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Technology and government regulation: A conceptual perspective of entrepreneurial orientation on creditworthiness of micro-enterprises

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Owing to globalization, enterprises continue to face increasing pressure from competition across the globe. When compounded with the changing needs of customers, complex business uncertainty and market instability, it becomes apparent that enterprises face increasing challenges in improving and maintaining business performance over time unless they actively manage these pressures. Entrepreneurs need to embrace an entrepreneurial mindset to recognize the threats and opportunities in their environs to ensure that their enterprises find a place in the financial sector and access to credit with ease. Entrepreneurial Orientation (EO) is often pointed out as an antecedent of competitive advantage, growth and superior performance. However, the question that remains unanswered is what effect EO has on firm creditworthiness in the face of government regulation and technological factors. This study aimed at establishing how EO impact on the creditworthiness of an enterprise. This is a conceptual study with a detailed literature review of the constructs. The review concludes that EO is a determinant of creditworthiness thus a driver of performance in microenterprises. Government regulations and technology are key in ensuring that EO has optimal effect on creditworthiness.

Key words: Entrepreneurial orientation, government, regulation, technology, credit, worthiness, enterprise.

INTRODUCTION

Small and Medium Enterprises are essential to all economies in the world, but especially to those in developing countries and, within that broad category, especially to those with significant employment and income distribution challenges (Kajalo and Lindblom, 2015). To build entrepreneurial orientation (EO) into small and medium enterprises is primarily a task of strategic decision-makers. If strategic managers and the culture of a given firm together generate a strong motion to innovate, to accept risks and aim for new entrepreneurial opportunities, one can speak of a firm that is characterized by EOs (Kosa et al., 2018).

Growth-oriented entrepreneurial ventures demonstrate unique financial needs not served by optimal capital structure rules (Long, 2013). Moreover, micro-enterprises face hurdles concerning with regard to funding their operations, which makes it difficult for these ventures to sustain their growth aspirations (Chimucheka and Mandipaka, 2015). Different capital structures become optimal at various stages during the life-cycle of the firm.

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For a venture embarking on a high growth trajectory, its capital structure must incorporate both equity-based (e.g. angel finance, venture capital and private and public equity) and debt-based (e.g. trade credit, short-term bank credit, and intermediate-term financial institution credit) financing, with debt financing forming a significant proportion of the venture’s funds, especially in the early stages (Beltrame et al., 2019).

Despite the enormous contribution of micro-enterprises to the growth of the economy, they hardly access financial products from universal banks as a result of their inability to meet conditions associated with the administration of bank products (Kessey, 2014). Even though the entrepreneurial venture needs assured debt financing, banks face two problems in determining creditworthiness and making such funds available: asymmetric information and moral hazard, arising because of the principal-agent nature of the relationship (Kosa et al., 2018). Creditors face uncertainty about the creditworthiness and paying capacity of potential entrepreneurial ventures they could lend to, resulting in the problem of asymmetric information (Beltrame et al., 2019). On the other hand, the moral hazard problem arises if the entrepreneur behaves opportunistically after receiving credit and defaults on repayment.

Entrepreneurial and other micro-enterprises face a myriad of challenges in the market for the reason that they are disadvantaged in obtaining financial credit because banks and other financial organizations consider extending credit to significant, ongoing companies to be less risky and incur fewer transaction costs (Wong et al., 2016). Previous studies have linked EO to superior performance and subsequent improvement of credit worthiness of SMEs (Vaznyte and Andries, 2019). Financial institutions are faced with the herculean task of information asymmetry where less is known about the borrowers and project to be undertaken, including the likelihood of debtors paying back (Huang et al., 2014). Bank loan managers feel more informed and confident with large, established businesses, as they are apt to believe they already understand the abilities and intentions of business managers.

This study advances the argument that micro-enterprises can build upon EO and leverage technology within the prevailing government regulations to develop a foundation for acquiring credit from banks. To alleviate the concerns that creditors have in the determination of creditworthiness, microenterprises endeavor to raise their level of creditworthiness. In this regard, the paper examined the role of EO on the creditworthiness of microenterprises. The paper also includes technology and government regulations as intervening variables.

**ENTREPRENEURIAL ORIENTATION**

Frank et al. (2010) define EO as a firms’ strategic orientation which captures the specific entrepreneurial aspect of decision-making styles, methods and practices with innovativeness, risk-taking and pro-activeness as the principal components. EO refers to the traditions that entrepreneurs make to identify and launch competitive ventures (Zehir et al., 2015). It represents a frame of mind and perspective about entrepreneurship that is reflected in a firm’s ongoing processes and corporate culture (Eshima and Anderson, 2017). EO is a firm’s ability to innovate, take risks, and proactively pursue market opportunities (Zehir et al., 2015).

EO refers to the mindset of organizations involved in pursuing new ventures and provides a viable framework for researching entrepreneurial activity (Govin and Wales, 2012). These activities include planning, analysis, decision making and various aspects of a firm's culture, value systems, and mission. EO is a firm-level strategy-making process that companies use to achieve their organizational purpose, attain their vision and obtain a competitive advantage. It entails to a sub-contract of market leadership, quality leadership, products specialization, cost leadership and manufacturing leadership. EO is a strategic orientation that an organization uses to adapt to changing business environment and have a sustainable competitive edge over rivals in the marketplace (Karacaoğlu et al., 2012).

Lumpkin and Dess (2005) averred that the concept of EO consists of five dimensions: autonomy, innovativeness, risk-taking, pro-activeness, and competitive aggressiveness. Freedom is defined as an independent action by an individual or a team aimed at bringing forth a business concept or a vision and carrying it through to completion. Innovativeness refers to the willingness to support creativity and experimentation. Risk-taking means a tendency to take bold actions, such as venturing into unknown new markets. Pro-activeness is an opportunity-seeking and forward-looking perspective. The fifth dimension, competitive aggressiveness, reflects the intensity of a firm's efforts to outperform the industry rivals to generate revenue without considering the net effect to household incomes and employment (Lumpkin and Dess, 2005).

High performing, entrepreneurial-oriented firms are successful in recognizing and exploiting business opportunities (Hartsfield et al., 2017). Thus, EO is established by identifying five dimensions of the entrepreneurial process: autonomy, innovativeness, risk taking, pro-activeness, and competitive aggressiveness. Employing an entrepreneurial strategic direction is crucial in helping new ventures survive, compete, and succeed (Wong et al., 2016). Similarly, EO has been consistently regarded as a prerequisite for wealth creation of new ventures by facilitating the pursuit of entrepreneurial opportunities (Guo et al., 2014).

**TECHNOLOGY ORIENTATION**

Entrepreneurship and its relation to technology and
innovation are studied extensively within organizations (Werber et al., 2015). Studies have advocated integrating innovation and technology at organizations where links have been established with firm performance (Amin, 2015). Firms which have adopted a technology orientation (TO) pursue advances in technology and innovations and investments are made in continuous innovations and disruptive technologies with the assumption that entire new markets will emerge. In this case, technology and firm innovation cannot only create value but can aid in the international expansion process, which many firms in developing countries are now undertaking (Bharati and Chaudhury, 2006). Reliable technology and EO at the firm level can provide the necessary competitive advantage for companies in emerging countries to compete globally (Pratono and Mahmood, 2015).

Technology and innovation in entrepreneurial businesses are typically explained in a variety of ways. For instance, (1) by describing how early-stage entrepreneurs and established business owner-managers focus on the novelty (or unfamiliarity) of their products or services relative to customers’ current experience (Martins, 2016), (2) by focusing on levels of innovativeness in entrepreneurial businesses as measured by the degree of competition faced by the business (Alford and Page, 2015), or (3) by whether the owner-manager perceives that many, few or no other businesses offer similar products or services (Urban, 2010). Several types of new venture technology and innovation strategies have been documented in literature, which includes, but are not limited to reactive imitation, proactive localization, import substitution, creative imitation, early-market entry, global niche and global innovation.

Adoption and usability of technology within a micro-enterprise has been embraced as a strategic means to attaining a competitive advantage in the market (Masa’deh et al., 2018). Implementation of technology is predominantly essential for small businesses unable to capitalize on economies of scale (Masa’deh et al., 2018) and conditioned in their response to increasing competition and uncertainties in the business environment. ICT creates tremendous opportunities for micro-enterprises specifically by making it possible for them to be part of a network (Martins, 2016), which ensures that there is more direct communication. In this regard, technology enhances the competitiveness (Linton and Solomon, 2017) of a small business, including its survival, profitability, and the future creditworthiness (Zuru et al., 2016).

**GOVERNMENT REGULATIONS**

Small and medium enterprises are supposed to follow government rules and regulations in their operations (Kitching et al., 2015). The level of regulatory laws or policies imposed by the government is directly proportional to the economic growth of the country. As the economic power of private sector business has grown, so too has the number of laws regulating business activity (Bouazza et al., 2015). In support of this assertion, Glaeser and Shleifer (2003) argue that the amount of government regulation of private sector business directly reflects the level of economic power within the private sector. Common examples of management include controls on market entries, prices, wages, development approvals, pollution effects, employment for certain people in specific industries, standards of production for certain goods and services.

Policies and regulations are the cornerstone of government support to MSEs and entrepreneurs in general. Nteere (2012) defines government policy as the principle that underlines the actions that are bound to take place to solve public issues administered through state legislation, regulations and administrative practice. Government policy reflects theoretical or experiential assumptions about what is required to resolve a particular issue or problem. Governments make policies and regulations to tackle a wide range of issue encompassing taxes, import and export duties, investment incentives and subsidies, levies and borrowing rates for Micro and Small Enterprises, immigration and pensions regulations.

Ohphanhdala and Suruga (2010) aver that appropriate implementation of government regulations and specific support programs are a precondition to achieve the positive goals and targets of SME promotion. Government creates the rules and framework in which small and medium scale enterprises can compete each other. From time to time, the government changes the rules and framework forcing Small and Medium Enterprises to change the way they operate. The public sector support through appropriate government regulations facilitates entrepreneurs to establish and thereafter take investment risks for growth of their enterprises.

**THEORETICAL FOUNDATION**

The study is premised on the following theories.

**Schumpeter’s innovation theory**

Schumpeter (1943) highlighted the innovational role in entrepreneurial process whereby wealth formation occurs through disturbance of present market structures when new products or services are introduced. Further, Schumpeter refers to technology advancement as the definite device of entrepreneurs, how entrepreneurs apply to exploit change as an opportunity for a diverse business or various services. Schumpeter argued that anyone seeking profits must innovate, suggesting that adoption and implementation of technology-based
innovations will lead to the much-needed level of performance of a business and therefore, make it possible for a micro-enterprise to meet its financial obligations. In this context, the extent and level of using technology within the internal processes and practices of a small business will ultimately translate into improved outcomes and subsequent creditworthiness contingent upon the history of performance.

Furthermore, Schumpeter designates a process of “creative destruction” where wealth creation takes place through interference of prevailing market configurations when new goods and services are introduced in a market. Wealth creation results to movement of resources away from existing organizations to new ones and as a result it allows emergence and growth of new businesses. Further, Schumpeter refers to technology advancement as the unique tool that entrepreneurs adopt to exploit change as a prospect for different companies, products or diverse services. The role of entrepreneurs is stressed as the entrepreneur’s necessity to pursue purposefully for the sources of innovation, modifications, indicators of opportunities for successful growth as well as the quest to know and adopt innovation principles effectively. Successive scholars in support and advancement of Schumpeter innovation theory opined that entrepreneur continuously search for change, respond and exploit it as an opportunity through purposeful adoption of technology (Sharma and Dave, 2011). However, the theory considers innovation as the only cause of wealth and profit in a business and fails to take into perspective other social and economic factors.

Adoption of this theory in this study provides a more in-depth understanding of the relationship between EO and technology in shaping the growth and expansion of micro-enterprises. The method demonstrates that there is a clear interplay between technology and innovation, which creates opportunities for enterprises to flourish within a competitive market, and the decision to exploit this relationship, is essentially a component of EO of a given micro-enterprise. Accordingly, the theory combines EO and technology to advance an argument that the two elements are crucial for the survival of a business and ensuing wealth creation in the form of profits. It is through accrued benefits that a micro-enterprise creates a clear trajectory of better performance, which further implies that it can repay credit solicited from financial institutions.

**Innovation theory**

Innovation theory predicts that the diffusion of innovation is often dependent on individual-level adoption (Centola, 2010). Innovators and early adopters are talented in the distribution of the innovation process. Innovators and early adopters are characterized as risk-takers, opinion leaders and social leaders (Iyengar et al., 2011). Although technology adoption calls for an extra cost, investment in technology opens up new markets, helps on the improvement of existing products as well as on development of new products. Innovativeness, as a component of EO, is of particular interest in the case of academic researchers, since innovation is commonly considered a prerequisite in generating valuable knowledge outputs (Heinonen, 2015). Diffusion theory works better in explaining adoption of technology but fails to take into consideration the available resources, which guarantee implementation of a given technological innovation. Innovation theory provides valuable insights to this study as it links innovation to EO and further clarifies the role of technology in enhancing new product development, opening of markets, and improving the competitiveness of present products. The theory sheds light on how technology acts as an essential component within the EO of a given enterprise. In a context in which radically enhanced technological capabilities exist, this article explores the mediating effect of technology on the influence of EO on creditworthiness.

**Market process theory**

Market process theory has its origins in economic theories of entrepreneurship. Researchers view market orientation as an out-in perspective or a pull approach where the firm is assessed as deriving its innovative concepts and generates new ideas from interacting with the market (Blanks, 2013). The market process theory has its strength in its critique of the standard price theory, which is argued as failing to accommodate human interventions and thus, the role of the entrepreneur and entrepreneurial firms is not appreciated.

Kizner (2008) postulated that when markets become strictly self-equilibrating, then to account for economic progress becomes difficult or unfeasible. The theory puts forward that producing agents within an economy properly utilizes the information profitably, a role fulfilled by the entrepreneurs. Entrepreneurs use available information in the market information while striving to identify gaps that provide opportunities for exploitation, expansion and sustainable growth-acting on identified opportunities the entrepreneur continually makes economic rents in the process.

Shane and Venkataraman (2000) further support this argument by perceiving entrepreneurship as the process where opportunities are discovered, evaluated and resources mobilized for profitable gains. The process, therefore, entails environment scanning for opportunities, proactive in research to address changing consumer tastes and preferences, and close monitoring on changes in income levels and demographics of the consumers and potential consumers. Market process theory, therefore, entails an out-in perspective. This means that the entrepreneur or the entrepreneurial firm seeks opportunities that can be exploited which are outside of it.
This process of opportunity discovery and exploitation is thus the fundamental component of innovation (Shane and Venkataraman, 2000).

METHODOLOGY

The paper was designed as a meta-analysis that combined the findings from independent studies. Meta-analysis offers a rational and helpful way of dealing with several practical difficulties that beset anyone trying to make sense of effectiveness research. Systematic review methodology was at the heart of this paper. The paper reviewed the relevant studies on EO, technology and government regulation. The objective of systematic reviews was to present a balanced and impartial summary of the existing research. Meta-analysis was carried out through desktop research on the study variables. The variables of interest in this paper are integrated as shown in analytical framework shown in Figure 1.

RESULTS AND DISCUSSION

The results are presented in line with the study variables.

Entrepreneurial orientation

Asymmetric information remains unique challenge that lenders face in their quest to determine the creditworthiness of micro-enterprises and other small businesses. Credit scoring is one of the ways that lenders determine the creditworthiness of enterprises. In this strategy, the lending institutions assess the creditworthiness of potential borrowers from their personal and business characteristics (Agier and Szafarz, 2013). The underlying business attributes are perfect to an enterprise and they are predominantly a product of EO of an enterprise. In this regard, a positive connection exists between EO and creditworthiness. EO enhances creditworthiness by improving overall performance of microenterprises (Frank et al., 2010). EO improves business performance only in cases in which a dynamic environment is combined with high access to financial capital and when a stable environment is combined with low access to financial capital.

EO allows a firm to develop ideas and realize them in the form of new products and services, participate in risky projects, predict future requirements, and find new market opportunities. EO positively influences ventures performance, and specifically, pro-activeness, risk-taking, and autonomous dimensions positively determine venture performance. Other studies have also highlighted the benefits of EO as enhancing performance (Engelen et al., 2015; Shan et al., 2016) despite stating that several contingencies affect the strength of this relationship.

The EO of a micro-enterprise differently affects the costs and benefits associated with external debt and equity financing, and thereby its use of the respective financing forms; with the strength of these relationships depending on industry-level risk and venture development stage (Vaznyte and Andries, 2019). EO facilitates firms to engage in risky activities such as high leveraging and substantial resource commitment with the desire of gaining high returns through pursuing opportunities in the market (Al-Mamun and Fazal, 2018). EO provides organizations with a basis for entrepreneurial decisions and actions. EO is demonstrated in firm-level risk-taking, innovative, and proactive behaviours, which ultimately contribute to the overall improved performance of a firm. Some studies have linked performance to creditworthiness by positing that the former increases access to higher financial capital by small businesses (Wong et al., 2016).

Empirical evidence suggests that collateral does not necessarily signal any EO dimension, even when controlling for the strength of the lender-firm relationship (Beltrame et al., 2019). Furthermore, SMEs can mitigate their financial risk through collateral only in multiple bank-firm relationships. On the other hand, innovativeness, competitive energy and aggressiveness allow SMEs to obtain external guarantees (mutual guarantees, bank guarantees and public guarantees, respectively), helpful to promote credit access.

The degree of impact of EO on firms depends on several internal and external factors. Whereas internal factors include techniques, strategies and processes, external factors include state of the economy, growth and trends in the industry, government rules and regulations (Fayolle and Tederove, 2011). The effect of the dimensions of EO on MSE growth can be treated as a single construct comprising the dimensions of innovativeness, risk taking and pro activeness.

Today’s dynamic business environment requires a firm to regularly innovate, take risk into account, give room for autonomy, be proactive, and aggressively compete to maintain or find a new position in the market place. EO provides small businesses with the ability to discover new business opportunities and the discovery of new opportunities enhances their differentiation from other firms (Omisakin et al., 2016). High EO among small business owners enhances the formation and activation of personal strategies affecting business growth and performance.

Technology orientation

Entrepreneurship can provide direction to the company’s entire operation, serves as an integral component of a firm’s strategy and may function as the core component of corporate strategy (Urban, 2010). Each of the EO dimensions-innovativeness, pro-activeness and risk-taking is useful for predicting the success of the business, which may be contingent on the environment. Managers can establish the impact of environmental dynamism and hostility on EO and TO and explore the effect of these
factors on various performance indicators. Indeed, managers need to adopt a contingency perspective on how environmental and organizational factors moderate, mediate or interact with TO and EO to enhance business performance. While EO is responsible for guiding the whole organization, technological capability is a critical element in the use of knowledge and technology as requirements to achieve innovations within the firm. Firms with a more developed capacity can ensure a better competitive advantage.

EO is mediated by the firm’s technology when EO is linked to performance or creditworthiness, and this mediating effect differs by industry (Choi and Williams, 2016). Technology has been used alongside marketing action to influence the relationship between EO and performance. Empirical evidence suggests that technology action has a stronger mediating effect than marketing action in manufacturing industries while marketing activity has a stronger mediating effect in service industries. Consistent with García-Galdeano et al. (2016) belief that EO is mediated by technology in influencing creditworthiness through access to financial capital, many studies have created a single variable from all the dimensions of EO to show that it affects performance. However, some studies have failed to show the relationship between EO and creditworthiness (Vaznyte and Andries, 2019; Brouthers et al., 2015). There is grounded empirical evidence in some studies, which shows that EO dimensions, such as pro-activeness, risk-taking, and innovation, are important in explaining business performance (Engelen et al., 2015).

**Government regulations**

A common argument among economists and business executives is that regulations are detrimental to the competitiveness of business because of the cost involved in complying with them (Kitching et al., 2015). Though the business fraternity can cry foul of the regulations, business ethics is also important; hence, regulation is sometimes called for. However, in the preparation of the regulatory framework, it is imperative to critically analyze the costs of such rules to small business (Chan et al., 2016).
Entrepreneurs posit that government regulations impede the growth of the private sector and SMEs. However, in broad terms, the government can be said to regulate private sector business for the good of society. The basic premise behind the regulation is to limit the ability of private sector businesses to harm other organizations, groups or individuals (whether intentionally or unintentionally) during conducting business (Keter, 2004). In general, government regulations of private industry tend to serve two overriding public objectives: (1) to promote market competition and control the market power of large firms over customers and smaller firms, and (2) to mitigate any adverse effects of business activity on individuals, other organizations and the environment (Cunningham and Rowley, 2008).

On the other hand, it is widely acknowledged that business regulations impose costs as well as benefits, and any regulatory prices typically fall most heavily on the businesses being regulated. The direct costs include capital costs associated with compliance, the costs associated with gathering information about what agreement entails, and the costs associated with reporting and record keeping. Many regulations expose businesses or their representatives to the risk of litigation and associated civil or criminal penalties. The direct costs incurred due to rules can negatively impact on businesses, especially SMEs and eventually lead to their closure. To caution the entrepreneurs from operating against these government regulations, be innovative, risk-takers and being proactive in their businesses, entrepreneurial training is hence considered necessary.

CONCLUSION

The study has contributed to Schumpeter's innovation theory, innovation theory, and market theory by affirming that technology influences the relationship between EO and creditworthiness. The study has revealed that technology raises the financial stake of a micro-enterprise and therefore, the ability to service a credit facility. Entrepreneurship orientation within organizations is a fundamental posture, instrumentally important to strategic innovation towards improved creditworthiness and better performance, particularly under shifting external environmental conditions. In developing countries, EO acts as the primary stimulant for capability development in microenterprises and improvement towards high credit rating. A company with the top on EO have more aptitude for risk-taking, innovativeness, and pro-activeness; as such they are oriented towards action, they pursue active implementation of new ideas, or processes not merely of their generation but also actively seek to anticipate opportunities to instigate changes to current strategies and tactics, and detect future trends in the market. EO enables micro-enterprises to fulfill their growth aspirations, and this depends on short-term, liquid sources of debt financing such as bank loans. In this regard, the EO construct is salient not only for large organizations but also for small and medium-sized organizations in different stages of economic development and varied cultural contexts. At the level of the organization, therefore, the formulation of policies focusing on EO should be accompanied by investment in modern technology. At the government level, the regulations governing microenterprises should promote access to credit by integrating entrepreneurship orientation as a critical success factor in enhancing credit rating. Entrepreneurship orientation, appropriate technology and government regulations serve as the core components of corporate development and improved credit rating.

The study has confirmed the application of meta-analysis when undertaking a systematic review of relevant investigations related to a defined area of interest. The meta-analytical method is suitable in analyzing knowledge gaps related to the independent effect of EO on creditworthiness. However, multiple linear regression is more appropriate in analyses that involve joint and moderating variables within a given empirical inquiry where primary data is involved.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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