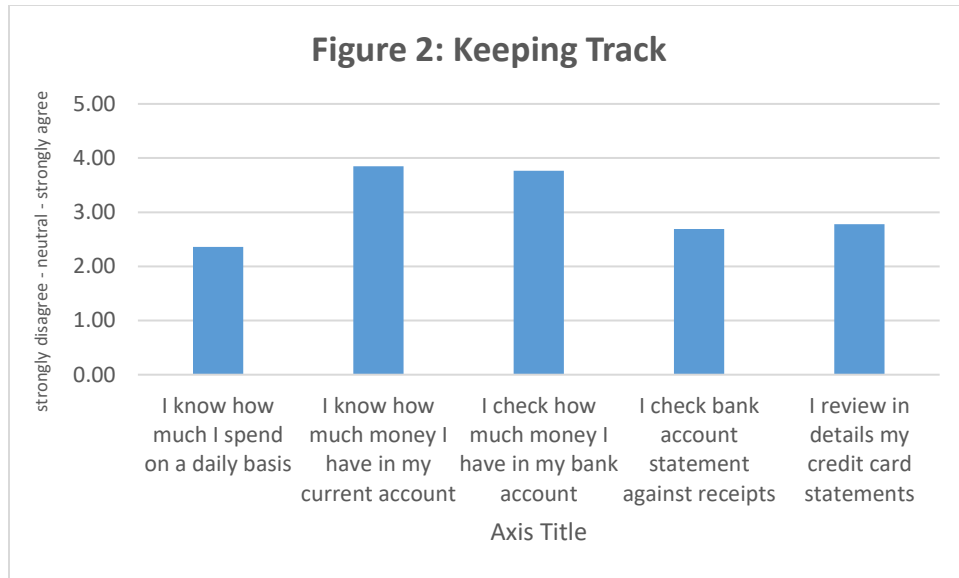
(1 = strongly disagree - 2 = disagree – 3 = neutral – 4 = agree – 5 = strongly agree)

The quantitative outcomes from the summary statistics in **Table 6** provide valuable insights even though they are mathematical averages and do not include hypotheses testing and statistical regression examination to assess relations between independent and dependent variables. Nevertheless, these qualitative summaries seem to confirm and are consistent with the emerging themes that the paper finds in its focus groups and experts interviews.

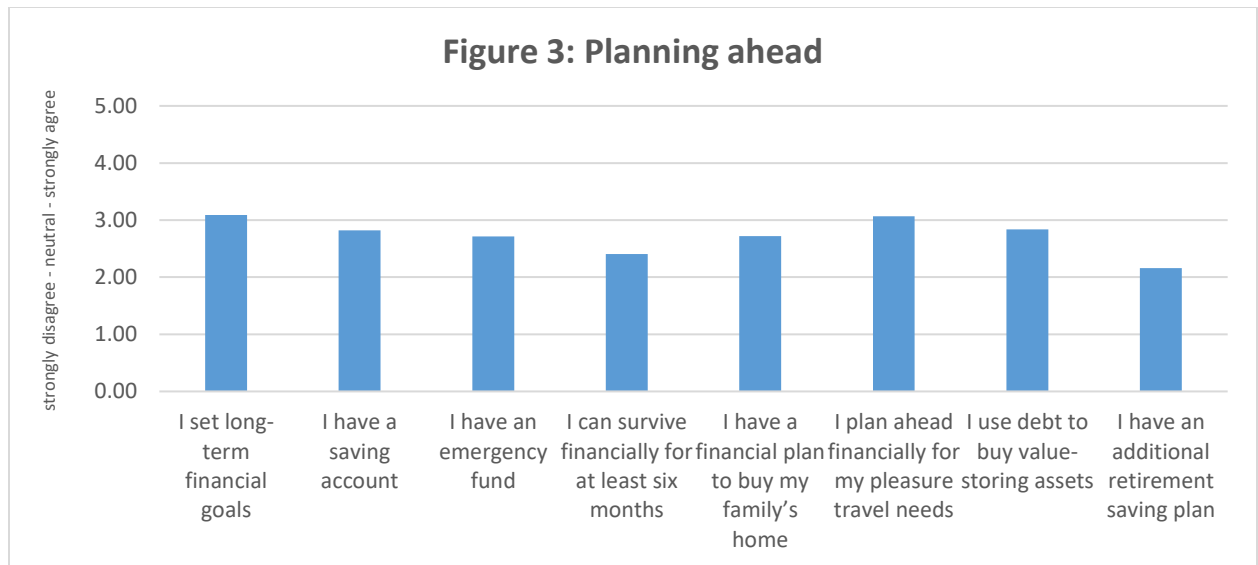
Across the five sections: making ends meet, keeping track, planning ahead, choosing products, and staying informed, the paper notices that participants do not exhibit a positive behavioral pattern in their personal financial management. The averages are centered around neutral level (3) and below the required level for successful personal financial management.



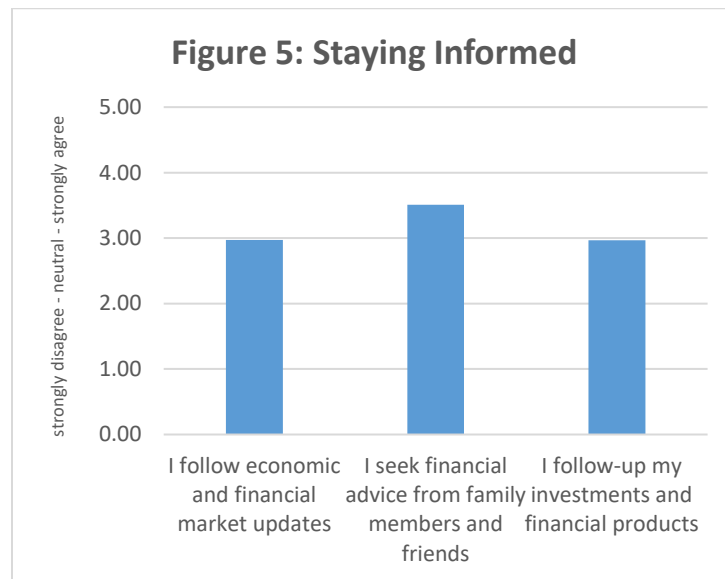
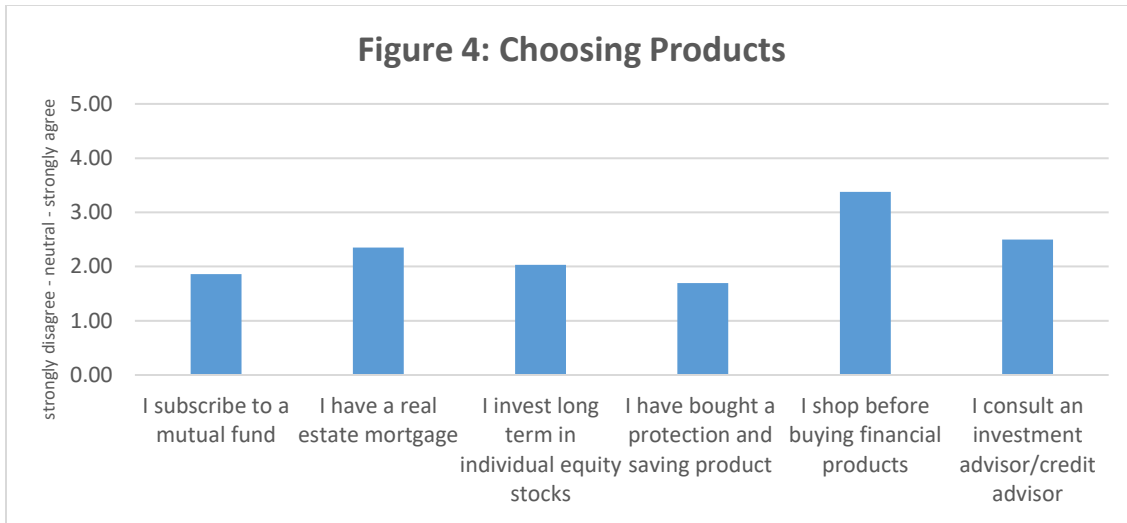
Making ends meet as shown in (Figure 1) appears to be difficult for participants who do not show a definite agreement with important indicators. The ability to meet all financial obligations is relatively higher than a neutral level (3) but still less than approval level (4) for such statement. This indicates that individuals struggle and face some difficulty in covering financial commitments such as bills and debt installments. Similarly, running out of money before the end on a month, resorting to others for financial support, not budgeting for expenses, and not paying the credit card balance in full monthly seem to be behavioral patterns among participants. In fact, participants do not confirm that their income exceed their expenses. This first dimension shows that participants in their personal assessment of individual situation points to a negative picture about their ability to meet and manage financial affairs. Running out of money and the need to rely on others to cover monthly expenses while at the same time lacking to budget expenses would make the monthly financial journey of cash flows a constant struggle that could spin out of control if we factor in the failure of paying personal loans carried on participants' credit cards.



Likewise, keeping track of financial affairs in (Figure 2) falls short among participants. With the exception of exact knowledge of how much money they have in their banking account and the frequency of checking bank accounts, participants fail to know how much they spend on daily basis and fail to review their receipts against their credit card transactions (less than 3). The combination of monthly financial struggle and lack of track about spending and financial transactions pave a path for financial incapability that does not indicate financial hardship only, but also a pattern of behaviors that makes escaping such hardship unattainable.



The measures of planning ahead in (Figure 3), which are indicators of financial sophistication, draw a negative picture that is consistent with participants own assessment of making ends meet and keeping track of their financial affairs. The measures of having long-term financial goals, saving account, an emergency fund, a financial plan to buy a home or for leisure travel point out clearly to the short-term orientation and participants' incapability to think long-term and plan accordingly. Therefore, not using debt to acquire value-storing assets and the lack of thinking about retirement to bridge the gap between expected income and expenses during retirement is not surprising. The pattern among participants centers around a neutral value of 3, which indicates that respondents are managing their financial affairs in a short-term time span. Hence, long-term planning has little place in this individual financial management framework.



The financial products that individuals purchase are indicative of their financial sophistication. Not investing in mutual funds and/or financial securities market, not hedging risk exposures via insurance products, and not relying on professional financial advisors makes individuals open for mistakes. Participants are neither participating in wealth creation nor concerned and/or aware of the financial challenges they face with regard to their financial assets or income replacement as well as their financial decision-making. This lack of financial sophistication limits

the viability of shopping for suitable financial products although they don't seem to practice this shopping exercise in the first place. Subsequently, staying informed via the follow-up of financial market updates and performance of personal investments does not seem a common practice, which is consistent with the overall behavioral trends that are noticed across other aspects.

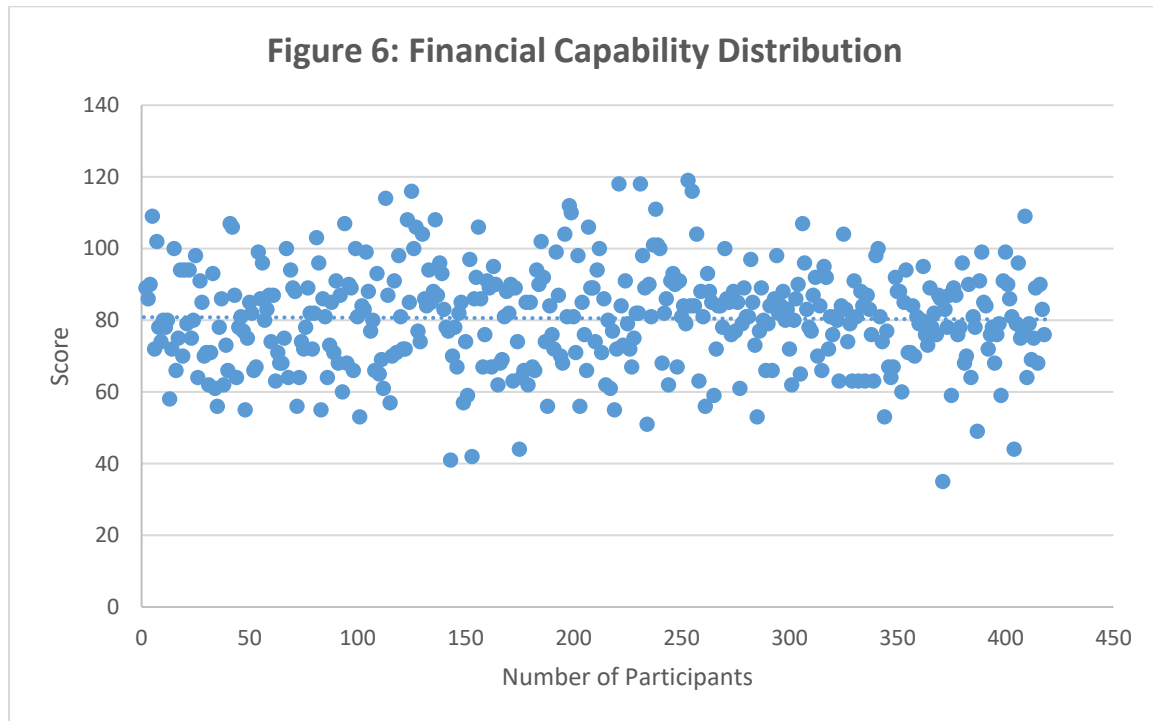


Figure 6 shows the distribution of respondents' overall performance numbers according to the paper's scale of 28 items ranging from 1 (totally disagree) to 5 (totally agree). The performance number in this scatter plot graph represents the summation of each respondent's answers of the 28 items that measure the five defined dimensions. We can see in this figure that the concentration and majority of respondents are between approximately 60 and 100, which is around the neutral level of 84. Furthermore, 41% of respondents are within the upper range of (3 and less than 4), while 56% are within the lower range of (3 and more than 2). Such distribution clearly indicates that financial capability is low among the participants despite this diverse sample group.

5.2 Exploratory factor analysis

Factor analysis is a commonly used method for data reduction into meaningful latent variables. It assesses the intercorrelations among a number of items and groups them into various dimensions commonly known as factors. For the scale refinement, we followed Churchill's (1979) scale development paradigm. The proposed scale was assessed regarding content validity as well as internal consistency and validity. Data analysis was carried out in two phases. In the first phase, we used exploratory factor analysis to examine the dimensionality of underlying latent measures. In the second phase, the psychometric properties of the scale have been assessed (Gerbing and Anderson, 1988).

To evaluate the dimensionality of the resultant financial capability scale, a principal component analysis with varimax rotation has been used. Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity have been used to assess the suitability of the data for the factor analysis. Both tests indicate that the data is suitable for factor analysis as the KMO values are well above 0.7 and Bartlett's Test of Sphericity is not significant (see **Table 7**).

Table 7. KMO and Bartlett's Test

Test details		Results
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.830
Bartlett's Test of Sphericity	Approx. Chi-Square	4189.002
	df	231
	Sig.	.000

Table 8. Rotated component matrix^a

Items	Component				
	1	2	3	4	5
PA2	.847				
PA3	.841				
PA6	.722				
PA8	.710				
PA1	.689				
MEM 2		.827			
MEM 6		.763			
MEM 3		.759			
MEM 1		.742			
MEM 4		.737			
KT4			.831		
KT1			.792		
KT3			.764		
KT5			.764		
KT2			.690		
CP4				.885	
CP1				.880	
CP3				.848	
CP2				.653	
SI1					.832
SI2					.801
SI3					.797

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Various criteria such as inter-item correlations, communalities, and cross-loading have been used to refine the scales. Using the high cross-loadings criteria resulted in eliminating one item from Making Ends Meet, three items from Planning Ahead, and two items from Choosing Products scale. All the items of Keeping Track and Staying Informed Responsibility were retained because no issues related to cross-loadings were observed in any of the items in these scales. **Table 8** summarizes the results of exploratory factor analysis with varimax rotation.

5.3 Confirmatory factor analysis

The confirmatory factor analysis (CFA) is a statistical technique that is generally used to substantiate the factor structure of the underlying variables. It allows for the examination of the reliability and validity of the scale. To check the psychometric properties of the scales in terms of reliability and validity we carried out a confirmatory factor analysis on the five dimensions extracted from exploratory factor analysis using AMOS 23. A measurement model was developed (**Figure 6**) by drawing covariance among each latent construct.

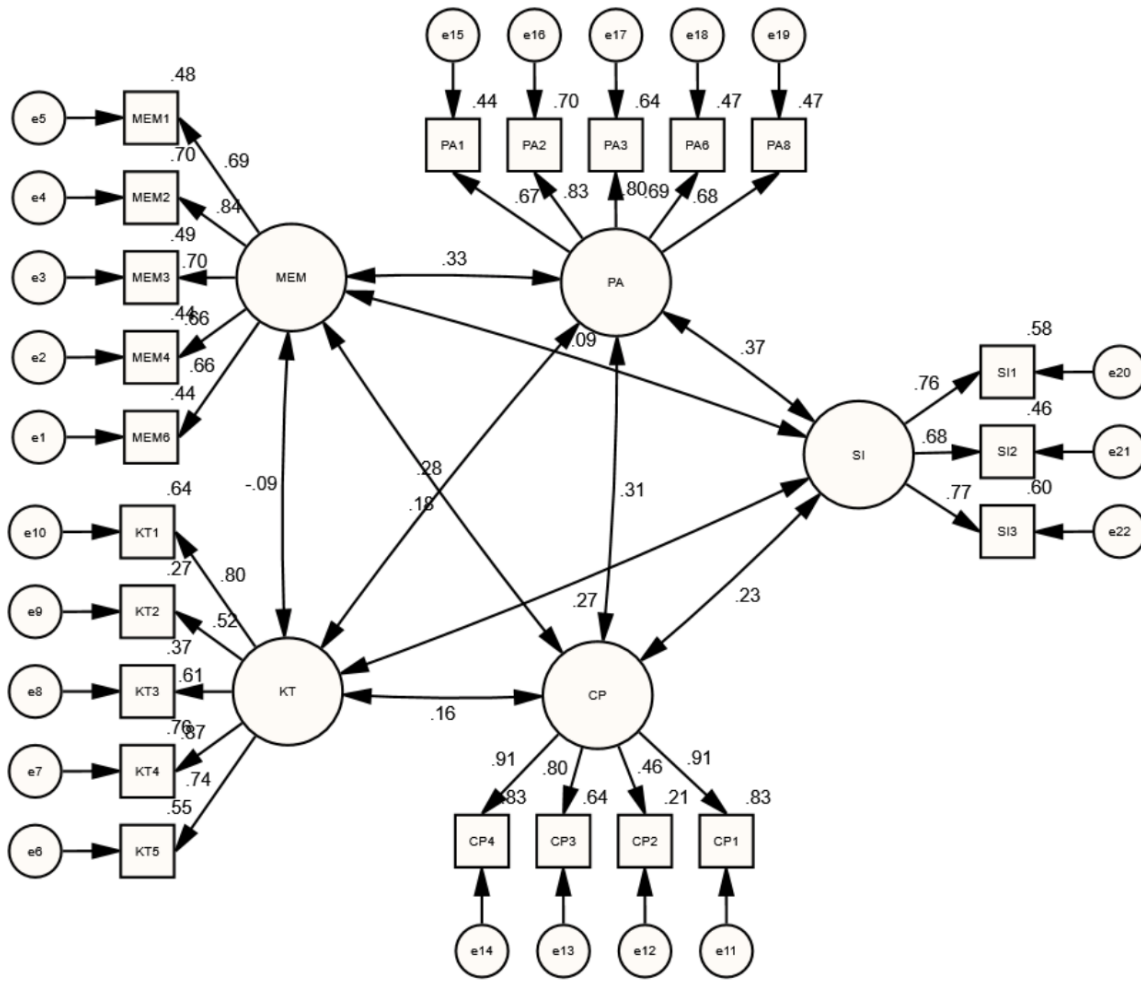


Figure 6. Measurement model

The fit indices of the measurement model (Chi-square (χ^2) = 435.048, df= 199, χ^2 /df= 2.186, GFI=.909, TLI=0.932, NNFI=.898, CFI=.942, and RMSEA=.053) indicate an adequate model fit. The goodness of fit measures are acceptable as all the fit indices meet the minimum requirements of an acceptable model fit as shown in **Table 9**.

Table 9. Measurement model fit indices

Fit Index	Recommended Value	Reference
Normed Chi-square (χ^2/df)	≤ 5.00	Hu & Bentler (1999)
GFI	≥ 0.90	Jöreskog & Sörbom (1982)
AGFI	≥ 0.80	Jöreskog & Sörbom (1982)
TLI	≥ 0.90	Hu & Bentler (1999)
CFI	≥ 0.90	Hu & Bentler (1999)
RMSEA	≤ 0.08	Hu & Bentler (1999)

5.4 Scale Reliability

After achieving an adequate model fit, we assessed the reliability and validity of the underlying scales. Cronbach's alpha coefficients ($\alpha > 0.7$) and composite reliability (CR > 0.70) measures of the latent constructs have been observed to assess the reliability of each construct (Nunnally, 1978). **Table 10** shows that both the Cronbach's alpha coefficients and composite reliability values are well above 0.7 for each construct. In addition, the standardized path coefficients of each item are also reported.

Table 10. Scale reliability

Constructs	Items	Standardized path coefficients	CR	AVE
Making Ends Meet	MEM6	.663***	0.837	0.509
	MEM4	.661 ***		
	MEM3	.700 ***		
	MEM2	.838 ***		
	MEM1	.690 ***		
Keeping Track	KT5	.743***	0.839	0.518
	KT4	.870 ***		
	KT3	.612 ***		
	KT2	.523 ***		
	KT1	.797 ***		
Choosing Products	CP1	.912***	0.866	0.630
	CP2	.460 ***		
	CP3	.803 ***		
	CP4	.912 ***		
Planning Ahead	PA1	.665***	0.855	0.544
	PA2	.835 ***		
	PA3	.800 ***		
	PA6	.688 ***		
	PA8	.684 ***		
Staying Informed	SI1	.762***	0.782	0.546
	SI2	.679 ***		
	SI3	.772 ***		

*** $p < 0.001$

5.5 Convergent and discriminant validity

In order to assess the convergent and discriminant validity of the scales, we followed the criteria proposed by Fornell and Larcker (1981) who consider that the Average Variance Extracted (AVE) should be higher than 0.5 to reach the convergent validity. The AVE values for each of the construct are greater than 0.5, which confirms that the convergent validity is met. For the discriminant validity, the AVE values for each construct should be greater than the shared variance of the other constructs (Fornell and Larcker, 1981). **Table 11** shows that the square root of AVE for each construct is greater than the correlation among other constructs, which corroborates the discriminant validity of the scale.

Table 11. Convergent and Discriminant Validity

Constructs	MEM	KT	CP	PA	SI
MEM	0.713				
KT	-0.087	0.720			
CP	0.178**	0.155**	0.794		
PA	0.326***	0.278***	0.307***	0.737	
SI	0.085	0.271***	0.230***	0.373***	0.739

Note: Diagonal elements are square root of AVE and off-diagonal elements are the correlations among latent constructs

As all the conditions for the reliability and validity of the scale are met, the scale meets the requirements of the scale reliability and validity (see below table 12).

Table 12. Newly validated 22-item financial capability scale

Factor 1: Making ends meet	
1	I can meet all of my financial obligations such as bills and debt installments at the moment
2	My income exceeds my expenses
3	I rarely run out of money before the end of the month
4	I rarely resort to other sources such as family, friends, and or banks for my expenses
5	My credit card balance is always paid in full and on time
Factor 2: Keeping Track	
6	I know precisely how much I spend on a daily basis
7	I know exactly how much money I have in my bank current account
8	I regularly check how much money I have in my bank account
9	I regularly check my bank account statement against my receipts
10	I monthly review in details my credit card statements
Factor 3: Planning ahead	
11	I set myself long-term financial goals to achieve
12	I have a saving account to which I allocate a portion of my monthly income
13	I allocate a portion of my monthly income as an emergency fund
14	I plan ahead financially for my pleasure travel needs
15	I have an additional retirement saving plan apart from government pension fund
Factor 4: Choosing products	
16	I subscribe to a mutual fund
17	I have a real estate mortgage to own a house
18	I am investing long term in individual equity stocks for some of the best performing companies in the capital market
19	I have bought a protection and saving product from a cooperative insurance company
Factor 5: Staying informed	
20	I turn to official outlets for economic and financial market updates
21	I seek financial advice from trustworthy family members and friends
22	I frequently follow-up on developments related to my investments and financial products

6. Explaining the context: emerging themes

1. Dependency mentality:

Collectivism, where a person's emphasis is on belonging to a group, family or society versus individualism, where self-orientation and interest is superior (Grable, 2009; Hofstede, 1980), might influence the behavior of individuals including their personal finance management. In some cultures, it is almost the norm that family, group members, and governmental agencies will always be there to help out people recover from financial losses due to taking risky options (Weber and Hsee, 1998). Participants in the focus groups pointed out that some Saudis experience what they described as dependency thinking thought process. The nature of Saudi family inter-relationships that reflect a social support system makes individual experiences and circumstances connected and relevant to other family members. As a result, the incentive to plan for financial emergencies and unexpected events might not be strong because individuals have easy access to an informal social safety net.

The presence of full and unconditional financial support given to children throughout their adolescence and the lack of financial management lessons early on in their lives might impact negatively their personal financial management. For example, a woman's decision to remain or leave the workforce seems to be influenced by the degree of family support according to one female group.

2. Easy access to financing:

Participants highlighted that Saudis who have an income and a bank account can relatively have easy access to consumer finance products with attractive

rates and much less duration to payoff. This situation facilitates and encourages a propensity to consumption as opposed to planning to save to secure someone's financial future. One important factor in consumer demand theory (Levin & Milgrom, 2004) that influences individuals' consumption behavior is the price of goods and services. If such price for personal finance solutions is affordable in the marketplace, individuals might not be inclined to have necessary plans to address unforeseen future financial needs.

3. Short-term orientation:

This theme underlines the effect of short-term horizon and the urge for instant gratification on individuals' financial decisions. Participants pointed out that some Saudis seem to concentrate on their day-to-day or monthly financial management as opposed to adopting a long-term view of their finances. For example, the accounting of income and expenses on an annual basis in managing personal finances is not a common practice among Saudis. Hence, yearlong financial expenses are not weighed against their expected income. This has some negative implications on their personal finance management as short-term financial needs and challenges would dominate one's financial behavior. This contradicts with the notion of "planning ahead" that is a major component of individual financial capability.

4. Using debt to accumulate value appreciating/storing assets as a mechanism for saving:

The proposition that leverage can be used to acquire assets as a commitment mechanism for saving seems to be an indicator of financial sophistication. Some participants mentioned that getting in debt (especially consumer finance debt) is one efficient and effective way to accumulate value appreciating/storing assets such as real estate or gold. This method serves to

overcome the difficulty that those individuals have in savings for the future. Therefore, they get into specific financial obligations to force themselves to save.

5. Social pressure:

The nature of social relationships, expectations, and/or obligations brings its own challenges in a collective society. This might explain why some participants attributed the involvement in some negative personal financial behavior practices to social and peer pressure at the expense of individuals' own financial well-being. Saudis may find themselves buying things they do not necessarily need nor can afford, so that they can appear financially capable or have the capacity to match others' consumption behavior. Some female participants gave examples of how being financially responsible can be interpreted as ungenerous even at the personal level.

6. Easy shopping:

Easy access to shopping outlets such as e-commerce apps brings products and services to Saudis, making them more impulsive consumers in their spending decisions. Saudis can easily access e-commerce via their smart phones to order different categories of consumer goods and have them delivered in a short period of time to their house doorsteps. Variety of e-commerce apps are increasingly emerging serving different segments of consumers. This apparently has an impact on financial behaviors and financial capability as a result.

7. The presence of government pension funds:

Participants pointed out that, in the context of Saudi Arabia, the automatic enrollment in government pension funds, for both private and public sectors, makes the pressure or need for an individual retirement planning either

unnecessary or less urgent. In a consumer demand theory framework, individuals' preferences influence their choices. The presence of a default pension fund plan could discourage self-initiated proactive financial planning to address additional financial needs at retirement unless they are sophisticated enough to calculate the future income required to maintain their life style.

8. Saving products are limited:

Participants pointed out that financial institutions are not offering innovative and custom-built saving products to suit different customer needs. So far, few banks have launched saving products. Banks usually indicate that the reason behind limited saving products is limited demand on the part of consumers. There might be other reasons behind having limited saving products such as unattractive rate of return as well as the presence of other informal saving schemes.

In addition, Saudis generally prefer to purchase financial products that are shari'ah compliant. Participants in the focus groups indicated that financial institutions are not offering enough shari'ah compliant savings nor financing and/or investment products.

9. Lack of marketing and consumer awareness:

Participants pointed out repeatedly that financial institutions need to leverage marketing and communications to improve significantly the level of awareness on the part of their consumers. Saudis - as they say- are not well informed of the available financial products that encourage them to be involved in the financial system.

10. Late entry into labor market:

Some participants pointed out that Saudis are increasingly joining labor force late in their lives. For example, Saudis may join work force well after 23 or

24 years old. This is considered late to learn and appreciate the value of money and managing one's personal finances. Young females may stay longer before joining the labor market, as opportunities are relatively limited compared to what is available to males.

11. Insurance products:

Based on the focus groups, the use of insurance products as risk-hedging mechanisms appears limited. Managing personal finance by protecting assets such as properties, possessions and insuring income does not seem a common practice among Saudis. Some Saudis are skeptical when it comes to purchasing an insurance product due to common religious beliefs that insurance products are generally not Shari'ah-compliant. The lack of an understanding of how these products can help individuals hedge certain risk exposures make them hesitant to buy.

12. Number of dependents and Ratio of dependency:

The dependency ratio refers to a measure of the number of dependents aged zero to 14 and over the age of 65, compared with the total population aged 15 to 64. This indicator gives insight into the number of people of nonworking age, compared with the number of those of working age.

The number of dependents is relatively high according to participants in the focus groups. United Nations' estimates indicate that dependency ratio for Saudi Arabia for the year 2020 is about 39.3% (United Nations, 2019). Hence, there are about 39.3 dependents for every 100 working age individuals. In addition, some old age retired citizens may seek constant financial support from their grown-up employed sons or daughters.

Citizens especially over 18 years old and above retirement age (with limited/or no income) sometimes represent huge burden financially on their

loved ones. Young Saudis males and females increasingly stay longer at their family homes until after their early twenties. This may have negative implications on the level of financial capability of individuals.

13. Sales-oriented financial institutions:

According to participants in the focus groups, the view of financial institutions as sales-oriented versus consumers' needs-focused institutions seems to affect the level of trust that consumers have in their products and services. This perception may lead consumers to consult unqualified people and receive wrong financial advice and commit bad financial decisions.

7. Policy recommendations

1. Make things easy and simple:

Complexity induces procrastination in personal financial decision-making (Madrian and Shea, 2001; FSA, 2008). When there are many options to choose from, people will have difficulty in selecting one especially if this involves some level of complexity (Schwartz, 2005). Therefore, offering limited number of choices for people to subscribe into saving products, for example, is necessary.

Financial institutions may capitalize on the notion that people seek simplicity and avoid complexity. Presenting consumers with limited choices of financial products can boost participation in the financial system and improve the state of financial capability of Saudi consumers.

In addition, encouraging employers to leverage the notion that individuals often accept the opt-in default option can increase their participation in institutional saving programs. This is an example of simplifying things for individuals for their future financial wellbeing as well as for the society as a

whole. Hence, it is advisable on the part of employers to expand on automatic enrollment especially for saving products.

2. Establishing a financial capability association/society

Launching a financial literacy (capability) society helps professionals interested in this topic to convene and exchange ideas. This society provides a place where civil society can meet with industry to understand each other and facilitate a host of solutions to improve financial capability levels in the Saudi Society. Through this association, professionals can get certified/licensed as financial literacy professionals with a threshold level of education and professional experience.

3. Social Marketing Approach:

Financial institutions may consider leveraging social marketing principles in communicating with their consumers to help them improve their financial capability levels. In other words, building on the principles of business marketing may be used to improve financial literacy and subsequently financial behaviors of Saudi consumers. Focused investment on social marketing will raise awareness and effectiveness of corporate communications of the financial products and services and subsequently will contribute to raising financial capability levels of consumers. This will in turn benefit financial institutions in earning new and sustained business.

4. Financial Advisory:

Saudi consumers should have an easy access to an official, licensed, and professional source of financial advisory. Establishing a formal way for

consumers to get financial advice from trustworthy sources enhances peoples' financial behaviors and capability.

Furthermore, the increase in consumers' financial knowledge may increase their self-confidence in understanding financial products and services and lead to a higher demand of professional financial advice (Alyousif and Kalenkoski, 2017).

5. Balance both financial institutions' needs and consumers' needs:

Financial institutions can strengthen their relationship with their consumers if they were to focus on need-based consumer products and services. This win-win relationship can help improve reputation of these institutions (Albassami et al, 2015; Albassami, 2016). Therefore, consumer trust will increase and consequently more consumers will get involved in the financial system.

6. Instilling a Saving culture:

Creating a savings culture amongst people should start early in peoples' lives. Children should be exposed to financial literacy and capability knowledge and experiences early on through the education system. Different stakeholders of government and non-government agencies should collaborate to improve financial literacy and recognize that sound financial management requires an infrastructure to encourage savings such as products and contribution plans.

7. Encouraging early employment and/or engagement in entrepreneurship:

Government and non-government agencies and stakeholders should collaborate to facilitate early employment and/or engagement in

entrepreneurship. This is significant, as youth employment and entrepreneurship will present opportunities for them to practice, early on in their lives, financial concepts and behaviors such as budgeting, saving, investing, etc.

8. Conduct periodical (annual) assessment of financial capability and design behavioral interventions

Conducting an annual assessment based on the proposed short-scale in this paper can measure financial capability levels among Saudis and identify behavioral gaps.

We can identify financial capability gaps for different target groups and subsequently work to customize policy interventions and specific programs to address their unique needs. Investment in interventions such as training, performance improvement, coaching, and technology enablement can be useful to close these gaps in financial capability for Saudis.

Government, non-government agencies, and relevant stakeholders should facilitate easy access to such interventions on the subject of financial capability.

9. Leveraging Financial Technology:

Financial institutions may consider leveraging the power of technology advancement to facilitate the adoption of financial capability behaviors such as making ends meet; keeping track; planning ahead; choosing products; and finally staying informed. Consumers would be enticed to use smart phone apps that help them to adopt useful financial behaviors and manage more effectively and efficiently their personal finance needs.

Conclusion

This paper aims to explore individual financial capability and its measurement in Saudi Arabia. It uses qualitative research methods such as focus groups and in-depth interviews to uncover the local context and the building blocks of financial capability. This was based on prior review of literature and understanding of how this construct is being measured in different developed economies.

The major contribution of this paper is developing a new 22- item short measurement scale for financial capability in Saudi Arabia. Based on focus groups and in-depth interviews, specific emerging themes were highlighted to explain the Saudi context as it relates to financial capability. As a result, the paper proposed few policy recommendations to address gaps uncovered in this qualitative research.

Across the five dimensions of financial capability namely, making ends meet, keeping track, planning ahead, choosing products, and staying informed, the paper notices that participants do not generally exhibit a positive behavioral pattern when it comes to financial capability. The averages are centered around a neutral level of (3) and below the minimum required level of (4) for successful personal financial management.

One limitation of this paper includes the difficulty to access a random sample representing the Saudi population. Future researchers can compensate such limitation with random samples that represent different regions in the kingdom of Saudi Arabia and different demographic target groups.

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