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Kirimi, D., Mukulu, E., & Orwa, G.

DETERMINING WHETHER NETWORK CENTRALITY HAS AN INFLUENCE ON THE FINANCIAL PERFORMANCE OF MEDIUM SIZED ENTERPRISES IN KENYA

Kirimi, D.,¹ Mukulu, E.,² & Orwa, G.³

^{*1} Ph.D Candidate, Jomo Kenya University of Agriculture & Technology [JKUAT],
P.O Box 62000 00200 Nairobi, Kenya

^{2,3} Prof., Jomo Kenya University of Agriculture & Technology [JKUAT],
P.O Box 62000 00200 Nairobi, Kenya

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ABSTRACT

The purpose of this study was to examine the influence of network centrality on financial performance of medium sized enterprises in Kenya. A descriptive survey design was adopted. The target population was drawn from 51 medium sized enterprises in Kenya which participated in the KPMG top 100 mid-sized ranking for the period 2011 to 2015. Multi stage, systematic and purposive sampling was used to select a sample of 255 which had the data needed in the study. Primary data was collected using questionnaires which were pretested for reliability and validity to determine its suitability for use in the study. Statistical Package for Social Sciences (SPSS) was used in the analysis of data to generate frequency distribution of the responses and descriptive statistics. The study findings indicated that the enterprises had greater power and influence over other enterprises in the industry, the enterprises operated in an environment that offered strategies about competitors and partnership opportunity information was available to their enterprise through networks. It was found that network centrality was positively and significantly related to financial performance. The finding lends support to the social network theory, indicating that the more central the entrepreneur is in the network, the more it will affect business performance. Firms with strong entrepreneurial orientations benefit from the industry leadership status associated with high centrality, because these ventures need to acquire resources and mobilize institutional support from a variety of domains to successfully commercialize their innovations. Medium sized enterprises should consider networking with external environment as part of business planning objective and the management or the owner manager of the business should use it as an instrument for accessing marketing information, for acquiring tangible and intangible resources and finally to improve the performance of their business. The study recommended that managers should carefully construct their alliance networks. Firms with superior advantage-creating or advantage-enhancing capabilities should encourage partners to actively collaborate with one another.

Key Words: Network Centrality, Financial Performance, Medium Sized Enterprises, Entrepreneurial Networks

INTRODUCTION

Medium sized enterprises are faced with major challenges of constantly improving their performance by reducing costs, enhancing quality and differentiating their products and services. The market environment in the Kenya has been extremely turbulent during the past decade, and to maintain continuous success in the face of global competition, firms must identify and analyze environmental characteristics and develop strategies to meet changing market needs. These enterprises need to respond to greater global imperatives and challenges to compete effectively in local and global markets (Waiganjo, Mukulu & Kahiri, 2012).

Network centrality refers to a firm's position in the entire pattern of ties comprising a network and indicates the firm's structural proximity to all other firms in the network. High network centrality indicates that entrepreneurs have access to many alternative providers of valuable resources (Kilduff & Tsai, 2003). Such privileged access is particularly beneficial to highly entrepreneurial firms since entrepreneurial orientation constitutes a resource-intensive strategic posture that involves much uncertainty (Wiklund & Shepherd, 2005). Through diverse relationships, a firm can obtain valuable and specialized knowledge, competencies and resources complementing or compensating their own limited in-house resources and competencies (Li, Lai & Chen, 2011). The advantages from networking can in turn enable firms to be more innovative, risk-taking and proactive, and thus portray an entrepreneurial orientation. For instance, Wiklund and Shepherd, (2005) found that inter-firm networking positively influences entrepreneurial orientation.

In today's competitive landscape, firms cannot rely on internally controlled resources alone to pursue advantage-creating and advantage enhancing strategies (Gaudici, 2013). They must collaborate with other firms to gain access to information, skills,

expertise, assets, and technologies and thus leverage their internal resources. Different strategic tendencies create different needs, motivations and opportunities for collaboration with other market participants such as competitors, distributors, suppliers, and customers. Thus, certain regularities in firms' strategic behavior can lead to distinctive and recognizable patterns of networking behavior, which in turn leads to predictable types of network structure (Robinson & Stubberud, 2009). A firm's ability to persistently outperform rivals depends also on the advantageous access to external information and resources uniquely held by other market participants (Krueger, 2007). The increased competitive pressure and the unprecedented pace of technological change in most industries today (Davis, 2007) have made collaboration with other firms a necessary condition for sustained success in the marketplace. This increased collaborative activity, strategically initiated by firms in their efforts to outcompete rivals; leads to formation of a network of inter firm relationships in the form of strategic alliances, joint ventures, and long-term agreements. Each firm in the alliance network maintains a distinct portfolio of alliances and has a distinct pattern of alliance ties with other network members, which in turn provide different potential for gaining access to network resources (Stam, 2010). Applying social network theories, researchers have shown empirically that several network positions for instance brokerage position, ego network density, centrality and configurations such as diversity of ties, proportion of strong or weak ties provide firms with advantageous access to network resources, which in turn is positively related to firms performance (Zaheer & Bell, 2005).

Statement of the Problem

Networking occurs as a natural and inherent entrepreneurial activity. This is because, owners and managers of medium sized enterprises are in

networking activity, through communicating activities such as interacting and participating in social, business and trade activities. A medium sized enterprise owner-manager personal network will be represented by people who can help the entrepreneur in arriving at decisions for the well-being of the enterprise. The cost of networking are implicitly hidden because any explicit cost or expenses are low in the immediate term, for example the cost of networking will include minor expenses such as club or trade members, cost of dinner trade functions or the cost of entrance to exhibitions.

However, networking increases the ability to leverage the internal resources and hence financial performance. Understanding the influence of entrepreneurial networks is a critical success factor to entrepreneurs and medium enterprises today. More so, entrepreneurial networking suggests that structural holes, network structure, network ties, network centrality and network size are the sources of entrepreneurial relationships that influence financial performance of enterprises (Setyawati, Shariff & Saud 2011). Studies conducted on networks and performance looked at different dimensions. Thrikawala (2010) carried out a research to shed light on the structure of social inter firm and supporting networks of SMEs in Sri Lanka and the impact of networking for their success

According to Setyawati *et al.* (2011) in their study on effects of learning, networking and innovation adoption on successful entrepreneurs in Central Java, Indonesia, showed that learning and networking have a significant effect on innovation adoption. Consequently, innovation adoption significantly affects the success of the entrepreneurs. Stam (2010) conducted a study on industry event participation and network brokerage among entrepreneurial ventures. Peprah (2010), on the other hand, assessed the extent to which the number of networks affects start-up capital and access to quantum of credit in

Ghana. Obura, Abeko and Obere (2010) studied the role and impact of networks on small businesses performance and sustainability in Kenya. This paper therefore sought to determine the influence of network centrality on financial performance of medium sized enterprises in Kenya.

Purpose of the Paper

To determine whether network centrality has an influence on the financial performance of medium sized enterprises in Kenya.

LITERATURE REVIEW

There can be many kinds of ties between the nodes. In its most simple form, a social network is a map of all of the relevant ties between the nodes being studied. The network can also be used to determine the social capital of individual actors. These concepts are often displayed in a social network diagram, where nodes are the points and ties are the lines. The power of social network stems from its difference from traditional sociological studies, which assume that it is the attributes of individual actors whether they are friendly or unfriendly, smart or dumb that matters. Social network theory produces an alternate view, where the attributes of individuals are less important than their relationships and ties with other actors within the network. This approach has turned out to be useful for explaining many real-world phenomena, but leaves less room for individual agency, the ability for individuals to influence their success, so much of it rests within the structure of their network (Koch, 1998).

These researchers often try to glean a better understanding of the inner workings of a network so they can further their cause or simply sell a product. The study, though, does have some inherent strengths and weaknesses. Strengths: The study offers an explanation for how random people are connected. It's useful in the study of large groups and

understanding how their members relate to others in the group. It provides insight into viral phenomena, such as viral content, the spread of diseases like Ebola, weaknesses: It's difficult to scientifically replicate and interpreting relationships/ties can be subjective. This is relevant in the study as it helps to illuminate the process by which entrepreneurs in networking groups can increase the amount of referrals they receive, and thereby increase firm performance. The study helps to understand how connections and relationships among medium sized enterprises in Kenya develop a social structure which can determine the financial performance of enterprises and impact on sustainability in the long run.

METHODOLOGY

This study adopted a descriptive survey design to collect data on network centrality and financial performance of medium-sized firms in Kenya. The survey was cross-sectional and therefore collected data from a number of different respondents at a single point in time. This design was appropriate because the purpose of the research study happens to be description and an association between independent variable (entrepreneurial networks) and dependent variable (financial performance) of medium sized enterprises.

The target population was all medium sized enterprises that appeared on the list of Top 100 between 2011-2015 from which the specific enterprises was selected and samples drawn from them. The selected firms were those that have appeared on the list for three or more times within the period under study. There were 51 enterprises that appeared more than three times with the population of study.

This study used a mixed sampling design. A multi-stage random sampling was conducted and samples were drawn from the target population. A multi-stage

sampling was a further development of the idea of cluster sampling. This technique is meant for big inquiries extending to a considerably large geographical area like an entire country (Kothari, 2014). According to Mugenda and Mugenda (2003) a sample of 30% of the accessible population is considered an adequate sample.

According to Zikmund (2010) purposive sampling is a sampling technique that allows a researcher to use cases that have required information with respect to the objectives of the study. Cases of subjects were therefore handpicked because they were informative and had the required characteristics. The rationale was to draw conclusions about the entire population. Purposive sampling method was used to select the unit of analysis to be used in the study. This method was used to select respondents from employees in the management level that was from the Human resource, marketing and business Development sections. From each enterprise 5 respondents were selected from three different sections since they had the required information for the study. Respondents were drawn from Human resource, marketing and business development department because they were more involved in entrepreneurial networking in their enterprises. The study used a questionnaire with different set of questions for the respondents to answer. Respondents were employees in HR, marketing and business development departments of the sampled companies. Primary data collected was coded and analyzed using SPSS version 20.0. The data collected from medium sized enterprises employees was subjected to quantitative analysis and key summaries were made. The findings were presented in form of tables and discussions and interpretation of the same given.

Results and Discussions

Factor Analysis

Table 1 showed the factor loadings for sub-constructs of network centrality. All the statements attracted coefficients of more than 0.4 hence all the statements were retained for analysis. According to Rahn (2010)

Table 1: Factor Loading for Network Centrality

Statement	Component
Our enterprise operate in an environment that are efficiency-driven is always the first to learn about new market conditions	0.599
Our enterprise operate in an environment that offers strategies about competitors	0.75
Partnership opportunity information is available to our enterprise through networks	0.785
Our enterprise is visible to potential resource providers	0.817
People are willing to share information and resources with our enterprise	0.841
Our enterprise has relatively quicker access to information	0.786
Networking facilitates sharing of resources	0.776
Pooling resources for social responsibility is made possible through networks	0.792
Flow of information that allows it to keep aware of new developments is through networking	0.787
Our enterprise has greater power and influence over other enterprises in the industry	0.614

Extraction Method: Principal Component Analysis.

Descriptive Analysis

The objective of the study was to determine whether network centrality has an influence on the financial performance of medium sized enterprises in Kenya. Table 2, showed that 85.9% of the respondents agreed that their enterprises operated in an environment that was efficiency-driven always the first to learn about new market conditions, 85.4% agreed that their enterprises operated in an environment that offered strategies about competitors and 84.4% agreed that partnership opportunity information was available to their enterprise through networks. Ninety two point two percent of the respondents agreed that their enterprise was visible to potential resource providers, while 88.7% agreed that people were willing to share information and resources with their enterprise and 88.3% agreed that their enterprises had relatively quicker access to information. In addition, 87.8% of

and Zandi (2006) a factor loading equal to or greater than 0.4 is considered adequate. This is further supported by Black (2002) who asserts that a factor loading of 0.4 has good factor stability and deemed to lead to desirable and acceptable solutions.

the respondents agreed that networking facilitated sharing of resources, 82% agreed that pooling resources for social responsibility was made possible through networks and 88.8% agreed that flow of information that allowed it to keep aware of new developments was through networking. Finally, 84.4% of the respondents agreed that their enterprises had greater power and influence over other enterprises in the industry. The mean score for responses for this section was 4.08 which indicated that majority of the respondents agreed to the statements regarding influence of network centrality on financial performance of medium sized enterprises in Kenya.

The study findings agreed with those of Brass, Galaskiewicz, Greve, and Tsai, (2004) who suggested that firms with central network positions enjoy several advantages that contribute to higher performance. Being positioned at the confluence of

information and resource flows, a central firm will be the first to learn about new market conditions, strategies of competitors, and partnership opportunities (Powelletet *al.*, 1996). High network centrality indicates that entrepreneurs have access to many alternative providers of valuable resources (Kilduff & Tsai, 2003). Such privileged access is

particularly beneficial to highly entrepreneurial firms since entrepreneurial orientation constitutes a resource-intensive strategic posture that involves much uncertainty (Wiklund & Shepherd, 2005). Entrepreneurs usually obtain these resources through their networks (Azzam & Ayed 2015).

Table 2: Network Centrality Descriptive Statistics

Statement	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean
Our enterprise operate in an environment that are efficiency-driven is always the first to learn about new market conditions	1.5%	2.4%	10.2%	43.9%	42.0%	4.22
Our enterprise operate in an environment that offers strategies about competitors	0.5%	3.4%	10.7%	56.6%	28.8%	4.1
Partnership opportunity information is available to our enterprise through networks	0.5%	3.4%	11.7%	62.4%	22.0%	4.02
Our enterprise is visible to potential resource providers	0.0%	1.5%	6.3%	70.7%	21.5%	4.12
People are willing to share information and resources with our enterprise	0.0%	2.9%	8.3%	66.3%	22.4%	4.08
Our enterprise has relatively quicker access to information	0.0%	2.4%	9.3%	66.8%	21.5%	4.07
Networking facilitates sharing of resources	0.0%	3.4%	8.8%	68.3%	19.5%	4.04
Pooling resources for social responsibility is made possible through networks	1.0%	3.9%	13.2%	64.4%	17.6%	3.94
Flow of information that allows it to keep aware of new developments is through networking	0.0%	2.9%	8.3%	63.4%	25.4%	4.11
Our enterprise has greater power and influence over other enterprises in the industry	1.0%	2.4%	12.2%	54.6%	29.8%	4.1
Average	0.5%	2.9%	9.9%	61.7%	25.1%	4.08

Linearity

Linearity of variables was tested using correlation coefficients as suggested by Cohen, West and Aiken, (2003). To establish whether there is a linear relationship, the study adopted the Pearson product of moment's correlation coefficients (R) as shown in Table 3 below. The results indicated that the variables financial performance and network centrality had a strong positive relationship as indicated by a correlation coefficient of 0.895. This implied that there was a linear positive relationship.

The study findings were in agreement with Bono (2013) who examined the role of personality and network centrality in community oriented pro-social behavior. Results indicated that personality traits contributed significantly to the attainment of central network positions directly and indirectly via prior pro-social community activities. The study contributed to existing literature on personality and social networks by demonstrating that people who are high on

extraversion and agreeableness have a high likelihood of engaging in pro-social community activities, in part because of the information, opportunities, and resources that they gain via central positions within their informal social networks. The study further agrees with Mungania, Gakure & Karanja (2017) who found out that network centrality is key to success of entrepreneurial firms.

Analysis

Regression analysis was conducted to empirically determine whether centrality were a significant determinant of financial performance of medium sized enterprises in Kenya. Regression results in Table 3 indicated the goodness of fit for the regression between network centrality and financial performance was satisfactory. An R squared of 0.801 indicates that 80.1% of the variations in financial performance are explained by the variations in network centrality.

Table 3: Model Summary for Network Centrality

Indicator	Coefficient
R	0.895
R Square	0.801
Adjusted R Square	0.8
Std. Error of the Estimate	0.27244

The overall model significance was presented in Table 4. An F- statistic of 818.021 indicated that the overall model was significant (P value= 0.000). The findings

imply that network centrality were statistically significant in explaining financial performance of medium sized enterprises in Kenya.

Table 4: ANOVA for Network Centrality

Indicator	Sum of Squares	df	Mean Square	F	Sig.
Regression	60.717	1	60.717	818.021	0.000
Residual	15.068	203	0.074		
Total	75.785	204			

The network centrality coefficients were presented in Table 5. The results showed that network centrality contributes significantly to the model since the p-value for the constant and gradient are less than 0.05. The findings implied that one positive unit change in network centrality effectiveness leads to a change in

financial performance by 1.04 units. This confirms the positive effect of network centrality on financial performance. The fitted equation was as shown below:

$$Y = -0.089 + 1.04X_5 + e$$

Table 5: Coefficients of Network Centrality

Variable	Beta	Std. Error	t	Sig.
Constant	-0.089	0.15	-0.597	0.551
Network centrality	1.04	0.036	28.601	0.000

CONCLUSION AND RECOMMENDATIONS

The study found out that network centrality was positively and significantly related to financial performance. The finding lends support to the social network theory, indicating that the more central the entrepreneur is in the network, the more it will affect his/her business performance. Firms with strong entrepreneurial orientations benefit from the industry leadership status associated with high centrality, because these ventures need to acquire resources and mobilize institutional support from a variety of domains to successfully commercialize their innovations. Central firms therefore are likely to be the first point of contact for interested outsiders, so that they have better abilities to attract valuable resources from diverse social circles.

Medium sized enterprises should consider networking with external environment as part of

business planning objective and the management or the owner manager of the business should use it as an instrument for accessing marketing information, for acquiring tangible and intangible resources and finally to improve the performance their business. To expand the business within domestic as well as for having international marketing exposure through exporting medium sized enterprises should have networking relationship with supporting institutions extensively.

The study recommended that managers should carefully construct their alliance networks. Firms with superior advantage-creating or advantage-enhancing capabilities should encourage partners to actively collaborate with one another. On the other hand, firms that lack superior capabilities need to economize their network structure by forming non redundant ties with firms from distant technological areas and thus increase their potential to discover new entrepreneurial opportunities.

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