



The Differential Effects of Government Support, Inter-firm Collaboration and Firm Resources on SMEs' Performance in a Developing Economy.

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The Differential Effects of Government Support, Inter-firm Collaboration and Firm Resources on SME Performance in a Developing Economy.

Abstract

Purpose

Notwithstanding that there has been increasing attention on factors that enhance SME performance in developing economies, there is a dearth of studies explicitly investigating the roles of government support systems and inter-firm collaboration. Drawing on the Resource-Based View (RBV) of the firm and Institutional theories, this study models and examines how government support, inter-firm collaboration and managerial ties affect SME performance and further explores how firm specific resources mediate the relationships.

Design/methodology/approach

A quantitative research design was employed. Data were collected using a structured questionnaire from 438 SMEs operating in Zambia, a developing Sub-Saharan African country. Hierarchical linear regression in SPSS PROCESS macro was used to test the hypotheses.

Findings

Findings indicate that managerial ties have both a direct and indirect effect, through firm resources, on financial performance. Also, the relationship between inter-firm collaboration and financial performance is fully mediated by firm resources. Surprisingly, results reveal that government support does not have a significant effect on SME financial performance.

Practical implications

The study has important implications for SME managers and policy makers. It demonstrates that inter-firm collaborations and managerial ties enhance a firm's financial performance. It also highlights the view that SMEs need to have firm specific resources to transform external resources, accessed from inter-firm relationships, into superior performance. SME policy makers are advised to focus more on policies and support mechanisms that promote inter-firm relationships at firm and managerial levels.

Originality/value

This study is one of the few studies to empirically show that the differential effects of inter-firm collaboration and managerial ties on SME performance are channeled through firm resources, in an under-researched developing Sub-Saharan African economy context. The study is also one of

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3 the few studies to reveal that government support is not significantly related to SME performance.
4 Therefore, it provides valuable insights which could be applied to other developing countries with
5 characteristics similar to Zambia.
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8 **Keywords:** *Government support; Inter-firm collaboration; Managerial ties; Firm resources; SME*
9 *performance*
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12 **Article classification:** Research paper
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1. Introduction

Small and medium-sized enterprises (SMEs) play a significant role in the growth of national economies. Consequently, they represent a very important area on the development agendas of most governments in both developed and developing economies. For example, while it is reported that 60% of the economies in developed countries comprise small businesses, 99% of businesses in developing countries are SMEs (Amoros and Bosma, 2014; Tadesse, 2009; Kauffmann, 2005; Muriithi, 2017). SMEs are therefore an important source of employment creation, business competitiveness, provide consumers with a variety of innovative products and services and contribute to economic growth in both developed and developing (Kongolo, 2010; Ratten, 2014; Poole, 2018). However, extant small business strategy literature indicates that in most developing economies, SMEs face a plethora of challenges that inhibit their performance and growth potential (Beyene, 2002; Ahmad *et al.*, 2010; Mukumba, 2014; Paul *et al.*, 2017; Colombo *et al.*, 2012). There is a consensus in the literature that resource constraints are one of the major challenges impeding performance and growth of SMEs in developing countries (Taylor, 2013; Ratten, 2014; Amornkitvikai and Harvie, 2018). Some scholars argue that due to their inherent predisposition to liability of smallness and newness, SMEs tend to be challenged by the need for external resources (Bengtsson and Johansson, 2014; Hunt and Hunt, 2017).

Scholars have since suggested the need for government support and inter-firm relationships as ways of overcoming resource and capability constraints SMEs face (e.g., Smallbone and Welter, 2001; Tambunan, 2008; Kang and Park, 2012; Lu *et al.*, 2010; Ratten, 2014; Charoensukmongkol, 2016; Songling, *et al.*, 2018). However, while scholars suggest the role of government support and inter-firm collaborations as critical to enhancing SME performance, the evidence for their effect is inconclusive with studies indicating positive effects (e.g., Lu *et al.*, 2010; Doh and Kim, 2014; Tambunan, 2008; Kang and Park, 2012; Lorenzoni and Lipparini, 1999; Dries and Swinnen, 2010; Wang *et al.*, 2015), some negative (e.g., Tang, 2011; Hong *et al.*, 2016; Bouncken and Kraus, 2013; Wathne and Heide, 2000) and others reporting no effect (e.g., Guan and Yam, 2015; Tang, 2011). Additionally, existing small business strategy literature does not comprehensively provide for mechanisms through which government support and inter-firm relationships affect performance and studies investigating this in developing economies are rare in the literature. As

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3 such, questions of how government support systems and inter-firm collaborations affect
4 performance and mechanisms through which their effects are channeled still remain unanswered.
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7 Accordingly, this study aims to address the apparent lack of scholarly work on the
8 performance outcomes of institutional support and inter-firm relationships. We draw insights from
9 the institutional theory to postulate that institutional support directly improves SME performance.
10 Drawing from the resource-based view (RBV) of the firm, we argue that managerial ties and inter-
11 firm collaboration improve SME performance. Furthermore, we examine how firm resources
12 mediate the relationships between government support; inter-firm collaboration; managerial ties,
13 and firm performance. We collect data from SMEs located in Zambia, a sub-Saharan African
14 developing economy and conduct empirical regression analysis to examine the relationships.
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17 The study contributes to the small business strategy literature in three ways: First, we
18 highlight the role that institutional support mechanisms, inter-firm collaboration and ties with
19 managers of other firms play on financial performance; second, we establish how firm specific
20 resources mediate these relationships thereby extending previous works that suggest a direct
21 relationship; and lastly, we uncover SME performance drivers and test the applicability of
22 measures developed and validated in developed Western economies in an African developing
23 economy. Africa remains a context with numerous business opportunities and as such, is receiving
24 increasing attention from small business scholars, policy makers and practitioners. Unfortunately,
25 because it remains a largely under-researched context, not much is known about factors that
26 influence SME performance (George *et al.*, 2016). Hence, our study presents an exciting context
27 and rare opportunity to advance knowledge to existing small business strategy theories and to test
28 their relevance beyond the developed economy context.
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42 In the sections that follow, we present the literature review and hypotheses. This is
43 followed by an explanation of methods used to collect data. We then present the findings of the
44 study and a discussion of their implications at theoretical, managerial and policy levels. We
45 conclude by providing direction for future research after highlighting the limitations of our study.
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50 **2. Literature review and hypotheses development**

51 We draw insights from the institutional theory and RBV to better understand the institutional,
52 organisational and individual firm specific drivers of SME performance outcomes. The
53 institutional theory postulates that institutional prescriptions and norms shape the nature of firm
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3 economic activity as they regulate and motivate the behaviour of actors in a given environment
4 (Lau *et al.*, 2002; Scott, 2013; North, 1990). Since institutional arrangements determine boundaries
5 and paths for firm behaviour in a given environment, they can produce entry barriers or create
6 opportunities for action and performance (Bruton *et al.*, 2010; Fligstein, 1996; Grewal and
7 Dharwadkar, 2002; North, 1990). On that account, variation in performance across contexts may
8 be explained as a function of differences in the existence, saliency, and intensity of particular
9 institutional arrangements (DiMaggio, 1994; DiMaggio and Powell, 1983; Pfeffer and Salancik,
10 1978; Peng, 2003). Accordingly, the institutional perspective is used in this study to explain how
11 the institutional environment in which the SME is embedded affects its activities and performance.
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19 On the other hand, the RBV of the firm, which considers a firm's resources and capabilities
20 as a fundamental source of competitive advantage and enhanced financial performance (Barney,
21 1991; Teece *et al.*, 1997), explains the resource and capability related antecedents to firm
22 performance. A firm's resources are assets and capabilities that are available and useful in
23 detecting and responding to market opportunities or threats (Barney, 1991; Wade and Hulland,
24 2004). These resources include physical resources such as a firm's plant and its access to raw
25 materials and finances; human capital resources which include training, experience, intelligence,
26 relationships, and insight of individual managers and employees in a firm, and organisational
27 capital resources such as a firm's formal reporting structure, culture and informal relations among
28 groups within a firm and between a firm and those in its environment (Barney, 1991; 2001).
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36 The role of government support and inter-firm relationships among SMEs has come to the
37 fore in investigations of SME performance in developing economies (Manolova *et al.*, 2010).
38 Indeed, small business strategy scholars have not only highlighted the need for governments to
39 support SMEs but also that these firms should co-operate and pool resources together to enhance
40 their performance (Kang and Park, 2012). However, the debate on how government support and
41 inter-firm collaborations among SMEs in developing economies relate to performance of their
42 businesses is not only inconclusive but also barely researched. Therefore, in line with extant small
43 business strategy literature and in following the institutional and resource-based theories, our
44 conceptual model in *Figure 1* proposes that government support, inter-firm collaboration and
45 managerial ties affect performance, both directly and indirectly through firm resources.
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2.1 Institutional support and firm performance

Given the underdeveloped market mechanisms in most developing economies, institutional arrangements in terms of government support play an important role in influencing SMEs' behaviours both by increasing access to resources and shaping how SMEs respond to competitive and dynamic environments (Smallbone and Welter, 2001; Tambunan, 2008; Lu *et al.*, 2010; Kang and Park, 2012); [Thongsri and Chang, 2019](#)). However, while scholars provide evidence of the existence of institutional support for SMEs in developing economies, a critical review of extant research provides inconclusive findings as to the relationship between government support and performance. For example, while Doh and Kim (2014), Tambunan (2008) and Kang and Park (2012) found a positive link, Hong *et al.* (2016) found that government support in terms of grant had a negative effect on innovation performance. Surprisingly, Guan and Yam (2015) found that government financial incentive is not significantly related to SME performance. Despite these equivocal findings in the literature, we draw insights from the institutional environment logic to argue that increases in institutional support for business will be associated with increases in performance.

The logic is that since government institutions regulate and motivate the behaviour of actors in a given environment (North, 1990; DiMaggio, 1994; Dunning and Lundan, 2008; Scott, 2013), they are likely to shape the nature of firm economic activity to an extent that they can stimulate a firm's action and boost performance. Therefore, we expect institutional support as demonstrated by business support provided by government and its agencies, such as tax allowances, loans, information technology, productivity improvement assistance and financial capital, would lead to enhanced firm performance. Based on the above arguments, we hypothesise that;

H1: *Institutional support is positively related to firm performance.*

2.2 Inter-firm collaboration and performance

The inter-firm relationship literature suggests that a firm engages in collaborative efforts with other firms, including its competitors, to pool their resources and capabilities together in an effort to achieve both mutual and individual goals (Levy *et al.*, 2003; Gnyawali and Park, 2009; Kang and Park, 2012). Mutual goals relate to common goals on which the relationships are built and held

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3 together while individual goals are firm specific, such as market and financial performance
4 (Gnyawali and Park, 2009). There is evidence in the literature that firms in inter-firm relationships
5 are able to reap a variety of benefits such as cost and risk sharing, access to a variety of other firms'
6 skills, knowledge, resources and capabilities in various value chain activities to enhance
7 performance (Lorenzoni and Lipparini, 1999; Dries and Swinnen, 2010; Bouncken and Kraus,
8 2013; Wang *et al.*, 2015). However, while the literature indicates that SMEs may benefit from
9 inter-firm collaborations, some scholars argue that collaboration may be dangerous for SME
10 survival. For instance, Gnyawali and Park (2009) suggest that while inter-firm collaboration may
11 help SMEs gain economies of scale, reduce marketplace uncertainty and risk, and speed up market
12 entry of new products, the risk of technology theft, the challenge of management style misfit, and
13 loss of focal firm control may cost SMEs cooperating with competitors. Colombo *et al.* (2012)
14 also posit that collaboration with other firms poses a lot of organisational and managerial
15 challenges for SMEs such as diverting limited resources and management time from the
16 company's core business.

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18 Although an ambiguity exists in the literature on whether inter-firm collaboration improves
19 or hurts performance, we draw insights from the RBV to model inter-firm collaboration as a direct
20 antecedent to SME financial performance. The RBV theory suggests relationships with other firms
21 as a unique, rare and inimitable resource, and a firm that collaborates with other firms is more
22 likely to gain sustainable competitive position and superior performance than competitors that
23 practice limited collaboration (Barney, 2001). Considering the resource challenges that SMEs face,
24 we expect that through collaborating with other firms, an SME may gain access to resources that
25 are immobile, not readily bought nor sold in the factor markets and is likely to enjoy superior
26 financial performance. Thus,

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28 ***H2: Inter-firm collaboration is positively related to financial performance.***

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2.3 Managerial ties and performance

Small business strategy scholars agree that top executives are one of most important human
resource assets in driving SME success. This is because such businesses largely rely on top
managers, who are usually the owners, for making and implementing most of the important firm
decisions (Lubatkin *et al.*, 2006; Lu *et al.*, 2010; Eijdenberg *et al.*, 2015). The literature suggests
that managers offer two types of resources, namely, human capital as indicated by their experience,

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3 and social capital as indicated by their external ties (Granovetter, 1985; Li and Zhang, 2007;
4 Augier and Teece, 2009; Chung and Kuo, 2018). Zhang *et al.* (2012) claim that managers in small
5 firms invest considerable amounts of time, money and other resources to develop and maintain ties
6 with managers of other firms.
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10 Managerial ties are especially prevalent in developing economies because of the weak
11 institutions and as such, managers are forced to rely heavily on their ties and interactions with
12 managers of other firms (Peng and Luo, 2000; Boso *et al.*, 2013; Chung and Kuo, 2018). Such
13 managerial ties, defined as a manager's social relations and networks with managers in other
14 business entities and ties to leaders in governmental, non-governmental and key industry
15 stakeholders (Peng and Luo, 2000), allow SME managers to learn from the experience of others
16 and be provided with opportunities to identify and capture business opportunities and therefore
17 improve performance (Augier and Teece, 2009). Since SME managers play a critical role in
18 identifying and capturing strategic opportunities, coordinating the necessary resources, and
19 initiating new business models (Steenkamp and Kashyap, 2010), it is reasonable to expect SMEs
20 with managers with strong managerial ties to more successfully manage their businesses and
21 record superior performance. In fact, the RBV perspective postulates that human capital resources
22 such as trust, friendship, reputation, experience, intelligence, relationships, and insight of
23 individual managers and employees in a firm are critical to performance as they are more difficult
24 to imitate than capital-based resources (Barney, 1991; 1995). Moreover, existing evidence by Cai
25 and Szeidl's (2017) study shows that managers with more meetings with other managers
26 significantly increased profit and exhibited higher growth than managers who had less.
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39 We therefore view managerial ties as an inimitable socially complex firm resource that
40 provides firms access to industry information held by competing firms (Li *et al.*, 2014), to the
41 extent that stronger ties between managers of a focal firm and managers in other firms may grant
42 firms access to industry information, subsequently strengthening a firm's performance.
43 Consequently, we hypothesise that;

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48 **H3:** *Managerial ties are positively related to firm performance.*
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51 2.4 Mediating role of firm resources

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53 As previously argued, findings from prior studies on the performance outcomes of government
54 support, inter-firm collaboration and managerial ties have been ambiguous and largely
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3 inconclusive. We suggest that one possible source of this ambiguity could be that these factors
4 may not directly affect financial performance, but may enhance financial performance when
5 channelled through firm resources which in turn influence financial performance (Barney, 1991).
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7 We argue that government support, inter-firm collaboration and managerial ties influence
8 performance indirectly through firm resources in that a firm needs to have its own resources and
9 skills to serve as a channel through which these factors (government support, inter-firm
10 collaboration and managerial ties) effectively enhance performance. We contend that with
11 increased resources, a firm is able to attract more government support, collaborate with other firms
12 and managers, handle competition, and develop new products and services to serve multiple and
13 diverse customer demands. This in turn results in the generation of greater returns to performance.
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20 Thus, if a firm is highly endowed with resources, it should be more effective in turning
21 additional resources and capabilities accessed through government support, inter-firm
22 collaboration and managerial ties to expand its business and improve financial performance.
23 Although studies that model firm resources as mediating the effect of government support, inter-
24 firm collaborations and managerial ties on performance are rare in the literature, our argument
25 finds support in Surroca *et al's* (2010) and Lu *et al's* (2010) studies which found firm internal
26 resources and capabilities to be critical enablers of a firm's external collaboration strategy's effect
27 on performance. Accordingly, we propose that:
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34 **H4a:** *Firm resources mediate the relationship between institutional support and financial*
35 *performance.*
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37 **H4b:** *Firm resources mediate the relationship between inter-firm collaboration and*
38 *financial performance.*
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40 **H4c:** *Firm resources mediate the relationship between managerial ties and financial*
41 *performance.*
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44 **3. Methodology**

45 *3.1 Setting of the study*

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47 To test our conceptual model, we used a sample of SMEs operating in Zambia, a developing Sub-
48 Saharan African country. The Zambian government has been pursuing the development of SMEs
49 since the late 70s when it became clear that the large business sector could not absorb all those in
50 need of employment (MCTI, 2011; Conway and Shah, 2010). To this effect, the government
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3 created the Village Industry Service (VIS) in 1978 aimed at encouraging and supporting rural
4 communities with various artisan craft skills. Later in 1981, through an Act of Parliament, the
5 Small Industries Development Organisation (SIDO) was created and then amended in 1996 to be
6 known as the Small Enterprise Development Board (SEDB) and now sits under the Zambia
7 Development Agency. The aim of the Agency is to develop and boost the performance of the
8 private sector by providing support in key areas such as small business and enterprise development,
9 trade and industry fund management, and contributing to skills training development (ZDA, 2009;
10 German and Schoneveld, 2012).

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12 However, despite government's effort in providing support to boost SME performance, the
13 majority of SMEs in Zambia, like in many other developing economies, are weak and stay small
14 due to lack of appropriate resources and capabilities (Beyene, 2002; Tadesse, 2009; World Bank,
15 2013; Amornkitvikai and Harvie, 2018). As a result, although representing 80% of the private
16 sector, SMEs contribute less than 20% to Gross Domestic Product (GDP) (Chisala, 2008; Muriithi,
17 2017). As such, issues on how to improve performance of SMEs remain as critical in Zambia as ~~it~~
18 isthey are in other developing economies. Therefore, Zambia makes a useful case scenario to
19 investigate some of the factors that enhance SME performance in developing economies. This
20 study sheds light on how government support, inter-firm collaboration and managerial ties
21 influence SME performance in Zambia and helps us understand how other developing nations with
22 similar characteristics to Zambia can achieve similar results.

23 24 25 *Research design*

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27 Since the aim of the study is to examine relationships between independent and dependent
28 variables and not necessarily to detect changes in the variables over time, a cross sectional survey
29 was employed. Although limited in their degree of causal inferences and prone to common method
30 bias, cross sectional surveys remain popular in small business strategy studies due to their ability
31 to efficiently collect data on a wide range of variables (Spector, 2019). To minimize the effect of
32 common method bias, Lindell and Whitney's (2001) test was employed. Results show that
33 originally significant correlations did not become non-significant after common method variance
34 adjustment indicating that common method bias was not an issue in this study (Lindell and
35 Whitney, 2001; Podsakoff et al., 2012; Spector, 2019).

3.2 Sample and data collection

Given the difficulty in identifying a single database on SMEs in most developing countries, including Zambia (Boso *et al.*, 2017; Kriauciunas *et al.*, 2011), we strived to build our sampling frame from multiple data sources such as Zambia Chamber of Commerce, Zambia Development Agency, Zambia Chamber of Small and Medium Enterprise Association and the Patents and Companies Registration Agency. Although these government sources provided names, addresses and telephone numbers of SMEs, we discovered that some records were dated as a number of firms had either changed location and/or telephone numbers. ~~Therefore, we relied on convenience sampling and snowballing recommended by Kriauciunas *et al.* (2011) as more appropriate sampling procedures in developing economies contexts. A structured questionnaire was used to collect data from SMEs and we relied on door-to-door face-to-face administration and collection of the questionnaire. Firms selected to participate in the study~~Therefore, within the confines of the study, we relied on a combination of convenience sampling and snowballing. Convenience sampling was used to collect data from SMEs gotten from registers of the above mentioned government sources as a starting point. Although prone to biasness, convenience sampling is recommended by several small business scholars as a more appropriate sampling procedure in situations where it is difficulty to create a useful sampling frame to generate sufficient level of response (e.g., Bryman and Bell, 2007; Mitchelmore and Rowley, 2013; Neneh, 2018). Snowballing was then applied where referrals from the initial contacted respondents were relied upon to identify additional participants (Saunders and Lewis, 2012).

A structured questionnaire was administered to respondents who were willing to participate in the study and met the following criteria: (1) were independent entities and not part of any company group or chain (Wiklund and Shepherd, 2005; 2011); (2) had operations in Zambia and (3) employed at least 10 and a maximum of 250 full-time employees (Fjose *et al.*, 2010). We relied on door-to-door face-to-face administration and collection of the questionnaire for a period of two (2) and a half months, beginning October, 2018 to mid-December, 2018. A total of 500 firms agreed to participate in our study but we obtained valid responses from 438 firms (88% response rate).

The respondents were mostly senior level executives with 26% CEO, 47% senior managers, and 27% others (e.g., head of unit). The respondents on average had seven (7) years of

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3 ~~experience with their current firms. To enhance quality of the responses, we~~
4 ~~The firms in our~~
5 ~~sample operated in multiple industries across Zambia including media, construction, higher~~
6 ~~education, healthcare, tourism, real estate, telecommunication, mining, automotive parts~~
7 ~~distribution and financial services, which are representative of developing economy industries~~
8 ~~(Story et al., 2015). The informants were mostly the owner-managers of the firms. We~~ tested
9
10 informant competence on three aspects: (1) knowledge of the issues under examination, (2)
11 accuracy of the information provided on the questionnaire, and (3) confidence in the answers to
12 the questions on a seven-point Likert scale (1 = strongly disagree; 7 = strongly agree) (Kumar *et*
13 *al.*, 1993; Morgan *et al.*, 2004). We recorded a mean score of 5.75 for knowledge of issues, 6.00
14 for accuracy of responses, and 6.02 for confidence in answers. Thus, as per Heide and Weiss'
15 (1995) thresholds that advocate for retention of cases with individual responses above the mid-
16 scale point (here 3.5) as a measure of high informant competency, we are confident that the key
17 informants in our research are competent.

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26 The firms in our sample operated in multiple industries across Zambia including media,
27 construction, higher education, healthcare, tourism, real estate, telecommunication, mining,
28 automotive parts distribution and financial services, which are representative of developing-
29 economy industries (Story et al., 2015). -On average, the firms employed 56 full-time employees
30 and had been in business for 14 years. We applied Armstrong and Overton's (1977) non-response
31 test by comparing the responses from early and late respondents. Results showed no substantial
32 differences between the means for early and late respondents even at 10% significance levels (Blair
33 and Zinkhan, 2006), and we thus concluded that non-response bias was not an issue.

3.3 Measures

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44 ~~We used~~ Given that the aim of the study was to examine relationships between variables multi-
45 item ~~scales derived from previous research were used.~~ The measures were anchored on a seven-
46 point Likert-type ~~sealescale~~ for all main constructs to give respondents a wider range of options
47 to choose from. ~~Our dependent variable, financial performance adopted from Katsikeas et al.~~
48 ~~(2006), is based on the respondents' own assessment of~~ The scales were subjected to reliability and
49 ~~validity tests to establish their firm's profitability. Specifically, managers rated financial~~
50 ~~performance in terms of profitability as a percentage of sales, return on investment, growth in~~
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~~profit, achievement of company financial goals and return on assets. Each item was measured on a seven-point scale (1 = “below average,” and 7 = “above average”).~~ suitability.

Institutional support in this study refers to managers' perception of the extent to which government and its agencies provide support for their business activities. (Thongsri and Chang, 2019; Nakku, *et al.*, 2020). Such support includes financial, technical, information, raw materials and equipment. The measure was adapted from Li and Atuahene-Gima (2001) and included six items tapping managers' perception of the extent to which the government and its agency/agencies provide the support they consider critical for the successful operations of firms in the industry. These were anchored on a seven-point scale with (1) being strongly disagree and (7) being strongly agree.

We followed Li and Zhang (2007) and Lau and Bruton (2011) to measure inter-firm collaboration, defined as the extent to which a firm collaborates with other market players. Respondents were asked to indicate the extent to which they spend time collaborating with customers, suppliers and distributors on a seven-point Likert scale where (1) = not at all and (7) = to an extreme extent.

Managerial ties capture the extent to which a manager of a focal firm has ties with managers or employees of other firms (Luo, 2003). Shane and Cable's (2002) four item scale, also used by Boso *et al.* (2013), was adapted and used in this study. The scale was anchored on a seven-point scale ranging from 1 = not at all to 7 = to an extreme extent.

Firm resources refer to the extent to which resources and skills exist in the firm. A six-item scale adopted from Wiklund and Shepherd (2005) and also used by Story *et al.* (2015) evaluates managers' perception of the extent to which the firm possesses technical knowledge, skills to capture and acquire market information, have easy access to financial capital and employees who are experts in their particular jobs and functions.

Firm performance is usually seen as a multidimensional construct that consists of both financial (e.g., profit, sales growth, and return on investment) and non-financial (e.g., market share, reputation, customer satisfaction and employee satisfaction) indicators (Boso et al., 2013; Neneh, 2018). This study follows Katsikeas et al. (2006) to operationalize firm performance as a one-dimensional multi-item construct, tapping managers' evaluation of a firm's financial performance in terms of profitability as a percentage of sales, return on investment, growth in profit, achievement of company financial goals and return on assets for a number of reasons. First,

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3 although objective measures are considered to be the most preferable, the use of subjective
4 measures is common in past research because of the extreme difficulty associated with obtaining
5 reliable objective data on SME performance in developing economies (Danso et al., 2016; Neneh,
6 2018). Most firms in Africa are usually reluctant and/or unwilling to disclose actual financial
7 figures as they consider such information to be sensitive and confidential (Krasniqi and Branch,
8 2018; Agyemang and Ansong, 2017). Second, this being a cross-industry study, a one dimensional
9 multi-item scale was more appropriate than objective measures for the purpose of comparing
10 financial performance. The fact that financial levels vary considerably across industries means that
11 the use of objective measures in multi-industry studies may obscure any relationship between the
12 independent variables and SME performance (Feng *et al.*, 2017). In this study, managers were
13 asked to rate the performance of their firm relative to other firms in their industry and as such
14 subjective measures were appropriate. Third, there is evidence for a positive correlation between
15 subjective performance assessments and other objective measures that use accounting or financial
16 data (Geringer and Hebert, 1991; Christoffersen *et al.*, 2014). Lastly, our use of subjective
17 measures is also in line with several recent studies on interfirm collaboration, government support
18 and SME performance (e.g., Ibrahim and Mustapha, 2019; Danso *et al.*, 2016; Neneh, 2018;
19 Thongsri and Chang, 2019; Nakku, et al., 2020). Therefore, taking into account the setting for the
20 study, the SME context and in following past research, this study finds it reasonable to use a
21 subjective measure to capture SME performance. Each of the five items was measured on a seven-
22 point scale (1 = “below average,” and 7 = “above average”).

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38 In line with previous studies, it seemed prudent to control for firm size and firm age, which
39 have the potential to influence performance (e.g., Oum *et al.*, 2004; Wiklund and Shepherd, 2005;
40 Chandy and Tellis, 2000; Kanter and Corn, 1998). Firm size remains a popular variable both as a
41 research variable and as a control variable but its effect on performance remains inconsistent. For
42 example, while it is argued that larger firms are more likely to dominate markets and gain
43 competitive advantage due to economies of scale and resource sufficiency (Oum *et al.*, 2004),
44 other researchers claim that larger firms are more difficult to control and are less adaptive and
45 flexible and less likely to quickly respond to market opportunities (Chandy and Tellis, 2000;
46 Kanter and Corn, 1998). As such, firm size is likely to influence the performance of SMEs and is
47 controlled for to avoid biasness in the model. Firm age is also considered to be a determinant of
48 performance because while older firms are more experienced and associated with first mover
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3 advantages, young firms have a higher failure rate due to liabilities of newness (Kirca *et al.*, 2011).
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5 Therefore, we control for firm age in order to mitigate the effects of a firm's establishment in an
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7 industry over time which is likely to affect performance.

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9 In this study we measured firm size as total number of full-time employees while firm age
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11 was measured as total number of years a firm has been in business (Schreiner *et al.*, 2009; Boso *et*
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13 *al.*, 2013). A natural logarithm transformation was taken for the two variables to normalise the
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15 data as recommended by Osborne and Waters (2002).

16 17 *3.4 Measure assessment and purification*

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19 We conducted Principal Component Analysis (PCA) with Varimax rotation to check the
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21 convergent and discriminant validity of the scales for measuring all the variables in this study.
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23 Results show that all the scale items were generally adequate for measuring the latent variables.
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25 For example, the KMO test of sample adequacy of 0.80 is a good indication that the item sample
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27 was adequate. Also, commonalities for all items had scores higher than 0.4. All five factors were
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29 extracted, consistent with the number of the main variables in our theoretical model. These factors
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31 together explained 62% of the variance in the model. Factor loadings of each of the items on their
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33 respective factors are greater than 0.6, above the recommended threshold (Osborne *et al.*, 2008).

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35 All the scales showed discriminant validity since each scale item loaded on the respective
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37 factor and there were no cross loadings. Also, the scales indicate that they are reliable based on
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39 Cronbach's alpha values that were all above 0.7, satisfying Bagozzi and Yi's (2012) threshold.
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41 Table 1 shows results of the factor analysis.

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---Table 1 about here---

4. Results

4.1 Correlation results

Table 2 presents the means, standard deviations and correlations among all the variables in the study. Apart from institutional support, all the other independent variables namely, inter-firm collaboration, managerial ties and firm resources were positively correlated to financial performance, ranging from 0.145 to 0.2.47, $p < 0.001$. Similarly, there was positive correlation

among the control variables, firm size and firm age, and financial performance respectively. In general, the correlation results suggest a strong relationship among the variables in the study.

---Table 2 about here---

4.2 Regression Results

We used hierarchical linear regression to test the hypotheses using the SPSS PROCESS macro. Two models were estimated. Since the purpose of the study was to assess the strength of the relationship between independent and dependent variables, and the proposed theoretical model suggests linear relations between the variables, multiple hierarchical linear regression analysis in SPSS PROCESS macro was used to test the direct effect hypotheses. This provided the study a simplistic and straightforward approach for determining the overall fit of the model and the relatively contribution of each of the independent variables, and is in line with previous studies (Doh and Kim, 2014; Neneh, 2018). Two models were examined to test the first three direct effect hypotheses. Both models had financial performance as the dependent variable. In the first model, only the impact of the control variables was estimated. Then the second model was estimated in which the with control variables and main effect variables were considered. Table 3 shows full details of the hierarchical regression models. Model 1 shows the effect of the control variables (firm size and age) on firm performance and was statistically significant with $R^2 = 0.021$, $F(2,436) = 4.680$, $p < .05$. In Model 2, we added the main effects (institutional support, inter-firm collaboration and managerial ties) to Model 1 and this led to a statistically significant increase in $R^2 = 0.068$, $F(5,433) = 6.353$, $p < .001$. The effect of institutional support on firm performance was not statistically significant ($b = -.029$, $p = .415$) and therefore H1 is not supported. We found statistically significant positive effects on firm performance of inter-firm collaboration ($b = .138$, $p > .05$) and managerial support ($b = .141$, $p > .001$). Therefore, H2 and H3 are supported.

----Table 3 about here---

4.3 Mediation analysis

Hypotheses 4a, 4b and 4c propose an indirect effect, through firm resources, of the effect of institutional support, inter-firm collaboration and managerial support on firm performance. The

indirect effects model was tested through the Preacher and Hayes (2004) regression procedure using the SPSS PROCESS macro. The results indicate that institutional support has no statistically significant effect on firm resources ($b = .003$, $SE = .029$, $p > .050$). However, both managerial ties ($b = .232$, $SE = .033$, $p < .001$) and inter-firm collaboration ($b = .305$, $SE = .042$, $p < .001$) have statistically significant effects on firm resources. The effect of firm resources on firm performance is statistically significant ($b = .193$, $SE = .060$, $p < .050$). These results provide support for the mediation hypothesis for the indirect effects of inter-firm collaboration and managerial ties on firm performance, through firm resources. We did not find support for the indirect effect of institutional support. The effect of inter-firm collaboration on performance was no longer significant ($b = .0796$, $SE = .055$, $p > .100$) after controlling for the mediator, firm resources, indicating full mediation. On the other hand, the effect of managerial ties remained significant ($b = .1926$, $SE = .060$, $p < .050$), indicating partial mediation. Approximately 9% of the variance in firm performance was accounted for by the independent variables ($R^2 = .09$). The indirect effect was tested using a bootstrap estimation approach with 10000 samples. The results indicate that the indirect coefficient was significant with $b = .053$, $SE = .022$, 95% CI = .014, .099. Based on these results, we find support for H4b and H4c but not H4a. Table 4 shows a summary of the hypotheses test results based on the results presented above.

----Insert Table 4 about here---

5. Discussion

Performance of SMEs in developing economies is receiving increasing attention from scholars, policy makers and the general public because of the role that these firms play in economic growth. It has therefore become increasingly important to understand factors that enhance performance of these firms. While previous studies have attempted to establish an empirical connection between government support mechanisms, inter-firm collaboration and managerial ties, findings so far remain conflicting. Our empirical study of SMEs in Zambia presents interesting findings as it lends support to the existing literature on one hand, while conflicting with them on the other. The study finds that while government support does not significantly influence SME performance, inter-firm collaboration affects performance through firm resources. We also find that managerial ties positively affect performance both directly and indirectly through firm resources. Our findings

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3 contribute to small business strategy theoretical development by linking institutional theory with
4 the RBV theory of the firm in several ways.

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6 The finding that government support has no significant effect on SME performance is not
7 only surprising but also challenges the institutional theory and findings of Doh and Kim (2014),
8 Tambunan (2008), Lu *et al.* (2010) and Kang and Park (2012) indicating a positive significant
9 relationship. However, this empirical finding broadens and deepens understanding on the influence
10 of government support on firm performance. Our findings suggest that institutional support in
11 Zambia does not significantly relate to the performance of the SMEs studied. Although contrary
12 to our expectation, this finding extends the existing argument that in view of under-developed
13 market supporting institutions and given that valuable resources are hard to come by in such
14 markets, firms in developing economies largely rely on inter-firm relationships and external
15 networks to access critical resources (e.g., Hitt *et al.*, 2006; Boso *et al.*, 2013; Lu *et al.*, 2010). As
16 such, government support may not have a significant effect on performance.

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18 Interestingly, our results reveal that inter-firm collaboration and managerial ties are
19 positively associated to performance. Our study affirms earlier studies on RBV by highlighting the
20 importance of inter-firm collaboration to financial performance which includes cost and risk
21 sharing, joint opportunity exploitation, access to a variety of competitors' skills, knowledge,
22 resources and capabilities in various value chain activities. For example, Brito *et al.* (2014) found
23 collaboration with suppliers and customers has a positive effect on firm growth and profitability.
24 In the area of collaboration with competitors, Luo *et al.* (2007) and Jiang *et al.* (2010) found that
25 alliances with competitors is positively related to financial performance. In the context of small
26 and medium-sized firms, Morris *et al.* (2007) provide evidence that inter-firm collaboration
27 enabled SMEs to mitigate risk and leverage resources. Therefore, the results in this study add to
28 this body of knowledge by providing evidence that inter-firm collaboration is useful for SME
29 performance from an under-researched developing economy context. As anticipated, inter-firm
30 collaboration is likely to lead to superior performance because a firm is able to reap a variety of
31 benefits such as access to other firms' resources and capabilities that may not even be exchanged
32 in the factor market as they are either mingled with other resources or embedded in inter-firm
33 routines and processes.

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35 Also, we infer from the findings that managerial ties are a critical precursor to financial
36 performance and confirm previous strategy studies that suggest managerial ties to have a

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3 significant influence on business strategy and performance (e.g., Kotabe *et al.*, 2011; Penrose,
4 1959; Li and Zhang, 2007; Prévot and Spencer, 2006; Lu *et al.*, 2010). As other scholars have
5 argued, managerial ties provide managers with business network knowledge which is essential for
6 exploiting and shaping business opportunities and enhance performance.
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10 Furthermore, our study contributes to the literature by providing evidence that firm
11 resources mediate the effects of inter-firm collaboration and managerial ties on financial
12 performance. The study thus amplifies previous studies of a direct link and suggests that the
13 relationships are more complex than have previously been postulated. To illustrate, while firm
14 resources fully mediate the inter-firm collaboration-performance relationship, they partially
15 mediate the managerial ties-performance relationship. Although studies that have examined the
16 mediating role of firm resources are rare in the literature, our finding is supported in part by Surroca
17 *et al.*'s (2010) study of the effect of a firm's resources in mediating the relationship between
18 corporate responsibility and financial performance. In that study, an indirect relationship that relies
19 on the mediating effect of a firm's intangible resources was found. Although that study used a
20 different independent variable, corporate responsibility, our finding of the mediating role of firm
21 resources is consistent with their findings. More related to our findings, Lu *et al.* (2010) found that
22 resources of institutional capital and managerial ties positively affect a firm's adaptive capability
23 which in turn positively influence international performance. Therefore, our inclusion of firm
24 resources as a mediating variable helps enhance our understanding of how inter-firm collaboration
25 and managerial connection affect SME performance. Results also provide empirical support of the
26 RBV theory which emphasises availability of internal resources and capabilities as a source of
27 competitive advantage and superior performance. Thus, the accumulation of firm specific
28 resources is a necessary conduit for inter-firm collaboration and managerial ties to result in
29 improved financial performance.
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45 Overall, our study contributes to our understanding of the performance effects of
46 government support, inter-firm collaboration and managerial ties within the context of SMEs in
47 an under-researched context of a developing economy. Our study extends the theory of small
48 business strategy and contributes to the body of existing literature by empirically showing that
49 while government support is not significantly related to performance, inter-firm collaboration and
50 managerial ties have a positive and significant effect on SME performance and their effects are
51 channelled through firm resources.
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6. Managerial and policy implications

Considering the resource challenges that SMEs in most developing economies face, firms are encouraged to rely less on institutional support but invest more in inter-firm collaboration and managerial ties to improve performance. The study provides evidence that SMEs would draw extensively from inter-firm relationships to overcome their resource shortages and increase their viability to enhance performance. Through collaborations and ties, SMEs will have access to a variety of resources and capabilities of other firms and learn from other firm managers which in turn will lead to superior performance. The finding that firm resources mediate the relationships highlights the importance of SMEs not only depending on external relationships to improve performance but also having firm specific skills and resources available that will transform the external resources into superior performance.

The fact that government support was found not to be significantly related to performance in this study raises serious policy implications. There is need for SME support institutions to critically reconsider their support mechanisms and develop more appropriate approaches that enhance performance. The result that inter-firm collaboration and managerial ties positively influence performance means that SME policy makers should focus more on policies and support mechanisms that promote inter-firm collaboration, rather than the hand-out kind of support. The increasing global competition means that there is a pressing need to improve the competitiveness of SMEs. Our study informs SME policy makers, especially from developing economies like Zambia, that one way to achieve competitiveness is for SMEs to collaborate and work with other SMEs including managers of other firms.

7. Limitations and future research

We conducted our study using a cross-sectional research design in SMEs in a developing economy context. While we unleash from a context that is largely under-researched, extrapolating our findings to other countries should be done with care. Therefore, further empirical investigation across small enterprises of developed economies would enrich our knowledge. It would also be interesting to use the measures adopted in this study to investigate how inter-firm collaboration and managerial ties increase financial performance of large firms in developed countries with

strong support institutions. Examining specific government support interventions, intensity of the support provided and variability across industries are other avenues for future research.

In addition, since our study focuses on three drivers of SME performance and firm resources as a mediator, there is need for more research to explore other internal and external environmental factors such as organisational structure, manager's background and competitive intensity that could affect SME performance. Examining how the variables interact to affect performance is another direction for future research. This will allow for a broader perspective to be taken to provide a better understanding of how the factors could complement each other to enhance financial performance.

This study adopted non-probability sampling procedures and subjective measures for all the main constructs due to the difficulty associated with data collection in most developing African countries. While a number of tests indicate that the measures are reliable and valid for use in this study, we suggest that probability sampling procedures and objective performance measures be adopted in future studies.

Finally, to provide well-grounded and better-nuanced results, future research should aim at conducting a longitudinal study to replicate and extend the research scope on the study constructs. The fact that government support is not significantly related to firm performance in this study could mean that government support mechanisms need to be studied over a longer period of time. Thus, conducting this study across time could help increase the precision of the findings and enable stronger statistical inferences to be made.

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Figure 1: Conceptual Model

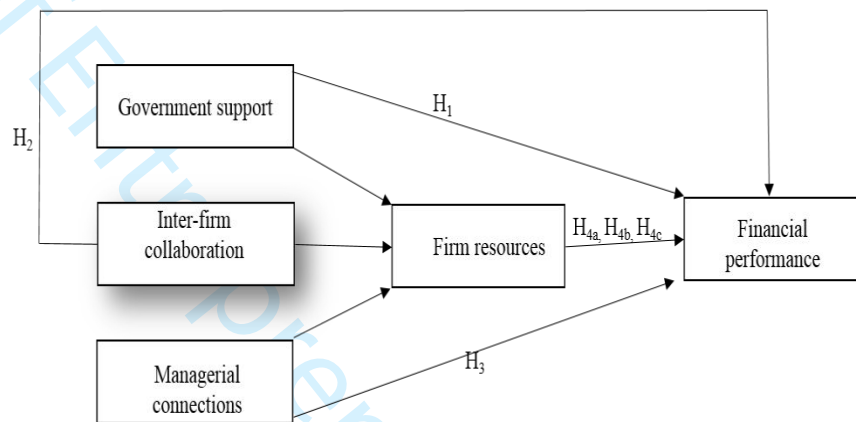


Table 1: Factor analysis and reliability results

	Factor loading	Cronbach's alpha (α)
<i>Institutional Support</i>		
The government and its agencies provide needed technical support for companies.	.706	
The government and its agencies play a significant role in providing financial support for companies	.811	
The government and its agencies help companies to obtain raw materials and equipment needed for their operations.	.809	
The government sets aside government contracts for new and small businesses.	.763	
The government and its agencies have special support available for individuals who want to start a new business.	.744	
The government and its agencies assist individuals with starting their own businesses.	.765	.859
<i>Interfirm collaborations</i>		
We spend considerable effort on collaborating with customers.	.630	
We maintain good relationships with customers.	.657	
We spend considerable effort on collaborating with suppliers.	.827	
We maintain good relationships with suppliers.	.791	
We spend considerable effort on collaborating with distributors.	.858	
We maintain good relationships with distributors.	.849	.864
<i>Managerial ties</i>		
I can obtain information about my industry faster than competitors.	.763	
I can obtain resources needed for business success faster than competitors.	.833	
I have a professional relationship with someone influential in my industry.	.789	
I have engaged with someone influential in my industry in informal social activity (e.g. playing and supporting football).	.715	.768
<i>Firm resources</i>		
We possess extensive technical knowledge.	.698	
We have the necessary skills to capture and acquire excellent market information.	.793	
We actively seek new ideas in our markets.	.723	
We have easy access to financial capital to support our business operations.	.654	

Our employees are experts in their particular jobs and functions.	.715	
Our staffs are knowledgeable about business practices in our industry.	.708	.800
Financial performance		
Profitability as a percentage of sales	.821	
Return on investment (ROI)	.851	
Profit growth	.868	
Reaching company financial goals	.856	
Return on assets (ROA)	.805	.895

Table 2: Descriptive statistics and inter-construct correlations

	Mean	SD	1	2	3	4	5	6
Financial Performance	5.236	1.049						
Firm Size	56.220	70.331	.099*					
Firm AGE	14.290	12.688	.140**	.459**				
Institutional Support	3.064	1.413	0.013	-0.043	-0.045			
Inter firm collaboration	5.787	0.960	.145**	-0.005	-0.017	.213**		
Managerial Ties	4.671	1.243	.196**	.123**	.104*	.187**	.172**	
Firm resources	5.659	0.933	.247**	.157**	.094*	.123**	.367**	.379**
* Correlation is significant at the 0.05 level (2-tailed).								
** Correlation is significant at the 0.01 level (2-tailed).								
N=438								

Table 3: Regression results for relationship institutional support, interfirm collaboration managerial ties and firm performance

	Model 1	Model 2
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<i>Control variables</i>		
Firm size	0.044	0.027
Firm age	0.166*	0.154*
<i>Independent variables</i>		
Institutional support		-0.029
Interfirm collaboration		0.138**
Managerial ties		0.141**
R^2	0.021	0.068
$Adj. R^2$	0.017	0.058
ΔR^2		0.047
F	4.68*	6.353**
Dependent variable = firm performance, ** $p < 0.001$, * $p < 0.05$		

Table 4: Hypotheses test results

Hypotheses	Findings
<i>H1: Institutional support is positively related to firm performance.</i>	<i>Not supported</i>
<i>H2: Interfirm collaboration is positively related to financial performance</i>	<i>Supported</i>
<i>H3: Managerial ties is positively related to firm performance.</i>	<i>Supported</i>
<i>H4a: Firm resources mediates the relationship between institutional support and financial performance</i>	<i>Not supported</i>
<i>H4b: Firm resources mediates the relationship between interfirm collaboration and financial performance</i>	<i>Supported</i>
<i>H4c: Firm resources mediates the relationship between managerial ties and financial performance.</i>	<i>Supported</i>