Behavior Towards Personal Monetary Resources:
A Study on WhatsApp and Facebook Users

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Abstract

There are scarce literature about attitude and behavior towards money in the Latin American context. The aim of the study was to identify the underlying structure that explains the behavior towards personal monetary resources on 631 Mexican Facebook and WhatsApp users. In order to get the database, the MAS scale was used. Three psychological qualities are included in this scale: security generated by money, need to retain money over a certain time and the feeling of power-prestige in having a certain amount of money. The data matrix obtained shows an acceptable internal consistency and reliability (α = 0.831). The data was analyzed using the exploratory factor analysis with principal component extraction and confirmatory analysis using Structural Equation Modeling (SEM) methodology to validate the measurement model. To do this, firstly we verify that the matrix is not an identity matrix. The main finding is the identification of a five-factor model with theoretical and practical validity. The fit of the model shows acceptable values: CMIN/DF 2.504; CMIN 658.442 with df 263 and p-value .080; the parsimony fit measure PRATIO (.877), PNFI (.773), PCFI (.811), RMSEA (.049), RMR (.134), GFI (.921), AGFI (.902) and PGFI (.745). The factor with the greatest contribution to factorial loads of the estimators of the model is Power and prestige, which explains the surveyed population's behavior, in relation to their monetary resources management.

Keywords: behavior, money, social networks, Structural Equation Modeling.

1. Introduction

Nowadays, it is common to listen on the radio or see on television how the world economy is doing. However, it is rare to hear or to see media references to people with anxiety, depression or compulsion generated by money (Diener, Seligman, 2004; Trachtman, 1999). Society, economy, people, attitudes, emotions and thoughts revolve around money. Money can strengthen some relationships or destroy others, creating a great dilemma (Trachtman, 1999).

For some time now, there have been questions about the emotions and behaviors that money generates in individuals. Tang (Tang, 1988) identified that the meaning given to money can change, depending on the disposition the person has to modify his cognitive patterns, either positively or negatively. To illustrate it, this author highlights the case of those who maintain a belief in money as a symbol of achievement. If their thoughts are constant to the degree of developing an obsession in possessing greater wealth, there is a greater possibility of showing traits of unhappiness in both, daily life and the workplace.

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Thus, money can be considered a symbol, a representation of objects and an extension of itself, in the sense that people are usually influenced by their life experiences. They will behave with certain expectations towards others and their behavior will be conducted ac-cording to their own expectations in terms of what they have, think and feel towards money (Trachtman, 1999).

In a similar way than money, Social media motivates users through a combination of emotional, cognitive, and social activations (Dolan et al., 2019). They are intangible experiences designed to engage users meaningfully (Singh et al., 2020). Social media is becoming predominant because of its ability to address the issue of socializing among people, particularly through Facebook and Twitter. Some messaging apps also allow people to connect socially. WhatsApp is one such platform that connects people not only through messaging but also through stories, groups, and other activities that are found in the app (Haque, Wok, 2020).

People's attitude towards money is a materialistic type showing a difference between what they have and what they would like to possess. They may believe they do have the monetary resources to satisfy their needs, so materialistic people will be prone to compare socially and financially with others, envying the goods and riches of others (Gasiorowska, 2015). As indicated by Csikszentmihalyi (Csikszentmihalyi, 1999), a person experiences monetary inequality when he analyzes the material goods he possesses and compares himself with others who have more. Even if he lives comfortably, because of this disparity, he will begin to feel poor because he does not have what others have and will be unhappy about that situation. In this sense, with social media there is also both, public and scholarly concern that social media use decreases well-being by providing a fertile ground for harmful social comparison and envy (Meier, Johnson, 2022).

One of the earliest scales to measure the attitude and behavior towards money was the Money Attitudes Scale, developed by Yamauchi and Templer (Yamauchi, Templer, 1982). This is based on three psychological qualities, which are the genesis for the construction of such evaluation. The first is the security generated by money, the second is the need to retain money over a certain time and the third is the feeling of power-prestige in having a certain amount of money. Since that Money Attitudes Scale by Yamauchi and Templer (Yamauchi, Templer, 1982) more than 20 attitudes towards money' scales have been developed (Furnham et al., 2012; Furnham, 1984; Lim,Teo, 1997; Tang, 1992) are some of the most used (Lay, Furnham, 2018). The scale used in this research is the Yamauchi and Templer (Yamauchi, Templer, 1982) considering that there is no consensus on the number of factors underlying money attitudes and it is clear from the extant measures that there are overlaps (Furnham, 2016) this scale was elected to analyzed behavior towards money in a little explored population.

Studies on the behavior towards social media (Kaya, Bicen, 2016; Cheok et al., 2017; Singh, 2020), have increased in the last years, especially after the pandemic, however, there are scarce literature about attitude and behavior towards money in the Latin American population. According to Sesini and Lozza (Sesini, Lozza, 2023) more than 200 paper on attitude towards money were published in the last 50 years, but only 2 % of these studies were conducted in Central and South America. There are studies on children in Colombia (Pérez, Otero, 2019) on teenagers in Ecuador and Chile (Denegri et al., 2021). On Chilean University students (Denegri et al., 2012), on Bolivian University Students (Ledezma, Gómez, 2005). Campos, et al. (Campos et al., 2015) analyzed attitude towards money in Brazil's workers. In Mexico, there is a study on teenagers (Díaz-Barajas et al., 2018) and on young adults (Roberts, Sepulveda, 1999). Therefore, this research addressed the behavior that Mexican Facebook and WhatsApp users have towards money.

Derived from the above, the following question arises: What dimensions explain the behavior towards personal monetary resources among Facebook and WhatsApp users? Then the objective of this study is to identify the underlying structure that explains the behavior towards personal monetary resources among Facebook and WhatsApp users in Mexico.

2. Materials and methods

It is a non-experimental and cross-sectional design study considering that the scale is applied in a single time. The study seeks to describe the trends shown by each of the dimensions indicators: power-prestige, retention-time, distrust and anxiety, in order to know the management of the monetary resources of the population under study. These indicators make up the scale proposed by Yamauchi and Templer (Yamauchi, Templer, 1982).

Population and sample

The population under study was Facebook and WhatsApp users. This was a non-probabilistic convenience sample obtained using the snowball technique and 631 responses were obtained (325 were women and 306 were men). This technique allows the instrument to be distributed to key informants so they can share it among their contacts, thus expanding the sample, like a snowball rolling down the mountain (Etikan et al., 2016).

Instrument

The Money Attitude Scale designed by Yamauchi and Templer (Yamauchi, Templer, 1982) is used. The scale consists of 29 items integrated in four dimensions (see Table 1). Responses are on a 7-option Likert type scale where: 1. Never, 2. Very rarely, 3. Rarely, 4. Sometimes, 5. Often, 6. Quite often, 7. Always. Considering that the purpose of the research is to identify the underlying structure that explains the behavior towards personal monetary resources, the MAS scale was appropriated, given the fact that it shows high internal consistency and reliability (Oviedo, Campo-Arias, 2005).

Table 1. Structure of the scale

Dimensions	Items
Power-Prestige	X3, X7, X10, X13, X16, X18, X21, X24, X26
Time-Retention	X1, X2, X6, X12, X14, X20, X23
Distrust	X4, X5, X8, X11, X17, X27, X28
Anxiety	X9, X15, X19, X22, X25, X29

The dimensions that integrate attitude towards money according to Yamauchi and Templer (Yamauchi, Templer, 1982) are:

1) Power-prestige is present in the behavior of using money as a sign of success and status in society.

2) Time-retention is that behavior of planning and preparing carefully to maintain future financial security.

3) Distrust occurs in people owing to suspicious behavior or doubt when they are in monetary situations.

4) Anxiety will be reflected in those people who worry about not having money or about getting it.

The Money Attitude Scale was adapted to the Spanish language to be used in the Mexican context. In addition, the sociodemographic profile consisting of Gender, Age, School Level and Income was included. The survey was created using Google Forms. It was distributed electronically to key contacts who are Facebook and WhatsApp users.

Statistical procedure

For data analysis, exploratory factor analysis is performed to obtain the exploratory factor solution, and later confirmatory analysis is performed using the SEM methodology. The main reason that justifies these procedures, according to Mulaik (Mulaik, 1972) and Matsunaga (Matsunaga, 2010) is that the use of both techniques let to evaluate the factorial structure. In this way, exploratory factor analysis builds a theory and confirmatory factor analysis confirms it. Furthermore, it is important to rotate the factors in a multidimensional space either orthogonally or obliquely, as Thurstone (Thurstone, 1947) suggests, which would allow to obtain a factorial solution with the best possible structure. For this study, it was decided to rotate orthogonally with Varimax to obtain the factors with the highest weights.

Finally, there is an intention to confirm the theoretical evidence for this behavior but in a different context. The explanatory theoretical paradigms have fallen short explaining these phenomena, therefore researchers in the field of social sciences must direct their efforts towards analytical models that had better explain an empirical reality. With the factorial solution, the database is explored, and with the extraction of components, as well as the Varimax rotation, a factorial structure is obtained, which is susceptible to confirmation through the SEM methodology.

3. Discussion

The three psychological qualities of the Yamauchi and Templer (Yamauchi, Templer, 1982) scale are security generated by money, need to retain money over a certain time and the feeling of power-prestige in having a certain amount of money. In the last years, several studies have analyzed the dimensions of the attitude and behavior towards money. As Fenton-O'Creevy and

Furnham (Fenton-O'Creevy, Furnham, 2022) state, having money, for many, can stand for Security. Money is a sort an emotional lifejacket. Money also represents Power and Prestige. It can be used to acquire importance, domination and control. Money is also associated with Love. It is given as a substitute for emotion and affection and for some money represents freedom. Furnham (Furnham, 1984) and Von Stumm, Fenton-O'Creevyand Furnham (Von Stumm et al., 2013) also coincides with these factors.

Furhnam and Murphy (Furnham, Murphy, 2018) carried out a factor analysis of the different measures yielded an interpretable factor structure. Those who associated money with Power and Freedom tended to be less satisfied with many aspects of their life (finances, friends, family life) while those who associated money with Security were happier with their finances and health. Those who saw money as Love were happy with most aspects of their life, particularly their family life.

Sharma et al. (Sharma et al., 2015) explore dimensions in money attitude among professional students in India. Their results indicate that professional students view money as a tool of power, use money to either impress or dominate people and money is regarded as a source of anxiety as well as a source of protection from anxiety.

Gasiorowska (Gasiorowska, 2015) highlights two attitude dimensions towards money. These are the affective dimension that refers to the symbolic meaning that the individual attributes to money, and the instrumental dimension that is the ability of the individual to manage money. The affective dimension serves as a mediator between income and financial satisfaction; that is, depending on personal income, the belief about money will be reflected on their monetary satisfaction. The instrumental dimension is a moderator of income level and financial satisfaction. People with greater ability to manage money will have more education and better monetary planning.

According to Németh et al. (Németh et al., 2017) attitude towards money can be strongly influenced by society, demographics, educational factors, and financial circumstances. Likewise, they mention that attitude has three main components: the cognitive one that refers to the level of knowledge that one has in this case of finances, the affective component, which has to do with the emotions and feelings that money generates and, finally, the conative, which has to do with the behavior in the presence or absence of money.

Falahati and Paim (Falahati, Paim, 2011) found that male university students use money to influence others, since it represents power and prestige. At the same time, it generates anxiety in them, leading to an attitude of monetary retention avoiding spending money even for their own needs. Women, on the other hand, spend money to reduce their stress and to self-reward; they maintain a more positive attitude towards money than men do.

Another recent study is that of Henchoz, Coste and Wernli (Henchoz et al., 2019) who applied 1,390 surveys to people from Germany, France, and Italy. Their participants perceive money as a path to autonomy. Likewise, they found three types of attitudes towards money, prestige and power, and finally, towards money management and goal orientation. They infer that these characteristics are present to a greater or lesser degree, depending on the region where the survey is applied. Having presented the theoretical evidence, the methodological procedure for the development of the empirical phase of the study is following.

Roberts and Sepulveda (Roberts, Sepulveda, 1999) conducted a research with the aim to analyze attitude towards money and compulsive buying in young Mexicans adults. Their results of the factor analysis show that the first factor to emerge was power-prestige, the second was retention time, the third one was distrust and the fourth one was anxiety. Their results also show that there was a significant impact of attitude towards money to compulsive buying.

4. Results

The reliability and internal consistency of the Attitude towards Money Scale measured, with the Cronbach's alpha index, was 0.831 (29 elements). Following the theoretical criterion of the minimum acceptable value of 0.70 35 (Oviedo, Campo-Arias, 2005) this indicates that it is an acceptable value, which confirms the validity of the test. Likewise, to verify the normality of the data, Kim (2013) suggests carrying out the kurtosis and asymmetry test, according the ranges described in Table 2.

According to the values described in Table 2b, and taking Kim (Kim, 2013) as reference, the items X21 and X24 exceed the values of skewness and kurtosis (> 2 and > 7). It indicates the non-normality of the data, but in the items, X7 and X18 the skewness value exceeds the threshold >2, but not in its kurtosis (< 7) which is consistent with the normality criterion.

Table 2. Theoretical values skewness and kurtosis

	Z value	Skewness	Kurtosis	P value	Null hypothesis	Distribution
small n < 50	> 1.96	Ignore	Ignore	0.05	Reject	Non normally
medium 50 < n < 300	> 3.29	Ignore	Ignore	0.05	Reject	Non normally
large > 300	Ignore	> 2	> 7	0.05	Reject	Non normally
large > 300	Ignore	< 2	< 7	0.05	No Reject	Normally

Source: H.Y. Kim (Kim, 2013)

Table 2b. Skewness, Kurtosis and descriptive

	skewness	kurtosis	Item	skewness	kurtosis	Item	skewness	kurtosis
X1	0.030	0.898	X11	0.49	0.223	X21	2.607	7.271
X2	0.241	1.187	X12	0.300	0.814	X22	0.426	0.705
X3	1.155	0.494	X13	1.559	1.971	X23	0.171	1.320
X4	0.304	0.320	X14	0.121	0.930	X24	2.749	8.385
X5	0.589	0.551	X15	0.196	0.650	X25	0.120	0.798
X6	0.187	0.997	X16	1.505	1.560	X26	2.229	5.054
X7	2.296	5.237	X17	0.864	0.442	X27	0.704	0.056
X8	1.393	2.016	X18	2.376	5.828	X28	0.938	0.488
X9	0.97	0.128	X19	1.263	0.928	X29	1.541	2.098
X10	0.934	-0.203	X20	-0.287	-0.496			

N = 631.

Table 2c shows the descriptive variables of the respondents' profile, as well as the ETA test, which measures the association between the variables occupation and gender, as well as the income level by gender. The values of this test are between 0 and 1. The closest to 0 indicates that there is no association between the row and column variables, otherwise, values close to 1 indicate that there is a great relationship between the variables.

Table 2c. Descriptive and ETA of the sociodemographic variables

Variable		N	Mean	Standard deviation
Gender*		631	1.5151	0.50017
Age		631	2.8193	0.92873
Scholarity		631	5.794	1.13754
Residing state		631	26.4723	7.02595
Occupation**		631	7.1315	4.75396
Incomes		631	4.2742	1.67312
Directional measures				
Nominal per interval	Eta	Occupation dependent*		.100
		Gender dependent**		.454
Nominal per interval	Eta	Incomes dependent		.326
		Gender dependent		.338

Continuing with the data analysis, Table 3 shows the component matrix with the factor loads of the components extracted under the criteria eigenvalues > 1.

As we can see in Table 3, the factorial solution with the eigenvalue criterion > 1 shows a structure of six factors that explain 55.816 % of the variance. However, in the method it was established that the factorial solution would be rotated with the Varimax orthogonal method, whose rotation method has the characteristic of extracting the highest values, hence. Table 4 shows the factorial solution with Varimax rotation obtained under the criterion of higher loads > 0.5 as seen below.

Table 3. Bartlett test of sphericity and total variance explained Extraction method: principal component analysis

	Factors	Initials eigenvalues	% variance	% accumulated
KMO .888 Approx. Chi-squared 6458.025 *df* 406; p-value <.001	1	6.658	22.959	22.959
	2	4.086	14.088	37.047
	3	1.902	6.557	43.605
	4	1.283	4.425	48.030
	5	1.240	4.277	52.307
	6	1.018	3.509	55.816

Table 4. Component matrix rotated[a]

Item	F1	F2	F3	F4	F5
X24	.779				
X21	.758				
X16	.655				
X18	.630				
X7	.605				
X26	.575				
X19	.564				
X13	.533				
X10	.526				
X12		.828			
X14		.777			
X1		.777			
X6		.760			
X23		.732			
X2		.729			
X20		.643			
X8			.688		
X28			.677		
X17			.676		
X11			.571		
X27			.543		
X5			.500		
X25				.759	
X15				.598	
X22				.529	
X9					.834
X29					.771

Notes: Extraction method: principal component analysis. Rotation method: Varimax with Kaiser Normalization [a]. The rotation has converged in 9 iterations. (X3 and X4 were excluded).

As we can see in Table 4, with the Varimax rotation the structure is now reduced to 5 factors, and not 6 factors as shown in Table 3 whose eigenvalues are greater than 1. Therefore, the confirmatory model is evaluated with five factors, using SEM methodology (Figure 1).
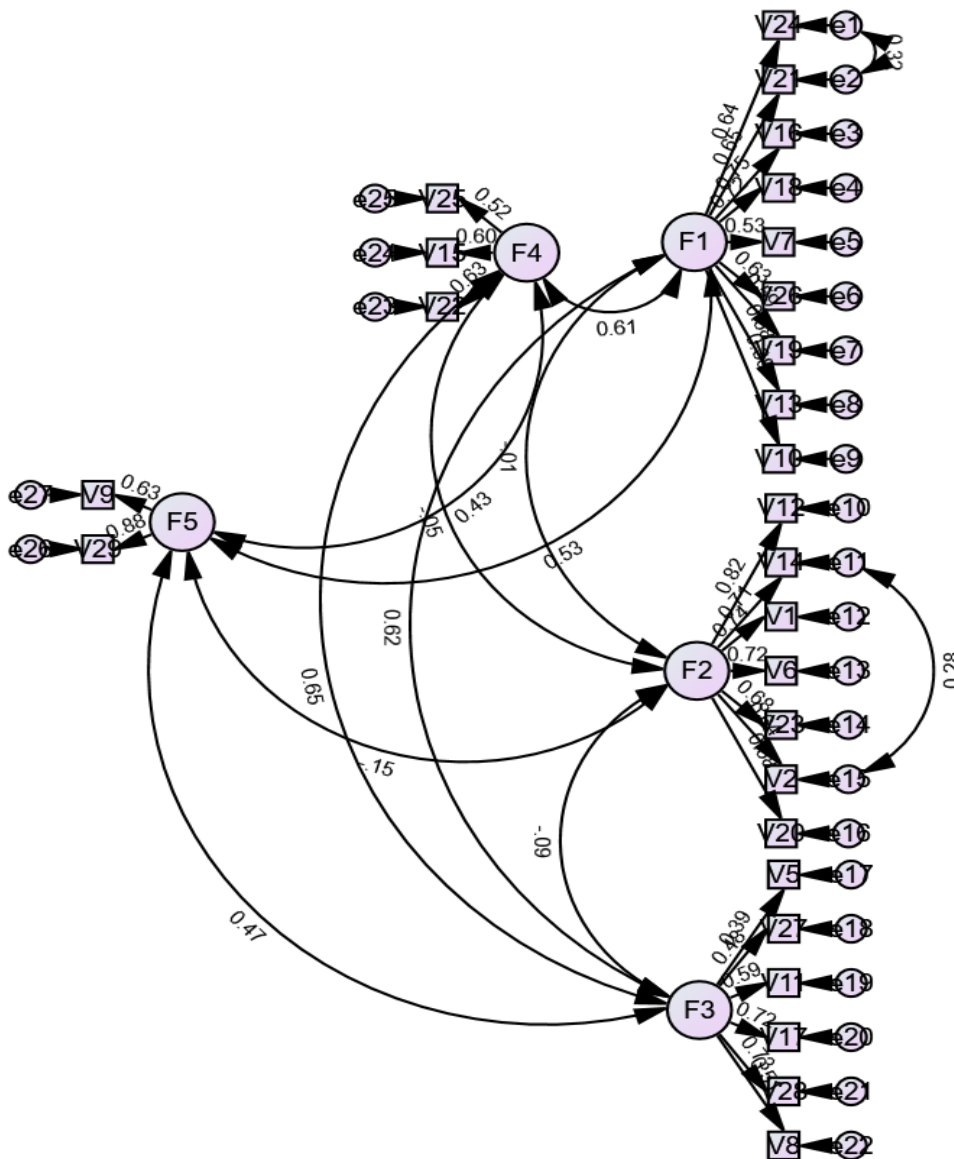
Fig. 1. Behavior to the personal monetary resources model

When evaluating the fit of the model, the following results are obtained: Maximum likelihood Chi-square (CMIN/DF: 2.761), Comparative fit index (CFI: .904), Parsimony-adjusted measures PRATIO (.889); PNFI (.762); PCFI (.803), RMSEA (.053), RMR (.132) and GFI (.905) show the goodness-of-fit index of the model described in Figure 1. However, the errors of the estimators that share questions in the same sense can be correlated, with the purpose of reducing the value of RMSEA, therefore, the model is run and the following is obtained (Figure 2).

The obtained model resulting (Figure 2) show a four-factor structure validated. The Best-fitted model presented acceptable structural fit and parsimony values: CMIN/DF (2.504); RMSEA (0.049); TLI (0.914), CFI (0.925) and parsimony adjusted measures (all >.5), PRATIO (.877); PNFI (.773); PCFI (.811). The adjustments carried out were to correlate the errors of the estimators that presented high values. In the Factor 1 we correlated the errors: e1 with e2; e1 with e9; e3 with e4; In factor 2 e11 with e15; e12 with e13 and finally in Factor 3 e17 with e18. The resulting model is shown in Table 5, which integrates the four factors with their respective indicators. The resulting model is compared with the original scale of Yamauchi and Templer (Yamauchi, Templer, 1982), where the differences of the rotated factor loadings and the estimators of the confirmatory model are identified.
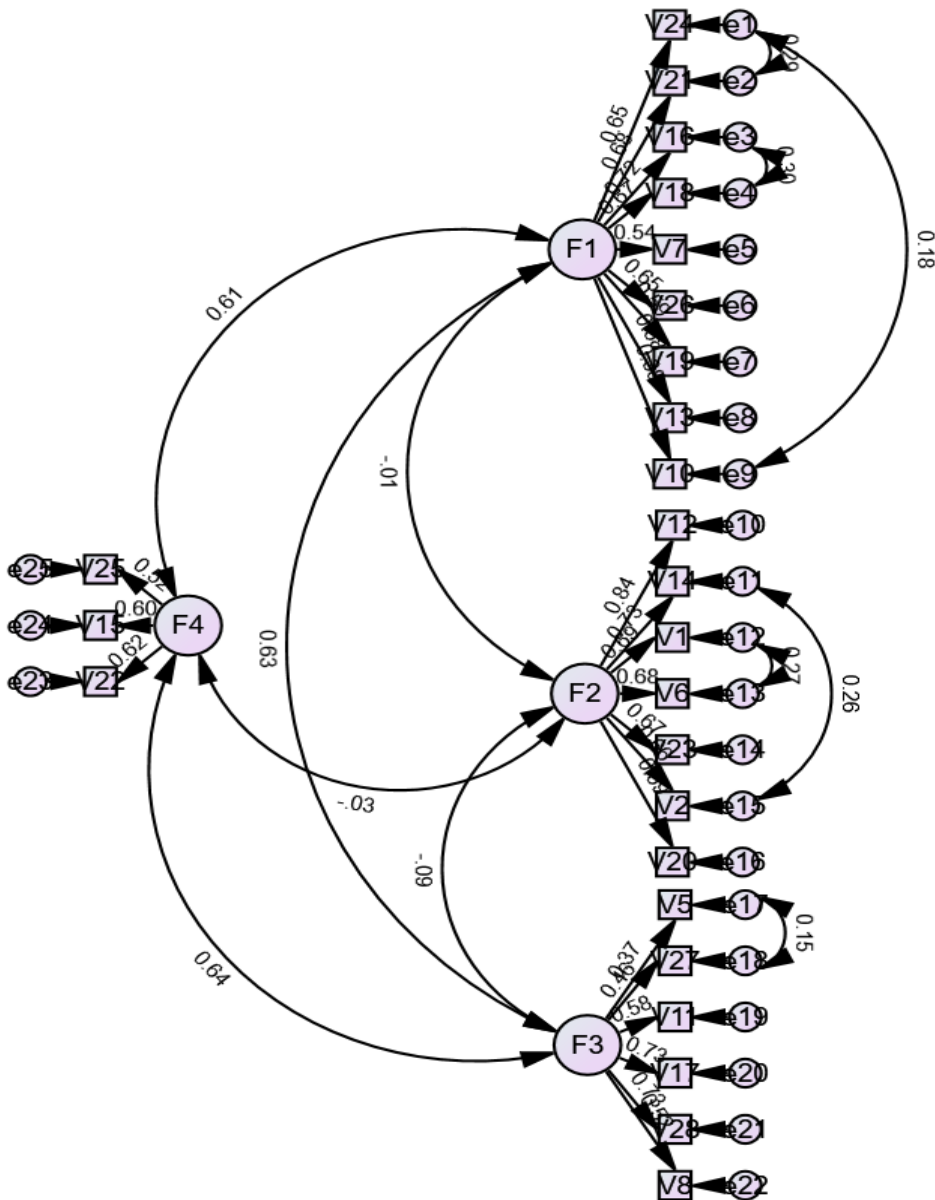
Fig. 2. Behavior to the personal monetary resources model adjusted.

Table 5. Resulting model versus original scale

Factor 1 Power-Prestige (PP)	Factor 2 Time-Retention (TR)	Factor 3 Distrust (D)	Factor 4 Anxiety (A)
X24, X21, X16, X18, X7, X26, X19, X13, X10	X12, X14, X1, X6, X23, X2, X20	X8, X28, X17, X11, X27, X5	X25, X15, X22
Original Scale of Yamauchi and Templer (1982)			
Power-Prestige (PP)	Time-Retention (TR)	Distrust (D)	Anxiety (A)
X3, X7, X10, X13, X16, X18, X21, X24, X26	X1, X2, X6, X12, X14, X20, X23	X4, X5, X8, X11, X17, X27, X28	X9, X15, X19, X22, X25, X29
Differences			
X19	None	X4	X9, X19, X29

According to the comparison of the resulting confirmatory model versus the original scale, we can observe that factor 1(PP) integrates X19 and excludes X3, while factor 2 (TR) coincides; Factor 3 (D) excludes X4 and factor 4 (A) excludes X9, X19 and X29.

However, how can we understand this?

Factor 1 named Prestige-power, refers to the fact that people associate money as a fundamental symbol of success. They spend to feel better and to impress others, they use money to persuade, they have respect for people who have more money, they try to find out how much money others have, and they brag about how much they earn.

Factor 2 named Time-Retention, refers to good money management, savings, and financial planning. In this sense, consider whether people have a detailed budget, have money to face a financial crisis, or save for the future and for their old age.

Factor 3 named Distrust, refers to the distrust people feel in purchasing or payment situations. Such is the case of doubts about spending, even with necessary things, distrusting whether it is the best price for a product or immediate and unjustified distrust regarding the ability to pay.

Finally, Factor 4 named Anxiety, refers to worrying behavior in relation to money, nervousness caused by not having enough money, and concern for financial security.

5. Conclusion

The aim of the study is to identify the underlying structure that explains the behavior towards personal monetary resources on 631 Facebook and WhatsApp users, with the use of Money Attitude Scale in relation to the power-prestige, retention-time, distrust, and anxiety dimensions. This is the second study with the objective to analyze the behavior towards money with the MAS scale in a Mexican adult population. The first one was the Roberts and Sepulveda (1999) study, carried out more than 20 years ago, at a time when the social media were emerging and were not part of people's lives like they are now. The results pointed to a greater trend towards the power-prestige dimension followed by distrust when making purchases. These results are similar with those obtained by Roberts and Sepulveda (Roberts, Sepulveda, 1999) in the power-prestige dimension as the first factor to emerge but differ in the retention-time dimension that they found as the second factor and in this research, it was distrust.

In the power-prestige dimension, there are several studies where high scores have been reported, which indicates that respondents perceive money as a means to achieve success, prestige, respect, power and status (Harnish et al., 2018; Henchoz et al., 2019; Medina, Saegert, Gresham, 1996; Németh et al., 2017; Roberts, Jones, 2001; Spinella et al., 2014; Tang et al., 2003; Tang, 1993; Tanget al., 2002).

Comparing the results obtained in the study with the Yamauchi and Templer (Yamauchi, Templer, 1982) results, in this power-prestige dimension, participants are not as influenced by how much money people have as the participants of the previous study were. However, they are more likely to spend the money to feel better. This finding is related with Harnish et al. (Harnish et al., 2018). They results show that compulsive purchases are linked to the power-prestige dimension. This suggests that compulsive buyers can use the products obtained (jewelry, clothing, cosmetics, among others) as a symbol of power, acceptance and social status, since with these purchases they can create a socially desirable image before others. Roberts and Jones (Roberts, Jones, 2001) and Roberts and Sepulveda (Roberts, Sepulveda, 1999) obtained the same findings.

Regarding the distrust dimension, the results show that concern for having found something with a lower price is not an indicator of those surveyed as it was for the Yamauchi and Templer (Yamauchi, Templer, 1982) participants. This finding is consistent with the research carried out by Spinella, Lester and Yang (Spinella et al., 2014) as well as by Harnish et al. (Harnish et al., 2018) where they relate the attitude towards distrust money with compulsive purchase. The score obtained was significantly the inverse, which means that people's tendency is to buy it without hesitation, questioning or complaining.

Finally, results show that anxiety dimension integrates worry and nervousness in relation to money and financial security but not bothering for having pass up a sale as Yamauchi and Templer (Yamauchi, Templer, 1982) results.

Final Reflection

Trachtman (Trachtman, 1999) said that assessing the attitude, behavior, beliefs towards money, as well as its use can show transcendent indicators to identify how the current traits of individuals are regarding money and what the trend of their behavior would be when they have money or not. The more one knows about the management and use of money, the greater chance one has of reducing the level of anxiety that it can generate (Funfgeld, Wang, 2009).

The results of the present research show the indicators that integrates the behavior towards money in the power-prestige, time retention, distrust and anxiety dimensions of a Mexican Facebook and WhatsApp user's population. The results also show how this behavior may differ

from the US population studied in the earlier study by Yamauchi and Templer (Yamauchi, Templer, 1982). The influence of social network as well as the use of internet could emerge as an explanation of some of the differences although additional research with this objective should be carried out in order to finding out.

As Németh, Luksander and Zsoter (Németh et al., 2017) refer, based on the theoretical and empirical evidence that exists so far, it is necessary to continue expanding the concept of attitude towards money to understand the use given to it, as well as the beliefs and emotions involved. This, no doubt, would not only affect individual behavior but also the economic and social environment.

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