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Financial Resilience and Wellbeing in College Students Within the Sustainable Development Goals Framework

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Abstract

Financial resilience has gained increasing attention due to its close relationship with individual wellbeing, financial inclusion, and sustainable development. This study examines how university students perceive and experience financial resilience, focusing on their perceptions, lived experiences, and actions undertaken to cope with adverse financial situations. Using data collected from 256 university students and applying Structural Equation Modeling (SEM), the study adapts a validated financial resilience scale based on financial health indicators proposed by BBVA and the Center for Financial Services Innovation (CFSI). The results support a three-factor structure reflecting actions, perceptions, and lived experiences related to financial resilience, although some indicators were excluded to achieve a parsimonious and theoretically coherent model. The findings provide empirical evidence on financial resilience in a young and potentially vulnerable population and contribute to the conceptual alignment of financial resilience with Sustainable Development Goals SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), and SDG 8 (Decent Work and Economic Growth).

Keywords: financial resilience; college students; SEM methodology; SDGs

1. Introduction

The concept of resilience, introduced by [1] marked a fundamental shift in the understanding of system stability by proposing a systemic, holistic perspective that integrates social, economic, and ecological dimensions. From this viewpoint, resilience is defined as the capacity of a system to absorb shocks, adapt to changing conditions, and reorganize itself without losing its essential functionality [2–4].

In the socioeconomic sphere, resilience has become a key element in explaining the capacity of individuals and institutions to cope with adverse scenarios. Recent events, such as the COVID-19 pandemic, have highlighted the vulnerability of large segments of the population to unexpected economic shocks, significantly affecting education, employment, and overall well-being [5]. In this context, financial resilience (FR) has gained relevance, understood as the capacity of individuals to withstand and recover from economic shocks without compromising their stability and quality of life.

Financial resilience is closely linked to overall well-being and, in turn, to the Sustainable Development Goals (SDGs). In particular, it contributes to SDG 3 (Good Health and Well-being) by reducing financial stress and its negative effects on physical and mental



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health; to SDG 4 (Quality Education) by strengthening financial literacy as an essential life skill; and to SDG 8 (Decent Work and Economic Growth) by promoting job stability, productivity, and sustainable economic participation [6–8].

Recent literature has demonstrated that financial resilience is a multidimensional construct influenced by economic, psychological, and sociodemographic factors. Previous studies indicate that financial and psychological resilience mediate the relationship between income shocks and financial well-being [9], while variables such as education, gender, employment type, and cognitive abilities significantly influence financial adaptability [10,11]. Furthermore, international organizations and governments have begun developing specific indices and metrics to assess financial resilience, recognizing its importance for public policy design [12].

Despite growing academic interest, most studies have focused on households, adult workers, or institutional contexts, while financial resilience among university students has received less attention. This group represents a critical stage in the life cycle, characterized by transitions toward financial independence, early entry into the labor market, and greater exposure to economic vulnerability. Understanding how university students perceive, experience, and manage adverse financial situations is fundamental to designing educational and policy interventions that support sustainable development.

Study Objective and Scope

In this context, the main objective of this study is to analyze financial resilience in university students, based on their perceptions, lived experiences, and actions in the face of adverse financial situations. The study adopts an exploratory and confirmatory approach, focusing on adapting and validating a model to measure financial resilience in a student population. Rather than establishing causal relationships or making population inferences, the research seeks to provide empirical evidence on how financial resilience manifests in a young and potentially vulnerable group, using SDGs 3, 4, and 8 as a conceptual and interpretive framework.

2. Theoretical Framework

2.1. Financial Resilience: General Conceptualization

Financial resilience has been conceptualized as the capacity of individuals and households to cope with, absorb, and recover from adverse financial situations at the global, national, family, and individual levels [13]. This concept recognizes that economic shocks can stem not only from systemic crises but also from everyday events such as job loss, health problems, or family emergencies.

A central element in the analysis of financial resilience is its relationship with financial inclusion. Salignac et al. [14] emphasize that financial inclusion is a necessary, but insufficient, condition for resilience. While access to financial products and services is fundamental, various critics argue that traditional financial inclusion has focused excessively on service provision, neglecting people's actual capacity to use them effectively in adverse contexts [14]. Hamid et al. [7] propose a comprehensive framework for measuring financial resilience that considers sociodemographic variables, financial education, financial inclusion, and economic resources. This approach highlights the dynamic and multidimensional nature of the construct, in which concrete financial actions (saving, debt management, spending planning) interact with perceptions and prior experiences.

2.2. Determinants and Dimensions of Financial Resilience

Empirical literature identifies multiple dimensions associated with financial resilience. Among the most relevant are savings, debt management, the existence of emergency funds,

and financial education [8]. McKnight and Rucci [11] emphasize that financial resilience is a dynamic process through which households recover from crises by drawing on savings, formal loans, or social network support.

Several studies have shown that having a job or access to financial services does not necessarily guarantee high levels of financial resilience. Salignac et al. [14] in a study conducted in Australia, found that a significant number of adults exhibited high financial vulnerability despite adequate management of basic financial products. Similarly, Lusardi et al. [15] document higher levels of financial fragility in specific groups, such as low-income households and ethnic minorities. From a psychological perspective, Tahir et al. [16] demonstrated that financial resilience positively influences life satisfaction, with this effect mediated by financial well-being and moderated by non-impulsive behaviors. These findings reinforce the idea that financial resilience is not only a matter of economic resources but also of behaviors, attitudes, and cognitive abilities.

2.3. Financial Education, Well-Being, and Resilience

Financial education plays a fundamental role in strengthening financial resilience, especially among young people. Bialowolski et al. [17] point out that financial resilience tends to increase in middle life and decrease in old age, highlighting the importance of early interventions. Kass-Hanna et al. [18] emphasize the need to integrate digital literacy into financial education, particularly in emerging economies, to promote resilient financial behaviors related to saving, responsible borrowing, and risk management. In this sense, financial education is positioned as a key mechanism for reducing vulnerability and promoting long-term financial well-being.

2.4. Financial Resilience and Sustainable Development Goals

Financial resilience is closely aligned with the Sustainable Development Goals. Regarding SDG 3, evidence shows that financial stress and economic insecurity negatively affect mental and physical health, creating cycles of vulnerability that are difficult to break [6,19]. With respect to SDG 4, studies have shown the importance of pedagogy that empowers learners to work towards a sustainable future [20]. In this regard, financial education contributes to inclusive and quality education by equipping individuals with essential skills for making informed economic decisions [21]. Finally, SDG 8 is strengthened by financially resilient individuals who can adapt to changing labor markets and contribute to sustainable economic growth [22].

2.5. Theoretical Foundations of the Study

This study is based on three complementary theoretical approaches. First, Resilience Theory provides the conceptual framework for understanding the capacity of individuals and systems to absorb, adapt to, and recover from adverse events without losing their essential [1–4]. Second, Human Capital Theory emphasizes the role of education and skills in economic decision-making and long-term well-being. From this perspective, financial education constitutes an investment in human capital that strengthens individuals' ability to manage economic risks and respond effectively to adverse financial situations [23–25]. Finally, Behavioral Finance Theory highlights the influence of psychological and emotional factors on financial behavior, particularly under conditions of uncertainty. This theoretical framework explains why financial decisions are not always rational and how cognitive biases, emotions, and non-impulsive behaviors influence financial resilience and financial well-being [26–28]. Taken together, these approaches support the conceptualization of financial resilience as a multidimensional construct based on perceptions, experiences, and actions and justify the use of SDGs 3, 4, and 8 as a conceptual and interpretive framework for analysis.

3. Method and Materials

3.1. Research Design

This study adopts a non-experimental, cross-sectional design with a quantitative approach and a hypothetico-deductive logic. The design is descriptive, exploratory, and confirmatory, which is appropriate for analyzing latent constructs, such as financial resilience, and for evaluating the internal structure of a previously developed measurement instrument. Given the exploratory nature of the study of financial resilience in university students, the research does not aim to establish causal relationships or make population inferences. Instead, the objective is to analyze the internal dimensionality of the construct as perceived and experienced by the students, and to examine the psychometric properties of the measurement model in this population.

3.2. Population and Sample

The target population consists of university students enrolled in public and private higher education institutions. The sample was obtained through non-probability self-selection sampling, a strategy commonly used in exploratory and psychometric studies with student populations [29]. A total of 256 valid questionnaires were collected, a sample size that meets the minimum criteria recommended for conducting exploratory factor analysis (EFA) and structural equation modeling (SEM), considering both the item-respondent ratio and the absolute thresholds suggested in the methodological literature. The use of non-probability sampling implies that the results should be interpreted as specific to the study context, without claiming statistical representativeness of the university population as a whole. Consequently, the findings provide analytical and theoretical evidence, rather than empirical generalization.

3.3. Instrument and Measurement of Financial Resilience

Financial resilience was measured using the scale developed by [8], which is based on financial health indicators proposed by BBVA's Center for Education and Financial Capabilities and aligned with the conceptual framework of the Center for Financial Services Innovation (CFSI). The instrument conceptualizes financial resilience as a multidimensional construct, operationalized through three interrelated domains: Perceptions of financial health indicators, Experiences of adverse financial situations, and Actions taken to cope with financial stress (see Appendix C). Each of these domains incorporates indicators related to saving, debt management, credit history, spending planning, and insurance coverage—dimensions widely recognized in the literature as central components of financial resilience and financial well-being. The scale was administered using a Likert format, allowing participants to express the degree to which each statement reflected their perceptions, experiences, or actions.

3.4. Data Collection Procedure

Data were obtained through a self-administered questionnaire, distributed voluntarily to university students. Participation was anonymous, and participants were informed about the academic nature of the research before completing the instrument. All procedures were carried out in accordance with institutional ethical guidelines. Informed consent was obtained from all participants prior to data collection.

3.5. Reliability and Validity Assessment

To assess the internal consistency and reliability of the instrument, Cronbach's alpha and McDonald's omega coefficients were calculated, with values of $\alpha > 0.70$ and $\omega > 0.70$ considered acceptable according to psychometric standards. The omega coefficient

was included as a supplementary indicator because it accounts for factor loadings and measurement error, yielding a more stable estimate of reliability in latent variable models.

Therefore, to validate the reliability and consistency of the scale, Cronbach's alpha and McDonald's Omega are utilized, with the criterion of $\alpha > 0.7$ (acceptable) based on the following equations:

$$\alpha = \frac{K}{K-1} \left[1 - \frac{\sum Vi}{Vt} \right]$$

where α = AC; K = No. items; Vi = Variance of e/item and Vt = total variance.

$$\omega = \frac{\left[\sum_{i=1}^i \lambda \right]^2}{\left[\sum_{i=1}^i \lambda \right]^2 + \left[\sum_{i=1}^i 1 - \lambda_i^2 \right]}$$

where ω is the omega coefficient symbol; λ_i is the standardized factorial load of i .

The omega coefficient, unlike the alpha coefficient, uses factorial loadings [30], which are the weighted sum of standardized variables, making calculations more stable [31] and reflecting the true level of reliability. Secondly, it does not depend on the number of items, as indicated by its mathematical expression [32].

Regarding the normality of the data, the criteria for skewness (<2) and kurtosis (<7) are used. For this purpose, the Fisher skewness coefficient is used, and according to the criteria of [33], described in Table 1:

$$CA_F = \frac{\sum_{i=1}^N (x_i - \bar{x})^3}{Ng \cdot S_x^3}$$

where the greater the sum of $\sum (x_i - \bar{x})^3$, the greater the skewness will be.

Table 1. Skewness and kurtosis values criterion.

Sample	Z	Skewness	Kurtosis	p-Value	HO	Distribution
small $n < 50$	>1.96	Ignore	Ignore	0.05	Reject	Nonnormal
medium $50 < n < 300$	>3.29	Ignore	Ignore	0.05	Reject	Nonnormal
large $n > 300$	Ignore	>2	>7	0.05	Reject	Nonnormal
	Do not ignore	<2	<7	0.05	Do not reject	Normal

Source: [33].

If the data matrix does not have normality, it is recommended to use polychoric correlation matrices, if the skewness and kurtosis exceed the values suggested by the theory [33–37]. Subsequently, the factorial solution obtained from exploratory factor analysis is confirmed using SEM methodology [38] where the fit of the measurement model, structural fit, and parsimony are validated [39–42].

To evaluate the data matrix, SPSS AMOS v23 was used. The indices are: χ^2 (chi-square), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Root Mean Square Error of Approximation (RMSEA), Root Mean Square Residuals (RMR) Tucker Lewis Index (TLI) and the Comparative Fit Index (CFI), through which the estimated model is compared with the null model that indicates the independence between the study variables.

3.6. Methodological Considerations

The use of non-probability, self-selected sampling is consistent with the exploratory nature of the study and with previous research on financial resilience in university populations. While this approach limits statistical generalizability, it is appropriate for examining relational patterns and validating measurement models in emerging research areas. Likewise,

the application of SEM prioritizes model parsimony and theoretical coherence, particularly given the sample size, in accordance with established methodological recommendations.

4. Data Analysis

The data matrix is analyzed as follows: first, the scale is validated using Cronbach's alpha and McDonald's omega to assess the reliability and internal consistency of the test items. Overall, Cronbach's alpha is 0.804, and deleting any item increases it to greater than 0.8. In relation to McDonald's omega coefficient, all items exceed the threshold of 0.8 (see Table 2). Appendices A and B present tables describing Cronbach's alpha values and individual omega coefficients for each item.

Table 2. Reliability and internal consistency of the test, with Cronbach's alpha and McDonald's Omega.

Case Processing Summary				Cronbach's Alpha	Omega
		<i>n</i>	%		
Cases	Valid	256	100.0	0.804	0.885
	Excluded ^a	0	0.0		
	Total	256	100.0		
<i>n</i> of elements				33	24

^a. List deletion is based on all procedural variables.

Table 3 shows the frequencies of indicators from the sociodemographic profile of the respondents. The highest participation percentage was among women (52.3%; *n* = 134), followed by men (43.8%; *n* = 112), with an age range of 18–20 years (46.1%; *n* = 118), followed by 32.4% (*n* = 83) aged 21–25 years. Regarding marital status, 85.2% (*n* = 218) are single. 64.1% (*n* = 164) are enrolled in public universities, and 35.9% (*n* = 92) in private universities. Regarding the influence on their financial knowledge, 31.3% (*n* = 80) reported that their father influenced them, followed by 29.3% (*n* = 75) who reported that their mother influenced them, and 20.3% (*n* = 52) reported that no one influenced them. The status indicates that 68.8% (*n* = 176) are only students, followed by 25% (*n* = 64) who are only workers. Regarding seniority at work, 66% (*n* = 169) do not work, and among those who work, 10.5% (*n* = 27) have been working less than 1 year, 10.9% (*n* = 28) more than 1 year but less than 3 years, and 3.5% (*n* = 9) between 3 and 5 years. Among those employed, the highest percentage earns less than \$3000.00 USD per month (9.8%, *n* = 25), whereas for 58.2% (*n* = 149), the question does not apply because they are not working.

Table 4 presents the total explained variance, which is composed of five factors accounting for 56.89% of the total variance of the phenomenon under study. Table 5 presents the rotated factor matrix in its hierarchical structure.

Table 3. Sociodemographic profile of the respondents.

Gender	<i>n</i> = 256	%
Male	112	43.8%
Female	134	52.3%
LGTBIQ+	10	3.9%
Type University	<i>n</i>	%
Public	164	64.1%
Private	92	35.9%

Table 3. *Cont.*

Age	<i>n</i>	%
18 to 20	118	46.1%
21 to 25	83	32.4%
26 to 30	27	10.5%
30 to 40	20	7.8%
>40	8	3.1%
Financial knowledge influences	<i>n</i>	%
Mother	75	29.3%
Father	80	31.3%
Siblings	18	7.0%
Friends	31	12.1%
Nobody	52	20.3%
Marital status	<i>n</i>	%
Single	218	85.2%
Married	13	5.1%
Free union	21	8.2%
Separated	1	0.4%
Divorced	2	0.8%
Widowed	1	0.4%
Labor status	<i>n</i>	%
Only work	64	25.0%
Do not work but have finished their studies	16	6.3%
Only study	176	68.8%
Job seniority	<i>n</i>	%
Less than 1 year	27	10.5%
>1 to 3 years	28	10.9%
>3 to 5 years	9	3.5%
>5 to 10 years	13	5.1%
>10 years	10	3.9%
Not applicable	169	66.0%
Monthly income	<i>n</i>	%
Not applicable	149	58.2%
Less than \$3000	25	9.8%
\$3000 to \$4999	19	7.4%
\$5000 to \$7999	17	6.6%
\$8000 to \$12,999	21	8.2%
\$13,000 to \$20,000	8	3.1%
More than \$20,000	17	0.0664063

Table 4. Total explained variance.

Factor	Sums of Loads Squared for Extraction			Sums of Loads Squared for Rotation		
	Total	% Variance	% Cumulative	Total	% Variance	% Cumulative
1	7.193	29.973	29.973	4.017	16.737	16.737
2	2.528	10.531	40.504	3.369	14.037	30.774
3	1.526	6.360	46.864	2.488	10.367	41.141
4	1.251	5.213	52.077	2.160	8.998	50.140
5	1.155	4.814	56.890	1.620	6.751	56.890

Extraction method: principal component analysis.

Table 5. Rotated component matrix ^a.

Items	F1	F2	F3	F4	F5
AX8	0.762				
AX6	0.687				
AX7	0.667				
AX5	0.645				
AX4	0.631				
AX3	0.630				
AX2	0.588				
EX8	0.567				
PX3		0.745			
PX4		0.742			
PX6		0.717			
PX7		0.627			
PX2		0.607			
PX8		0.532			
PX1					
EX4			0.817		
EX3			0.812		
EX7			0.590		
EX1				0.638	
AX1				0.606	
EX2					
EX5					0.691
PX5					0.609
EX6					
Average Variance Extracted (AVE)	0.422	0.444	0.558	0.258	0.283
Composite Reliability (CR)	0.853	0.825	0.788	0.410	0.440

Extraction method: principal component analysis. Rotation method: Varimax with Kaiser normalization ^a. The rotation has converged in 7 iterations.

As seen in the rotated factor matrix, the 5-factor structure obtained differs from the three-dimensional model proposed by [8].

SEM Methodology for the Analysis of the 5-Factor Structure

To confirm the factor solution described in Table 5, SEM is employed, and a measurement error model is specified to evaluate the unobserved latent variables incorporated. In addition, the dependency relationships between the obtained factors are verified. Figure 1 shows the initial measurement model. In parallel, a model based on the [8] proposal is presented and compared with the rotated solution (Figure 1b).

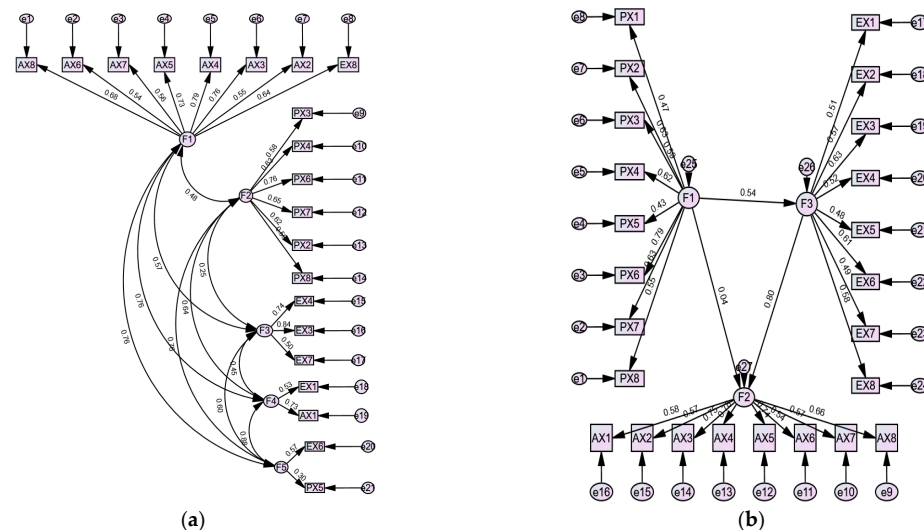


Figure 1. Initial Factorial solution (Flores et al., 2024 [8]). (a) Initial factorial solution from EFA. Chi-square = 420.027; Degrees of freedom = 179; Probability level = 0.000. (b) Applying the tridimensional model, we have the next representation. (Chi-square = 659.114; Degrees of freedom = 249; Probability level = 0.000).

The values obtained from the maximum likelihood ratio show a probability level (0.000), which is less than 0.05, and Chi-square value of 420.027 with 179 degrees of freedom. On the other hand, the three-dimensional model by [8] yields a chi-square statistic of 659.114 with 259 degrees of freedom and a p -value of 0.000, which does not support its confirmation. Regarding the rotated solution with the Varimax criterion, the goodness-of-fit indices, structural fit, and parsimony do not align with theoretical criteria. The exclusion of indicators was guided by both statistical and theoretical criteria, aiming to achieve a parsimonious and interpretable measurement model. Items with low factor loadings were removed to ensure construct reliability and model stability, particularly in the context of SEM applied to a student sample. This procedure does not imply rejection of the underlying construct; rather, it reflects contextual differences in how financial resilience manifests among university students compared with other populations.

Figures 2–5 depict adjustments to improve the model in accordance with theoretical criteria.

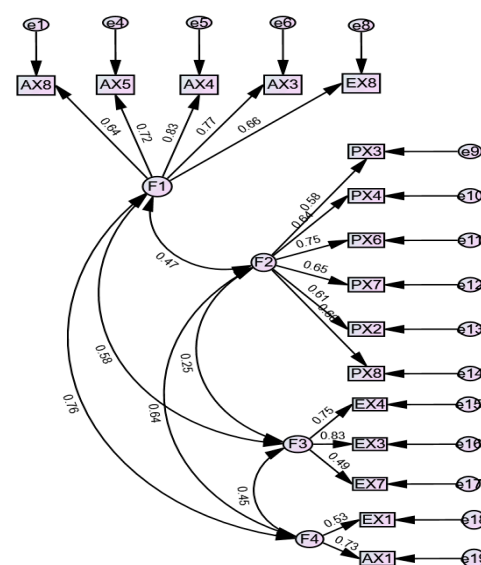


Figure 2. Adjustment to the factorial solution (Chi-square = 180.186, degrees of freedom = 98, Probability level = 0.000).

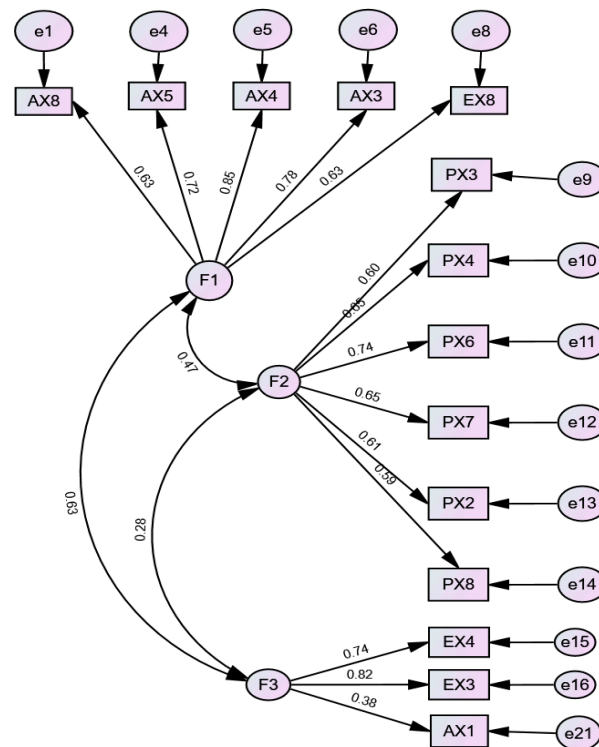


Figure 3. Adjustment to the factorial solution (Chi-square = 209.047, degrees of freedom = 74, Probability level = 0.000).

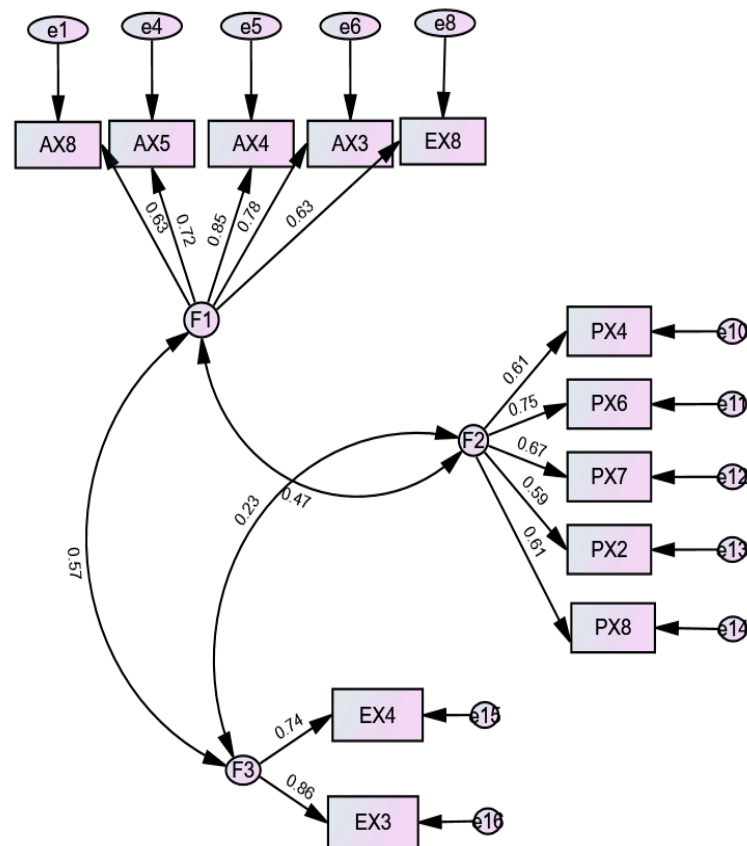


Figure 4. Adjustment to the factorial solution (Chi-square = 96.456, degrees of freedom = 51, Probability level = 0.000).

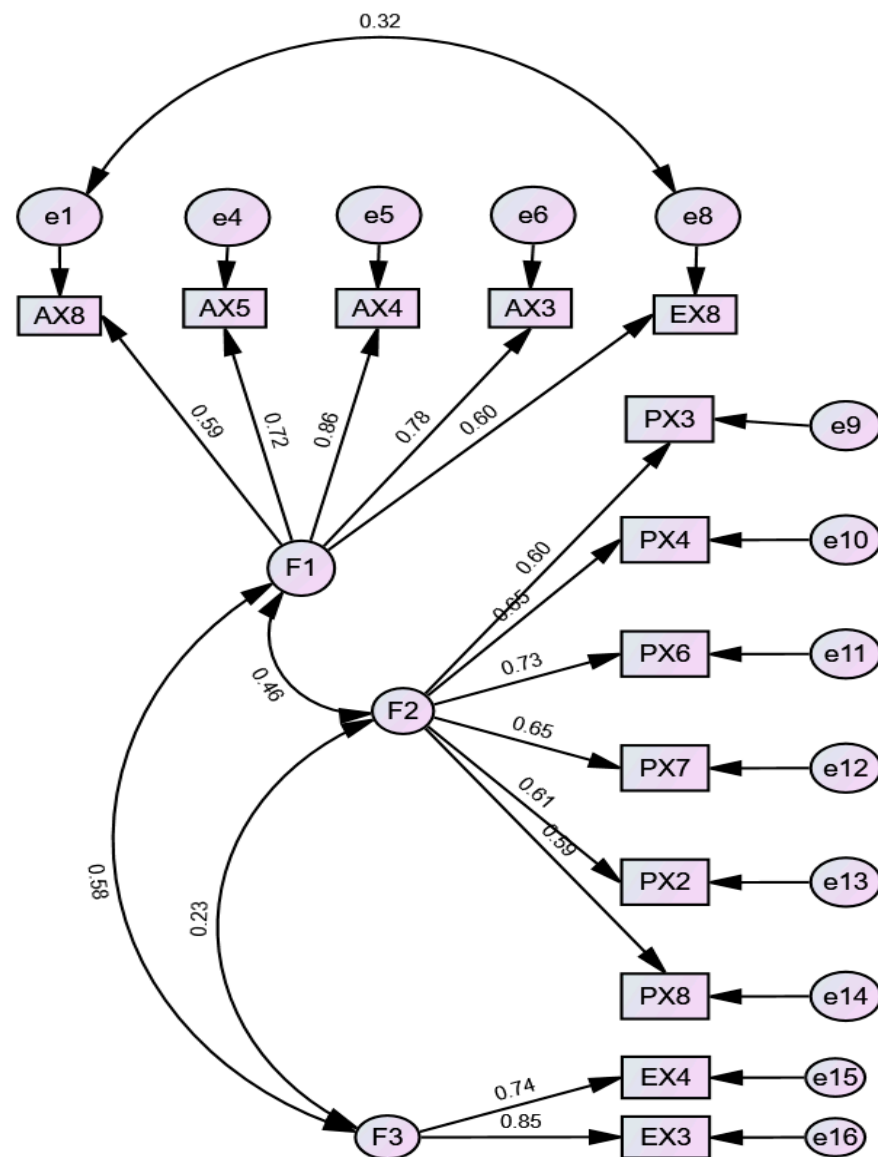


Figure 5. Adjusted final model of perception, lived experiences and financial resilience (Chi-square = 91.617, degrees of freedom = 61, Probability level = 0.07).

To justify the exclusion of certain items originally included in the factor structure reported in Table 5, a structural analysis was performed using AMOS, following the recommendations of Kline [43] and Hair et al. [44] on the specification and evaluation of structural equation models. Exploratory factor analysis with Varimax rotation identified items loading onto each factor and evaluated the robustness of their factor loadings in an initial five-factor model (Figure 1). Subsequently, in the initial structural model (Figure 1), it was observed that some items had factor loadings below the optimal values (≥ 0.7 ideal, ≥ 0.6 minimum acceptable), especially in factors four and five, in addition to very high correlations between factors and the presence of indicators with low loadings, which compromised the validity and reliability of the model.

In response, items with insufficient loadings were excluded, and a final three-factor model was chosen (Figure 5), which retained only items with satisfactory standardized loadings and significantly higher, consistent values (e.g., AX4 = 0.86; EX3 = 0.85). This procedure, based on statistical and theoretical criteria, yielded a more parsimonious, robust, and reliable model for representing the construct, in line with the methodological recommendations of [43,44]. A brief summary of the observed parameters is shown in Table 6

below. The adjustment reduced the model's complexity, improved conceptual coherence, and facilitated an optimal statistical fit, evidenced by absolute, incremental, and parsimony fit indices (χ^2/df , RMSEA, GFI, CFI, TLI, PGFI, PNFI) that meet the established reference criteria (see Table 7).

Table 6. Evaluated parameters and their justification.

Evaluated Parameter	Initial Model (Figure 1)	Final Model (Figure 5)	Justification and Explanation
Number of factors	5 factors (F1 to F5)	3 factors (F1 to F3)	Factor reduction to improve parsimony and eliminate dimensions with low statistical performance.
Number of items	20 items distributed in 5 factors	15 items distributed in 3 factors	Exclusion of items with low factor loadings (<0.6), which compromised validity and reliability.
Factor loadings	Wide variability, with loads from 0.26 (PX2) to 0.79 (AX5)	Higher and more consistent, from 0.59 (AX8) to 0.86 (AX4)	Improvement in the robustness of retained items, favoring the quality of the construct measurement.
Correlations among factors	Wide range, between 0.25 and 0.88, with very high values (F1–F5 = 0.88)	Moderate, between 0.23 and 0.58 (F1–F2 = 0.46; F2–F3 = 0.23)	Reduction in multicollinearity and factor redundancy for a more interpretable, robust model.
Correlated errors	Not present	Presence of correlation between errors e1 and e8 (0.32)	Theoretical-statistical adjustment to improve the overall fit without compromising the validity of the model.
Adjustment indices	Non-optimal values: RMSEA > 0.08 ; CFI < 0.90 (see Table 7)	Optimal values: RMSEA < 0.06 ; CFI > 0.95 (see Table 7)	The final model shows better absolute, incremental, and parsimonious fit, validating the exclusion of items.
Conceptual coherence	Lower, due to items with low loads and redundant factors	Higher, with solid load items and well-defined factors	Preservation of the theoretical validity and conceptual consistency of the construct, following good SEM practices.

Table 7. Models obtained.

	RMSEA	CMIN/DF	RMR	GFI	AGFI	PGFI	TLI	CFI	PRATIO	PNFI	PCFI
Model 1	0.073	2.347	0.065	0.864	0.825	0.670	0.846	0.869	0.852	0.677	0.740
Model 2	0.057	1.839	0.052	0.915	0.882	0.659	0.927	0.941	0.817	0.719	0.768
Model 3	0.085	2.825	0.082	0.889	0.842	0.626	0.868	0.893	0.813	0.687	0.726
Model 4	0.059	1.891	0.045	0.939	0.907	0.614	0.944	0.957	0.773	0.707	0.740
Model 5	0.044	1.502	0.042	0.947	0.921	0.635	0.966	0.973	0.782	0.724	0.761
***	0.080	2.647	0.073	0.809	0.770	0.672	0.785	0.806	0.902	0.654	0.727

After model adjustments, Figure 5 shows the final model with the best indices, while Table 7 shows the models obtained.

5. Discussion

5.1. Interpretation of the Main Findings

The results of this study indicate that financial resilience among university students is primarily characterized by saving behavior, debt management, and spending planning,

which emerge as the most relevant dimensions of the construct in this population. This finding is consistent with previous research that highlights the central role of precautionary saving and liquidity control as fundamental mechanisms for financial adaptation in contexts of economic uncertainty [8,11]. However, unlike studies of adult populations or households with stable incomes, the dimensions related to insurance or long-term investment strategies did not demonstrate sufficient empirical robustness in the student sample. This pattern suggests that financial resilience in university students is conditioned by short-term financial priorities, limited income streams, and less exposure to formal financial instruments. In this sense, financial resilience in the early stages of the life cycle appears primarily defensive, oriented toward immediate financial continuity rather than risk transfer or wealth accumulation.

5.2. Comparison to Previous Studies

The findings of this study partially converge with those reported by [8], who identify saving, debt management, and financial planning as central components of financial resilience. However, relevant differences are observed in the construct's empirical structure, as several items related to insurance and asset diversification did not meet acceptable factor loadings in the university sample. These divergences can be attributed to contextual differences in the target population, particularly with respect to age, level of financial autonomy, and employment status. While Flores et al. [8] analyzed a more heterogeneous population with greater economic stability, this study focuses exclusively on university students, many of whom depend on family support, scholarships, or part-time jobs. Consequently, the practical relevance of formal financial products, such as insurance, may be perceived as limited or inaccessible, reducing their weight in financial decision-making.

These results also align with prior evidence that employment alone does not guarantee financial resilience when income is insufficient to cover basic needs or to cover unexpected expenses [14]. Consequently, financial resilience should be understood as a construct that depends on context and life-cycle stage, rather than as a homogeneous configuration applicable to all populations.

5.3. Methodological Considerations and Refinement of the Model

The transition from an exploratory five-factor structure to a confirmatory three-factor model reflects empirical and theoretical refinement, not an arbitrary reduction in dimensions. In psychometric research, particularly in exploratory research, it is common for initial solutions to evolve during confirmatory validation as the model's conceptual coherence and empirical fit are assessed. Item removal was based on both statistical criteria (factor loadings greater than 0.50) and their conceptual alignment with the financial realities of the student population. This approach reduces the risk of overfitting and improves the interpretability and contextual validity of the final model. Similar strategies have been used in previous studies of financial resilience and behavioral finance, particularly in adapting instruments to new populations or cultural contexts. It is important to note that the final three-factor structure should not be interpreted as a limitation of the construct, but rather as evidence that financial resilience manifests differently across life stages, reinforcing the need for specific measurement frameworks for each population.

5.4. Sociocultural and Contextual Interpretation

The centrality of saving behavior identified in this study can also be interpreted from a sociocultural perspective. In many contexts, young people face high economic uncertainty, rising educational costs, and delayed entry into stable labor markets. These structural conditions foster a financial orientation focused on self-protection and risk avoidance, rather than long-term financial optimization. Furthermore, cultural norms regarding

family support, informal networks, and collective financial responsibility can serve as partial substitutes for formal mechanisms such as insurance. This may explain why students prioritize liquid savings and debt avoidance over contractual risk-management instruments. This pattern has been documented in emerging and middle-income economies, where informal financial practices often complement—or even replace—formal financial systems.

5.5. Implications for the Sustainable Development Goals

The study's results provide empirical evidence supporting the conceptual alignment between financial resilience and SDGs 3, 4, and 8, even though these goals are not directly measured as dependent variables. By strengthening students' capacity to manage financial stress, financial resilience contributes to psychological and emotional well-being, in line with SDG 3 (Good Health and Well-being). Likewise, the central role of financial planning and saving reinforces the importance of financial education as a component of quality education (SDG 4) [20]. Finally, financial resilience equips students with key adaptive skills to navigate unstable labor markets and build productive career paths, indirectly supporting SDG 8 (Decent Work and Economic Growth). In this sense, financial resilience can be understood as a cross-cutting enabling capacity that indirectly contributes to the advancement of multiple dimensions of sustainable development.

5.6. Limitations and Future Research

This study has some limitations that should be considered when interpreting its results. First, the sample was obtained through non-probability self-selection sampling. While this type of sampling limits the external validity of the findings and restricts the generalizability of the results to the university population as a whole, its use is widely accepted in exploratory and psychometric studies, in which the main objective is to examine the internal structure, dimensionality, and metric properties of the instruments, rather than the estimation of population parameters [45–48]. In this sense, the results of this study should be interpreted as evidence of the patterns and configurations of the financial resilience construct in a specific university context. This is conceptually relevant for understanding the processes associated with well-being (SDG 3), quality education (SDG 4), and decent work and economic growth (SDG 8), although it does not claim to be representative of the population.

However, the use of non-probability sampling restricts the extrapolation of the results to other educational and sociocultural contexts. Future research could strengthen external validity by employing probabilistic or stratified sampling designs and by replicating the model across institutions, regions, and countries. This would enable a more robust evaluation of the contribution of financial resilience to the Sustainable Development Goals across diverse youth populations. Additionally, the sample size and the lack of stratification by variables such as geographic region, academic discipline, or employment status may have influenced the observed factor structure. Further studies with larger, more heterogeneous samples would allow comparisons across subgroups and the analysis of potential contextual differences relevant to the design of educational, financial, and labor policies aligned with the SDGs.

Finally, while the study is conceptually framed within the Sustainable Development Goals (SDGs 3, 4, and 8), these were not directly measured using specific indicators. In this regard, future research could integrate measures of mental health and well-being, academic performance, and labor-market transitions to empirically examine the mechanisms through which financial resilience contributes to sustainable development among young people.

6. Conclusions

This study analyzed financial resilience among university students, drawing on their perceptions, lived experiences, and actions in the face of adverse financial situations, using an exploratory and confirmatory approach. The results show that financial resilience in this population is primarily structured around saving, debt management, and budgeting, reflecting a configuration of the construct shaped by life-cycle stage, level of economic autonomy, and sociocultural context.

6.1. Theoretical Contributions

From a theoretical perspective, this study contributes to the literature on financial resilience by demonstrating that the construct does not manifest uniformly across populations; rather, it takes distinct configurations depending on age and socioeconomic context. Among university students, financial resilience is expressed primarily through short-term defensive mechanisms rather than through risk accumulation or transfer strategies. Furthermore, the research reinforces a multidimensional approach to financial resilience by integrating elements of Resilience Theory, Human Capital Theory, and Behavioral Finance. This integration allows us to understand financial resilience not only as an economic capacity but also as a cognitive and behavioral process influenced by education, perceptions, and prior experiences.

6.2. Methodological Contributions

From a methodological perspective, this study offers empirical evidence on the adaptation and validation of an instrument to measure financial resilience in university students. The findings show that some indicators relevant in adult populations lose explanatory power in youth contexts, highlighting the need to adjust the instruments to the characteristics of the studied group. The model refinement process, which yielded a three-factor structure, underscores the importance of assessing the contextual validity of psychometric instruments and avoiding the uncritical application of scales developed for other populations. Furthermore, the use of structural equation modeling enabled the identification of consistent relationships among the construct's dimensions, making a significant contribution to the methodological literature on measuring financial resilience in educational contexts.

6.3. Implications for Practice and Public Policy

From an applied perspective, the results suggest that strategies aimed at strengthening the financial resilience of university students should prioritize the development of fundamental skills, such as saving, debt management, and financial planning, rather than focusing on complex or long-term financial instruments. In this process, universities play a strategic role by implementing financial education programs tailored to students' contexts, either integrated into the academic curriculum or delivered through specialized financial support services. At the public policy level, the findings support the need to design interventions for young people that facilitate access to basic financial tools, promote precautionary saving, and reduce financial vulnerability during their formative years. In addition, these actions advance the Sustainable Development Goals, especially SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), and SDG 8 (Decent Work and Economic Growth), by promoting inclusive, practical, and accessible financial education for the entire student population.

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Informed Consent Statement: Informed consent was obtained from all participants involved in the study.

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Appendix A

Item—total Statistics.

Cronbach's Alpha.

Items	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha If Item Deleted
PX1	104.7305	161.092	0.310	0.798
PX2	104.3438	159.803	0.485	0.792
PX3	104.9297	162.042	0.415	0.795
PX4	104.6563	161.866	0.406	0.795
PX5	105.2148	164.342	0.302	0.799
PX6	104.2617	160.272	0.532	0.792
PX7	104.4883	160.698	0.508	0.792
PX8	104.2969	162.704	0.435	0.795
EX1	105.0273	159.376	0.436	0.793
EX2	104.7461	158.865	0.520	0.791
EX3	105.7305	160.480	0.447	0.793
EX4	105.8008	162.717	0.336	0.797
EX5	105.3203	159.999	0.428	0.794
EX6	105.0039	157.141	0.532	0.789
EX7	105.5586	160.028	0.379	0.795
EX8	104.9961	158.945	0.516	0.791
AX1	104.8398	158.566	0.554	0.790
AX2	104.8594	159.557	0.529	0.791
AX3	105.1758	158.106	0.555	0.790
AX4	105.0977	158.073	0.584	0.789
AX5	105.0352	158.787	0.585	0.790
AX6	105.3164	160.994	0.438	0.794
AX7	105.4375	161.620	0.435	0.794
AX8	105.0195	160.576	0.487	0.793

Appendix B

Item—total Statistics.
(McDonald omega).

Items	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Multiple Correlation Square	Cronbach's Alpha If Item Deleted	McDonald's Omega If Item Deleted
PX1	83.2188	146.893	0.304	0.297	0.892	0.887
PX2	82.8320	145.795	0.472	0.387	0.886	0.881
PX3	83.4180	147.844	0.406	0.423	0.888	0.883
PX4	83.1445	147.097	0.423	0.409	0.888	0.882
PX5	83.7031	150.657	0.265	0.310	0.891	0.886
PX6	82.7500	145.765	0.542	0.568	0.885	0.880
PX7	82.9766	146.211	0.515	0.412	0.886	0.880
PX8	82.7852	147.950	0.452	0.367	0.887	0.881
EX1	83.5156	144.345	0.465	0.326	0.887	0.880
EX2	83.2344	144.063	0.544	0.411	0.885	0.878
EX3	84.2188	145.387	0.480	0.534	0.886	0.881
EX4	84.2891	147.414	0.372	0.470	0.889	0.884
EX5	83.8086	146.030	0.413	0.366	0.888	0.882
EX6	83.4922	142.651	0.545	0.396	0.884	0.878
EX7	84.0469	145.182	0.398	0.339	0.889	0.883
EX8	83.4844	143.812	0.555	0.516	0.884	0.878
AX1	83.3281	143.578	0.588	0.458	0.884	0.877
AX2	83.3477	145.569	0.514	0.412	0.885	0.879
AX3	83.6641	143.204	0.585	0.568	0.884	0.877
AX4	83.5859	143.020	0.623	0.618	0.883	0.877
AX5	83.5234	143.866	0.618	0.529	0.883	0.877
AX6	83.8047	145.993	0.466	0.416	0.887	0.881
AX7	83.9258	146.853	0.453	0.470	0.887	0.881
AX8	83.5078	145.082	0.541	0.501	0.885	0.879

Appendix C

Financial resilience scale.
Part 1: perception toward financial health indicators.

Items
P1.—Do you think that you should spend less than what you earn?
P2.—Do invoices have to be paid on time and in full?
P3.—Is it convenient to have enough savings in liquid financial products?
P4.—Have enough savings or long-term assets?
P5.—Have a sustainable level of debt?
P6.—Have a healthy credit history?
P7.—Have adequate insurance?
P8.—Plan expenses for the future?

Part 2: Lived experience towards financial health indicators.

Items

Lex1.—Personally, have you experienced a situation where you spend less than you earn?

Lex2.—If you had outstanding payments, did you pay the bills on time and in full?

Lex3.—Do you have enough savings in liquid financial products?

Lex4.—Do you have enough savings or long-term assets?

Lex5.—Currently, do you have a sustainable level of debt?

Lex6.—Today, do you have a healthy credit history?

Lex7.—Do you currently have adequate insurance in force?

Lex8.—In your personal life, do you plan the expenses that you will have in the immediate future and in the short term?

Part 3: During or after some adverse financial situation.

Items

Fr1.—Personally, did you take any actions to spend less than you earn?

Fr2.—In the event of having had pending payments, and not having paid on time: did you take any action to resolve the payment of your invoices on time and in full?

Fr3.—If so, did you implement any plan to increase your savings in liquid financial products?

Fr4.—Did you take any action to have enough savings or long-term assets?

Fr5.—Have you defined any strategy to maintain your debts sustainably and that you can pay when due?

Fr6.—If you did not have a healthy credit history, did you carry out any plan?

Fr7.—In case of not having adequate insurance, or having some, did you implement any plan to modify this scheme?

Fr8.—In case of not doing it in your personal life, did you implement a strategy to plan the expenses that you will have in the immediate future and in the short term?

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