

Mediating Effect of Human Capital on the relation between Capital Structure and Firm Performance: Evidence from Ethiopian Coffee Farmers Cooperatives

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Abstract:

This study investigates the consequence of human capital mediating on the association among capital structure and performance in the context of Ethiopian coffee farmers' cooperatives. The study collected data from a sample of 385 participants representing 33 coffee cooperatives. The data adequacy was evaluated by employing the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Sphericity Test. Confirmatory Factor Analysis (CFA) was employed to establish the association among observed variables and their underlying latent constructs, while Discriminant Validity was assessed to ensure the distinctiveness of the constructs. The Structural Equation Modeling (SEM) was then utilized to test the hypothesized associations and evaluate model fitness. The p-value being less than 0.001 indicates a substantial association among Human Capital and Organizational Performance with a direct effect of 0.25 supported with a coefficient 0.457 with a standard error of 0.132. Indirect effect through human capital founded was 0.39. The results of the study indicate that human capital acts a partial mediating role in the association among capital structure and organizational performance by 0.64. This finding suggests that the effective management of human capital can enhance the impact of capital structure on performance of a firm within the coffee farmers' cooperatives. The findings of this study contribute to the existing literature on capital structure and performance of firm, particularly within the context of agricultural cooperatives.

Keywords: Human Capital, Capital Structure, Performance of a firm, Equity, debt

1. Background of Study

Coffee farmers' cooperatives play a vital role in the coffee industry, providing small-scale farmers with a collective platform to pool resources, share knowledge, and access markets (Ahmed & Mesfin, 2017). The performance of these cooperatives directly impacts the economic well-being of the farmers and the overall sustainability of the coffee supply chain (Eshetie and Sisay, 2018). One crucial factor that can influence cooperative performance is the capital structure, which states to the composition of debt and equity financing used by the organizations (Pingali et al., 2019). In Ethiopia, empirical studies indicated that agricultural cooperative improves member efficiency by facilitating access to agricultural inputs and promoting outreach connections, decrease transaction cost. It has have a affirmative influence on the cooperatives (Eshetie and Sisay,2018; Bolton, 2019 ; Amanuel and Ensa, 2023).

The choice of capital structure decisions made by coffee farmers' cooperatives can have noteworthy consequences for their economic strength, threat profile, and ability to undertake

productive savings. However, the association among capital structure and cooperative performance is complex and can be influenced by various factors (Mardones & Cuneo, 2020; Ejike & Nike, 2020; Nyabakora, 2021). One such factor is the presence of human capital within the cooperative, encompassing the knowledge, skills, and expertise of cooperative members (Ejike & Nike, 2020; Nyabakora, 2021; Wulandari, Paminto & Kusimawardani, 2022).

Human capital shows an acute role in facilitating the effective utilization of financial resources and driving cooperative performance. The expertise of cooperative members in coffee production techniques, market analysis, and cooperative management can lead to better decision-making and resource allocation. Additionally, investing in human capital through training and capacity-building initiatives can enhance the capabilities of the cooperative and its ability to leverage its financial resources effectively (Hidayat and Widodo, 2022; Raj and Kumar, 2023; Masyhuri et al., 2024).

Previous studies have investigated the individual effects of capital structure and human capital on cooperative performance, there is a need to understand the interplay among these factors (Phu and Hong, 2020; Sisodia, Jadiyahappa and Joseph, 2021; Rahman and Akher, 2021). Specifically, it is essential to explore the mediating role of human capital in the association among capital structure and cooperative performance. Understanding this mediation process can provide valuable insights into the mechanisms through which capital structure affects performance and guide the development of strategies for coffee farmers' cooperatives.

2. Statement of Problem

The existing literature on cooperative financial management has primarily focused on the impact of capital structure and human capital on performance independently (Thi Hong, 2020; Arifa et al., 2020; Kanbiro, 2021). However, there is a contractor gap existed in research in understanding how these factors interact and influence cooperative performance in the context of coffee farmers' cooperatives. Preceding studies examining the association among capital structure and performance of firm have yielded inconsistent results. Some studies suggest a positive association, indicating that an optimal capital structure enhances performance of a firm (Alqershi Abas and Sanuri, 2019; Uysal, 2020; Albloush et al., 2022). However, other studies report a negative or insubstantial association, highlighting the need for further investigation and clarification (Kyazze, Isa and Nkote, 2020; Amanuel and Ensa, 2023; Hidayat and Widodo, 2022).

Different researchers used different theoretical lenses to understand the related association (Kitenga et al., 2020; Thi Hong, 2020; Arifa et al., 2020; Kanbiro, 2021). Therefore, a theoretical gap exists due to the limited attention given to understanding how human capital influences the association among capital structure and performance of firm, specifically within the Ethiopian coffee farmer's cooperatives.

Existing studies like Kitenga et al. (2020), Thi Hong (2020), Arifa et al. (2020), and Kanbiro (2021) often employ inadequate measurement techniques or fail to capture the multidimensional

nature of human capital adequately. This methodological gap and knowledge gap limits the accuracy and generalizability of findings, necessitating a structure equation. Consequently, a comprehensive investigation is needed to bridge this knowledge void gap and offer a more nuanced association of the association.

3. Objectives

To fill above mentioned research gap study followed the following research objectives:

1. To assess the Capital Structure effect on organizational performance.
2. To examine the Capital Structure effect on Human capital.
3. To assess the Human capital effect on performance of a firm.
4. To examine Human Capital Mediation among Capital Structure and organizational performance.

4. Conceptual Review

a. Capital Structure

The term "capital structure" describes how a business combines various funding sources, such as debt (bonds, loans) and equity (common stock), to support its operations. It shows the breakdown of a business's long-term capital and the percentage of debt and equity that is utilized to fund its operations and assets (Ahmed & Mesfin, 2017). The concept of capital structure has its origins in the field of corporate finance. The Modigliani-Miller theory, developed by economists Franco Modigliani and Merton Miller (1963) in the 1950s and 1960s, laid the basis for capital structure (Shamsuddin et al., 2018). This theory suggests that in a perfect capital market (Modiglian & Miller, 1958; 1963).

Capital Structure proxies

I. Short-term debt

Short-term debt denotes to borrowed funds that a company plans to repay within a relatively short period, typically within one year or less. It is a form of financing that provides companies with immediate cash flow to meet their short-term obligations or fund temporary working capital needs (Hidayat and Widodo, 2022). Companies can obtain short-term financing from banks through lines of credit or revolving credit facilities (Thi Hong, 2020; Masyhuri et al., 2024).

II. Long Term Debt

Long-term debt denotes to rented funds that a company plans to repay over an extended period, typically exceeding one year. It represents a form of financing that provides companies with capital for long-term investments, acquisitions, expansion projects, or other major financial needs (Wuttaphan, 2017). Companies can issue bonds to raise long-term capital. Bonds are debt securities that typically have maturities ranging from several years to several decades (Rahman and Akher, 2021). Companies may obtain long-term financing from banks or financial institutions

through term loans (Shamsuddin et al., 2018). Similar to bonds, debentures are long-term debt instruments issued by companies to raise capital (Wuttaphan, 2017).

III. Equity

Equity, in the context of finance and accounting, refers to the ownership interest or residual claim in the assets of a company after deducting liabilities. It represents the shareholders' stake in the company and represents their ownership rights and claims on the company's earnings and assets (Kyazze, Isa and Nkote, 2020). Common equity, also known as common stock or ordinary shares, represents the ownership interest held by common shareholders in a company (Bolton, 2019 ; Amanuel and Ensa, 2023). Preferred equity, also referred to as preferred stock, is a class of ownership that has certain preferences over common equity (Amanuel and Ensa, 2023)

b. Human Capital

According to Shamsuddin et al. (2018), human capital is the combination of a people abilities, understanding, expertise, and other characteristics that enhance their productivity and capacity to create socioeconomic value. The economists Gary Becker and Theodore Schultz popularized the idea of human capital in the 1960s. The concept originated in the field of economics. They suggested that people as well as societies may invest in human capital through training, instruction, and other forms of skill enhancement. This investment enhances individual productivity, increases earning potential, and contributes to economic growth and development (Kyazze, Isa and Nkote, 2020).

Human capital encompasses formal education and training acquired through work experience, on-the-job training, and personal development efforts (Thi Hong, 2020). From a societal perspective, human capital is considered a critical driver of economic growth and social development (Schultz, 1961; Becker, 1993; Armstrong, 2006; Wuttaphan, 2017).

Human Capital proxies

I. Education

Education is a process of acquiring knowledge, skills, values, and attitudes through formal instruction or training (Masyhuri et al., 2024). The primary goal of education is to facilitate learning and provide individuals with the knowledge and skills (Alqershi Abas and Sanuri, 2019). Education provides individuals with a foundation of knowledge and equips them with essential skills such as literacy, numeracy, critical thinking and problem-solving (Thi Hong, 2020). Employees with higher levels of education tend to have better employment opportunities, higher incomes, and greater job security (Shamsuddin et al., 2018). Education also helps reduce social and economic inequalities (Kyazze, Isa and Nkote, 2020).

II. Awareness

Awareness is the state of knowing or comprehending a specific problem, circumstance, or idea. It entails having awareness of and knowledge about one's environment, oneself, and the wider world (Masyhuri et al., 2024). The capacity to identify and comprehend one's own ideas,

emotions, drives, assets, and limitations is known as self-awareness (Alqershi Abas and Sanuri, 2019). Social awareness promotes inclusivity, respect, and effective communication in personal and professional associations (Amanuel and Ensa, 2023). Environmental awareness refers to understanding the impact of human activities on the natural environment and recognizing the importance of conservation and sustainable practices (Madushanka & Jathurika, 2018).

III. Training

Training refers to the process of acquiring knowledge, skills, and competencies through systematic instruction, practice, and learning activities designed to improve performance in a specific area. Training can take various forms, including classroom-based instruction, hands-on practice, e-learning modules, workshops, simulations, and on-the-job training (Rahman and Akher, 2021). The primary goal of training is to enhance individuals' capabilities and improve their performance in a particular job or task (Thi Hong, 2020). Skill development through training enables individuals to perform their jobs more effectively and efficiently (Masyhuri et al., 2024).

c. Performance of a firm

Business performance refers to the measurement and evaluation of how well a company or organization is achieving its objectives and goals. Business performance can be evaluated using various key performance indicators (KPIs) and metrics, such as revenue growth, profitability, customer satisfaction, market share, and operational efficiency (Alqershi Abas and Sanuri, 2019). The origins of business performance management can be traced back to the early 20th century when management pioneers like Frederick Taylor and Henri Fayol introduced scientific management principles and emphasized the importance of performance measurement and control in achieving organizational efficiency (Amanuel and Ensa, 2023; Madushanka & Jathurika, 2018).

Performance of firm proxies

I. Non-financial performance

Non-financial performance denotes to the measurement and evaluation of a business's performance beyond financial metrics. Non-financial performance indicators provide insights into other aspects of organizational effectiveness, such as customer satisfaction, employee engagement, environmental impact, social responsibility, and innovation (Madushanka & Jathurika, 2018). Non-financial performance indicators help organizations understand their overall impact and success in areas that go beyond financial outcomes (Shamsuddin et al., 2018; Kyazze, Isa and Nkote, 2020). Customer satisfaction metrics assess the level of satisfaction, loyalty, and perception of value among customers (Thi Hong, 2020; Alqershi Abas and Sanuri, 2019).

II. Financial Performance

Financial performance refers to the evaluation and measurement of a company's financial health and success (Madushanka & Jathurika, 2018). Revenue is the total amount of money generated from the sale of goods or services. It is a fundamental indicator of a company's financial performance and growth (Uysal, 2020). Profitability measures the ability of a company to create returns (Durrah et al., 2016; Madushanka & Jathurika, 2018).

III. Employee Satisfaction

The degree of excitement, joy, and satisfaction that workers feel at work is known to as employee satisfaction (Alqershi Abas and Sanuri, 2019). Higher levels of efficiency and effectiveness are often the result of satisfied workers since they are more engaged, driven, and devoted to their job (Amanuel and Ensa, 2023). Fair and competitive compensation, along with comprehensive benefits packages, are important factors that contribute to employee satisfaction (Almanaseer, 2019).

5. Theoretical Foundation

Three theories were used as the basis for this study: Modiglian and Miller's capital structure theory, pecking order & trade-off theory. The theories have been used recently by the following scholars (Kitenga et al., 2020; Thi Hong, 2020; Arifa et al.,2020; Kanbiro, 2021).

a. Modigliani and Miller's theory

Modigliani and Miller's theory, also known as the Modigliani-Miller theory, is a foundational concept in corporate finance that explores the association among capital structure (how a company finances its operations), human capital (skills, acquaintance, and abilities of employees), and business performance (Sisodia, Jadiyahappa and Joseph, 2021).

Modigliani and Miller's theory suggests that, under certain assumptions, capital structure of a business is irrelevant in determining the firm's value (Kitenga et al., 2020). Modigliani and Miller (1963) revised the terms and clarified that interest expense is tax deductible and asserting that the value of the firm should increase with higher debt ratios. However, in real-life situations, capital structure decisions can have indirect effects on business performance (Amanuel and Ensa, 2023).

b. Pecking order theory

The pecking order theory, established by Myers and Majluf in 1984, delivers visions into the association among capital structure, human capital, and business performance. Unlike Modigliani and Miller's theory, which assumes perfect capital markets, the pecking order theory recognizes information asymmetry and the costs associated with external financing (Almanaseer, 2019).

The pecking order theory suggests that companies have a preferred order of financing sources based on their cost and availability (Kitenga et al., 2020). Human capital is an integral part of the pecking order theory. Firms with strong human capital may prefer internal financing because it allows them to retain control over decision-making and operations (Thi Hong, 2020). The pecking order theory suggests that the choice of capital structure can indirectly impact business performance (Arifa et al.,2020).

c. Trade- off theory

By weighing the advantages and disadvantages of various financing options, the trade-off theory sheds light on the connection among capital structure, human capital, and corporate performance (Kraus & Litzenberger, 1973). According to the trade-off theory, businesses should weigh the

advantages and disadvantages of debt financing when deciding on their capital structure (Amanuel and Ensa, 2023).

Human capital is a relevant factor in the trade-off theory as skilled and motivated employees can influence a company's ability to generate profits and cash flows. Human capital contributes to the company's capacity to meet its debt obligations and optimize business performance. Companies with strong human capital may be better positioned to manage the costs and risks associated with debt financing (Thi Hong, 2020). The trade-off theory advocates that the choice of capital structure can impact business performance (Almanaseer, 2019).

6. Empirical Review

a. Capital Structure and Performance of a firm

The effect of capital structure on performance of a firm is a topic of substantial interest in corporate finance. While the association among capital structure and performance of a firm is complex and can vary across different situations and industries (Arifa et al.,2020). Debt financing typically carries a lower cost compared to equity financing due to tax advantages and lower agency costs. By utilizing debt financing, firms can lower their weighted average cost of capital (WACC), which can positively impact performance of a firm by increasing profitability and shareholder value (Phu and Hong, 2020). The use of debt in the capital structure increases financial risk for a firm. Higher levels of debt can lead to increased interest payments and financial obligations, which can strain cash flow and limit financial flexibility (Arifa et al.,2020).

The capital structure of a firm can also affect its business flexibility. A capital structure with a higher proportion of equity financing provides greater flexibility in decision-making and strategic choices (Doan,2020; Mardones and Cuneo, 2020). This flexibility can positively influence performance of a firm by enabling faster adaptation to changing market conditions and capitalizing on new opportunities (Almanaseer,2019;C. Islam et.al.,2019;Doan,2020; Mardones and Cuneo,2020;Ejike& Nike,2020; Nyabakora,2021).

H₁: There is statistically substantial association among Capital Structure & organizational performance.

b. Capital Structure and Human capital

The effect of capital structure on human capital is an indirect one, as capital structure decisions can have implications for the overall financial health and stability of a company, which in turn can impact human capital (Phu and Hong, 2020). A heavily leveraged company with a high level of debt may face financial distress or bankruptcy if it is unable to generate sufficient cash flows to service its debt (Lindberg and Johansson, 2022).

Capital structure decisions can influence a company's ability to provide competitive compensation and benefits packages to attract and retain talented employees. Firms with a higher proportion of debt in their capital structure may have higher interest payments, which can limit the resources available for investment in employee compensation and benefits. On the other hand, companies with a more equity-heavy capital structure may have greater financial flexibility to invest in human

capital through competitive salaries, training programs, and employee development initiatives (Doan,2020; Mardones and Cuneo, 2020).

The capital structure of a company can influence its ability to invest in human capital development. Companies with a more equity-heavy capital structure may have greater financial resources available to invest in training programs, employee education, and skill development initiatives. These investments can enhance the knowledge, skills, and capabilities of employees, leading to improved human capital and increased performance of a firm (Usman, Wirawan &Zulkifli, 2021; Lindberg and Johansson, 2022).

H2: There is statistically substantial association among Capital Structure and Human capital

c. Human Capital and Performance of a firm

Human capital refers to the knowledge, skills, experience, and capabilities of the employees within an organization. The effect of human capital on performance of a firm is widely recognized and has been extensively studied (Phu and Hong, 2020). Employees with high levels of human capital can contribute to innovation and creativity within an organization. They possess the knowledge and skills necessary to generate new ideas, solve complex problems, and identify opportunities for growth and improvement. Companies that have a workforce with strong human capital are more likely to innovate and develop new products, services, and processes, which can lead to a competitive advantage and improved performance of a firm (Lindberg and Johansson, 2022).

Human capital plays a crucial role in enhancing productivity and efficiency within an organization. Employees with the right skills and expertise can perform their tasks more effectively, make better decisions, and complete work in a timely manner. They are often more efficient in utilizing resources, optimizing processes, and minimizing waste. Higher productivity and efficiency can lead to cost savings, higher output, and improved performance of a firm (Rahman and Akher, 2021). Human capital contributes to the adaptability and flexibility of an organization. Employees with strong human capital are better equipped to adapt to changes in the business environment, embrace new technologies, and learn new skills. They can quickly respond to market shifts, customer demands, and industry trends, allowing the organization to stay competitive and agile (Phu and Hong, 2020; Sisodia, Jadiyahappa and Joseph, 2021; Rahman and Akher, 2021).

H3: There is statistically substantial association among Human capital and performance of a firm

d. Human Capital Mediating Effect In among Capital Structure and Performance of a firm

The mediating effect of human capital among capital structure and performance of a firm refers to the role that human capital plays in linking the two variables. In this context, human capital acts as an intermediary or mediator through which the association among capital structure and performance of a firm is influenced (Albloush et al., 2022). Human capital can serve as a catalyst for the effective utilization and management of the capital structure. Employees with strong human capital, such as knowledge, skills, and experience, can contribute to better decision-making regarding capital structure choices (Alqershi Abas and Sanuri, 2019). They can assess the financial needs and risk appetite of the firm, evaluate the costs and benefits of different financing options,

and make informed choices that align with the organization's goals and strategies. By effectively managing the capital structure, firms can optimize their financial resources, reduce costs, and enhance performance of a firm (Kyazze, Isa and Nkote, 2020).

Human capital can directly impact firm financial performance, which, in turn, can be influenced by capital structure decisions. Employees with high levels of human capital are more likely to contribute to increased productivity, innovation, and efficiency (Uysal, 2020). They possess the skills and knowledge necessary to improve operational processes, develop and deliver high-quality products or services, and attract and retain customers. These factors can positively affect performance of a firm. A strong human capital base can help firms achieve better financial performance, regardless of their capital structure (Alqershi Abas and Sanuri, 2019; Uysal, 2020; Abloush et al., 2022).

H4: Human Capital Mediates substantially among Capital Structure & organizational performance.

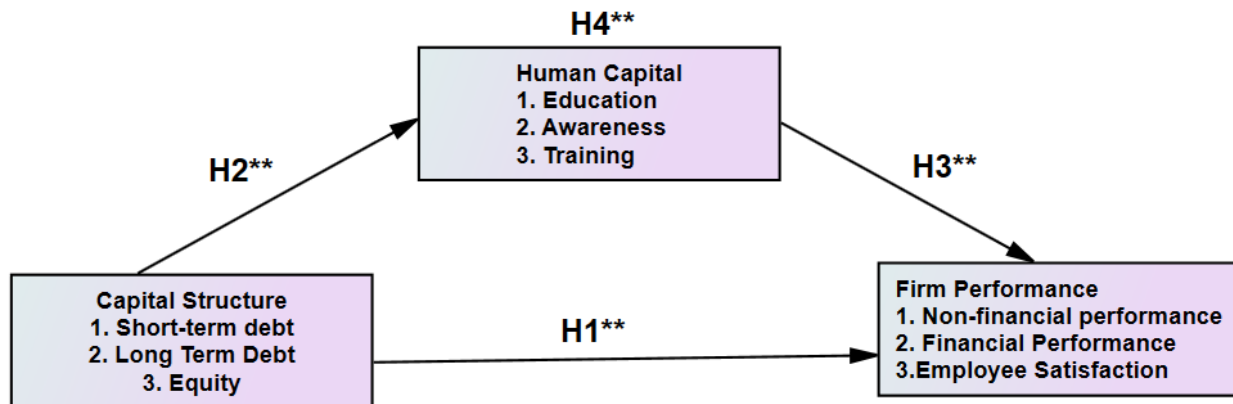


Figure: 1 Conceptual frame work of the study

Source: Researchers Own Construct (2022)

7. Research Methodology

The investigator employed an explanatory research design and a quantitative research technique. Semi-structured questionnaires with a five-point Likert scale were used to gather the data. The analysis of the data was done with SPSS AMOS version 26. The KMO and Bartlett's Test of Sphericity of Data Adequacy were utilized to assess the study's validity and dependability. The exploratory factor analysis was employed by the researcher to determine construct dimensionality. Structure equation modeling, or SEM, was utilized to assess the model fitness and mediation analysis.

The Cochran (1997) sampling formula was utilized to ascertain the study's representative sample. Given a desired accuracy level, desired confidence level, and the expected fraction of the attribute existing in the population, the Cochran formula may be used to determine the optimal sample size. Cochran's method is thought to be particularly useful in scenarios with big populations.

$$n_o = \frac{Z^2 pq}{e^2}$$

$$n = (1.96)^2 (0.5) (0.5) / (0.05)^2 = 385$$

The primary cooperatives from various clusters were chosen using a multi-stage cluster proportional systematic random selection technique. The cooperatives were categorized into administrative zones and districts using cluster sampling. Random sampling from a large or geographically diversified population can be accomplished by cluster sampling. Increasing sampling efficiency and lowering costs is a major objective of cluster sampling. Item having more than one cluster decreases the likelihood of being included in the final sample considerably, even though each cluster has an equal probability of being picked. A probability strategy proportional to size (PPS) can be used to reduce this problem since it accounts for variations in cluster sizes and modifies for the likelihood of selected clusters. In other words, it raises the possibility that components

Finally, the respondents were selected proportionally from each clusters using proportionate sampling method from each clusters as indicated in Table 1 below

Table1. Proportionate sample size

No	Administrative zone	District	Primary Cooperatives	Number of members	Proportion	Sample size
1	West Guji	Abaya	14	11,900	$385 * 11900 / 25990$	176
2	West Guji	Gelana	2	2,100	$385 * 2100 / 25990$	31
3	East Guji	Uruga	13	9,100	$385 * 9100 / 25990$	135
4	East Guji	Shakiso	2	1,250	$385 * 1250 / 25990$	19
5	East Guji	Adola	2	1,640	$385 * 1640 / 25990$	24
			33	25,990		385

For the collected data with help of KMO and Bartlett's Test data sphericity was checked to validate the internal consistency of data. Confirmatory Factor Analysis (CFA) was employed to test discriminant validity on the bases of Average Variance Extracted (AVE). The Structural Model was then utilized to test the hypothesized associations and evaluate model fitness.

8. Data Analysis and Results

Reliability Test

By utilizing the Kaiser–Meyer–Olkin (KMO) test, researchers assessed the statistical appropriateness of data for factor analysis. The test assesses how well each variable and the entire model are sampled. The statistic expresses how much of the volatility in a set of variables may be common variance.

Table 2 KMO and Bartlett's Test of Sphericity

Kaiser Meyer Olkin Degree for Sampling Adequacy	0.824
Approx. Chi-Square	1223.402
Bartlett's Test of Sphericity	Df
	28
	Sig.
	.000

Source: SPSS output, 2023

The Kaiser-Meyer-Olkin (KMO) test of sampling adequacy's outcome is shown in table 2. Higher numbers indicate better sample adequacy. The range is 0 to 1. The KMO value in this instance is 0.824, indicating that the data is thought to be sufficient for factor analysis. A number above 0.6 is usually regarded as satisfactory.

In this table 2, the approximate chi-square value is 1223.402. The degrees of freedom (Df) for the test are 28, and the p-value (Sig.) is 0.000. Overall, KMO measure indicates that the sampling adequacy is good, and Bartlett's test indicates that there are substantial correlations among the variables, supporting the presence of underlying factors. These findings provide confidence in conducting factor analysis on the given dataset.

Confirmatory Factor Analysis

The process of generating hypotheses about the connection among observable variables and their latent components is aided by Confirmatory Factor Analysis (CFA). Based on the outcome covariance matrix, CFA is a statistical method used to confirm the factor structure of a collection of observed variables (Luong & Flake, 2022).

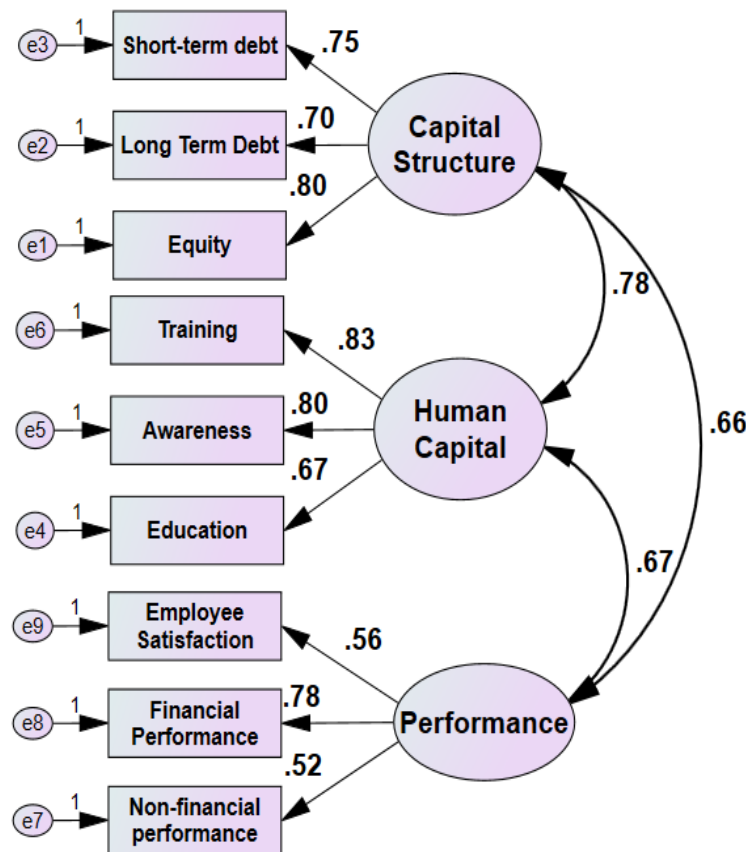


Figure 2: Confirmatory Factor Analyses

The result of the covariance association among the constructs has been shown in table 3 below.

Table 3: Covariance Matrixes

Constructs		Estimate	S.E.	C.R.	P	Label
Capital Structure	<--> Performance	.130	.020	6.365	***	H1
Capital Structure	<--> Human capital	.157	.022	7.267	***	H2
Human capital	<--> Performance	.091	.015	5.902	***	H3

Source: SPSS Output (2023)

The table 3 shows the covariance matrixes among different constructs in the model. Capital Structure <--> Performance covariance estimate among Capital Structure and Performance is 0.130. The standard error is 0.020, and the critical ratio is 6.365, which indicates a substantial association among these two constructs ($p < 0.001$). Capital Structure <--> Human Capital covariance estimate among Capital Structure and Human Capital is 0.157. The standard error is 0.022, and the critical ratio is 7.267, indicating a substantial association ($p < 0.001$) among these two constructs. The parameter label for this association is par_8. Human Capital <--> Performance

covariance estimate among Human Capital and Performance is 0.091. The standard error is 0.015, and the critical ratio is 5.902, suggesting a substantial association ($p < 0.001$) among these two constructs. Based on these covariance estimates, it can be concluded that there are substantial associations among Capital Structure and both Performance and Human Capital, as well as among Human Capital and Performance. These findings provide insights into the associations among these constructs and can be used to further analyze and understand their inter associations in the model.

Discriminant Validity

Table 3: Discriminant validity

	CR	AVE	MSV	MaxR(H)	Capital structure	Human capital	Organizational Performance
Capital structure	0.741	0.592	0.579	0.780	0.769		
Human capital	0.813	0.686	0.596	0.835	0.761	0.828	
Organizational Performance	0.732	0.678	0.572	0.733	0.704	0.772	0.760

Discriminant Validity Overall, the table 3 suggests that there is discriminant validity among the three constructs: Capital structure, Human capital, and Organizational Performance. This means that each construct is distinct and measures a different underlying trait. Composite Reliability (CR) constructs have high CR values (above 0.7), indicating good internal consistency and reliability.

Average Variance Extracted (AVE) constructs have AVE values above 0.5, indicating that they capture a substantial amount of variance and converge well. Maximum Shared Variance (MSV) for all the constructs is lower than their corresponding AVE values, which suggest good discriminant validity. The constructs do not share a substantial amount of variance with each other. Maximum Correlation with Heterotrait MaxR(H) values for all the constructs are lower than their corresponding AVE values, indicating good discriminant validity. The constructs have a low correlation with constructs that measure different underlying traits.

Structural Model and Hypothesis Testing

Figure 3: Structural Model of the Capital Structure Construct

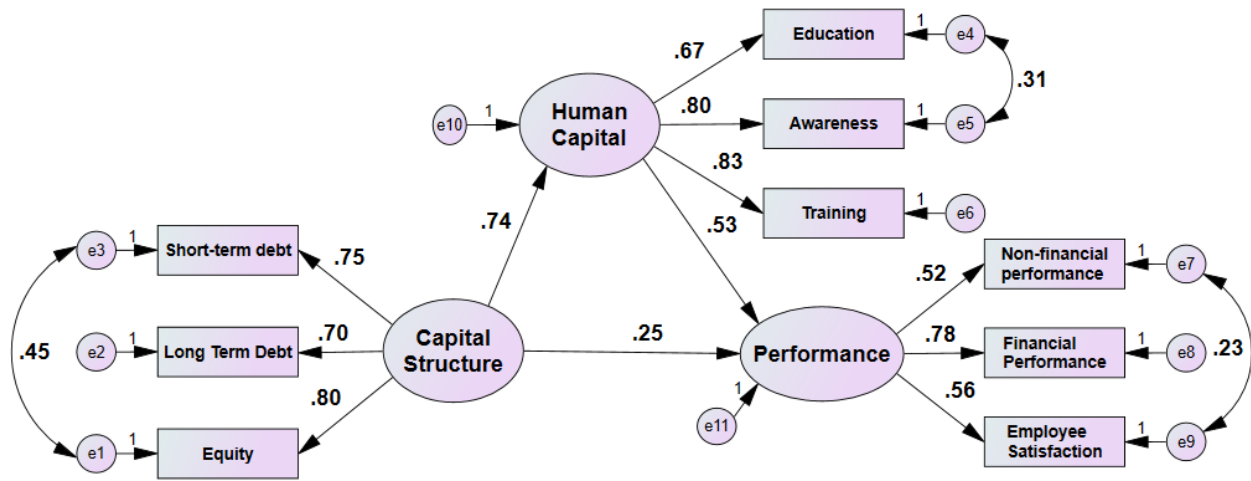


Table 4: Hypothesis Testing

Constructs		Estimate	S.E.	C.R.	P	Label
Human capital	<--- Capital Structure	.598	.065	9.145	***	H2
Organizational Performance	<--- Capital Structure	.227	.100	2.266	.023	H1
Organizational Performance	<--- Human capital	.457	.132	3.450	***	H3

Source: AMOS Output, 2023

The table 4 displays the estimates, manifested the coefficient among Capital Structure and Organizational Performance is 0.227 with a standard error of 0.100. The critical ratio is 2.266, and the p-value is 0.023. Since the p-value (0.023) is less than the significance level (commonly set at 0.05), we can conclude that there is a substantial association among Capital Structure and Organizational Performance. Therefore, Hypothesis H1 is supported, suggesting that Capital Structure has a substantial impact on Organizational Performance.

The coefficient among Capital Structure and Human Capital is 0.598 with a standard error of 0.065. The critical ratio is 9.145, and the p-value is less than 0.001 (represented as *** in the table). The p-value being less than 0.001 indicates a highly substantial association among Capital Structure and Human Capital. Thus, Hypothesis H2 is supported, indicating that Capital Structure has a substantial influence on Human Capital.

The coefficient among Human Capital and Organizational Performance is 0.457 with a standard error of 0.132. The critical ratio is 3.450, and the p-value is less than 0.001 (represented as *** in the table). The p-value being less than 0.001 indicates a highly substantial association among Human Capital and Organizational Performance. Therefore, Hypothesis H3 is supported, suggesting that Human Capital has a substantial impact on Organizational Performance. Study outcomes are consistent with previous studies like (Phu and Hong, 2020; Sisodia, Jادیyappa and Joseph, 2021; Rahman and Akher, 2021).

Model Fitness Test

The capacity of the model to replicate the current connection with the data examined under comparable conditions is referred to as model fitness.

Table 6: Model fitness

Measurement Category	Fit Indices	Model Value	Cut-off Value	Remark
Chi-Square	CMIN	93.622	-	
	DF	21	-	
	CMIN/DF	4.458	3-5	Fit
	P- value	.000	P>0.5	Not fit
Absolute fit measurement	GFI	0.947	>0.9	fit
	SRMR	0.020	< 0.08	Good fit
	RMSEA	0.095	< 0.08	fit
Incremental fit measurement	CFI	0.941	>0.9	Good fit
	IFI	0.942	>0.9	Good fit
	RFI	0.874	>0.9	Fit
	TLI	0.900	>0.9	Fit
parsimony fit measure	PNFI	0.541	>0.50	Fit
	PCFI	0.549	>0.50	Fit

Source: AMOS Output, 2023

Based on the table 6 results of GOF (Goodness-of-Fit) indices for the final one-factor model of the Capital Structure construct, here is an interpretation of the fit indices: The chi-square value of 93.622 with 21 degrees of freedom suggests a substantial difference among the observed and expected covariance matrices. This indicates a lack of fit. The ratio of chi-square to degrees of freedom is 4.458, which falls within the range of 3-5. This suggests an acceptable fit. The p-value of 0.000 is less than 0.5, indicating a poor fit. However, it is important to note that the chi-square test is sensitive to sample size, and small deviations from perfect fit can lead to substantial p-values in large samples.

The GFI value of 0.947 is greater than 0.9, indicating a good fit. Standardized Root Mean Square Residual (SRMR) value of 0.020 is less than 0.08, suggesting a good fit. Root Mean Square Error of Approximation (RMSEA) value of 0.095 is less than 0.08, indicating an acceptable fit. In Incremental Fit Measurement, Comparative Fit Index (CFI): The CFI value of 0.941 is greater than 0.9, suggesting a good fit. Incremental Fit Index (IFI) value of 0.942 is greater than 0.9, indicating a good fit. Relative Fit Index (RFI) value of 0.874 is greater than 0.9, suggesting an acceptable fit. Tucker-Lewis Index (TLI) value of 0.900 is greater than 0.9, indicating a good fit. Parsimony Normed Fit Index (PNFI): The PNFI value of 0.541 is greater than 0.50, suggesting a fit. Parsimony Comparative Fit Index (PCFI): The PCFI value of 0.549 is greater than 0.50, indicating a fit.

Mediation Analysis

Table 5: Mediation Analyses

Path	Effect	Value	Hypothesis	Result
Organization Performance ← Capital structure	Direct effect	0.25	H4 supported with p=***	Partial Mediation
Organization Performance ← Human Capital ← Capital structure	Indirect effect	0.39		
	Total Effect	0.64		

Source: AMOS Output, 2023

Table 5 presents the mediation analysis, which sheds light on the interassociations among Organization Performance, Human Capital, and Capital Structure. There is a statistically substantial (p=***) direct association among Organization Performance and Capital Structure of 0.25. This lends credence to Hypothesis 4 (H4), which holds that Organization Performance positively influences Capital Structure directly. The analysis not only shows the direct influence but also the indirect effect of Organization Performance on Capital Structure, which is mediated by Human Capital. The indirect effect, which is 0.39, indicates that Organization Performance influences Capital Structure favorably and partly via its effect on Human Capital.

The direct and indirect impacts added together yield the overall effect, which is equal to 0.64. This suggests that there is a positive and statistically substantial overall association among capital structure and organization performance. Given that both the direct and indirect effects of the mediation analysis are statistically substantial, it is possible to classify the situation as one of partial mediation. This indicates that there is a direct impact of Organization Performance on Capital Structure and that Human Capital acts as a partial mediator in the link among Organization Performance and Capital Structure.

Ultimately, the results of the mediation study demonstrate that Organization Performance positively affects Capital Structure directly as well as indirectly through its impact on Human Capital. The importance of taking into account both direct and indirect paths when analyzing the link among these crucial organizational performance is shown by the overall effect of 0.64.

These findings are similar with previous studies like (Ejike & Nike, 2020; Nyabakora, 2021; Wulandari, Paminto & Kusimawardani, 2022). Additionally, the indirect effect of Capital Structure on Organizational Performance through Human Capital highlights the importance of investing in and developing human resources to enhance overall organizational performance.

9. Result and conclusion

The results of the study demonstrated that examining the role that human capital plays as a mediator in the association among capital structure and performance improves the performance of coffee cooperatives. As a result, coffee cooperatives need to align their HRM practices with their financial management decisions. The implications of this alignment go beyond capital structure

and encompass organisational performance and resource allocation. The link among human capital and financial resources, as noted by Modigliani and Miller's theory, effects performance results, retained earnings, as recommended by the theory, may be leveraged by cooperatives to make investments in human capital development. This might entail providing financing for initiatives aimed at improving skills, development and research projects, or training programs—all of which help the company's human capital grow.

According to Myers and Majluf's (1984) Pecking Order Theory, businesses choose internal finance over external financing. This idea states that companies use earnings that are retained as their primary source of funding, subsequent to debt financing and equity financing. The results imply that human capital mediates the link underlying capital structure and performance in the setting of coffee cooperatives. Studies that view the same connection via the same theoretical lens of Pecking Order Theory (e.g., Phu and Hong, 2020; Sisodia, Jadiyappa and Joseph, 2021; Rahman and Akher, 2021) corroborate similar findings.

According to the Trade-off Capital Structure Theory, businesses should weigh the advantages and disadvantages of debt financing when deciding on their ideal capital structure. This idea states that there is a debt-to-equity ratio that maximizes the firm's worth. The study's conclusions suggest that human capital mediates the link among capital structure and performance in the context of coffee cooperatives. These findings are consistent with relevant earlier research that was based on trade-off capital structure theory, such as Kitenga et al. (2020), Thi Hong (2020), Arifa et al. (2020), and Kanbiro (2021). This suggests that coffee cooperatives might proactively regulate their capital structure to make investments in human capital while weighing the advantages of debt financing (tax benefits, financial leverage, etc.) against the drawbacks.

The irrelevance of capital structure theory was put out by Modigliani and Miller in 1958. They contended that the capital structure has no bearing on a firm's value in an ideal marketplace with no taxes or bankruptcy expenses. The study's findings, however, point to human capital as mediating the link among capital structure and performance in coffee cooperatives in the real world—that is, in imperfect markets. This reasoning is consistent with earlier research that built upon the Modigliani and Miller hypothesis, such as Shamsuddin et al. (2018), Ahmed & Mesfin (2017), and Arifa et al. (2020). This suggests that decisions about capital structure may have an effect on coffee cooperatives' capacity to make investments in human capital. Coffee cooperatives can proactively manage their capital structure to enable expenditures in human capital.

The study's conclusions are consistent with other empirical research that highlights the role of human capital in moderating the link among capital structure and performance, such as those of Eshetie and Sisay, 2018; Bolton, 2019; and Amanuel and Ensa, 2023. Previous research has demonstrated the beneficial effects of human capital investments on business performance, including staff development, training, and education (Durrah & Jathurika, 2018; Madushanka & Durrah, 2016). The idea that human capital plays a critical mediating role in the association among capital structure and performance in coffee cooperatives is further supported by connecting the study's findings with the body of empirical research already in existence.

In conclusion, the results of the study indicate that better understanding the mediating function of human capital improves coffee cooperative performance when it comes to capital structure choices. These results are corroborated by the body of empirical research on the significance of human capital in business performance, as well as by the Pecking Order Theory, Trade-off Capital Structure Theory, and Modigliani and Miller's Theory of Capital Structure.

10. Recommendations

The following suggestions are put forth in light of the results of the mediation study that looked at the connection among performance of a firm, human capital, and capital structure in Ethiopian coffee farmer's cooperatives.

First and foremost, the cooperatives must to keep making investments in the development of human capital a top priority. According to the study's findings, human capital is a key mediator in the association among capital structure's beneficial impacts and performance of a firm. The cooperatives can improve overall organizational performance by using their financial structure to improve the competencies, expertise, and skills of their staff.

Second, the cooperatives ought to manage their capital structures in a balanced manner. The findings indicate a strong positive correlation among capital structure and performance of a firm, but there is also a sizable indirect influence that is mediated by human capital. In order to engage in human capital development initiatives as well as improve performance directly, cooperatives should aim to optimize their financial structure.

Thirdly, in order to closely follow the effects of capital structure decisions on both human capital and business performance results, the cooperatives should improve their monitoring and assessment processes. They will be able to adjust their tactics as necessary to meet the targeted performance targets and make better-informed, data-driven decisions as a result.

Lastly, the cooperatives have to think about distributing these study results and optimal methodologies to other Ethiopian coffee farmer cooperatives. The whole coffee growing industry may gain insights on how to efficiently use capital structure and human capital to create sustainable organizational performance by promoting knowledge-sharing and collaborative learning. Overall, the recommendations highlight how crucial it is to manage investments in human capital and capital structure concurrently in order to maximize company performance within the framework of Ethiopian coffee farmer cooperatives. The cooperatives may improve their competitiveness and aid in the wider economic growth of the coffee sector by putting these methods into practice.

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