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A Structural Equation Modelling Approach for College Students Financial Literacy

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ABSTRACT

This research explores the dynamics of financial literacy among students in shaping future financial well-being. Using Structural Equation Modeling (SEM), it aims to uncover the relationship between financial literacy and students' interest in learning about finance. The data is derived from responses to a questionnaire from 200 students. The research reveals a path coefficient of 0.97 between financial literacy and literacy interest, indicating a strong positive relationship. This implies that 97% of the variation in financial literacy can be explained by literacy interest. Overall, the SEM model demonstrates a significant fit, providing valuable insights for enhancing financial literacy among college students.

Keyword: Financial Literacy, College Students, SEM

1. Introduction

College Students Financial Literacy constitutes a critical dimension in the holistic development of individuals pursuing higher education. In this context, financial literacy encompasses the knowledge, skills, and attitudes necessary for students to make informed and effective decisions regarding their finances. It goes beyond merely understanding basic financial concepts and extends to the application of these principles in real-life scenarios. Recognizing the significance of financial literacy in shaping the future financial well-being of college students, this research explores the intricate facets of their financial knowledge, behaviors, and attitudes [1], [2], [3]. Various factors exert influence on College Students Financial Literacy, shaping the degree to which individuals comprehend and engage with financial matters [4], [5]. Socioeconomic background, educational experiences, cultural influences, and personal attitudes towards money are among the myriad elements that contribute to the complex web of factors influencing financial literacy levels [6]. Understanding the interplay of these factors is essential for developing targeted interventions and educational programs aimed at enhancing financial literacy among college students. To unravel the intricate relationships among the diverse factors influencing College Students Financial Literacy, this research employs a Structural Equation Modelling (SEM) approach. SEM provides a robust analytical framework for examining the direct and indirect effects of multiple variables on financial literacy [7], [8]. By employing SEM, this study aims to discern the latent constructs and their interdependencies, shedding light on the underlying mechanisms that contribute to or hinder the development of financial literacy among college students. The latest research in the field of College

Students Financial Literacy continually informs and refines our understanding of this dynamic domain. Recent studies have explored innovative pedagogical approaches, the impact of technological advancements on financial decision-making, and the role of peer influence in shaping financial behaviors among college students [9]. Staying abreast of these developments ensures that the present research is contextualized within the broader landscape of evolving knowledge and practices.

The primary aim of this research is to contribute substantively to the ongoing discourse on College Students Financial Literacy. By systematically examining the factors influencing financial literacy through the lens of SEM, this study aspires to offer comprehensive insights that can inform the design and implementation of effective financial education programs within university settings. Ultimately, the research aims to empower students with the knowledge and skills necessary to navigate the complexities of personal finance, fostering a generation of financially literate individuals poised for success in their post-educational pursuits.

2. Methodology

The methodology employed in this research on College Students Financial Literacy involves a systematic approach designed to comprehensively analyze the factors influencing financial literacy and utilize Structural Equation Modelling (SEM) for a nuanced understanding of these relationships. The stages of the research flow consist of [10]:

a) Conduct an extensive review of existing literature on College Students Financial Literacy, focusing on relevant theories, models, and empirical studies. This step establishes the theoretical foundation and informs the identification of key factors influencing financial literacy among college students.
b) Based on insights gained from the literature review, identify the key constructs or variables that contribute to College Students Financial Literacy.
c) Develop a comprehensive survey instrument to collect quantitative data on the identified constructs. The survey should incorporate validated scales and items from existing literature while also addressing specific aspects relevant to the context of university students.
d) Select a representative sample of college students from diverse backgrounds and disciplines. Administer the survey to gather data on their financial knowledge, behaviors, and attitudes. Ensure ethical considerations, such as informed consent and data privacy, are adhered to throughout the data collection process.
e) Employ Structural Equation Modelling (SEM) to analyze the collected data. SEM allows for the examination of complex relationships between observed and latent variables, providing a robust method for understanding the interplay of factors influencing financial literacy among college students.
f) Define the structural model by specifying the relationships between the identified constructs. This involves formulating hypotheses about the direct and indirect effects of various factors on College Students Financial Literacy.
g) Use appropriate statistical software to estimate the parameters of the SEM and assess the overall fit of the model. Iteratively refine the model based on fit indices, ensuring that it accurately represents the relationships among the chosen constructs.
h) Interpret the SEM results to derive meaningful insights into the factors influencing financial literacy among college students. Identify significant pathways, direct and indirect effects, and potential moderating or mediating variables that contribute to a comprehensive understanding of the issue.

3. Result and Discussion

Descriptive statistics provide a summary overview of the central tendencies and variability within a dataset. In the context of the provided data on college students' financial literacy, computed descriptive statistics for each variable and can be shown in Figure 1 below:

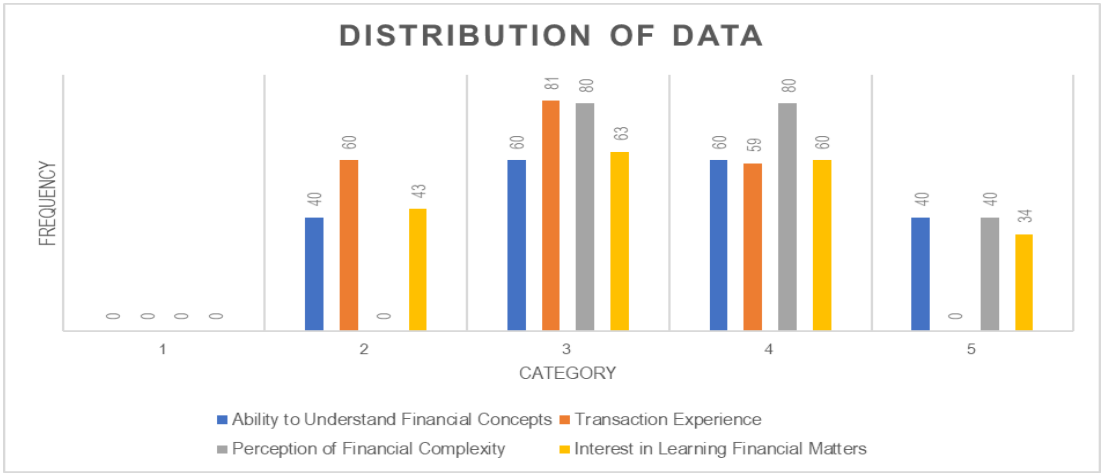

Figure1. Description Data

From figure above, it appears that the results from the questionnaire are presented in a tabular format with five response options (1 to 5) for each of the four constructs or questions. Ability to understand financial concepts obtained result that majority perceive a moderate (60%) to high (40%) level of ability, with none reporting the lowest level. Transaction experience obtained result that predominantly high transaction experience (81%), with a notable portion reporting a basic level (60%). Perception of financial complexity obtained result that most respondents find financial matters moderately complex (80%), with 40% perceiving them as highly complex. Interest in learning financial matters obtained result that varied interest levels, with the majority (63%) expressing a moderate interest, and 34% indicating the highest interest.

The testing of measurement models involves estimating factor loadings that measure the strength of the relationship between latent variables and their indicators, and Cronbach's Alpha values are used to assess the extent to which the indicators used to measure latent variables are consistent and reliable. The result of measurement models given in Figure 2 below:

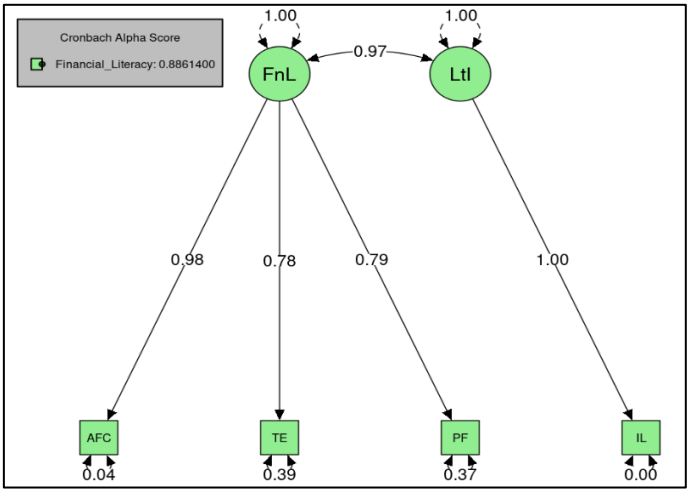

Figure 2. Measurement Models Result

For AFC factor loadings value is 0.981, suggests a strong positive correlation between the latent variable financial literacy and the observed variable AFC. Similarly, for TE and PF, Std.all values of 0.782 and 0.791 indicate strong positive correlations between Financial Literacy and these observed variables. For Literacy Interest (IL), the Std.all value of 1.000 indicates a perfect positive correlation, suggesting that Literacy Interest fully accounts for the variability in the observed variable IL. Then, cronbach's alpha for financial literacy is 0.8861400. The high Cronbach's alpha suggests that the items measuring financial literacy in model are correlated with each other and are collectively reliable in assessing the overall financial literacy construct. This strengthens the confidence in the internal consistency of the measurement and the reliability of using these items as a composite measure of financial literacy. The path coefficient testing involves statistical test calculations and the computation of P-Values (P-Values) to determine the statistical significance of the path coefficients in the SEM model. The test results are shown in the Figure 3 below:

```
Regressions:
                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
  FinancialLiteracy ~
    LiteracyIntrst    0.968    0.022   43.678    0.000    0.970    0.970

  R-Square:   FinancialLtrcy    0.940
```

Figure 3. Path Coefficient Testing

Financial literacy regressed on literacy interest obtain that parameter estimate value is 0.968. The estimate represents the strength and direction of the regression path from literacy interest to financial literacy. In this case, a value of 0.968 indicates a strong positive regression relationship. R-squared values for financial literacy regressed on literacy interest is 0.940. This suggests that 94.0% of the variance in financial literacy is explained by the inclusion of literacy interest in the model. In other words, literacy interest is a strong predictor of financial literacy, and it plays a significant role in explaining the variability in financial literacy.

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Model Test User Model:

  Test statistic                                12.979
  Degrees of freedom                                 2
  P-value (Chi-square)                           0.002

Model Test Baseline Model:

  Test statistic                               855.259
  Degrees of freedom                                 6
  P-value                                        0.000

User Model versus Baseline Model:

  Comparative Fit Index (CFI)                    0.987
  Tucker-Lewis Index (TLI)                       0.961
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Figure 4. Overall Test of SEM

Based on Figure 4 from the overall test of SEM obtained that Chi-square value is 0.002, indicates the significance of the difference between the observed and expected covariance matrices. A lower p-value suggests a better fit of the model to the data. In this case, the model is significantly different from the expected covariance structure. Then, Chi-square value for baseline model represents that the user-specified model is equivalent to a more restrictive baseline model. A significant p-value (0.000) indicates a significant difference between the user-specified model and a more restrictive baseline model. This suggests that the user-specified model is a better fit. Besides that, both CFI and TLI values close to 1 suggest good model fit and shown that values closer to 1 indicate better fit, with 1 being a perfect fit. Based on the overall results of SEM model testing, if we visualize the relationship between path coefficients it can be described as follows:

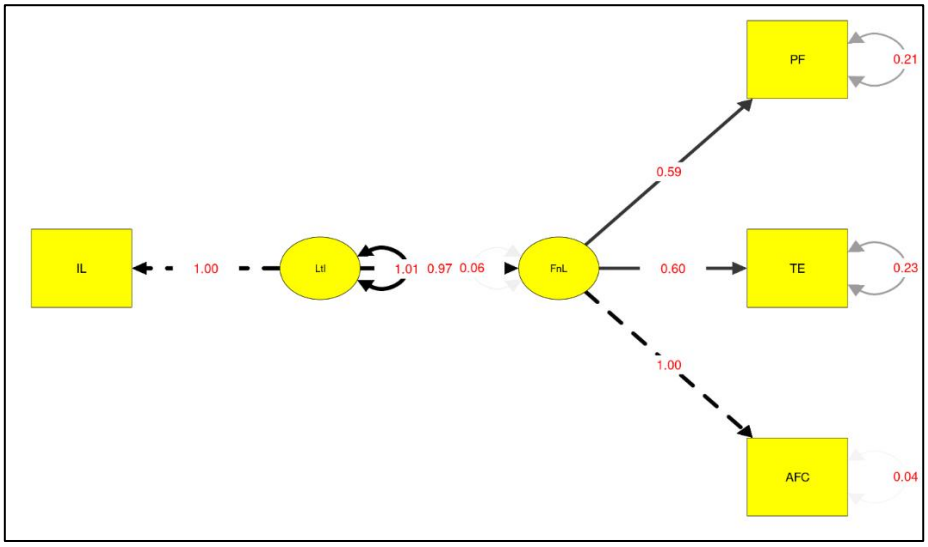

Figure 5. Path Diagram

Based on Figure 5 above, shown that the standardized loading of 0.97 indicates the strength and direction of the relationship between literacy interest and financial literacy in SEM. A path correlation of 0.97 implies that 97% of the variance in financial literacy can be explained by the variance in literacy interest. In other words, there is a robust and positive relationship between individuals' literacy interest and their financial literacy, as measured by the latent construct. The positive sign indicates that as literacy interest increases, financial literacy is expected to increase as well. This aligns with the theoretical expectation that individuals with a higher interest in financial matters are more likely to possess higher levels of financial literacy.

4. Conclusion and Future Research

This research reveals a significant relationship between literacy interest and financial literacy among college students, measured by a path coefficient of 0.97. This result indicates that 97% of the variation in financial literacy can be explained by literacy interest. The positive value signifies that as individuals' interest in financial matters increases, their level of financial literacy is expected to rise as well. This finding supports the theory that individuals with higher interest in financial issues tend to have higher levels of financial literacy, contributing crucial insights into the factors influencing the financial literacy of college students.

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