Paper title: **Networking Activities and Performance of Enterprises: Some Empirical Findings from Tanzanian Manufacturing SMEs**

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Abstract:

Informed by the networks, entrepreneurial, industrial districts, business strategy, marketing and innovation perspectives, this study investigated the impact of networking activities on performance of small and medium manufacturing enterprises (SMEs). It is argued that the networking-performance nexus has received little attention especially in developing economies. Networking in this study was measured by actors bonds. Results from 413 SMEs revealed a strong positive relationship between SMEs actor' involvement in actor bonds and the resulting firm performance. The results suggest that networking is instrumental to SMEs actors' acquisition and leveraging of resources. Both social and business networks were found to play a crucial role. The findings imply that there are potentials to improving performance of firms in these contexts if SMes actors can actively engage themselves in social and economic bonds among themselves, which in turn can enhance their resource mobilization and leveraging capacities.

Background information
The literature about networking activities among business owner-managers and entrepreneurs has in the recent years acquired more space within the field of business management. Involvement of these economic actors in networking activities has been extensively deliberated in different contexts and in relation to factors that affect the performance of enterprises at all levels: large, medium, small and micro. For instance, evidence from the trends of discourses in the scholarly works of the Industrial Marketing and Purchasing (IMP) group and the European International Business Academy (EIBA) shows that some scholars have so far put forward some general theories and models that are now widely used in explaining the contingent value of networking activities in connection with operations of enterprises.

However, a notable shortcoming associated with the theories in this area of study is that most of them have been devised within developed economies and likewise are the empirical justifications behind them. Their relevance and applicability in the context of developing economies, especially in Africa, are not yet well established and justified. Considering that networking is both a social and economic phenomenon, generalising from empirical findings based from only a few cultural settings (mostly western developed economies) might not be appropriate. If the theories in this area are to gain efficacy and extend applicability to enterprises in African developing economies, there are a number of knowledge gaps that need to be addressed. The way economic activities are organised, the motives behind establishing enterprises, the size of operations of enterprises, the technology involved, the management style, and the social values and cultures of the enterprise owner-managers and entrepreneurs differ significantly (Munene, et al. 2000; Hofstede, 1980, 1991). Moreover, even within the contexts where the theories emerged, there are observations that the assumptions regarding the long-term benefits accruing to the individual enterprise whose owner-manager is involved in networking activities have only been empirically examined to a limited extent (Havnes and Senneseth, 2001). The main support has been the theoretical argument that if the benefits of networking are not positive overtime, the enterprise owner-manager would leave the network (*ibid*). Such evidences would not be satisfactory, especially in the African cultures where enterprise profitability might not be the sole goal, since it is sometimes overshadowed by other social motives and economic obligations, including establishing enterprises as means of survival (Olomi, 2001). Moreover, according to some social science scholars, African cultures are comparatively non-individualistic, and have accordingly been stereotyped to have stronger social ties (Munene, et al. 2000; Hofsted, 1980, 1991), which are likely to hinder capitalistic tendencies of accumulating resources. This paper attempts to empirically address some knowledge gaps regarding the nexus between networking activities of Small and Medium size Enterprise (SME) owner-managers and the corresponding performance of enterprises in the context of an African developing economy, Tanzania in particular.

The Research Problem
Despite the concern that business researchers have devoted on the subject of networking activities, little consideration has been directed towards exploring the nexus of networking activities and the firm's overall performance (Benson-Rea and Wilson, 2000). It is also notable that different and often contradicting views have been put forward in attempting to explain the relevance of networking activities. On one hand there are views that networks are useful means of acquiring and leveraging resources, fostering learning and innovation, enabling flexibility and competitiveness (Hakansson and Johannson, 2001; Shaw, 1991; Thorelli, 1986). However, on the other hand there are views that networks are not useful because of their associated social obligations (or social costs). In some situations, it is argued that networks lead to resource drainage and thus impede growth and development of SMEs (Curran and Blackburn, 1994; Burt, 1992; Peterson and Rajan, 1994; Uzzi, 1997). In the African context the situation is even more complex due to the postulation that African cultures are associated with higher degrees of social ties and dependencies (Hofstede, 1980; Hyden, 1983; Illiffe, 1983), such that it is most likely (along this line of thought) that networking activities in this context are liabilities rather than assets. However, this postulation hasn't been empirically tested and hence lacks supporting evidence. Thus, in order to contribute towards resolving this scholarly debate, this paper empirically examines one major element of networking activities, actor bonds, by focusing the investigation on whether bonds among African Tanzanian SME actors hinder or support performance of their firms.

Research Objectives
Following the research problem above, the overall objective of this paper is to examine the relationships that exist between SME actors' bonds and SMEs' performance in Tanzania. The paper conceptualises performance of SMEs on a multi-perspective, adopting the balanced scorecard model (BCM) approach. Accordingly, the specific research objectives arising from the above overall objective are as follows:

- To examine relationships between SME actors' bonds and performance of SMEs on the customer services perspective
- To examine relationships between SME actors' bonds and performance of SMEs on the innovation and learning perspective
- To examine relationships between SME actors' bonds and performance of SMEs on the internal operations perspective
- To examine relationships between SME actors' bonds and performance of SMEs on the financial perspective

Definitions of key terms

As allude to above, the networks discourse has attracted attention of scholars from different fields hence engendering different definitions and approaches have been used in explaining networking activities (Monsted, 1995; Sheena, et al. 2001). Likewise the concepts of enterprise performance and SMEs have also been used differently by scholars. These observations trigger the need for operational definitions for any study involving these terms. In that respect, this study adapted the definition presented by Ford et al. (1998), which considers a *network* as a portfolio of long-term, social and economic relationships that a particular individual, group or organisation has with particular sets of stakeholders. Accordingly, *networking activities* in this study refer to social and economic processes through which individuals and organisations develop lasting relationships with particular sets of stakeholders for the purposes of accessing support and facilitating exchange. The study focuses on the three main variables of the networking process as highlighted by Hakansson (1987): *actor bonds, resource sharing* and *activity links.* The main reasons for applying this definition are that by considering both social and economic perspectives the study would be able to comprehensively and adequately examine SME actors' networking activities and their associated impact on the firms' performance.

With regard to firm performance there are also different views. For instance in their discussion of measurements of business performance in strategy research, Venkatraman and Ramanujam (1986, pg. 801) observe that "… with the volume of literature on this topic continually increasing, there appears to be little hope of reaching any agreement on basic terminology and definitions". However, approaches that conceptualise performance in terms of both *outcomes* and *behaviours* have in recent years received relatively wider acceptance (Bates and Holton, 1995; Brumbach, 1988). In that regard, performance encompasses both *how* things are done and *what* is done, an approach that we subscribed to. Our adoption of this definition arises from the observation that many researchers (see for instance in Kane, 1996; Kaplan and Norton 1992, 1996; Wickham, 1998), agree that the criteria for measuring performance must be comprehensive enough, covering all of a firm's key functional areas, as opposed to delivery of results (however outstanding) in merely one or a few areas. Having this holistic view of performance, Kaplan and Norton (1992) developed the Balanced Scorecard Model (BCM) as a comprehensive tool for measuring performance. The model, as shown in figure 1, identifies four performance perspectives of a firm, which are: financial, internal processes, innovation and learning, and customer services.

Figure 1: The Balanced Scorecard Model
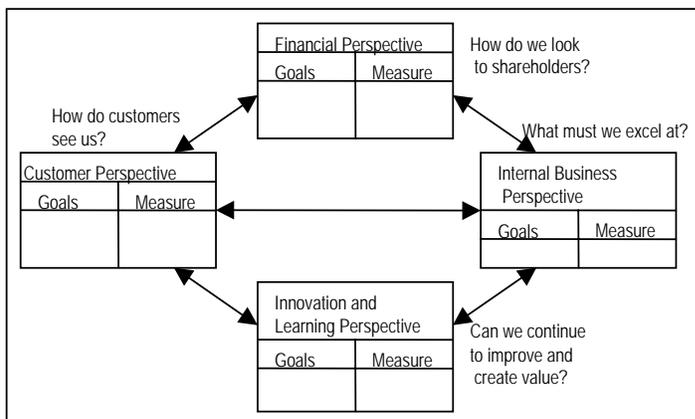
Source: Kaplan and Norton (1992).

Proponents of the model argue that the balanced scorecards are a set of measures (quantitative and qualitative) that give managers a fast but comprehensive view of the different key performance areas of the business, and hence coverage of both end results as well as the process. This study applied the four perspectives in operationalising performance of firm.

The concept of Small and Medium size Enterprises (SMEs) on the other hand, has become more intriguing among policy makers and the academia since the global economic turn around in the mid 1980s (Özcan, 1995; Tripp, 1997; URT, 2003). This is because in many developing economies, the processes of economic change and restructuring have been (and are still) focused on the SMEs sector as the reliable source of local capacities and potentials for economic growth (Bennett and McCoshan, 1993; Curran and Blackburn, 1994). To the extent that SMEs have been increasingly recognized as the most promising economic agents within the Tanzanian private sector (URT., 2003), as elsewhere, it was apparent that the focus should be on SMEs in order to add value towards better understanding of the country's key economic players. The study adopts the definition of Tanzanian SME development policy (URT, 2003), which defines SMEs as firms employing between 5 and 99 employees, and have capital investments in machinery (in Tanzanian shillings) ranging from 5 to 800 millions.

Literature review
A review of the literature related to networks and networking activities reveals that business scholars (and social science scholars in general) have differently conceptualised networking activities and the effects of belonging to networks. We noted that a lot of networks related studies and publications have (and are still) been made in the areas of entrepreneurship theory, marketing (with catch words like business to business marketing, relationship marketing, inter-firm networks, and buyer-supplier relationships), business strategy, industrial districts literature, and innovation theory. Substantial efforts have been directed on exploring the features of enterprise owner-mangers' business networks (Hakansson and Johanson, 2001), the role of personal networks (Aldrich and Zimmer, 1986; Özcan, 1995; Premaratne, 2001) and social networks (Degenne and Forsé, 1999; Lesser, 2000) among others, and the extent these sorts of networks are likely to affect the overall status of enterprises (Benson-Rea and Wilson, 2000; Özcan, 1995).

In entrepreneurship theory, some basic arguments in favour of networking have been that the entrepreneur utilises and gets support from his or her network during the venturing process (Johannisson et al., 1994). The network provides moral support, financial support, information, and other kinds of material and non-material support for the business start up. In that regard, new entrepreneurs are particularly seen to be largely dependant on their personal networks as sources of supplements to their own resources (Özcan, 1995). The time and cost at which such resources are accessed by an actor is also argued to be minimal. For example, according to Coleman (2000) and Degenne and Forse (1999), the greater the numbers of contacts available to an actor, the greater are the chances of acquiring information and other resources needed, at a minimum cost. Furthermore, according to Brown and Butler (1993), the type of information provided by the networks is necessary not only for identifying entrepreneurial opportunities that warrant founding of an enterprise, but also for ensuring the enterprise' success.

The basic arguments in the industrial districts literature that favour adoption of networking are that the network provides or can supply the enterprise with resources, which otherwise would not have been made available and that the network offers flexibility when organising production processes (Axelson and Easton, 1992; Özcan, 1995; Piore and Sable, 1984). Moreover, as no single business unit has all the resources required, it is advocated that interactions with the external environment (through networking) is so fundamental since through such processes, resources and support can be acquired from other actors such as suppliers, banks, government agencies, relatives, friends and acquaintances (Premaratne, 2001).

With regard to learning and innovation theory, business scholars argue that belonging to a network increases an enterprises' learning and innovation rates (Hakansson and Johanson, 2001; Wedin and Silver, 2001). This is achieved through, for example, inter-firm learning processes among technically related enterprises, whereby the network acts as a conduit of knowledge transfer. Falling under this category are processes like joint production, joint marketing, and joint research and development. Similarly the linkages between suppliers and customers play a crucial role in learning because the regular flow of information between them leads to improved understanding of each other's needs. Such understandings of the partners' needs encourage the suppliers to aggressively seek the best ways of meeting and satisfying needs of their customers in order to maintain the exchange relationships. In the long run, this continued search for best means of addressing needs culminates into improved quality of the firms' conversion processes. Likewise, the products and services which such actors exchange among themselves as well as with their customers are likely to be better (see for example, Hakansson, 1989).

Regarding marketing related aspects, a parallel development has been that of revisiting the traditional views about an enterprise's marketing processes. For instance the traditional marketing theory has been

challenged by the IMP Group (Ford, 1990) in that it has a focus on a faceless market. With the traditional marketing approach, a marketer is assumed to face passive customers, who only react upon the marketer's initiation of the exchange processes through manipulation of the four P's (product, pricing, promotion and place) in order to get access to the customers' interests and actions to satisfy their needs and wants. In that perspective only the marketer is considered to be an active player (Ford, 1990). On the contrary, the concept of networking has been applied to refer to the situations whereby both the marketer and customer are considered to be active players in the exchange processes (Hakansson and Johanson, 2001; Thorelli, 1986). In that respect, the customer can also play the role of initiating the exchange processes.

Regarding strategy theory, it has been argued more indirectly that the network increases the enterprise's competitive advantage and in the long run, its profits and survival (Gibb, 1993). This is because interactions among firms comprise of patterns of information exchange concerning the participating firms' needs, capabilities and strategies related to, for instance production, distribution logistics, quality and research and development (Cunningham and Homse, 1986). Hakansson and Snehota (1995) put it even more apparently that, interactions among firms are a matter of coordinating actors, resource portfolios, and activities, which is essentially the search for strategy. This is due to the assumption that through networking relationships, a network member is more likely to specialise in the production of products and services for which it has core competencies[1] and acquires other products and services through linkages with network partners. By networking, an enterprise acquires first hand information (for example regarding market trends, technological matters and even political issues) from the environment and then utilises that information in designing appropriate strategies. Studies on "buyer-seller relationships" in industrial markets, for instance, have lead to the evolution of the networks theory (Hakansson, 1987), which currently has been used to inform a number of researches in networks. Since this model was applied in the current research, we explain it in brief in the following paragraphs.

Proponents of this theory (see for instance, Axelson and Easton, 1992; Hakansson, 1987; Johanson and Mattson, 1987) assert that a firm's long-term better performance is largely dependent on how well it establishes and manages its relationships with other publics in the environment. Such relationships are referred to as the "building blocks" of a network, which is in turn characterised by closeness of actors (in terms of frequency of communication), complexity of interactions (in terms of different purposes for which interactions are meant), reciprocity of activities, trust among actors, and the relationships being long term in nature. Furthermore, the networks are considered to embody both social and economic properties (Hakansson and Johansson, 2001) and the analysis can categorically be focused on *supply-oriented* networks (those relationships with suppliers, and are extended to suppliers of suppliers), *demand-oriented networks* (relationships with customers as well as customers' customers) and *support-oriented* networks (for example relationships with banks and research institutions). From this theory, a network model has been developed in order to explain the networking process. The model (figure 2) portrays that a network is made up of three main elements, A*ctors, Resources* and *Activities,* and hence the model is in some cases abbreviated to the "A-R-A model". The philosophy behind the interconnections among these variables is that actors, defined as the specific social objects (individuals, groups or organisations) perform some activities and have control over the resources. As actors perform such activities, certain resources are used in order that other resources should be produced (or refined), and the value of the resources is determined by the activities into which they are used. Being social objects, actors develop long-term relationships overtime, through frequencies of interactions and continued exchanges. Such long-term relationships are bound together (hence the use of the term actor-bonds) by trust that gradually grows from the long-term, harmonious and mutually beneficial exchanges. In so doing actors are more likely to minimize uncertainty and opportunistic[2] attempts.

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[1] The concept of core competencies refers to the collective learning in the organisation, especially how to coordinate diverse production skills and integrate multiple streams of technologies (Prahalad and Hamel, 1990; p. 82).

[2] Williamson (1975) argues that opportunism is to be distinguished from stewardship behaviour. Stewardship behaviour involves a trust relation in which the word of a party can be taken as his bond . . . Opportunistic behaviour differs because it involves making "false or empty, that is, self-disbelieved, threats and promises" in the expectation that individual advantage will thereby be realised … (p. 26).

Figure 2: The network model.
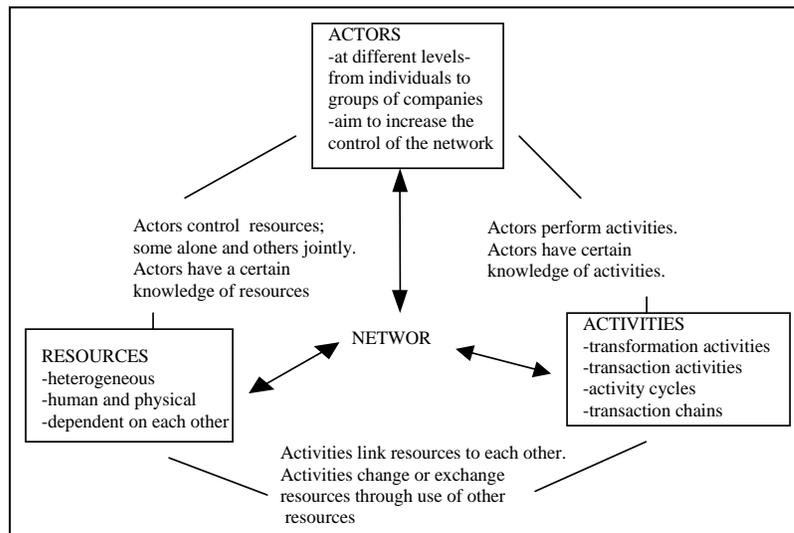
Source: Hakansson, 1987.

However, despite the above explanation of the theory and its accompanying model, criticisms have often been based on the grounds that it focuses on relationships among large firms of developed economies. Moreover, it entails both positive and negative effects such that its usefulness cannot be guaranteed in all contexts. It is also noticeable that most of empirical studies have been limited to western developed economies, including Sweden, the United Kingdom, France, Germany and Italy (see Hakansson and Johansson, 2001). The theory's usefulness in explaining SMEs' networking activities in developing economies has not yet been ascertained.

Some empirical studies on networks in the Tanzanian context
Although very little has been done regarding networking activities in Tanzanian SME actors, some empirical studies worth mentioning include that of Rutashobya (1990), Bangens (1998) Mboma (1999), Masenge (2001). Rutashobya (1990) provides some empirical findings regarding inter-firm linkages in the automobile industry basing on a study on the market for Tanzanian automobile radiators in Kenya. The researcher observed that despite the relatively high quality of products and the low-price strategy that was being practiced by the Tanzanian radiator exporter, actor bonds and ties among Kenyan buyers potentially restricted entry by non-members of the networks. In that respect the possibility of establishing relationships (in the form of joint ventures) would have added value. The study by Bangens (1998) focused on how inter-firm linkages determine the conditions for learning in firms. The overall objective of the study was to explore the relationship between the way linkages are organised and the processes of accumulating capabilities. Through the use of a case study methodology whereby firms from Tanzania and Kenya were involved, the findings indicated that the assumption that a firm's linkages comprise a precondition for learning[3] was proved to be successful. Mboma (1999) also examined the role of retailers' characteristics in explaining the development of small retail businesses. Among the retailer-related variables that were investigated was networking. The findings with regard to this variable were that networking influenced some of the store attributes, which included merchandise assortment, store location and achievements made by a retailer. Nevertheless, this study's focus was not on networking activities and so did not explore networking activities in detail. The study was also only based in one region (Dar es Salaam), and so the results can hardly be generalised. We also noted that Massenge (2001) analysed the role of owner-managers and networks in internationalisation of small handcraft firms. The study involved a survey of 40 firm and 4 case studies. Among the findings was the observation that performance in export business depends on how the owner-manager of the firm undertakes business interactions with other firms by forming networks. For instance it was found out that networks facilitate access to information and entry to export markets. Nevertheless, this study was limited in only one district (Kinondoni) of Dar es Salaam region and as mentioned above, involved only handcraft firms.

The point of departure from the above mentioned studies, which this research made based on both the focus and methodology. Regarding the focus, this study focused on the impact that networking activities

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[3] Learning here is defined as the process of capability accumulation.

have on performance of manufacturing SMEs (covering four business sub-sectors: food processing, iron works, woodworks and textiles), in five regions of Tanzania (Dar es Salaam, Mwanza, Arusha, Mbeya, and Mjini Magharibi). Methodologically it involved the use of a relatively medium sample (413 firms), whereby both quantitative and qualitative data were collected and analysed. Moreover, the conceptual framework, which this study designed and applied departs significantly from any other study that has already been done so far, in Tanzania and elsewhere.

To summarise the above review of the literature, we reiterate the point that despite the above conceptualisations and rethinking of the ways of governing social and economic activities in business enterprises, most of the works in this (networks) area, in terms of serious theoretical and empirical research have been done in developed, western economies (Rutashobya, et al., 2001). In the African context in general, and Tanzanian SMEs in particular, it is apparent that little has been done, such that there are no empirical evidences that support endorsing network theories that were established in developed economies. These observations contributed to the justifications and motivation for conducting the current this research.

Conceptual Framework and Research Hypotheses
Following the literature review presented above, the conceptual framework for this study is an integration of two models: the network model (figure 2) and the balanced scorecard model (figure 1). The former is adapted for operationalising actor bonds while the latter is for operationalising firm performance. We chose the network model for the following reasons: first, the model identifies the main variables in the networking process and explains the relationships among them. Second, it is an analytical tool that has recently gained popularity and hence widely applied in this growing literature (Sorensen and Reve, 1998), such that many researchers have been applying it in both theoretical and empirical studies (see for example, Bangens, 1998; Foss, 1999; Sorensen and Reve, 1998). As noted above, the balanced scorecard model, on the other hand, is a tool that provides a relatively comprehensive framework for measuring and analysing a firm's performance. Figure 3 is the model that resulted from integrating the above models and was used in guiding this study in examining the impact of exogenous latent variable (actor bonds) on the endogenous latent variable (firms' performance).

Figure 1: Conceptual model
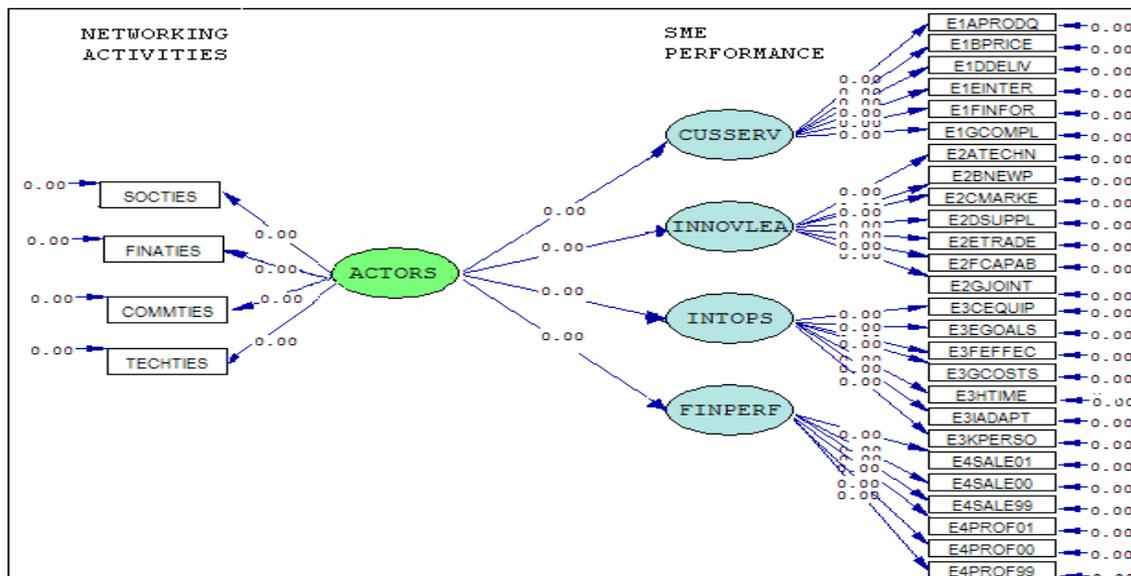
Actors in this study are defined broadly to include firm owners, managers, and owner-managers. These oversee performance of activities within their firms and also have control over the resources. However, since no business is an island (Hakansson and Snehota, 1986), each actor is assumed to be fundamentally embedded in webs of more or less strong, trust based, long-term relationships with other actors. These enable the actor to access resources from other actors and to perform activities worth exchange. The relationships further act as 'building blocks' of actor bonds, and are important in that trusted actors frequently act on the focal actor's behalf. This phenomenon helps in increasing the flow of relevant information (and other resources) to the focal actor, and further reduces uncertainty and opportunistic behaviours among actors (Cromie, et al.1993, Hakansson, 1997). It is also noted from the

literature that both the diversity and density of an actor's bonds play useful roles (Degenne and Forse, 1999). This is because interactions with individuals occupying different positions and statuses (for instance kinship members, friends, business associates, co-workers, suppliers, and customers) improve both the quantity and quality of information needed by the focal actor in making business decisions that are more logical. Accordingly, following the conceptual model above, we put forward the following major research hypothesis: *The more an SME actor has bonds with other stakeholders, the better the firm's performance*.

However, following our conceptualisation of a firm's performance in terms of customer services, internal operations, innovation and learning and financial performance, the above hypothesis was further narrowed down into the following array of hypotheses:

H$_1$: *The more an SME actor has bonds with other stakeholders, the more likely the firm is to deliver better services to customers.*

H$_2$: *The more an SME actor has bonds with other stakeholders, the more likely the firm is to experience better performance on innovation and learning.*

H$_3$: *The more an SME actor has bonds with other stakeholders, the more likely the firm is to experience better internal operations.*

H$_4$: *The more an SME actor has bonds with other stakeholders, the more likely the firm is to experience better financial performance.*

Research methodology
This paper adopted a deductive, theory testing approach to knowledge generation. This follows the observation that the subject upon which the enquiry focuses has been well established in developed economies, such that testable hypotheses could be established from the existing theories (Hilderbrand, 2003). Accordingly, a survey design was adopted and the analysis of data was done quantitatively.

Population, sample and sample size of the study
The population for this study comprised of Tanzanian manufacturing SMEs, specifically those dealing with woodwork, food processing, iron works and textiles. Firms involved in the woodwork category were those engaged in production of wooden products, such as furniture (tables, chairs, beds, etc.) and fixtures (doors, windows, etc.). The iron works category included firms dealing with fabrication activities, for instance latch-machining and welding, leading to the production of machinery parts, iron tools and equipments, and the like. Regarding the textiles category, firms included were those dealing with cloth making, for instance the tie & dye (locally known as batiki), cloth making (weaving) and tailoring marts. And finally regarding the food processing category, firms involved were those dealing with manufacturing of food substances for human consumption, such as bakeries, grain (maize, rice and wheat) - processing (or rather milling) enterprises, milk processing enterprises, and the like. This study used the individual SME owner-managers and their respective enterprises as the unit of analysis. The focus was on owner-managers because they are the most involved persons in the decision-making processes of their enterprises and therefore, information from them would be richer and more reliable for making informed judgements. The study involved a survey of 413 manufacturing SMEs. This number is what was achieved out of a planned sample of 450 respondents. A multistage cluster sampling method was used, whereby the population was first clustered into zones, basing on the geographical patterns of the country whereby five regions were then selected. These are Dar es Salaam, Arusha, Mwanza, Mbeya and Mjini Magharibi. These were selected basing on the regions' activeness in SME activities, for instance in terms of concentration, enterprise sizes and accessibility. The national statistics from the Central Bureau of Statistics were used for this purpose.

Concerning validity and reliability of measurements, the questionnaires items used were those which have been applied by other scholars and demonstrated high levels of validity and validity. Moreover, after the questionnaire was drafted, other SME researchers at the University of Dar es Salaam were approached for a review of the constructs, content and structure. The questionnaire was then revised and pre-tested. Data from the pre-test questionnaires enabled preliminary performance of Inter-item reliability tests using the Cronbach's alpha coefficient and item to total correlations. Following Babakus et al. (1996) and Anderson and Gerbing (1988), items whose inclusion resulted in lowering alpha coefficients were eliminated. The goal was to ensure that the remaining items measuring a given construct were internally

consistent. In the final analysis, all the factors loading to give constructs had inter-item Cronbach's alpha coeffients that were greater than 0.6, which ensured that the measures were satisfactorily acceptable (Bollen, 1989; Malhotra, 1996)[4]. We chose to use Cronbach's alpha because it is the most often used reliability test in social sciences research and it provides superior results when compared to other methods (see for instance the test-retest and the split-half methods), which are associated with many limitations (Bollen, op cit.).

Operationalisation of variables
In line with the network model (Hakanson, 1987), actor bonds were operationally defined in terms of social ties, commercial bonds, technological ties and financial ties among actors, whereby multi-items were used in measuring each construct. A total of 23 items were initially used in measuring an SME owner manager's ties with other actors, ranging from kinship members to business associates. However, following a thorough analysis of missing values within each item, performance of factor analysis, as well as the item-to-total scores, 13 items were removed. The remaining 10 were then subjected to reliability tests using the Chronbach's Alpha, whereby all items loading to a given construct had an Alpha coefficient greater than 0.6 , which meant that the items were internally consistent and could be used to measure one common variable. Regarding the dependent variable, in line with the Balanced scorecard model (Kaplan and Norton, 1992)'s approach to measuring a firm's performance, we identified and used four areas for guidance in setting indicators of an SME's performance. These are financial, customer services, innovation and learning, and internal operations. Like was done for actor bonds, multi-items were used in measuring each construct, from which factor analysis was then done. A total of 25 items were used in the final analysis.

Data analysis and interpretation of findings
Two statistical packages were used for this purpose, the Statistical Package for Social Sciences (SPSS, version 11.0), and the LInear Structural RELationships (LISREL, version 8.51). The former was chosen because it is a powerful and widely used statistical tool from which many tests and analysis can be easily performed, for instance factor analysis, descriptive statistics such as simple frequencies and cross tabulations, and measures of association such as Chi-square tests. The later was chosen on the grounds that since the variables used in this study have multiple indicators and given that there was a need to establish causal relationships, simple regression procedures provided by the SPSS would be considered unsatisfactory or rather, inappropriate (Long, 1984; Bollen, op cit.). Following Bollen (1989) and Joreskog and Sorbom (1996), the statistical tool that is most suited to these kinds of variables and relationships is the LISREL. The use of LISREL was furthermore supported by the observations from the empirical literature that the use of causal models in social sciences is increasing significantly. This is because by combining data and theory, these models provide researchers with more powerful opportunities to advance scientific knowledge (Hulland, et al. 1996).

Following Du Toit and Du Toit (2001), Joreskog and Sorbom (1996) and Bollen (1989), an SPSS 11.0 (for windows) dataset was imported into a PRELIS 2.0 spreadsheet for further cleaning and processing of the dataset before running LISREL 8.51. The SPSS dataset had the results of the factor analysis processes from which 4 principal components were availed for actor bonds. Individual items that demonstrated acceptable reliability and validity, and strongly loaded to each principal component were combined (in the PRELIS procedure) by taking their simple arithmetic mean[5]. Regarding SME performance, on the other hand, 6 variables were used for customer services, 7 for internal operations, 7 for innovation and learning, and 6 for financial performance.

A series of LISREL 8.51 models were then developed using the SIMPLIS programming language. For each model, a PRELIS System Data Files was developed, whereby polychoric correlations and asymptotic covariance matrices were generated and used in model estimations. All bivariate distributions had adequate normality on the basis of the Root Mean Square Error of Approximation (RMSEA) statistic provided by PRELIS, since the p-values were all significant. The method of estimation used in the models was the Weighted Least Square (WLS) and the sample size in all models was 413. Since by default LISREL 8.51 provides results at levels of significance of $\alpha = 0.05$, the same levels of significances were

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[4] The Cronbach's coefficient alpha ranges from 0 to 1, whereby, according to Malhotra (1996) a value of 0.6 or less is considered unsatisfactory.

[5] Factor scores would have been used for this purpose. However, a comprehensive review of the use of factor scores by Ford et al (1986) concluded that because alternative estimation methods produce different sets of factor scores, the simple average of items loading to a particular factor should be used for subsequent analysis. The approach is further supported by many empirical studies, for instance in Babakus et al. (1996).

used throughout the analysis. This choice is further supported by the study of Hulland et al. (1996), who argue that the cut-off point of p<0.05 is more widely accepted in both social sciences and other disciplines, since the null hypothesis of satisfactory model fit can not be rejected.

Actor bonds versus performance measured customer services
While actor bonds were measured in terms of the 4 principle components mentioned above, customer services (CUSSERV) on the other hand were measured in terms of six variables, namely product quality (E1APRODQ), price (E1BPRICE), timeliness in delivery (E1DDELIV), care about customer's interests (E1EINTER), information provided about products (E1FINFOR), and handling of customer complaints (E1GCOMPL). The empirical test to hypothesis 1 is shown in figure 4, which is the LISREL output for the causal relationship between actor bonds and customer services. The model fitted the data fairly well as indicated by some of the fit indices. That is, a Chi-square[6] (χ^2) of 43.51 with 33 degrees of freedom (p<0.05), Root Mean Square Error of Approximation (RMSEA) = 0.0463, Normed Fit Index-2 (NFI-2) = 0.9612, and Adjusted Goodness of Fit Index (AGFI) = 0.9489 indicated good fit of the model to the data. The average factor loadings (0.7784 and 0.7853 respectively for ACTORS and CUSSERV) of observed variables to the latent variables were significantly higher above the minimum of 0.7, which according to Fornell, et al. (1982) is considered satisfactory. All the t-values (the minimum was 4.1575 while the highest was 15.1372) were significantly larger. Moreover, from the modification indices output of the initial model, the only significant modification index was the error covariance between E1PRODUC and E1DDELIV. The path joining these indicators was accordingly fitted and the model was re-run in order to generate results presented in figure 4. None of the remaining modification indices was significant at the level of α = 0.05.

Figure 4: Actor bonds versus performance about customer services
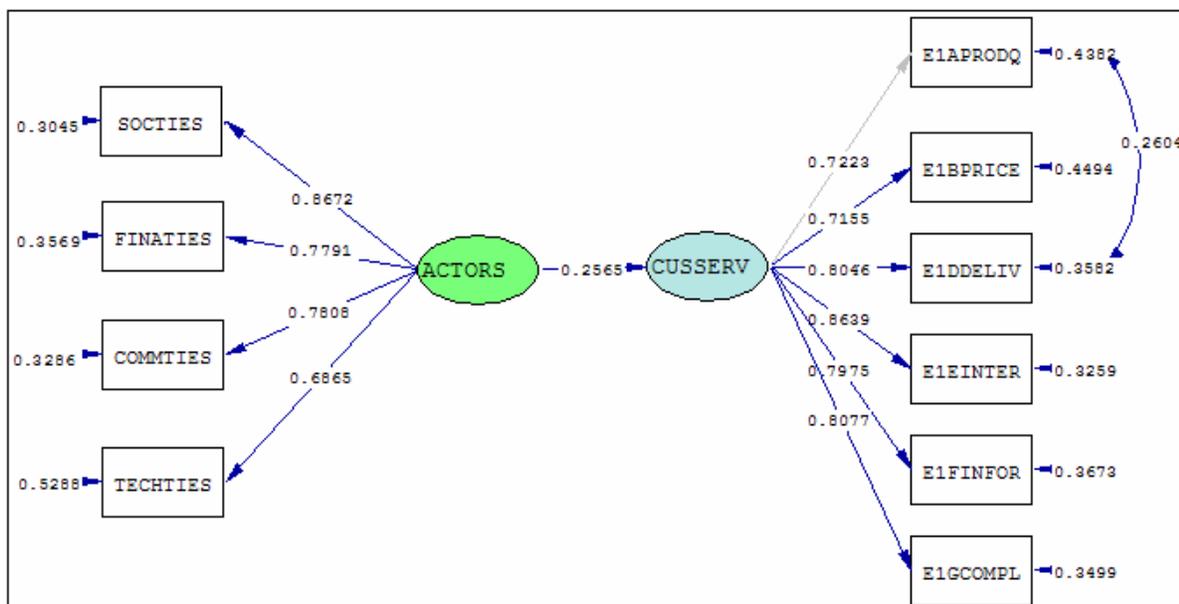

Following Joreskog and Sorbom (1996), the inference that can be made from the statistical results in figure 4 is that there is a positive causal relationship (0.2565) between actor bonds (ACTORS) and customer services (CUSSERV). This implies that *if actor bonds are increased by one unit while other things held constant, the expected increase in an enterprise's customer services is 0.2565 units on the average*. On the bases of these results, therefore, hypothesis 1 was supported.

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[6] In assessing the overall fit of the model, the most popular index of goodness of fit has been the χ^2 statistic, which tests the null hypothesis that the estimated variance-covariance matrix deviates from the sample variance covariance only because of sampling error. In practice, however, the test is sometimes of limited usefulness because it is not robust to violations of underlying assumptions (particularly normality) and because it is heavily influenced by sample size (Bentler, 1990). Due to this unreliability of χ^2 statistic, a number of statistical measures of model fit have been suggested, including the RMSEA and NFI-2 such that looking at multiple fit indices is highly recommended (Bollen and Long, 1993; Brown and Cudeck, 1993).

Actor bonds versus performance measured by innovation and learning

Innovation and learning processes were measured in terms of six items, namely, access to better production techniques and skills (E2ATECHN), introduction of new products (E2BNEWP), access to new markets (E2CMARKE), access to new sources of supplies (E2DSUPPL), gaining of trade secrets (E2TRADE), understanding of competitive capabilities (E2FCAPAB) and creativity in utilisation of existing resources (E2GCREAT). Figure 5 was used to test the causal relationship between actor bonds and enterprises' innovation and learning processes. From the outputs of the initial model for this relationship, four error covariance paths were suggested in the modification indices. That is, a path from E2ATECHN to E2BNEWP, from E2BNEW to E2JOINT, from E2SUPPLY to E2JOINT and from SOCTIES to TECHTIES. These were accordingly added and the model re-run to generate the final output presented in figure 5. Fit indices yielded the following results: χ^2 = 54.76 with 38 degrees of freedom (p<0.05), Root Mean Square Error of Approximation (RMSEA) = 0.0493, Normed Fit Index-2 (NFI-2) = 0.9299 and Adjusted Goodness of Fit Index (AGFI) = 0.9012. These all indicated sufficient fit of the model to the data. The average factor loadings (0.8038 and 0.8336 respectively for ACTORS and INNOVLEA) of observed variables to the latent variables were significantly higher above the minimum of 0.7 (Hulland et al. op cit). All the t-values (the minimum was 3.8592 while the highest was 17.1632) were significantly larger and none of the remaining modification indices was significant the level of α = 0.05.

Figure 5: Actor bonds versus performance about innovation and learning
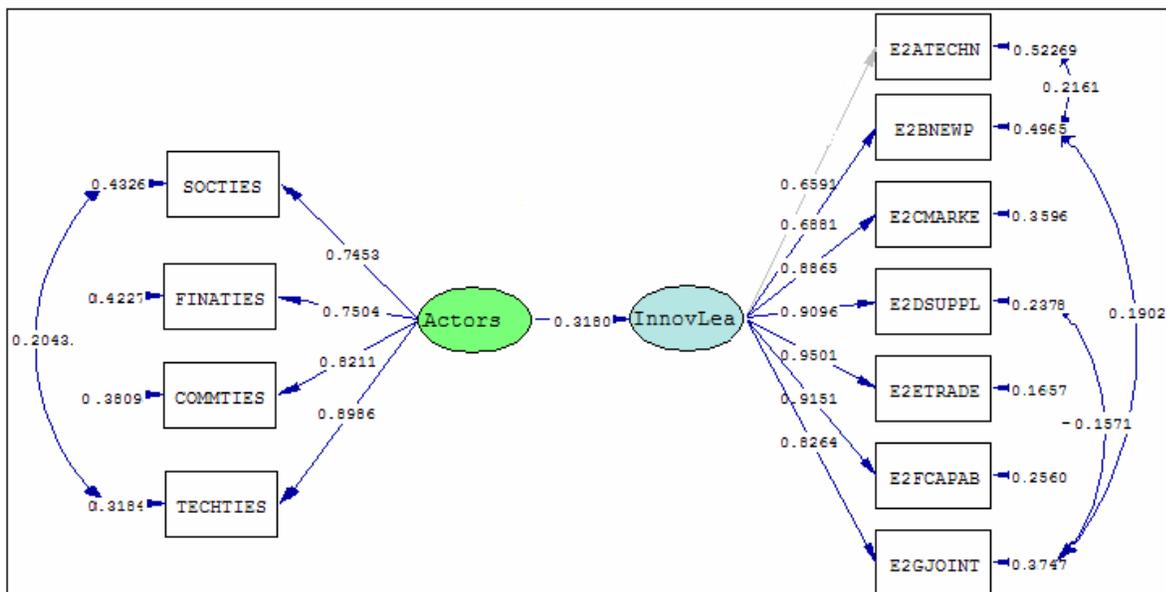
The inference that can be made from figure 5 is that there is a positive causal relationship (0.3180) between actor bonds and enterprises' innovation and learning processes. This implies *that if actor bonds are increased by one unit while other things held constant, the expected increase in an enterprise's innovation and learning processes is 0.318 units on the average*. These findings support hypothesis 2.

Actor bonds versus performance measured by internal operations

Internal operations (INTEROP) were measured using seven variables, namely, improvement in production equipments and processes (E3CEQUIP), attainment of production goals (E3EGOALS), efficiency in resource utilisation (E3FEFFIC), attainment of lower unit costs (E3GCOSTS), reduction of lead time (E3HTIME), product and process adaptations (E3IADAP), and capacity to employ new personnel (E3KPERSO). Figure 6 is the LISREL output for the causal relationship between actor bonds and an enterprise's internal operations, which provides the empirical test to this hypothesis. From the initial model for this relationship, three error covariance paths were suggested in the modification indices. That is a path from E3GCOSTS to E3IADAP, E3HTIME to E3IADAP and E3HTIME to E3KPERSO. These were accordingly added and the model re-run to generate the final output presented in figure 6. Some fit indices, that is, a χ^2 of 57.56 with 39 degrees of freedom (p=<0.05), Root Mean Square Error of Approximation (RMSEA) = 0.0629, Normed Fit Index-2 (NFI-2) = 0.9705, and Adjusted Goodness of Fit Index (AGFI) = 0.9282, indicated that the model fitted the data fairly well. The average factor loadings of observed variables to the latent variables (0.8392 and 0.7553 respectively for ACTORS and INTEROP) were significantly higher above the minimum of 0.7 (Hulland et al., op cit.). All the t-values were

significantly larger, the minimum was 3.6215 while the highest was 16.2603, and none of the remaining modification indices was significant the level of α = 0.05.

Figure 6: Actor bonds versus performance about internal operations
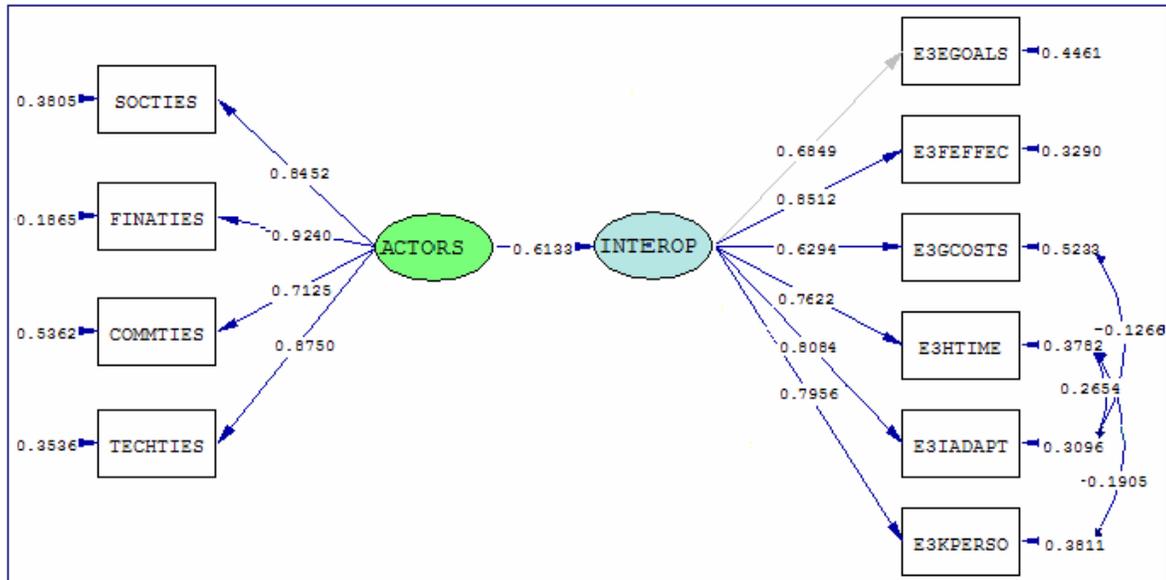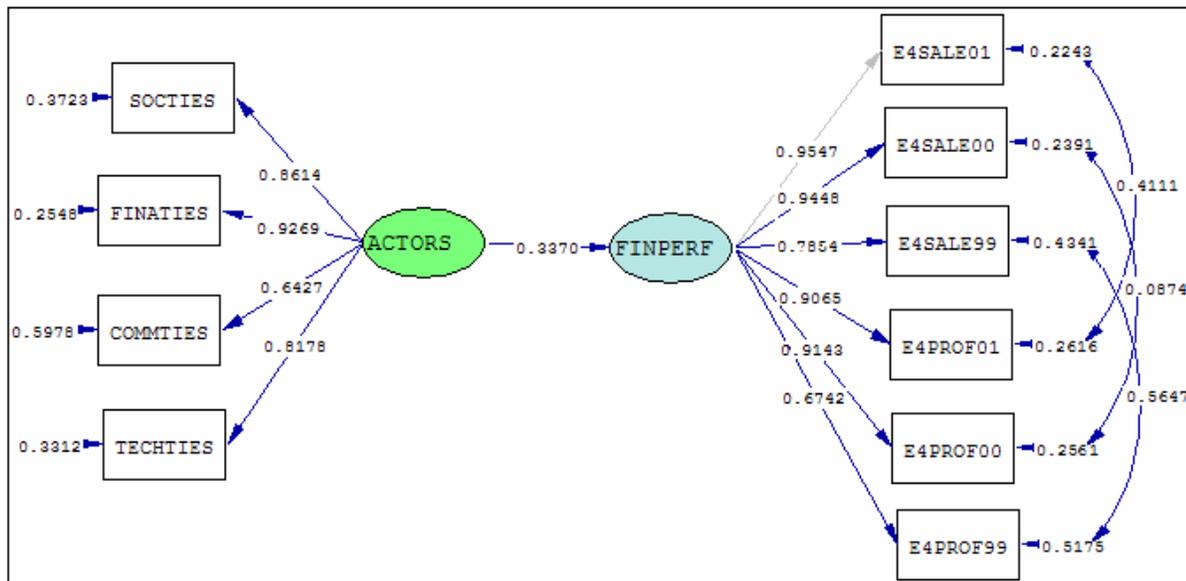

Figure 6 shows that there is a positive causal relationship (0.6133) between actor bonds and enterprises' internal operations. This implies that *if actor bonds are increased by one unit while other things held constant, the expected increase in an enterprise's internal operations is 0.6133 units on the average.* These statistical results supported hypothesis 3.

Actor bonds versus financial performance
Financial performance was measured in terms of six items, namely, sales performance for three consecutive years (1999-2001) which were denoted by E4SALE99, E4SALE00, E4SALE01 and profits for the same three consecutive years (E4PROF99, E4PROF00 and E4PROF01). Figure 7 was used to test the causal relationship between actor bonds and an enterprise's financial performance. This final model was attained after three error covariance paths were iteratively fitted to the initial model for this relationship. That is from E4SALE01 to E4PROF01, E4SALE00 to E4PROF00 and E4SALE99 to E4PROF99. Fit indices yielded the following results: χ^2 = 68.54 with 39 degrees of freedom (p<0.05), Root Mean Square Error of Approximation (RMSEA) = 0.0502, Normed Fit Index-2 (NFI-2) = 0.9480 and Adjusted Goodness of Fit Index (AGFI) = 0.9131, indicated fairly good fit of the model to the data. The average factor loadings of observed variables to the latent variables (0.8122 and 0.8633 respectively for ACTORS and FINPERF) were significantly higher above the minimum of 0.7 (Hulland et al., op cit). All the t-values were significantly larger (the minimum was 2.709 while the highest was 15.8145). None of the remaining modification indices was significant the level of α = 0.05.

Figure 7: Actor bonds versus financial performance

The inference that can be made from figure 7 is that there is a positive causal relationship (0.3370) between actor bonds and enterprises' innovation and learning processes. This implies that *if actor bonds are increased by one unit while other things held constant, the expected increase in an enterprise's financial performance is 0.337 units on the average*, suggesting that hypothesis 4 is supported.

Having obtained the above results, we performed further investigations on the data to see if there were any differences regarding the impact of actor bonds in the four different sub-sectors of manufacturing firms involved in this study. We also considered the possibility of influences and variations caused by sample characteristics such as age of enterprises and of firm owner managers, gender, education, size of firms and ethnicity of owner managers. This was accomplished through cross tabulations and Chi-square tests. At the significance level of $\alpha = 0.05$, the findings indicated that actor bonds are equally important regardless of the above factors, except for geographical location of the firms. This is indicated in table 1 below, where the Chi-square test for the cross tabulation of the type of actor bonds and the region where the business is located showed that there is a statistically significant difference at the level of $\alpha = 0.05$. The significance of this kind of relationships is most likely associated with the geographical distribution of ethnic groups in Tanzania, such that different ethnic groups scored differently on the principal components of social ties, commercial ties, financial ties and technical ties. It is interesting to note from the percentages in the table that commercial ties are over represented in Arusha region (mostly dominated by the Chagga ethnic group) while social ties are under represented. The lower score in social ties which is coupled with a higher score in commercial ties might be reasonably associated with the geographical mobility of the Chagga ethnic group. Such a composition of ties enables them to move all over important business centres in the country while at the same time maintaining stronger commercial ties among themselves. This ethnic group is over represented in this study's sample (accounting to 17.7% out of the 65 ethnic groups involved), and is geographically distributed to cover all the regions from which the study drew the sample. These findings compare well with previous studies (see for instance Rutashobya, 2000 and Olomi, 2001), which also have shown almost similar patterns with regard to this ethnic group.

Table 1: Actor bonds versus region where business is located

| | | | Type of actor bond | | | | |
			Social ties	Financial ties	Commercial ties	Technical ties	Total
Region where the business is located	Dar es Salaam	% within Region where business is located	23.9%	13.6%	18.2%	44.3%	100.0%
		% within Type of actor bond	30.4%	15.2%	19.5%	38.2%	26.5%
	Mwanza	% within Region where business is located	26.3%	14.5%	34.2%	25.0%	100.0%
		% within Type of actor bond	29.0%	13.9%	31.7%	18.6%	22.9%
	Arusha	% within Region where business is located	9.4%	18.9%	45.3%	26.4%	100.0%
		% within Type of actor bond	7.2%	12.7%	29.3%	13.7%	16.0%
	Mbeya	% within Region where business is located	25.4%	31.7%	9.5%	33.3%	100.0%
		% within Type of actor bond	23.2%	25.3%	7.3%	20.6%	19.0%
	Mjini Magharibi	% within Region where business is located	13.5%	50.0%	19.2%	17.3%	100.0%
		% within Type of actor bond	10.1%	32.9%	12.2%	8.8%	15.7%
Total		% within Region where business is located	20.8%	23.8%	24.7%	30.7%	100.0%
		% within Type of actor bond	100.0%	100.0%	100.0%	100.0%	100.0%

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.81.　Number of valid cases = 332

b. Pearson Chi-Square value = 60.108, df = 12, Sig. = 0.000

We also noted that in Mbeya region the opposite of the situation in Arusha region occurs. Social ties are higher than commercial ties, which suggests that actors from this region (mostly Nyakyusa and Safwa) have more of social ties than commercial ties and perhaps this partially explains their limited mobility to other geographical regions for commercial purposes. In Mwanza region, it is notable from the statistics in table 1 that there are relatively higher scores on both commercial and social ties, suggesting that though actors from this region (mostly Sukuma) attempt to have a wider geographical coverage, such mobility is limited by the relatively stronger social ties. Actors from this region are geographically available in all the regions the study covered, but at a rate which is not comparable to that of actors from Arusha region (mostly the Chagga).

In Mjini Magharibi region it is notable that there is an over representation of financial ties while social ties are lower. Most likely this has to do with the characteristic that most SME actors in this region were of a homogeneous ethnic group (the Waunguja), and historically this ethnic group had been in trade (see for instance, in Ntarangwi, 2003). It is more likely that this indicates their attitudes towards valuing financial relationships among themselves is high (comparatively, all the other regions have lower scores on financial ties). Most of them operate within Zanzibar, though a few of them are found in Tanzania mainland. In Dar es Salaam region, technical ties appear to be over represented as compared to other types of actor bonds, indicating that the influx of actors from various regions has a moderating effect onto the other types of actor bonds. Most likely business owner-managers in this region are most inclined to ties in terms of value adding processes, though the other types of actor bonds are also prevalent.

It is worth noting that with the exception of Mjini Magharibi region, financial ties are relatively lower in most of the regions. For instance Dar es Salaam region has the lowest score of 13.6%, followed by Mwanza (14.5%), Arusha (18.9%) and finally Mbeya which has the highest score of 31.7%. Perhaps this is one of the explanations about inadequacy of financial resources among SME actors, as little efforts are directed to formation of financial ties among SME actors.

Discussion of findings
In the above statistical investigations of the relationships between actor bonds and performance of enterprises, all of the hypotheses have been supported by the data. The general inference here is therefore, as hypothesized, that there is a positive relationship between SME actors' involvement in actor bonds (a major element in networking activities) and the resulting performance of their enterprises. When compared to previous empirical studies on the subject of networks, these results both support and depart from what have already been established. In the first place the results are in agreement with scholars who argue that networking is instrumental to SME actors' acquisition and leveraging of resources (Hakansson,

1987). Particularly in the African context, these findings are in agreement with those of Kuada (2000)'s exploratory study of social ties in Ghanaian firms. The findings also support the arguments within the network theory, that actor bonds play a significant role in networking activities. This is because despite the fact that three main components (actors, resources and activity linkages) are identified in the theory, still the theory compellingly argues that actors own and control the resources, directly through owning them or indirectly through having bonds with those who have the direct control. And furthermore, it is the existence of actor bonds that support activity linkages among related actors. The findings reject the reasoning based on the assumptions that because of the higher level of poverty among African SME actors, actor bonds would most likely lead to increased social dependences and obligations that culminate into resource drainage and hence poor performance of the firms.

Conclusion

This paper has empirically examined the impact of networking activities on performance of SMEs in the Tanzanian context and its findings have demonstrated that the usefulness of social and business networks is not only limited to actors based in western developed economies, but also to actors in the SME sectors of African developing economies. The findings imply that there are potentials to improving performance of firms in these contexts if SMEs actors can actively engage themselves in social and economic bonds among themselves, which in turn can enhance their resource mobilisation and leveraging capacities.

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