

At what age do Mexicans suffer the most financial stress?

Age and
financial stress
in Mexico

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Abstract

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Purpose – Needs change as people get older. Procuring resources to satisfy them can generate anguish and insecurities in consumers due to their financial situation. This study aims to analyze the relationship between age and financial stress among Mexican adults and estimate the age of their maximum financial stress.

Design/methodology/approach – This study is based on constructing a financial stress indicator using the confirmatory factor analysis and linear regression models with a quadratic term, employing data from the National Survey on Financial Inclusion 2021.

Findings – Results show that the relationship between age and financial stress follows a quadratic pattern, with a maximum level at age 56, which varies according to sex, marital status, number of dependents, education and regions. These findings interest financial product designers and policy developers who aim to improve consumers' well-being.

Research limitations/implications – Longitudinal studies and indicators, such as financial fragility, are needed to facilitate refining models over time.

Originality/value – There is no evidence of studies that have addressed the age of maximum financial stress in Latin America. Doing so is relevant because identifying the stages in life when adults are most vulnerable to financial stress helps assess its causes more precisely, thus mitigating its adverse effects.

Keywords Financial stress, Financial well-being, Aging, Midlife, Mexico, Region

Paper type Research paper

1. Introduction

Financial stress can be defined as the feeling of anguish and insecurity that people experience because of their financial situation. According to Prawitz *et al.* (2006), it refers to the set of negative feelings at one end of a particular continuous emotional state, which flows to another extreme, this one positive, called financial well-being. Financial well-being or its lack thereof, explains a part of general well-being related to life satisfaction, self-esteem and a sense of belonging (Netemeyer *et al.*, 2018). As time goes by, individuals face fluctuating decisions and situations that affect their level of financial stress, therefore, impacting their health, perception of self-accomplishment and the way they relate to others (Arber *et al.*, 2014; Díaz-Fernández *et al.*, 2019; Warmath, 2021).

Financial stress changes with age and the individual's context (Collins and Urban, 2020). For example, when people get older, they accumulate more wealth, making it easier to achieve their financial goals (Binswanger and Carman, 2012). Nevertheless, their financial prowess and ability to adapt, especially to technological changes, get diminished; consequently, their levels of well-being are affected (DeLiema *et al.*, 2020). Furthermore, some decisive events in

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people's lives, for example, marriage, parenthood and retirement, cause alterations that significantly influence their financial well-being (Salignac *et al.*, 2020; Arrondo *et al.*, 2021). According to O'Connor *et al.* (2019), financial vulnerability can affect equally the poor and the wealthy; factors such as unemployment, economic activity and poverty can affect consumers' financial situation, thus shaping their financial stress.

The problem addressed in this study regards the lack of consensus about the stage in life when people are most vulnerable to financial stress. Worldwide, some authors have found that its counterpart, financial well-being, is more persistent among older adults (Collins and Urban, 2020; de Bruijn and Antonides, 2020; Fu, 2020). Others point out that the relationship between age and financial well-being follows an inverted U-shaped pattern, with the young and the oldest being the most advantaged (Riitsalu and Murakas, 2019; Xiao and Porto, 2017). A third group warns that these two variables have no apparent relationships (Strömbäck *et al.*, 2020; Rahman *et al.*, 2021). If so, most agree that the definition of financial well-being can change radically with age (Riitsalu *et al.*, 2023).

Therefore, this study aims to analyze the relationship between age and financial stress among Mexican adults and estimate the age of their maximum financial stress. For this purpose, it follows a quantitative, transactional, descriptive and correlational method, supported by constructing a financial stress indicator and simple linear regression models with a quadratic term based on data from the National Survey on Financial Inclusion, NSFI 2021 (INEGI, 2022).

Identifying the stages in life at which adults are most vulnerable to financial stress helps make a more accurate analysis of its causes, thus facilitating the development of initiatives focused on mitigating its adverse effects. These findings interest professionals in charge of designing and marketing financial products in private institutions and developers of public policies aiming to improve consumers' general well-being.

2. Literature review

2.1 Macroeconomic regional approach to financial stress

Several researchers have investigated financial stress from a macroeconomic point of view. In this sense, Valerio Roncagliolo and Villamonte Blas (2022, p. 69) refer to it as "the periods in which economic agents are exposed to extreme uncertainties leading to negative expectations of financial markets." Therefore, predicting the occurrence of these episodes and analyzing their determinants has been a central concern in alleviating their consequences and economic impacts at international, regional and national levels (Illing and Liu, 2006; Cardarelli *et al.*, 2011; Park and Mercado, 2014).

When a macroeconomic system gets stressed, families suffer, too (Friedline *et al.*, 2021; Cardona-Montoya *et al.*, 2022). Households fear or experience job instability, over-indebtedness and economic hardship, among other problems (Cardarelli *et al.*, 2011; Choi *et al.*, 2020). For instance, in Colombia, an inverse relationship was observed between workers' financial stress and preparedness; this last measured as the self-perception of financial endowment, the holding of investments and savings, the use of budget and the sufficiency of household's income to overcome the COVID-19 crisis (Cardona-Montoya *et al.*, 2022). Also, in the United States of America, Choi *et al.* (2020) proved that job insecurity directly influences workers' financial stress.

In Mexico, several studies have associated financial fragility with low-income monoparental families led by women and those in which income is generated only by men (Ibarra López, 2019; Martínez and Ferraris, 2021). Others have noticed that limited female participation in formal labor markets adds extra pressure on households with low-educated members (Félix-Verduzco and Inzunza-Mejía, 2019; Montoya, 2019).

Culture and institutions can facilitate or restrain economic opportunities. In highly populated countries, contrasting socioeconomic conditions affect financial literacy and

inclusion, thus impacting financial stress (Raccanello and Sundaram, 2018). This study analyzes financial stress considering individual characteristics and a regional approach based on the six-region classification employed by INEGI in NSFI 2021 (see Table 1).

The most populated regions are R5 East and South-Central and R3 West and Bajío, with 30.2–21.2% of Mexico's total population, respectively. In 2021, both regions contributed to gross domestic product (GDP) by 19.9% each. In 2020, the population in moderate and extreme poverty fluctuated from 27.7% in R1 Northwest to 62.2% in R6 South. Meanwhile, unemployment remained low in R6 (3.0%) but high in R4 Mexico City (7.3%) and labor informality varied from 42.0% in R1 to 70.7% in R6 by the second quarter of 2021. Since 2005, salaries in the Mexican

Region states	National population 2020 (%)	Contribution to GDP 2021 (%)	Poverty 2020 (%)	Unemployment 2021-Q2 (%)	Labor informality 2021-Q2 (%)	Access to financial products 2021-Q2 (%)
<i>R1 Northwest</i> Baja California, Baja California Sur, Chihuahua, Durango, Sinaloa, Sonora	12.8	15.5	27.7	3.2	42.0	75.7
<i>R2 Northeast</i> Coahuila, Nuevo León, San Luis Potosí, Tamaulipas	12.1	17.3	30.4	4.0	42.8	77.0
<i>R3 West and Bajío</i> Aguascalientes, Colima, Guanajuato, Jalisco, Michoacán, Nayarit, Querétaro, Zacatecas	21.2	19.9	36.9	3.9	53.2	69.3
<i>R4 Mexico City</i> Ciudad de México	7.3	15.3	32.6	7.3	47.1	74.2
<i>R5 East and South-Central</i> Estado de México, Hidalgo, Morelos, Puebla, Tlaxcala, Veracruz	30.2	19.9	53.9	4.8	64.7	62.0
<i>R6 South</i> Campeche, Chiapas, Guerrero, Oaxaca, Quintana Roo, Tabasco, Yucatán	16.5	12.1	62.2	3.0	70.7	60.1

Source(s): Author's elaboration with data from INEGI (2023a, b) and Coneval (Consejo Nacional de Evaluación de la Política de Desarrollo Social) (2023)

Table 1.
Economic
characteristics by
region

formal sector have increased economic growth, while unemployment has impacted it negatively; these facts, in turn, have affected families' financial conditions (Reyna, 2021).

Furthermore, financial inclusion is also a contrasting indicator. While in the North more than 75% have access to at least one formal financial product, in the South no more than 62% do. In Mexico, according to Díaz *et al.* (2023), holding a savings account or a formal credit reduces consumers' financial vulnerability, while having a standing informal credit increases it.

2.2 Age and financial stress

This study analyzes *financial stress* from a consumer's perspective, following the emotional continuum ranging from *subjective financial well-being* to its negative opposite, *financial stress*, as indicated by Prawitz *et al.* (2006). Moreover, it adheres to the remarks made by Friedline *et al.* (2021, p. S43) regarding the discomfort and distress often experienced by family providers "when they do not have adequate income, wealth, or debt to afford economic hardship".

According to Ruggeri *et al.* (2020), *subjective well-being* is the combination of factors that make people feel good and function well. It has emotional and practical components that extend far beyond happiness and satisfaction with life. Analogously, *subjective financial well-being* can be defined as feeling good about one's financial situation and being able to finance a decorous lifestyle now and in the future (Riitsalu *et al.*, 2023). Furthermore, it refers to the perception of satisfaction caused by the possession, utilization or consumption of material and immaterial resources (Xiao and Anderson, 1997). Hence, *financial well-being* is the opposite of *financial stress* in this work, assuming they are part of the same conceptual construct.

Empirical research concerning the relationship between age and financial well-being has had contrasting results. In the first group are those scholars who have established that financial well-being increases with age. For example, Fu (2020) found that adults from 11 emerging and developed nations perceive their financial condition favorably at older ages. Another example is provided by Collins and Urban (2020), who observed that financial well-being gets its lowest among people aged 18–24 and peaks after age 75, in the United States of America. They explained this pattern by the accumulation of goods and savings that come with age. Similarly, in the Netherlands, de Bruijn and Antonides (2020) found that levels of financial worry decline as people age.

A second group of researchers argues that financial well-being in early adulthood is high but declines to a minimum at midlife, which rises again as people age. In line with this idea, Riitsalu and Murakas (2019) confirmed that Estonian adults aged 18–29 show the highest level of financial well-being, which subsequently reaches its minimum between 30 and 59, to improve again after 60. Another example is offered by Xiao and Porto (2017), who found that the lowest level of financial satisfaction occurs between 45 and 54, while the highest satisfaction befalls before 25 and after 65, among a sample of more than 26,000 Americans.

Finally, researchers such as Rahman *et al.* (2021) observed that age is unrelated to financial stress in Malaysia. Similarly, Strömbäck *et al.* (2020) concluded that age is not significant in explaining financial well-being among a sample of students from Sweden. Although they warned that their sample was very homogeneous regarding age, thus their conclusion should not be extrapolated.

For all the above and assuming that financial stress is the counterpart of subjective financial well-being, this study puts to the test the following hypotheses applicable to Mexican adults:

H1. Age is related to financial stress following a nonlinear pattern.

H2. The maximum financial stress occurs around midlife.

3. Method

3.1 Research design/model

This research is based on the National Survey on Financial Inclusion, NSFI, conducted in Mexico during the second quarter of 2021 (INEGI, 2022). It comprises a database of 13,554 records corresponding to one adult from each household in the sample, representing more than 90 m Mexican adults. Of these, 36 who did not report their age and 204 who did not answer the questions necessary to estimate financial stress were discarded. Analogously, those aged 83 years and over were grouped into a single category because the punctual frequency associated with each age above 83 was shallow and could bias the results. In this way, *age* is configured as an independent variable fluctuating from 18 to 83, with 83 representing adults between 83 and 97.

This research's methodological design follows the linear regression models with one quadratic term employed by Finke *et al.* (2016) concerning the age of maximum financial knowledge and Easterlin (2006) regarding the maximization of life-cycle happiness. In both, age and age squared are independent variables.

3.2 Data and variables

The construction of the dependent variable financial stress was based on four NSFI items consistent with those used by the USA Consumer Financial Protection Bureau (2017a) and Netemeyer *et al.* (2018). To adapt these questions to measure financial stress rather than financial well-being, they were coded so that a higher value represents more financial stress, as indicated in Table 2.

Since the responses follow an ordinal scale, an indicator of financial stress was constructed after performing a confirmatory factor analysis. Previously, several indicators were estimated: the Cronbach's alpha coefficient to evaluate items' internal consistency, the Kaiser–Meyer–Olkin coefficient, KMO, to validate the suitability of the sample size, the Bartlett sphericity coefficient to test if the data were suitable for factor analysis and the inflation factor of the variance, VIF, to check for multicollinearity. The acceptance criteria used for them are $\alpha \geq 0.7$ (Hair *et al.*, 2014), $KMO > 0.6$ (Kaiser, 1974), $p < 0.05$ for the sphericity coefficient (Bartlett, 1937) and $VIF < 2.5$, respectively.

The factor analysis was based on the technique of principal component factors with retention of those that presented *eigenvalues* greater than 1.0, according to the Kaiser criterion, *varimax* rotation and an explained variance greater than or equal to 50%. Subsequently, values for the *financial stress* indicator were estimated using the weights that resulted from the factor analysis. Equation 1 shows how the values for this indicator were calculated for each observation *i* in the database. In it, FS_{*x*} refers to the financial stress

Item	Code/answer
<i>To what degree or extent do you agree or disagree with the following statements . . . ?</i>	
X1 <i>Inflexibility.</i> Managing your income and expenses controls your life	(0) Never (1) Sometimes (2) Always
X2 <i>Frustration.</i> Given your economic situation, you feel that you will get the things you want	(0) Agree
X3 <i>Insufficiency.</i> You have enough money to cover all your expenses	(1) Not agree, nor disagree (2) Disagree
X4 <i>Uneasiness.</i> You feel relieved that your money is enough to get what you need	

Source(s): Author's selection from NSFI (INEGI, 2022) based on CFPB (2017a) and Netemeyer *et al.* (2018)

Table 2.
Items to measure
financial stress

indicator, w_k to the weights derived from the factor analysis and X_k , $k = 1 \dots 4$, to the variables employed to measure financial stress:

$$FSx_i = w_1 \cdot X1_i + w_2 \cdot X2_i + w_3 \cdot X3_i + w_4 \cdot X4_i \tag{1}$$

Later, FSx was transformed to fit on a scale ranging from 0 to 100, where 0 was associated with the absence of stress and 100 with the maximum *financial stress*. Equation 2 shows how the values for this indicator (FS_i) were transformed for each observation i in the database.

$$FS_i = 100 * \frac{FSx_i - \min(FSx_i)}{\max(FSx_i) - \min(FSx_i)} \tag{2}$$

Next, for each age, the *average financial stress* (FS_{age}) was calculated by adding up the values FS_k of all people who are *age* years old and dividing the sum by the number of them (n), as shown in Equation 3:

$$FS_{age} = \frac{\sum_{k=1}^n FS_k}{n} \tag{3}$$

3.3 Analytical procedures

This average is the dependent variable in a multiple linear equation in which age and age-squared functions as independent variables and sex, marital status, number of dependents and education level functions as control variables (see Table 3).

Finally, several regression models with a quadratic term were constructed to explain *financial stress* as a function of *age* and different values of *sex*, *marital status*, *dependents*, *education* and region, as shown in Equation 4:

<i>Dependent variable</i>		
Financial stress for each age FS_{age}	Continuous variable equal to the average financial stress indicator values corresponding to all people at a certain age. It ranges from 0.0 (absence of stress) to 100.0 (maximum level of financial stress). $FS_{age} \in [0, 100]$; $age \in [18, 83]$	CFPB (2017a), Netemeyer <i>et al.</i> (2018)
<i>Independent variables</i>		
<i>Age</i>	Ordinal variable that fluctuates between 18 and 83. The latter value includes people aged 83–97. $age \in [18, 83]$	Author's proposal
Age^2	Ordinal variable resulting from $age * age$, which ranges between 324 and 6,889. $age^2 \in [324, 6,889]$	
<i>Control variables</i>		
<i>Sex</i>	Dichotomous variable equal to 1 for women and 0 for men. $Sex \in [0, 1]$	Author's proposal
Marital status (<i>MS</i>)	Dichotomous variable equal to 1 for married or living with a partner and 0 for any other case. $MS \in [0, 1]$	
Dependents (<i>Dep</i>)	Ordinal variable indicating the number of economic dependents; it fluctuates between 0 and 6 (for people with six or more dependents). $Dep \in [0, 6]$	
Education (<i>Educ</i>)	Ordinal variable that refers to the years of education. It ranges from 0 to 20+. $Educ \in [0, 20]$	
Region (<i>R1 ... R6</i>)	Set of binary variables such that $R1+R2+R3+R4+R5+R6 = 1$	
Source(s): Author's elaboration based on the sources indicated in the table		

Table 3.
Variables description
and analytical model

$$FS_{age} = \beta_0 + \beta_1 \cdot Age^2 + \beta_2 \cdot Age + \beta_3 \cdot Sex + \beta_4 \cdot MS + \beta_5 \cdot Dep + \beta_6 \cdot Educ + \beta_7 \cdot R2 + \beta_8 \cdot R3 + \beta_9 \cdot R4 + \beta_{10} \cdot R5 + \beta_{11} \cdot R6 + error \quad (4)$$

$R1$ is omitted due to its collinearity with other regions, and *error* represents the residual. Two linear regression models with a quadratic term are constructed: one including only *age* and *age*² and another including them and all control variables.

4. Results

4.1 Factor analysis for financial stress

Several indicators were calculated to determine whether the variables are susceptible to being processed by factor analysis. The adequacy coefficient of the sample KMO = 0.66 indicates that it is mediocre but acceptable. Bartlett's sphericity test registers a $p < 0.05$, sufficient to confirm that the data are suitable for factor analysis (see [Table 4](#)).

Furthermore, there were no multicollinearity problems between the variables because each presents a VIF < 2.5; overall, they register VIF = 1.44. However, Cronbach's alpha coefficient registers a value of 0.614, which is insufficient to accept the four variables. Moreover, when estimating the effect of omitting each of these variables in the alpha coefficient, it was noticed that the factor analysis would benefit if the variable X1 is omitted because the remaining three variables register an alpha equal to 0.745, which is acceptable. Therefore, X1 was omitted for the rest of the process and so were the records of those who responded did not know or did not respond to X2, X3 or X4.

After performing factor analysis, the remaining three variables explain 67.5% of the variance, with a single retained factor presenting an eigenvalue greater than 1.0. Likewise, the three variables included in the construction of the retained factor have weights greater than 0.7, sufficient to justify their inclusion in the construct (see [Table 5](#)).

4.2 Descriptive statistics

After factor analysis, the average *financial stress* was estimated for each age. There were 13,314 observations, corresponding to one adult for each household in the sample, representing 88,359,714 Mexicans. The average financial stress score was 54.0, with a standard deviation of 35.3 (see [Table 6](#)).

Financial stress is critical between ages 43 and 62, with a lower incidence among those under 33 and over 83. Similarly, women and married people suffer significantly greater financial stress than men and singles ($p < 0.001$). Moreover, financial stress increases with each additional economic dependent ($p < 0.001$). In addition, the most contrasting difference is observed between those who at most completed nine years of education, with an average score of 59.9 and those with 13 or more school years, whose average score is 44.9.

Variable	VIF	Alpha
X1 (inflexibility)	1.75	0.745
X2 (frustration)	1.71	0.525
X3 (insufficiency)	1.29	0.402
X4 (uneasiness)	1.01	0.416
Total	1.44	0.614
KMO = 0.660		
$\chi^2(6) = 9,999.9$		$p = 0.000$

Source(s): Author's elaboration with Stata ([StataCorp, 2017](#))

Table 4.
Internal consistency
for the construction of
a financial stress
indicator

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Table 5.
Factor analysis for
financial stress

Factor	Eigenvalue	Difference	Proportion	Accumulated variance
1	2.024	1.416	0.675	0.675
2	0.608	0.241	0.203	0.878
3	0.368		0.123	1.000
Retained factor after varimax rotation				
Variable				Factor 1
X2				0.749
X3				0.862
X4				0.849
Source(s): Author's elaboration with Stata (StataCorp, 2017)				

Table 6.
Descriptive statistics
on financial stress
among Mexican adults

Variable	Sample	Observations Population	%	Financial stress		ANOVA <i>p</i> -value
				Mean	St. Dev	
<i>Age</i>						56.7***
18–22	1,311	11,328,025	12.8	40.9	33.1	
23–32	2,839	19,469,133	22.0	49.6	33.4	
33–42	2,840	17,349,766	19.6	55.4	35.2	
43–52	2,336	15,699,312	17.8	61.2	35.3	
53–62	1,830	11,997,063	13.6	60.0	34.8	
63–72	1,320	7,940,352	9.0	56.7	36.2	
73–82	618	3,378,093	3.8	54.4	35.7	
83+	220	1,197,970	1.4	52.8	38.6	
<i>Sex</i>						53.1***
Men	6,112	41,709,480	47.2	51.5	35.2	
Women	7,202	46,650,234	52.8	56.1	35.2	
<i>Marital status</i>						37.9***
Single	5,511	34,837,293	39.4	51.7	35.3	
Married	7,803	53,522,421	60.6	55.4	35.2	
<i>Dependents</i>						10.8***
0	1,640	4,090,407	4.6	48.4	36.5	
1	2,591	12,862,553	14.6	52.7	35.9	
2	2,808	17,414,318	19.7	52.9	35.5	
3	3,042	21,187,207	24.0	53.6	34.7	
4	1,775	14,750,683	16.7	54.3	34.7	
5	782	8,226,030	9.3	57.8	35.2	
6+	676	9,828,516	11.1	56.9	35.0	
<i>Education</i>						217.6***
0–9 years	7,313	46,939,386	53.1	59.9	34.9	
10–12 years	3,023	21,347,099	24.2	49.5	34.2	
13+ years	2,978	20,073,229	22.7	44.9	34.6	
	13,314	88,359,714	100.0	54.0	35.3	
Note(s): *** <i>p</i> -value<0.001						
Source(s): Author's elaboration with Stata (StataCorp, 2017)						

4.3 Econometric analysis of financial stress

Two econometric models with a quadratic term were constructed after estimating values for financial stress using factor analysis. Both include *age* and *age-squared* as independent variables: Model 1 excludes control variables and Model 2 includes *sex*, *marital status*, number of *dependents* and years of *education*.

4.3.1 Age and financial stress among Mexican adults. The results in both models confirm that age is a significant variable associated with financial stress, both alone and squared ($p < 0.001$). Therefore, there is sufficient evidence not to reject **H1**: age is related to financial stress following a nonlinear pattern. Besides, it is worth noticing that women, singles, the head of larger families and the less educated are more predisposed to financial stress. Furthermore, Model 2 shows the relevance of age in explaining financial stress. Compared to control variables, *age* and *age-squared* exhibit beta coefficients equal to 0.852 and -0.775 , respectively, while the East and South-Central region and *education* show the subsequent highest absolute betas with 0.188 and -0.156 , respectively (see [Table 7](#)).

According to Model 1, the age at which Mexicans suffer the most financial stress is 56. At this age, they reach a maximum financial stress score of 60.8. In contrast, the minimum score is 39.5 at 18. Their level of financial stress exceeds the overall average of 54.0 between ages 38 and 73. From 38 to 56, financial stress increases at an average rate of 0.83 points per annum. Thus, these data are enough to confirm that (**H2**) the maximum financial stress occurs around midlife (see [Figure 1](#)).

These results are consistent with those found by [Riitsalu and Murakas \(2019\)](#) in Estonia and [Xiao and Porto \(2017\)](#) in the United States of America, indicating that younger and older adults experience higher financial well-being than middle-aged adults. In contrast, [Easterlin \(2006\)](#) observed that, in the United States of America, life-cycle happiness reaches its maximum at 51; however, its financial satisfaction domain records its lowest at 36, at some point in between adults' midlife, which is consistent with the results found in this study.

4.3.2 Age and financial stress by sex. Throughout most of their adult life, women suffer a more financial stress than men. While females reach their maximum financial stress level at 52, men experience it at 62; they present scores of 63.1 and 58.9, respectively (see [Table 8](#)).

However, at 68, this pattern is reversed and men become more prone to suffer higher financial stress than women until the end of their lives (see [Figure 2](#)).

4.3.3 Age and financial stress by marital status. On average, singles show less financial stress than married people. However, being married or living with a partner helps retard

Variable	Coefficient	Model 1 Std. Error	Beta	Coefficient	Model 2 Std. Error	Beta
Age ²	−0.015***	0.000	−0.669	−0.017***	0.000	−0.775
Age	1.666***	0.001	0.792	1.792***	0.001	0.852
Sex				3.776***	0.007	0.053
Marital status				−1.343***	0.008	−0.019
Dependents				1.401***	0.002	0.066
Education				−1.209***	0.001	−0.156
<i>Region (northwest)</i>						
R2 Northeast				−1.621***	0.014	−0.015
R3 West and Bajío				3.506***	0.013	0.040
R4 Mexico City				10.978***	0.016	0.086
R5 East and South-Central				14.382***	0.012	0.188
R6 South				5.171***	0.014	0.053
Constant	14.36	0.025		457.83	0.030	
Observations		88,090,849			88,090,849	
$P > F$		0.000			0.000	
Adjusted R^2		0.034			0.094	

Note(s): *** p -value<0.001

Source(s): Author's elaboration with Stata ([StataCorp, 2017](#))

Table 7.
Econometric analysis
for the relationship
between age and
financial stress

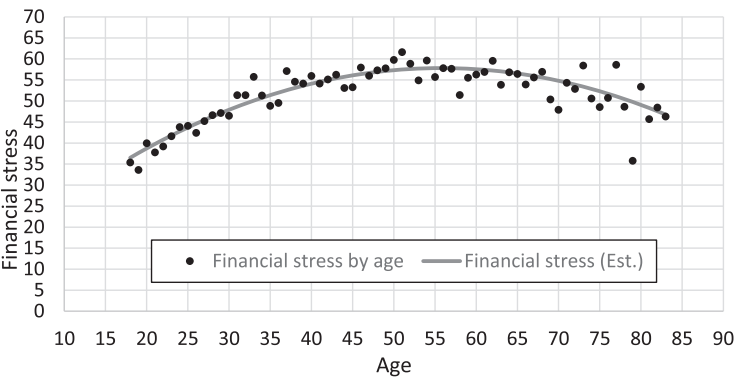


Figure 1.
Age vs financial stress
among Mexican adults

Source(s): Author’s elaboration with Stata (StataCorp, 2017) and Excel (Microsoft Corporation, 2013)

Variable	Women		Men	
	Coefficient	Std. Error	Coefficient	Std. Error
Age ²	−0.018***	0.000	−0.011***	0.000
Age	1.909***	0.002	1.381***	0.002
Constant	13.089	0.034	15.954	0.036
Observations	46,551,121		41,539,728	
<i>P</i> > <i>F</i>	0.000		0.000	
Adjusted <i>R</i> ²	0.034		0.038	
Average financial stress (FS)	56.1		51.5	
Age of maximum FS	52		62	
Period of FS above average	[33, 71]		[41, 83]	

Note(s): ****p*-value<0.001
Source(s): Author’s elaboration with Stata (StataCorp, 2017)

Table 8.
Age and financial
stress among Mexican
adults, by sex

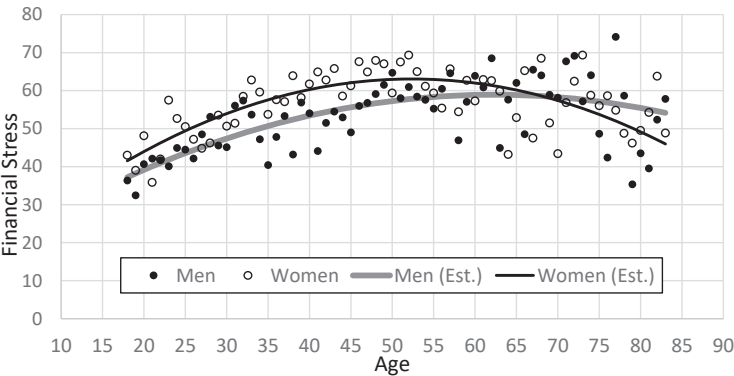


Figure 2.
Age and financial
stress among Mexican
adults, by sex

Source(s): Author’s elaboration with Stata (StataCorp, 2017) and Excel (Microsoft Corporation, 2013)

financial stress for consumers between 22 and 61. Married people reach their maximum financial stress at 60, while singles at 53 (see Table 9).

At 62, married and single consumers exhibit the same level of financial stress. However, after 62, financial stress decreases rapidly for singles, at a rate of 0.73 points per annum, while for married people, this rate is barely 0.27. Therefore, singles present lower financial stress at older ages than married adults (see Figure 3).

These facts suggest that, during working ages, partners in life help ease financial stress, while in retirement, remaining alone is a better way to reduce financial stress. Another explanation is that couples are more prone to having children; thus, coping with family expenses becomes a priority over retirement savings.

4.3.4 Age and financial stress by economic dependents. Regarding financial stress, the more is not always, the merrier. For an economic provider, a large family means more reasons to get financially worried. The number of dependents among Mexican adults is related to increased financial stress. Consumers with no dependents reach their maximum financial stress level at 59, those with one or two reach their maximum at 57, having three or four dependents is related to a financial stress peak at 56 and those with five or more reach their maximum at 61 (see Table 10).

In this sense, individuals with more dependents have more extended periods of financial stress above average. For example, zero dependents extend financial stress among adults for

Variable	Married		Single	
	Coefficient	Std. Error	Coefficient	Std. Error
Age ²	−0.011***	0.000	−0.019***	0.000
Age	1.379***	0.002	2.022***	0.002
Constant	19.225	0.042	8.820	0.034
Observations	53,383,778		34,707,071	
$P > F$	0.000		0.000	
Adjusted R^2	0.022		0.050	
Average financial stress (FS)	55.4		51.7	
Age of maximum FS	60		53	
Period of FS above average	[39, 81]		[30, 76]	

Note(s): *** p -value<0.001
Source(s): Author's elaboration with Stata (StataCorp, 2017)

Table 9.
Age and financial
stress among Mexican
adults, by marital
status

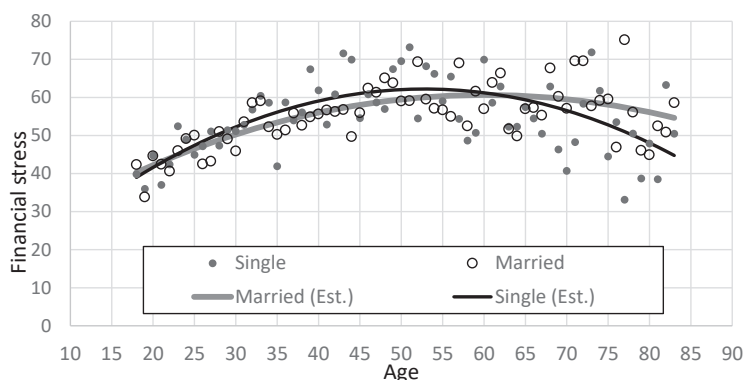


Figure 3.
Age and financial
stress among Mexican
adults, by marital
status

Source(s): Author's elaboration with Stata (StataCorp, 2017) and Excel (Microsoft Corporation, 2013)

Table 10.
Age and financial stress among Mexican adults, by number of dependents

	0		1–2		3–4		5+	
Variable	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.
Age ²	−0.011***	0.000	−0.014***	0.000	−0.016***	0.000	−0.012***	0.000
Age	1.312***	0.006	1.591***	0.002	1.823***	0.002	1.532***	0.003
Constant	12.961	0.160	13.483	0.045	10.906	0.039	19.720	0.053
Observations	4,070,270		30,170,599		35,839,228		18,010,752	
$P > F$	0.000		0.000		0.000		0.000	
Adjusted R^2	0.013		0.030		0.043		0.050	
Average financial stress (FS)	48.4		52.8		53.9		57.3	
Age of maximum FS	59		57		56		61	
Period of FS above average	[42, 77]		[37, 77]		[34, 78]		[34, 83]	
Note(s): *** p -value<0.001								
Source(s): Author’s elaboration with Stata (StataCorp, 2017)								

36 years, between ages 42 and 77; in contrast, being responsible for five or more descendants causes high financial stress for 50 years, from 34 to 83 (see Figure 4). These results are consistent with those obtained by Hurst *et al.* (1998) in the United States of America, who explained that families with more children tend to save less and are more likely to have economic difficulties than families without children. Given the previous results, childless couples are expected to show lower financial stress, while single women in charge of five or more children present a higher financial stress.

4.3.5 Age and financial stress by education level. Education is a critical factor related to financial stress. For example, consumers who attended at least one year of college present a maximum financial stress level at age 51, similar to those between 10 and 12 years who record their maximum at 50. In contrast, adults who completed up to the ninth grade got their highest peak at 54. Their maximum financial stress scores are very dissimilar: 65.2 for the least educated, 57.2 for those between 10 and 12 years and 48.2 for those who completed at least 13 school years (see Table 11).

The age-financial stress relationship follows an inverted U-shaped pattern for the three groups. From 18 to the age of maximum financial stress, adults who at most completed the ninth grade

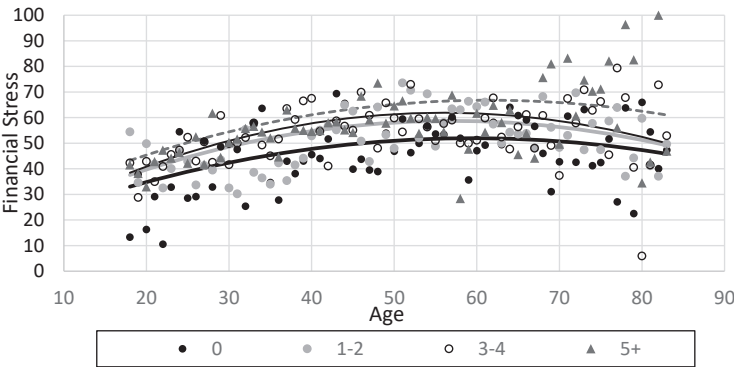


Figure 4.
Age and financial stress among Mexican adults, by number of dependents

Source(s): Author's elaboration with Stata (StataCorp, 2017) and Excel (Microsoft Corporation, 2013)

Age and financial stress in Mexico

Table 11.
Age and financial stress among Mexican adults, by years of education

Variable	0–9 years		10–12 years		13+ years	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
Age ²	–0.017***	0.000	–0.017***	0.000	–0.009***	0.000
Age	1.817***	0.002	1.745***	0.003	0.912***	0.003
Constant	16.216	0.039	13.551	0.050	25.029	0.056
Observations	46,834,162		21,305,199		19,951,488	
$P > F$	0.000		0.000		0.000	
Adjusted R^2	0.027		0.032		0.007	
Average financial stress (FS)	59.9		49.5		44.9	
Age of maximum FS	54		50		51	
Period of FS above average	[37, 71]		[30, 70]		[32, 70]	

Note(s): *** p -value<0.001

Source(s): Author's elaboration with Stata (StataCorp, 2017)

showed an increased rate of 0.60 points per annum in their score. This rate is 0.56 for those who registered in 10–12 grades and 0.29 for consumers who went beyond the 12th grade (see Figure 5).

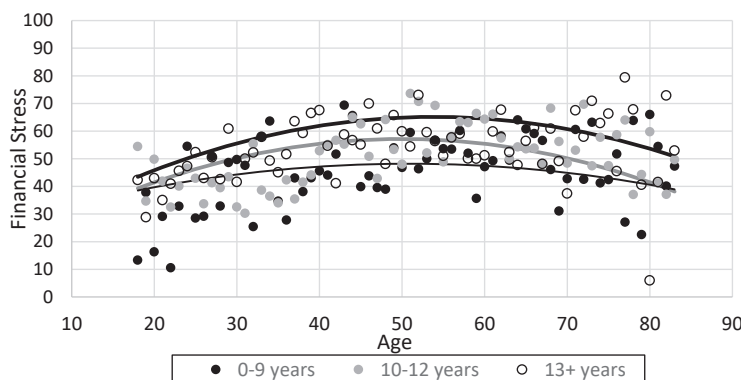
4.3.6 Age and financial stress by region. Financial stress varies from region to region, following a concave pattern. The Northern regions show the lowest financial stress, averaging 46.6 for the Northwest and 45.4 for the Northeast. Practically, they exhibit the same financial stress pattern according to age, which is lower than that of any other region for each age. On the contrary, the East and South-Central regions show the highest financial stress, scoring 62.0. Unlike other regions, the West and Bajío show the highest age of maximum financial stress; however, this is associated with a prolonged stage of financial stress above average, from 36 to 91 years old (see Table 12).

For all regions, an inverted U-shaped pattern is observed. The younger are the least financially stressed and stress peaks at mid-age; nevertheless, one can observe (see Figure 6).

5. Discussions

5.1 Theoretical implications

Financial stress changes with age. From a theoretical point of view, this study confirms that age and financial stress have a nonlinear relationship, following a pattern resembling an inverted U. Accordingly, younger adults and older adults register the lowest levels of financial distress and



Source(s): Author's elaboration with Stata (StataCorp, 2017) and Excel (Microsoft Corporation, 2013)

Figure 5.
Age and financial stress among Mexican adults, by years of education

Variable	Northwest		Northeast		West and Bajío	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
Age ²	−0.014***	0.000	−0.017***	0.000	−0.007***	0.000
Age	1.540***	0.003	1.807***	0.003	0.902***	0.003
Constant	10.774	0.070	3.633	0.072	27.803	0.055
Observations	11,340,625		10,751,866		18,165,982	
$P > F$	0.000		0.000		0.000	
Adjusted R2	0.026		0.033		0.017	
Average financial stress (FS)	46.6		45.4		51.0	
Age of maximum FS	54		53		63	
Period of FS above average	[34, 74]		[34, 73]		[36, 91]	

Variable	Mexico City		East and south-central		South	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
Age ²	−0.011***	0.000	−0.019***	0.000	−0.019***	0.000
Age	1.227***	0.004	2.092***	0.002	2.083***	0.003
Constant	27.281	0.093	12.087	0.043	5.472	0.060
Observations	7,331,476		26,811,389		13,689,511	
$P > F$	0.000		0.000		0.000	
Adjusted R2	0.015		0.058		0.055	
Average financial stress (FS) score	56.2		62.0		53.6	
Age of maximum FS	55		56		54	
Period of FS above average	[34, 75]		[35, 77]		[33, 75]	

Note(s): *** p -value<0.001
Source(s): Author’s elaboration with Stata ([StataCorp, 2017](#))

Table 12.
Age and financial stress among Mexican adults, by region

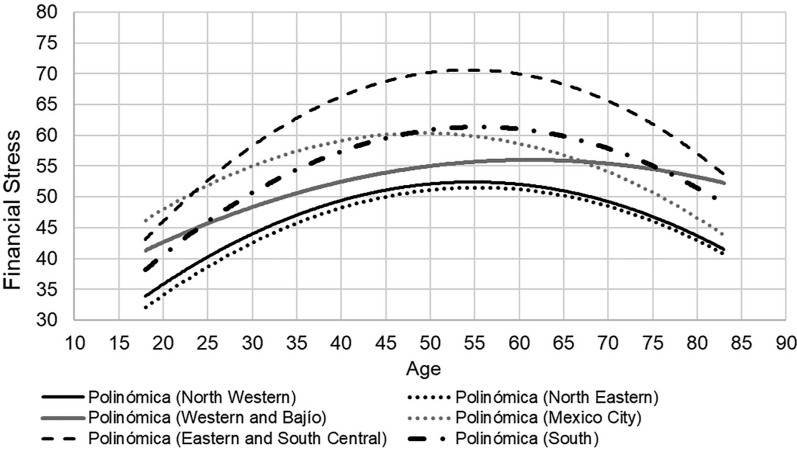


Figure 6.
Age and financial stress among Mexican adults, by region

Source(s): Author’s elaboration with Stata (StataCorp, 2017) and Excel (Microsoft Corporation, 2013)

concern. This result is consistent with those found by Riitsalu and Murakas (2019) in Estonia and Xiao and Porto (2017) in the United States of America, who observed that financial well-being reaches its bottom at some point in midlife, between 30 and 59 in the first case and

between 45 and 54 in the second. Likewise, in Mexico, according to this research, people suffer the most financial stress between ages 38 and 73, with a maximum level at 56.

In the United States of America, a similar observation addressing the stages in life when financial satisfaction hits the bottom is provided by [Easterlin \(2006\)](#). He estimated a minimum of financial satisfaction at age 31, implying that financial satisfaction increases for most of an adult's life. This fact assumes that, as time goes by, consumers accumulate wealth and experience, which help them cope economically and emotionally with adversities.

This growing trend was also observed in other works regarding age and financial well-being ([Collins and Urban, 2020](#); [de Bruijn and Antonides, 2020](#); [Fu, 2020](#)). However, the present study provides evidence that contradicts this cumulative pattern. Instead, in Mexico's case, it suggests that financial stress rises because of life events until the middle of adulthood, which varies from person to person and is influenced by the environmental and inherent conditions related to every individual. Regional differences regarding the institutional context and culture are related to financial stress. Therefore, countries with unequal socioeconomic conditions, such as Latin American nations, are more predisposed to experience contrasting levels of financial stress.

5.2 Managerial/policy implications

Different events accentuate or alleviate financial stress throughout life, for example, getting married, having children or graduating from school. In this sense, marrying or living with a partner helps mitigate financial distress due to factors such as financial socialization, the consolidation of wealth and the solidarity of the spouse in case of contingencies. Among Mexicans, the advantage for couples extends up to age 62 but increases rapidly afterward in favor of singles for whom financial stress decreases. This outcome is congruent with similar observations recorded by the [CFPB \(2017b\)](#) for adults in the United States of America; as retirement approaches and afterward, some couples tend to rely on a single income or pension, adding more pressure to their household's financial situation.

Similarly, a significant difference is observed between women's and men's financial stress. Throughout their productive age, females show higher levels of financial stress than males. However, this difference in men's favor in Mexico ends at age 68 and remains like that. One explanation is that women's participation in the labor market often includes hiring schemes that generate lower incomes, such as seasonal and part-time jobs, in contrast to men, who occupy most of the full-time positions.

Additionally, female participation in the labor market is strained by childbearing, traditionally regarded as a female responsibility. When women assume the role of family caregivers, their participation in the labor market is usually limited, and with this, their access to formal financial markets is reduced; consequently, financial learning in practice becomes more complex, not because of a lack of skills but of time, which is the result of their activities prioritization ([Struckell et al., 2022](#)).

Moreover, the most formally educated people tend to have a more stable financial life than the less educated. In this context, education refers to general schooling and not only to financial training but also the former is concerned with preparing intelligent consumers, the second with skillful financial customers. As a result of education, people are better equipped to face economic uncertainty and have better control of their emotions. These findings are consistent with those registered by [Kempson et al. \(2017\)](#), [Fu \(2020\)](#) and [Riitsalu and Murakas \(2019\)](#) concerning education and financial well-being. Also, this result concurs with the remarks pointed out by [Cardona-Montoya et al. \(2022\)](#) regarding how, in Colombia, the most financially educated workers are better prepared to handle economic adversities, thus showing lower probabilities of experiencing financial fragility and financial stress.

Furthermore, it is worth noticing that the regional context is associated with consumer's financial stress. In Mexico, the Northern regions, which present the lowest levels of

financial stress, have the highest access rate to financial products and the lowest rates of poverty and labor informality. On the contrary, the Southern regions, which present the first and the third highest rates of financial stress, have the lowest access rate to financial products and the highest levels of poverty and labor informality. Mexico City, the region with the second highest level of financial stress, experienced the highest unemployment rate among all regions.

Therefore, identifying the structural conditions and life events that affect the population's financial stress is critical for enhancing policies and strategies to improve financial well-being. The results obtained in this research imply that financial inclusion and education policies must focus on at least four general issues. First, government programs must mitigate the financial fragility gap between monoparental and biparental families and attend couples in retirement that depend on a single income or pension. Second, the policy must be oriented to improving and expanding labor opportunities for women to access the benefits offered by the formal financial system. Third, promoting financial education as an integral part of the pre-university curricula is necessary for aspiring to accomplish results in the long run, especially in schools located in marginalized areas. Finally, public policy must also address the gap reduction of regional inequalities when mitigating financial stress.

5.3 Limitations and future research agenda

In line with the recommendations made by [Mahendru \(2021\)](#), this study explores the stages in life when people experience the most financial stress and the mechanisms to allay it, ultimately improving consumer satisfaction. However, its main limitations are the need for longitudinal studies that facilitate refining models over time and the absence of indicators such as financial fragility.

Future research must consider analyzing the determinants of financial stress at a consumer's level and including other indicators related to households' financial well-being. Also, investigating the causality effects of financial literacy and financial inclusion over financial stress and financial well-being, with age as a moderating variable, is a topic worth considering. Finally, another subject that can be included in a future research agenda is comparing consumer behavior in critical (i.e. extreme poverty and insecurity) and non-critical (i.e. buoyant economy) economic contexts.

6. Conclusions

The relevance of this study lies in proposing a model to estimate the stages in life when Mexican adults are more likely to suffer financial stress. While there are similar works concerning the age of maximum happiness, satisfaction with life or financial knowledge, especially in developed economies, during this research, no other studies addressing the age of maximum financial stress in Latin America were found. This study aims to inspire more research on financial stress, especially in regions where socioeconomic and working conditions cause additional financial stress among people.

In emerging economies, transitioning from policies promoting financial inclusion to those focused on the population's financial health and well-being remains challenging. Making formal financial services available to a broader population is not enough for families to take advantage of these resources or to alleviate their financial fears and concerns. Therefore, public policy must emphasize alleviating disadvantaged households, particularly female-led monoparental families with three or more children and those led by low-educated middle-aged adults from Southern regions. This research provides evidence contributing to a better understanding of financial stress throughout adult life. Hence, it is of interest to financial product designers and policy developers aiming to improve consumers' well-being.

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