

INSTITUTIONAL DETERMINANTS OF CREDIT ACCESSIBILITY: A CROSS-COUNTRY ANALYSIS USING DOING BUSINESS INDICATORS

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Abstract

Business development, entrepreneurship and the overall economic growth largely depend on access to credit, which also differs greatly among countries based on institutional and regulatory environment differences. The nature of business regulations on access to credit is hence important in enhancing the operations of the financial markets and the promotion of economic growth. This study examines the relationship between selected business regulatory indicators and access to credit across countries. A quantitative panel research design was employed using data from the World Bank Doing Business historical database. After data cleaning and filtering, the final dataset consisted of 1062 observations covering multiple economies and years. The analysis included descriptive statistics, Pearson correlation analysis, graphical assessment, and a fixed-effects regression model with clustered standard errors to evaluate the influence of regulatory indicators on credit accessibility. The results indicate that starting a business, enforcing contracts, and resolving insolvency have positive and statistically significant effects on access to credit, suggesting that improvements in regulatory efficiency and legal frameworks can support better lending conditions. In contrast, registering property and paying taxes were not statistically significant in the fixed-effects model. The findings highlight the importance of institutional quality in shaping financial accessibility and suggest that reforms aimed at strengthening legal systems and reducing administrative barriers may improve credit market development across economy.

Keywords: *access to finance, credit markets, financial development, institutional quality, economic growth*

1. Introduction

Access to credit is one of the key factors in economic progress as firms and individuals use credit to fund productive investments, make investments in innovation, and increase the scale of their business. An appropriate distribution of credit resources through financial systems helps to increase economic growth, enhance productivity, and activity in the sphere of entrepreneurship (Armeanu et al., 2015). Access to finance continues to be a major challenge to businesses, especially in small and medium-sized enterprises in most economies. Restraints on credit can keep firms from investing in new technology, new markets, or expanding operations, and thus the performance of the overall economy is inhibited (Volk and Trefalt, 2014). As a result, the research on the factors that determine the availability of credit has gained significance in economics and business research. Access to credit is directly connected with the institutional and regulatory environment in which the financial markets exist. Good financial systems are not simply a question of having banks and other financial intermediaries, but also having a supportive regulatory framework that creates less uncertainty and risk to all parties concerned, both lenders and borrowers. Laws that regulate business operations determine the ease with which firms can raise capital, especially in a business environment where the quality of institutions may differ across nations (Popov, 2018). Financial market functioning can be enhanced and access to capital facilitated by institutional arrangements to provide legal protection, transparency and effective dispute resolution mechanisms. Financial accessibility is especially sensitive to entrepreneurship and business development. External funding is a common practice among entrepreneurs to start up new businesses, grow the business and undertake innovations. In the case of proper functioning of credit markets, they provide financial resources that can help the entrepreneurial ecosystems expand and help with economic development (Naudé, 2014). On the same note, business creation and administrative hurdles can be minimized; this will support dynamic entrepreneurship and enhance access to financial resources (Mason and Brown, 2014). In that regard, institutional frameworks that determine the regulation of business are very important in determining the financial opportunities of firms. Other past research has also pointed to the correlation between financial accessibility and the performance of firms. Access to credit has been shown to influence the growth and sustainability of businesses by enabling them to invest in productive assets, manage operational risks, and expand into new markets (Włodarczyk et al., 2018). Companies that are operating in a place where access to finance is low might find it difficult to grow faster and be more competitive compared to those in the financially developed economies. Moreover, financial barriers might become even more serious due to regulatory restrictions, especially when administrative processes, legal enforcement systems, or institutional inefficiencies disrupt the business activity (Jaradat et al., 2018). It has also been reported that institutional quality is a significant factor in financial market development. Regulatory frameworks where the rules are clear and effective enforcement mechanisms are in place, as well as powerful legal safeguards, are more likely to encourage a well-developed financial market and better access to capital (Christensen et al., 2016). In the same vein, research studies on regulatory environments in different countries indicate that the quality of regulation may have a strong impact on financial market performance, such as the growth of the stock market and financial accessibility (Umar and Nayan, 2018). These results indicate the significance of regulatory institutions when it comes to the development of financial systems and easy access to finance. Besides, institutional frameworks determine the interaction between entrepreneurship and economic growth. Those countries have stronger institutions, which are better developed and have a higher entrepreneurship activity and a better financial market, that are leading to the development of the economy (Bosma et al., 2018). On the other hand, low institutional settings have the potential to add a barrier to financial access through elevated transaction costs, legal ambiguity, and information asymmetry between lenders and borrowers. Although a large amount of literature has been done on the link between financial development and economic growth, little focus has been placed on the importance of individual business regulatory measures in the determination of cross-country variations in credit availability. Although there are a number of studies done to determine the relationship between financial systems and economic performance, there are limited studies that have focused on how specific features of business regulation affect the availability of credit. The cross-country institutional indicators are a good chance to investigate these relationships, as they enable making systematic comparisons of the regulatory environment in different economies (Kysucky, 2015).

To address this gap, the present study examines the relationship between selected business regulatory indicators and access to credit using internationally comparable institutional data. The discussion is based on the most important regulatory areas affecting the business operations, such as procedures of business entry, the system of property registration, tax compliance procedures, contract enforcement mechanisms, and the insolvency systems. These indicators may represent pertinent aspects of the regulatory environment that may affect financial accessibility between firms.

This research paper aims at exploring the role of institutional and regulatory provisions in determining credit access in different countries. To provide empirical data on the influence of institutional variables on the availability of credit, the paper will examine the relationship between the business regulation indicators and the financial accessibility. These relations are relevant to comprehend the necessity to create the regulatory reforms to make financial accessibility and business development more accessible.

2. Methodology

2.1 Research Design

In the present study, the research design is a quantitative panel design, which will be employed to determine the correlation between the measures of business regulation and access to credit among nations. The panel data are used to isolate the dissimilarities between countries and time dynamics. Descriptive statistics are constructed in the analysis to quantify the

correlation, and a fixed-effects regression model is used to figure out the relations between regulatory factors and credit accessibility.

2.2 Data Source

In the empirical analysis, the statistics of the World Bank data on the Doing Business database are used, which only show internationally comparable variables to evaluate the business environment in various economies. The data set includes information regarding the entry of businesses, registration of property, payment of taxes, enforcement of contracts and the solving of insolvencies. After data cleaning and filtration, the analysis dataset is 1062 observations across different countries and years (World Bank, 2020).

2.3 Variable Selection and Measurement

This study examines the relationship between access to credit and several institutional indicators that reflect the regulatory environment affecting business activities. The variables were chosen according to their suitability for financial accessibility and institutional quality in the business environment. The dependent variable is access to credit, which represents the ability of firms and individuals to obtain financing from financial institutions. This indicator in the Doing Business framework indicates how strong the legal rights of both borrowers and lenders are and the availability of systems of credit information. The more the scores, the higher the level of legal protection and credit information infrastructure. There are five regulatory indicators of the independent variables. Measuring business start-ups assesses the processes, time and cost involved to start up a new company, and a low number of administrative hurdles is an indication of a more conducive and perhaps better access to funds. The efficiency of property registration systems and security of property rights can be captured by registering property, which can then be used to lend by enhancing collateral mechanisms. Tax payment reflects on the administrative cost of tax compliance, which includes the payment periods and the time taken to meet tax obligations, which are subject to affect business transparency and operational efficiency. The enforcement of contracts measures the performance of the judicial systems in commercial dispute resolution, where effective enforcement of contracts may minimize transaction risks and enhance lender trust. Lastly, the insolvency resolutions are a measure of efficiency of bankruptcy procedures and creditor rights as well, which are crucial in ensuring financial stability and enhancing the operations of the credit market.

2.4 Data Preparation

Prior to statistical analysis, the data were subjected to a number of preprocessing operations to guarantee data quality and consistency of analysis. To prevent a biased estimation, the non-informative and missing values were eliminated. Data consistency and standardization were also screened and, where necessary standardized. The resulting dataset after the cleaning of data was organized as a panel dataset, which comprised various countries across a number of years. This leads to an analysis that is capable of taking into account fairly time-varying changes in the institutions in addition to the cross-country variations.

2.5 Statistical Analysis

The empirical study took place in three steps. First, descriptive statistics were done to describe the distribution of the variables and to determine patterns in the data. Mean, standard deviation, minimum and maximum values were employed to give a summary of the regulatory environment and financial accessibility of various countries. Second, the Pearson correlation analysis was conducted to analyze the pair-wise relationships of the variables. This step helps to identify potential associations between regulatory indicators and access to credit while also assessing potential multicollinearity among explanatory variables. Third, the study employed a fixed effects regression model to estimate the relationship between institutional indicators and access to credit. Cross-country panel studies rely heavily on fixed effects models since they address country-specific variables which vary with time; these unobservable variables include legal traditions, institutional frameworks, as well as cultural aspects.

The econometric model can be expressed as follows:

$$Credit_{it} = \beta_0 + \beta_1 StartBusiness_{it} + \beta_2 Property_{it} + \beta_3 Taxes_{it} + \beta_4 Contracts_{it} + \beta_5 Insolvency_{it} + \alpha_i + \varepsilon_{it}$$

where:

- $Credit_{it}$ represents access to credit in country i at time t
- $StartBusiness$, $Property$, $Taxes$, $Contracts$, and $Insolvency$ represent the regulatory indicators
- α_i captures country-specific fixed effects
- ε_{it} represents the error term

To enhance the accuracy of the statistical inference, the country-level clustered standard errors were applied. Clustering takes into consideration the possibility of correlation of errors within the countries across time and gives stronger estimates of standard errors.

3. Results

3.1 Descriptive Statistics

The descriptive statistics of the variables that are included in the analysis is reported in Table 1. The sample comprises 1062 observations of various economies and years. The average access to credit score is 49.87, with a relatively large

standard deviation (23.49), indicating substantial variation in financial accessibility across countries. Starting a business has the highest mean score (74.23) of the explanatory variables, and this implies that most economies have established fairly simple business entry procedures. Conversely, the average value of insolvency resolution is less (42.21) with a high dispersion (SD = 23.32), indicating variations in institutions that regulate the practices of bankruptcy and creditors' security. Likewise, registering property, paying taxes and enforcing contracts have means of 60.74, 68.01 and 55.49, respectively. These findings indicate a significant range of differences in the quality of regulation by different economies and that institutional environments vary significantly among different countries.

Table 1. Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Access to credit	49.87	23.49	0.00	100.00
Starting a business	74.23	17.88	2.21	99.62
Registering property	60.74	18.29	0.00	95.41
Paying taxes	68.01	17.05	0.00	100.00
Enforcing contracts	55.49	13.62	6.13	84.15
Resolving insolvency	42.21	23.32	0.00	93.89

3.2 Global Trends in Access to Credit

Figure 1 illustrates the global trend in average access to credit scores between 2014 and 2020. The number demonstrates a steady positive trend over the course of time. The average credit score has improved in the world by about 44 points from 2014 to almost 56 points in 2020, which shows that the world is slowly gaining access to finances. This successful trend indicates that a lot of economies have put up reforms to enhance financial systems, enhance credit information infrastructure and legal protection of lenders. Such institutional enhancements are seen to have helped in the improvement of access to finance between countries.

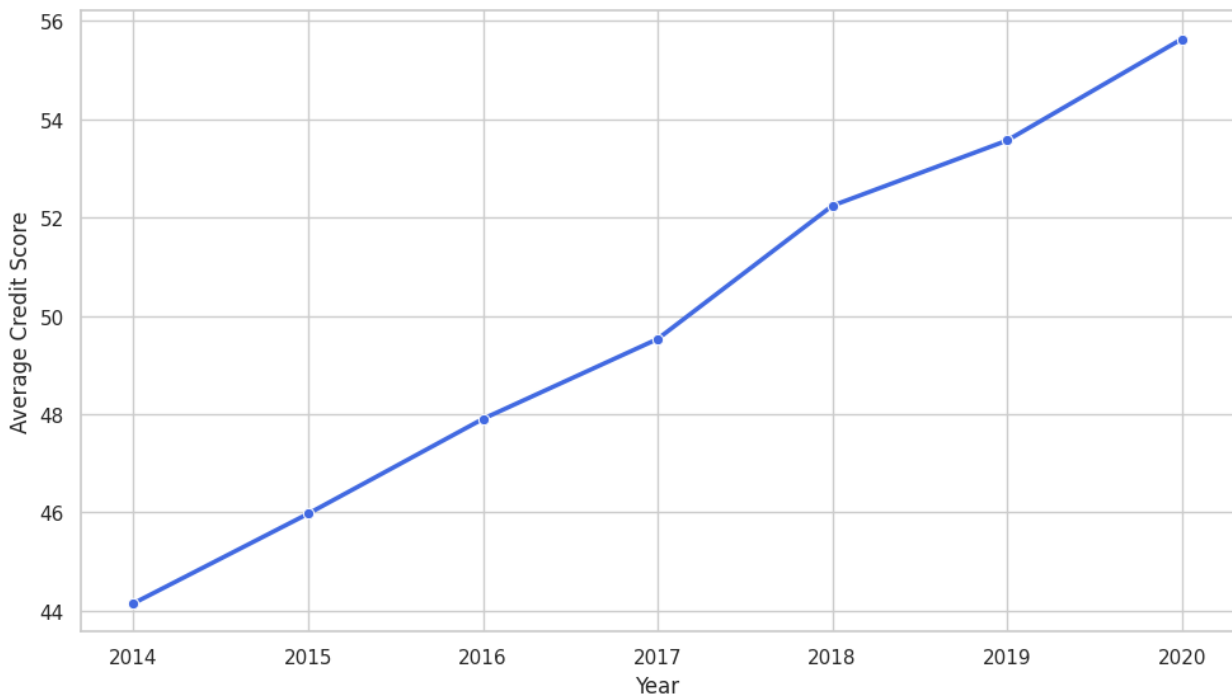


Figure 1. Global Trend of Access to Credit Scores Over Time

3.3 Correlation Analysis

The Pearson correlation between the variables in the study is given in Table 2. The results indicate that access to credit is positively correlated with all regulatory indicators, although the strength of the relationships varies. The strongest correlation is observed between resolving insolvency and access to credit, suggesting that economies with more effective insolvency frameworks tend to exhibit higher levels of financial accessibility. It is also seen that positive interactions exist between registering property and enforcing contracts as the laws are complementary to reforms in the business

environment. In general, the value of the correlation coefficients indicates that multicollinearity is not going to be a major concern in further regression analysis.

Table 2. Correlation Matrix

Variable	Access to credit	Starting business	Registering property	Paying taxes	Enforcing contracts	Resolving insolvency
Access to credit	1.000	0.407	0.442	0.317	0.379	0.544
Starting business	0.407	1.000	0.413	0.542	0.420	0.465
Registering property	0.442	0.413	1.000	0.517	0.621	0.518
Paying taxes	0.317	0.542	0.517	1.000	0.476	0.445
Enforcing contracts	0.379	0.420	0.621	0.476	1.000	0.469
Resolving insolvency	0.544	0.465	0.518	0.445	0.469	1.000

3.4 Relationship Between Contract Enforcement and Credit Accessibility

The association between contract enforcement and access to credit is illustrated in Figure 2, which presents a scatter plot together with a fitted regression line. The relationship between the two variables in the figure is evidently positive. Economies that have more effective contract enforcement tend to have more credit accessibility. This trend indicates that an efficient judicial system and the credibility of enforcing contractual commitment minimizes the uncertainty in financial dealings, and more lenders are convinced, hence allowing more credit to be availed.

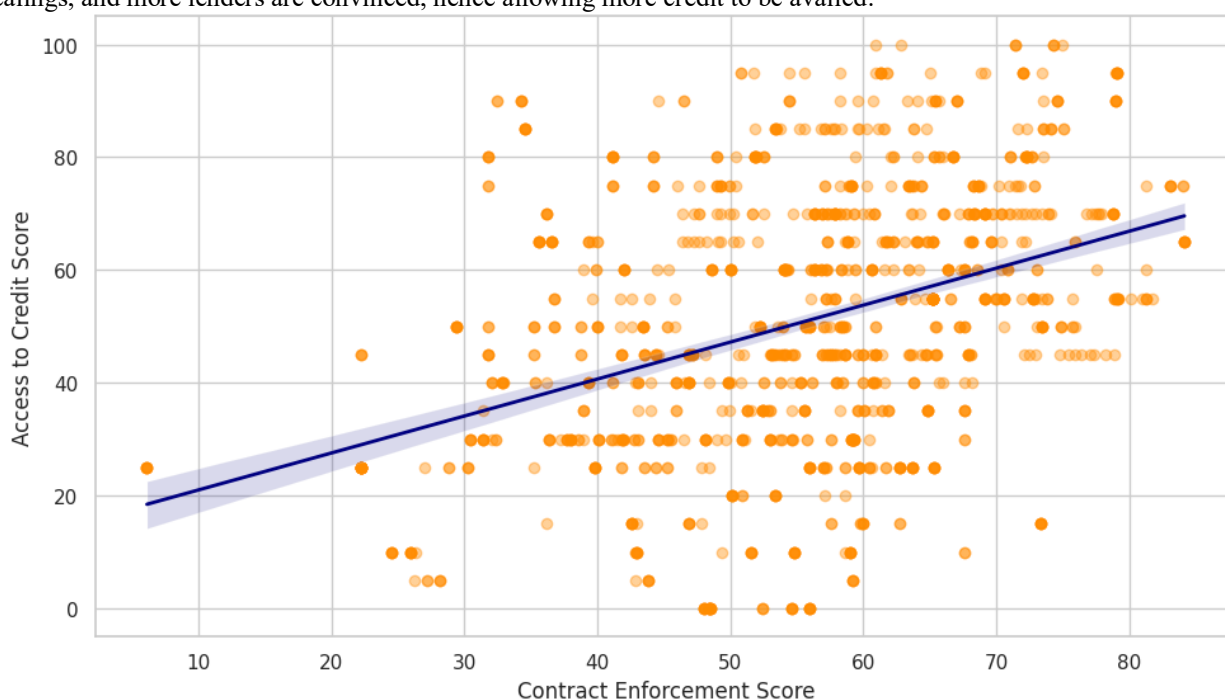


Figure 2. Relationship Between Contract Enforcement and Access to Credit

3.5 Fixed Effects Regression

To investigate the effects of regulatory indicators on financial access and control the effects of unobserved country-specific heterogeneity, a fixed effects regression model with clustered standard errors was estimated (Table 3). The findings indicate that several institutional variables play an important role in shaping access to credit. In particular, starting a business demonstrates a positive and statistically significant association with credit accessibility ($\beta = 0.2748, p = 0.002$). This finding indicates an option of reducing business entry processes as a way of enabling firms to access external funding. Likewise, enforcing contracts has a strong positive impact ($\beta = 0.001 = 1.2502$); that is, the way the judicial system and the mechanisms to enforce the contracts are improved can substantially increase the functioning of the financial market.

Table 3. Fixed Effects Regression Results (Clustered Standard Errors)

Variable	Coefficient	Std. Error	t-value	p-value
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Starting business	0.2748	0.0904	3.0386	0.0024
Registering property	0.2461	0.1440	1.7083	0.0876
Paying taxes	0.1226	0.1143	1.0730	0.2833
Enforcing contracts	1.2502	0.3656	3.4195	0.0006
Resolving insolvency	0.4570	0.1360	3.3598	0.0008

Observations = 1062; $R^2 = 0.935$; Adjusted $R^2 = 0.919$

The coefficient of resolving is also positive and significant ($\beta = 0.4570$, $p = 0.001$), which also emphasizes the relevance of well-developed bankruptcy procedures and protection systems by creditors in enhancing access to credit. In comparison, registering property and making taxes have statistically insignificant effects in the fixed effects specification, such that their effects may be partly capturing institutional differences among economies and not the cross-country changes.

3.6 Regional Differences in Credit Accessibility

Figure 3 shows the average access to credit scores per region of the world, with significant regional differences. The most average credit accessibility in Europe and Central Asia is in the high-income OECD countries. Comparatively, Sub-Saharan Africa and the Middle East and North Africa have lower credit scores, which is an indicator of poor financial infrastructure and institutional arrangements. Such regional variations imply that the quality of regulatory and institutional development is still a crucial factor of financial market performance.

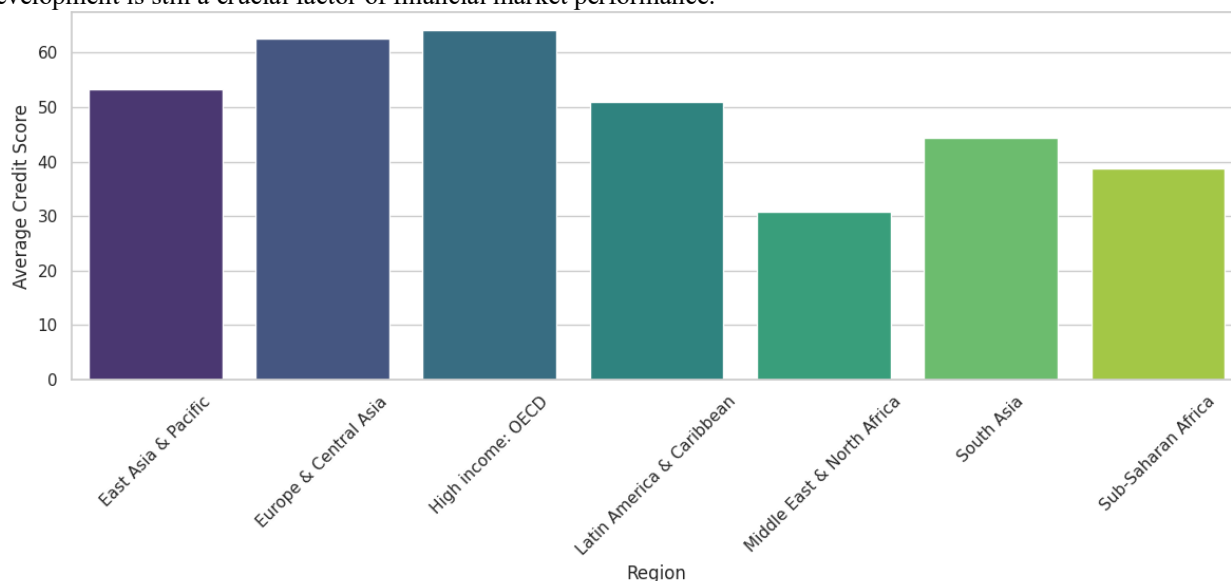


Figure 3. Average Access to Credit Score by Region

4. Discussion

The ability to access credit in different economies seems to be tightly connected with the institutional and regulatory framework of financial markets functioning. The findings reveal that initiating a business, enforcing a contract, and dealing with insolvency show a strong positive correlation with the credit accessibility and provide evidence that a higher welfare in regulation effectiveness and legal regulations leads to better lending terms. The positive impact of the entry of businesses shows that the administrative barriers to the entry of firms can be minimized to motivate the formalization of firms and enhance their exposure to finance institutions, among other things, facilitating them to access finances more easily. Correspondingly, the enforcement of contracts is relevant in mitigating the lending risks because effective judicial systems can enable lenders to recover their claims by use of effective legal systems. The resolution of insolvency also helps in the accessibility to credit by offering the structured procedure of addressing the defaulting of the borrowers, which enhances the confidence of the creditors and promotes lending. Comparatively, property registration and payment of taxes were not significant in the fixed-effects model. Although property registration has the potential to enhance collateral mechanisms, and tax systems have the potential to enhance transparency, their implication on credit markets may be subject to wider financial and institutional circumstances. The trends of the figures in the region also imply that economies

with superior institutional frameworks and better financial conditions are likely to have high credit accessibility levels as opposed to those with less developed financial environments and institutional frameworks.

The results align with previous research indicating that access to credit remains a major constraint for firms and households in many developing economies, particularly where institutional structures are weak or financial systems are underdeveloped (Linh et al., 2019). The empirical data also provide support that enhanced access to financial services can sustain wider economic results, such as a decrease in poverty and greater involvement in economics, which explains why access to credit is essential to socioeconomic development (Ampah et al., 2017). In the same vein, the studies that analyze the performance of firms in the African economies demonstrate that better access to finance can foster business productivity and growth, indicating that the role of financial accessibility in the development of enterprises is also significant (Fowowe, 2017). Other studies emphasize that firm access to credit is influenced not only by borrower characteristics but also by institutional and financial market structures, indicating that the broader regulatory environment plays a crucial role in shaping lending outcomes (Presbitero and Rabelotti, 2016).

Cross-country studies also indicate that better financial access could help to promote entrepreneurship by allowing companies to acquire the capital needed to start a business and expand it (Anton and Bostan, 2017). Besides that, the European small and medium enterprises' performance shows that financing patterns differ across the country, contingent on the institutional quality and regulatory environment, which once again underscores the effect of the national environment on credit provision (Andrieu et al., 2018). Entrepreneurial ecosystems and the activities of innovation have also been demonstrated to be influenced by institutional structures, indicating that financial systems are not the only sphere of regulatory effects, but the overall process of economic development (Fini et al., 2017). The information gathered in the emerging markets also shows that institutional frameworks and banking systems play a crucial role in determining the success of firms in accessing financing (Dong and Men, 2014). On the same note, cross-country studies on financial institutions have indicated that the conditions of institutional and financial performance may influence the lending behaviour and credit provision of different economies (Abrar, 2019).

These results have a number of significant implications for policymakers and financial institutions. To begin with, access to credit has to be improved through a multidimensional institution-wide approach and not through individual policy interventions. The regulatory reforms that facilitate the entry into business, increase the system of justice, and improve the insolvency processes can contribute to making the credit markets easier and problem-free to enter. Second, the policymakers cannot overlook the fact that legal and regulatory institutions are directly associated with the financial accessibility. The transparent regulatory system, the effective systems of dispute resolution, and the effective systems of creditor protection can contribute to the creation of more stable and credible financial markets. Third, it could benefit the financial institutions by influencing the environment whereby the functional systems reduce the risks of lending, and the legal protection is clear as well. The existence of good regulatory systems will assist in fostering the development of credit markets and more participation in formal financial systems.

Despite the fact that some insights have been provided in the analysis, there are several limitations that should be taken into consideration. The study is carried out using standardized cross country regulatory indicators that only capture the formal institutional structures but may not fully capture the differences in the policies being implemented, enforcement or informal institutionalization policy practiced or enforced in the different countries. These variables are capable of affecting the availability of credit that cannot be well observed on the indicators that are available. In addition, the research is done on institutional actions at the national level rather than borrowing behaviour by the firms. It implies that among its findings, the results focus on the institutional correlates as well as the availability of the credit but do not directly account how individual firms face credit constraints or credit terms.

The further research can generally broaden the analysis by employing the financial information on the firms level, the indicators of the banking segment or other indicators of the financial market development. These practices can provide greater information regarding the impacts of the institutional environments on the lending practice and financial accessibility in economies.

5. Conclusion

The conditions of institutional and regulatory settings continue to play a major role in the activities of credit markets in nations. The results indicate that better access to credit is linked to business entry process, contracting enforcement, and insolvency resolving processes, and this highlights the significance of legal certainty and efficiency of regulatory bodies in facilitating financial access. However, property registration and tax administration were not found to be generally significant in the fixed-effects model, which implies that their impact can be indirect or contingent on larger institutional environments. Such outcomes suggest that the availability of credit cannot be reinforced only by financial-sector growth. Reforms, which ease entry barriers and make judicial systems more effective and develop viable insolvency systems, tend to offer a firmer basis for inclusive and stable credit markets. The differences between regions, as seen in the analysis, also support the position of institutional quality in determining the financial results. Though the study offers cross-country data on the institution factor of credit accessibility, the study is constrained by the fact that it utilized standardized regulatory indicators, as opposed to firm-level borrowing data. The results could be expanded in further studies through the inclusion of firm-specific financial data and other variables in the banking-sector to better understand the impacts of institutional reforms on the actual credit terms and borrowing behavior.

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