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Financing Social Enterprises in Tunisia: The Role of Equity, Diversity, and Integrity (EDI)

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Abstract— In the face of profound socioeconomic transformations, social enterprises play a decisive role in advancing sustainable development. Driven by a social mission, they seek to reconcile social performance with long-term viability. This research draws on several theoretical frameworks, including transaction cost theory, hierarchy theory, blended value, hybrid organizations, and the ESG and sustainable finance framework, to address the two objectives of our study: (1) assessing the impact of EDI (Equity, Diversity, Integrity) engagement on access to financing for 30 Tunisian social enterprises, particularly the Agricultural Development Groups (GDA) and the Mutual Agricultural Service Companies (SMSA); and (2) econometrically modeling the influence of EDI dimensions on the financial structure of a panel of 38 publicly listed companies between 2019 and 2024. These theoretical insights help illuminate how financing choices can shape the integration of EDI values into the practices of social enterprises. The findings indicate that EDI has become a positive signal for investors in a context of strengthened ESG standards. The study reveals a structural asymmetry: while EDI is valued by financiers to the benefit of listed companies, it has yet to translate into inclusive financing mechanisms for social enterprises. The findings open the way toward a hybrid financing model in which listed companies could act as responsible investors supporting the social innovation initiatives led by GDA and SMSA.

Keywords— EDI, social enterprise, listed company, ESG, financing

I. INTRODUCTION

Social enterprises combine profit-oriented activities with social objectives to generate both economic and social outcomes [3]. It has become generally accepted that applying the principles of EDI to the way social entrepreneurs operate can improve corporate governance, reduce the risk of investors being misled and enhance investors' confidence in a company's ability to achieve its goals ([1],[4]). Despite being explicitly aligned with EDI, social entrepreneurs have significant challenges in obtaining sufficient financial resources, which raises the question of whether mechanisms based on integrity and transparency provide access to external financing for social entrepreneurs.

This research addresses the following question: To what extent do Equity, Diversity, and Integrity (EDI) practices influence access to finance in Tunisia? To answer it, the paper adopts a dual approach. This approach allows for a comparative analysis of financing mechanisms across organizational forms.

Although EDI-related practices have been widely examined in the context of developed financial markets, there is a lack of evidence from North African countries. Tunisia provides a relevant setting characterized by the coexistence of capital markets and socially oriented organizations.

The paper adopts a comparative perspective to highlight a paradox related to equity, diversity, and integrity (EDI) in Tunisian context.

This approach helps build more general knowledge about the ways in which principles of ethical governance interact with financial tools, especially within conditions where the nature of institutions and markets affects companies' sustainability.

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II. METHODOLOGY

A. Social Enterprise Sample and Survey Design

The first empirical analysis is based on a field study conducted on a sample of 30 social enterprises operating in Tunisia. These organizations consist of Agricultural Development Groups (GDA) and Mutual Agricultural Service Companies (SMSA), which are collective entities pursuing social objectives and operating under mutualization principles. The selected enterprises are classified as women-led structures, as women represent more than 80% of total members, and approximately 93% of board members, reflecting a high level of gender diversity. The sample represents about 13% of all GDA and SMSA operating nationwide.

The sample consists of 30 women-led GDA and SMSA identified from the GIZ (2019) report, representing approximately 13% of active structures nationwide [5]. Based on this dataset, a structured questionnaire was designed to assess the extent to which social enterprises comply with Equity, Diversity, and Integrity (EDI) principles while ensuring economic viability.

From the methodological perspective, the combination of qualitative field research and econometric models can provide for a more comprehensive evaluation of the financing mechanisms related to EDI practices. The survey method provides for the consideration of organizational and governance factors which are not typically included within the parameters of financial datasets, especially when it relates to social enterprises. Simultaneously, the panel data method utilized within the context of listed companies can provide for the systematic evaluation of correlations between EDI practices and capital structure determinations.

This temporal distinction does not weaken the comparative logic of the study, as the objective is to contrast structural financing mechanisms rather than short-term dynamics.

B. Descriptive Indicators

Descriptive statistics were used to summarize key organizational characteristics, including year of establishment, geographical location, membership size, board composition, and financing mode. The results reveal a strong dominance of self-financing, as none of the surveyed social enterprises reported access to external bank credit. Gender diversity indicators show overwhelming women representation both at the membership and governance levels, highlighting the social orientation of these organizations but also their exposure to financing constraints.

III. DATA AND MODEL SPECIFICATION

A. SWOT Analysis of GDA and SMSA

A SWOT assessment highlights the main structural features shaping the development potential of focusing on women-led Agricultural Development Groups (GDA) and Mutual Agricultural Service Companies (SMSA) [2]**.**

TABLE I. SWOT SUMMARY FOR WOMEN-LED GDA AND SMSA

Strengths	Weaknesses	Opportunities	Threats

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Existing legal framework; trained board members; local production know-how	Weak legal literacy; unclear roles; weak market channels; insufficient mentoring	Regulatory revision; creation of sales outlets; tailored capacity building; ESS financing opportunities	Lack of specific legal framework in some agricultural sectors; limited credit access due to lack of collateral

B. Econometric Analysis (Second Sample: Listed Firms)

The second part of the study applies an econometric approach to examine the relationship between EDI (Equity, Diversity, Integrity) and corporate financing behavior. The analysis uses an unbalanced panel of 38 listed firms, representing 228 firm-year observations over the 2019–2024 period.

Estimations are conducted in EViews using the Ordinary Least Squares (OLS) method, to identify potential correlations between EDI practices and leverage patterns.

C. Model Specification

A sequential strategy is used to test EDI mechanisms progressively. In the original formulation, four models are estimated by integrating Equity, then Diversity, then Integrity, and finally a composite EDI index.

The equation is:

$$TDA\_{it} = \beta_0 + \beta_1\, DIV\_{it} + \beta_2\, LEV\_{it} + \beta_3\, SIZE\_{it} + \beta_4\, MARGIN\_{it} + \beta_5\, TANG\_{it} + \beta_6\, EDI\_{it} + \varepsilon\_{it}$$

Where TDA_{it} denotes the total debt-to-total assets ratio of firm i at time t.

Depending on the specification, EDI_{it} is alternatively replaced by EQUALITY**,** DIVERSITY**,** or INTEGRITY, and finally by the composite EDI index. To control for unobserved firm-specific effects, we replace the simple OLS approach with a panel data framework. We use the Hausman test to decide between Fixed and Random Effects, ensuring more robust coefficients for our 228 observations.

D. Variable Definitions

The econometric model includes the following firm-level and governance variables:

- TDA (Debt Structure): total debt divided by total assets.
- DIV (Dividend Policy**)**: dividend relative to earnings per share.
- LEV (Leverage): log of the debt-to-capital ratio.
- SIZE (Firm Size): log of total assets.
- MARGIN: margin and revenue extracted from firm financial databases.
- TANG (Asset Tangibility)**:** inventory to total assets ratio.
- EDI is a transparency-based index computed from annual reports using binary disclosure indicators.

E. Descriptive Statistics.

Table II reports the OLS regression results for the dependent and explanatory variables included in the model.

TABLE II. OLS REGRESSION RESULTS

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MODEL	COEFFICIENT	T STATISTIC
DIV	-0.20	-2.21**
LEV	0.16	3.77***
SIZE	-0.04	-1.80
MARGIN	0.002	0.4
TANG	0.87	4.95***
EDI	1.66	2.64**

*** p<0.01, ** p<0.05, * p<0.10

Standard diagnostic tests were performed and confirm robustness.

IV. EMPIRICAL RESULTS AND DISCUSSION

The empirical findings are discussed in the context of various alternative theories such as the Pecking Order Theory, transaction cost theory, and the sustainable finance approach. Traditional theories emphasize firms' preference for internal funding.

However, the current trends in ESG-based investment strategies indicate that non-financial factors may also play a crucial role in the funding decisions of lenders and investors. In this respect, EDI practices may be considered as a means of improving governance and minimizing information asymmetry.

The econometric validation of the OLS specifications relies on standard diagnostic checks. The model exhibits an R-squared of 0.42.

A. Control Variables

The results confirm that traditional financial determinants significantly shape corporate leverage. The leverage proxy (LEV) displays a positive and highly significant association with total debt, suggesting that firms already exposed to debt tend to increase their reliance on external financing.

Although both TDA and LEV reflect aspects of leverage, LEV is included as a control variable to capture the firm's historical financing intensity; preliminary Variance Inflation Factor (VIF) tests were conducted to ensure that multicollinearity does not bias the reported coefficients.

By contrast, firm size **(**SIZE**)** and dividend policy (DIV) show negative and statistically significant effects, indicating that larger firms and dividend-paying firms may rely more on internal funds or alternative financing channels, thereby reducing dependence on external debt. Asset tangibility (TANG) presents a positive and strongly significant effect, consistent with the role of tangible assets as collateral that facilitates access to borrowing. In contrast, the profitability margin (MARGIN) does not appear statistically significant across specifications.

In this study, TANG is proxied by the inventory-to-total-assets ratio to specifically capture the role of liquid circulating assets as collateral, which is particularly relevant for the operational cycles of Tunisian firms in the sample.

B. The Role of EDI and Comparative Interpretation

The positive and significant coefficient of the composite EDI index provides meaningful insights in light of the theoretical frameworks mobilized in this study.

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While the Pecking Order Theory predicts a preference for internal financing, the findings suggest that firms demonstrating stronger EDI commitment are more likely to progress toward external debt financing, potentially through lenders and investors aligned with ethical and ESG-oriented principles [6]. This dynamic is consistent with the sustainable finance framework. In this setting, EDI may act as a mechanism that reduces uncertainty and perceived information asymmetry, thereby supporting access to debt financing.

A central contribution of this study is the differentiated influence of EDI components across models. Equity and Diversity are both positive and highly significant at the 1% level, suggesting that listed firms integrating these dimensions tend to exhibit higher leverage, possibly due to improved access to funding. In contrast, Integrity **-** proxied by a transparency index derived from annual report disclosures **-** appears statistically insignificant.

This may indicate that disclosure-based transparency has not yet become a decisive factor in shaping debt capacity over the 2019–2024 period, or that keyword-based measures may not fully capture deeper integrity mechanisms. Importantly, the composite EDI index remains positive and significant at the 5% level, highlighting that the combined effect of the three pillars is more influential than any single dimension.

The comparative perspective between the two samples strengthens the interpretation. Evidence from the 30 social enterprises (GDA/SMSA) supports the Pecking Order Theory in a strict manner: these organizations rely almost exclusively on self-financing, reflecting structural constraints and persistent barriers to credit access. Conversely, the econometric results for listed firms nuance the Pecking Order prediction.

While we acknowledge the temporal gap between the 2019 GDA data and the 2019-2024 listed firms panel, this dual dataset provides a critical baseline to compare structural credit barriers. The strong significance of Equity and Diversity, as well as the positive effect of the composite EDI index, suggests that EDI practices can reduce perceived informational frictions and function as a quality signal that facilitates access to debt.

These findings are consistent with sustainable finance and stakeholder-based perspectives. Investors and lenders appear to increasingly value social performance—particularly equity and diversity—as part of overall firm value, translating this into improved access to capital. In transaction cost terms, EDI engagement may reduce monitoring and contracting costs for financiers [7].

V. CONCLUSION

This research focused on the dual challenge of financing social enterprises in Tunisia by examining the interaction between the principles of Equity, Diversity, and Integrity (EDI) and access to capital. To address this issue, we adopted a mixed-method approach combining a qualitative analysis of 30 social enterprises (GDA/SMSA) with a quantitative econometric analysis based on a panel of 38 listed firms over the period 2019–2024. The integration of these two analyses reveals a central paradox in the Tunisian context. On the one hand, the qualitative evidence shows that social enterprises (GDA/SMSA) are hybrid organizations by nature, deeply rooted in EDI values [2].

They display governance practices that promote equity (with a strong women representation on boards), diversity, and collective decision-making, while pursuing an integrity-oriented mission. Yet, despite embodying EDI principles, these actors remain largely excluded from formal financing channels, being confined to self-financing and constrained by persistent difficulties in accessing credit. On the other hand, the quantitative analysis suggests that for listed firms, representing a potential source of capital, EDI engagement has increasingly become a financial lever.

Our OLS regressions indicate that the overall EDI index is positively and significantly associated with higher leverage levels (TDA). The overall consistency of our study lies in highlighting this critical disconnect: the Tunisian financial market is beginning to value EDI, thus supporting the sustainable finance framework, by rewarding large listed firms that incorporate these principles into governance and investment strategies. However, these valuation mechanisms have not yet extended to social enterprises, even though they are the primary carriers of these values.

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In terms of policy, the implications of the results point to the importance of financial institutions and policymakers creating financial instruments that take into consideration the nuances of social enterprises more effectively. Although the principles of EDI have gained acceptance in the world of capital markets, there is a lack of effective implementation of these principles in the realm of inclusive financing instruments. There is a need to bridge the gap through special financing instruments, a guarantor fund, or a partnership program among listed companies and social enterprises. These findings contribute to ongoing debates on sustainable finance and inclusive growth in developing financial systems. Managers of social enterprises must improve their formal governance and disclosure to enhance financial sustainability.

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