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GENERIC BUSINESS STRATEGIES IN THE MICRO AND SMALL ENTERPRISE TYPOLOGY: AN EMPIRICAL INVESTIGATION AMONG NAIROBI MANUFACTURING MICRO AND SMALL ENTERPRISES

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ABSTRACT

Micro and Small Enterprises (MSEs) play a significant role in Sub-Saharan Africa national economies, however, few transition to formal medium or large size enterprises due to a wide array of challenges faced. The MSE typology sought to provide an array of business strategies MSEs could use to overcome these challenges and improve their performance. A central foundation of the typology is the generic nature of the strategies, that is general applicability across industry, organization type or size. The general objective of this study, therefore, was to determine the extent to which the business strategies within the typology are indeed generic. The study evaluated the generalization across two sub-sectors (Furniture manufacturing and agro-food processing) as well as across gender (taken as male and female). From the study, and using binary logistic regression only two of the twenty-eight variables were statistically significant, albeit mild discriminant, therefore supporting generalizability across sub-sectors. In addition, none of the variables served as statistically significant discriminants between male or female owners. Though limited in scope the generic nature of the defined strategies was established, providing support for the MSE typology meeting the generic requirement from typology theory.

Key Words: *SME, Strategies, Generic, Logistic , typology*

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Introduction

In Sub-Saharan Africa, it is estimated that the informal sector, mainly consisting of Micro and Small Enterprises (MSEs) accounts for approximately 90 percent of all new jobs and up to 85 percent of total employment. The sector consists mainly of micro-enterprises (MSEs) that 'typically operate at a low level of organisation, with little or no division between labour and capital, and on a small scale.' (ILO 2000). The importance of the informal sector in the development of these economies is backed by empirical evidence supporting countries' development, employment, wealth creation and poverty reduction objectives (Akpalu and Bhasin, 2001). In Kenya, the significance is evident in that the sector employs approximately 8.8 million people or 81.1 percent of those employed in 2014 (KNBS, 2015) There are mainly in the areas of manufacturing, building and construction; wholesale and retail trade; hotels and restaurants; transport and communications (mainly support services to transport activity); and community, social and personal services. In Nairobi, informal manufacturing MSEs have sprung up in clusters in areas that have combinations of high vehicular and human traffic, high populations densities, as well as transport arteries.

Despite the significant role informal sector MSEs play in Sub-Saharan Africa national economies, however, few transition to formal medium or large size enterprises due to a wide array of challenges that include lack of access to markets; information on and access to finance; low ability to acquire necessary technical and managerial skills, and limited access to technology (Stevenson and St-Onge, 2006). These challenges are further compounded for IS/MSE entrepreneurs by low education levels of the entrepreneurs; lack of managerial, marketing and production skills; use of rudimentary technology; low-skilled work-base; lack of access to credit; very low purchasing power of their consumers/clients; and regulatory constraints emanating from difficulties of obtaining legal status (Stevenson and St-Onge, 2005a,b). Applicability and adoption of successful strategies typically applicable to large and medium enterprises may start to address and overcome the myriad of challenges faced by MSEs. This study, focussed on informal sector MSEs in manufacturing and agro-food processing is based on the MSE competitive business strategies typology (Ogot, 2012) that posits that the combination of Porter (1980)'s theory of competency with strategic alliance theory is better suited to MSEs than use of competency theory alone for increased competitive advantage.

Research Problem

Competitive business strategy typologies classify business strategies based on common elements and provide a framework for gaining competitive advantage over one's business rivals. Typologies can be defined as conceptually derived sets of ideal types that are interrelated. Typologies contain quantifiable constructs that are explicitly defined, have articulated relationships among the constructs, and the predictions associated with them are testable and subject to disconfirmation (Snow and Ketchen, 2014). Ogot (2012)) incorporated competitive business methods shown from the literature to improve the business performance of MSEs into a new MSE competitive business strategies typology. The typology is anchored on two dimensions: Collaboration (Peer and Mentor) and Competency (Low cost and Differentiation). A MSE can therefore employ a combination of twenty-eight generic business strategies within one or more of four strategic groups: Peer Differentiation, Peer Low Cost, Mentor Differentiation, and Mentor Low Cost. A generic strategy is a broad categorization

of strategic choice, generally applicable regardless of industry, organisation type or size.

This study, therefore, sought to answer through empirical testing the following critical questions, (1) Are the business strategies within the MSE typology generic? and (2) Which of the proposed strate- gies are most commonly used by manufacturing MSEs in the informal sector?

Research Objectives and Hypotheses

The general objective of this study was to determine the extent to which the business strategies within the MSE typology are generic. The specific objectives were to:

- Carry out exploratory empirical determination of the independence of the proposed strategies across two manufacturing sub-sectors, and to gender; and
- Establish the extent to which each of the proposed generic strategies are currently being applied by manufacturing MSEs.

The empirical study was exploratory in that although a generic strategy should be generally applicable across all MSEs independent of sector, geographical location or economy, time constraints of the current study limited validation to urban MSEs in Nairobi in two business sub-sectors: manufacturing (wood and metal) and agro-food processing. The research objectives formed the basis of the following two hypotheses:

i. H_1: Use of the business strategies in the MSE typology is independent of manufacturing (wood and metal) or agro-food processing sub-sectors among MSEs.
ii. H_2: Use of the business strategies in the MSE typology is independent of gender.

Literature Review

From the literature, competitive business strategies and methods employed by MSEs are quite di- verse. Most of them revolve around strategic alliances, also referred to as inter-firm cooperation, that may be defined as (Birru, 2011), 'the presence of deliberate relations between otherwise autonomous organisations for the joint accomplishment of individual and operating goals.' For example Hardy et al. (2003) posit that inter-firm collaboration leads to increased collective learning where there are opportunities for development and exchange of ideas as well as sharing of knowledge between firms. This has also been shown to be a prevalent mode of learning among SMSEs as compared to formal learning (Lange et al., 2000). Further for SMSEs who generally lack adequate internal resources, cooperation with other enterprises enables them to make up for the shortfall by accessing financial, material and human resources of their partners De Propis (2002). Inter-firm cooperation or strategic alliances mainly takes on two general approaches: value chain approaches, and horizontal linkages and networks. Link- ages are cooperations between firms seeking to integrate some of their activities, exploit their complementarities in search of new markets, and pool sources of knowledge in order to achieve economies of scale or address common problems(Barkley and Henry, 2007).

MSE participation in value chains involves vertical (forward and backward) linkages, typically with larger firms, and often in the form of sub-contracts, franchising, licensing and supplier relation- ships. Horizontal linkages, on the other hand, are typically in the form of formal and informal networks with firms

of similar size, either directly or through umbrella organisations and associations. A brief discussion of each follows.

Value Chain Approaches

A value chain involves the activities needed to turn raw materials into finished products ready for sale. Each activity 'adds value' towards the final product. IS/MSEs participate in forward linkages in value chains mainly through subcontracting. Other methods include franchising, agency arrangements, and licensing. Subcontracting can be viewed as an 'arms length' relationship between a larger enterprise (buyer) and a smaller one (producer). Subcontracts are durable, that is, they are not one-off in nature, as would be the purchase of ready-made products and widely available services. Subcontracting can reduce the capacity building period for MSEs to come up with the desired levels of product quality and design, the ability to meet stated delivery times, and for ongoing innovation and differentiation. Within these arrangements, large enterprises can often serve as a valuable source of capital, technology transfer, and quality collateral in the form of secure production contracts (Wattanapruttipaisan, 2002). It is worth noting that large enterprises enter into subcontracts with their own agenda and interests, which may not necessarily be the same as the SMSE suppliers. For example, large enterprises will only invest in building up the capabilities and competitiveness of SMSEs only if they are able to get a good return in a reasonable period, or can play a key role in their strategic plans to diversify or differentiate – for example, in products, supply sources, market segments, and market locations. Even then, large enterprises will weigh the risks in terms of monetary and time costs that may be required to bring potential SMSE subcontractors up to the required standards and criteria before deciding to invest (Wattanapruttipaisan, 2002).

MSEs backward linkages in the value chain are normally with larger firms from which inputs, technology transfer, and training can be obtained. For example, in Kenya, small-holder farmers are able to move away from rain-fed agriculture to simple greenhouse drip irrigation systems with kits supplied by Amiran Kenya Ltd. The company provides 'complete kit[s] containing a simple greenhouse drip irrigation system, water tank fertilizer, seeds, agro support and training' Kabukuru (2011). Farmers have been known to receive up to 200 percent returns from use of the kits. MSEs generally have little power in buyer-driven (controlled) chains, for example in garments, commodity foods, and agency arrangements (e.g. Safaricom's MPESA agents in Kenya). There are a few exceptions however. For example, Starbucks Coffee in the US leads a buyer-driven chain where the products value is linked to its quality, something controlled by the producers who are mainly small- holder speciality coffee farmers in Africa and Latin America. The success of this arrangement lies in the strong inter-firm cooperation between the lead-buyer (Starbucks) and the producer groups (the small holder farmers) with more of the post-harvest and quality control functions being passed to the farmers groups (Ponte, 2002). It is worth noting that producers have more power in value chains where their products are characterized by a high degree of labour specialization and product differentiation (Kula et al., 2005).

Horizontal Linkage and Networking Approaches

One of the main approaches to increased business performance of MSEs is through the creation of collective efficiencies via group formation. Presence of strong producers groups and associations for

quality driven value chains, allows product differentiation and branding strategies at the producer level as they are able to control for quality, and carry out branding activities on behalf of members. Horizontal cooperation or linkages between similar size enterprises performing like functions in a sector can result in collective efficiencies from reduced transaction costs, faster innovation and problem solving, as well as increased market access via economies of scale (Kula et al., 2005).

Collective efficiencies (Schmitz, 1995) can be defined as the 'combination of incidental external economies, and of the effects of joint actions, that helps to explain the efficiency gains of firms located in clusters, and their increased capability to upgrade and grow' (Pietrobelli and Rabellotti, 2004). For example, Makombe (2006) in a study of women food-processing micro entrepreneurs in Tanzania found significant benefits of membership in their producer association, the Tanzania Food Processors Association. The women were no longer isolated in their micro enterprises, and had a forum within which to exchange ideas and establish networks. Specific benefits to the women entrepreneurs as determined from the study included, 'facilitating contacts with other women [entrepreneurs]; getting advice on new products; getting information about training, seminars, meetings and trade fairs; getting inputs in bulk more easily; selling products under the association's trade name; sponsorship to trade fairs; ...getting loans; and becoming known or getting publicity'. (p. 129). The last point is of particular importance as MSEs rarely have funds available individually to undertake any marketing activities. In addition, participation in trade fairs further helps to advertise their products and activities resulting in more business exposure and therefore the possibility of potential customers, suppliers or promoters.

Prasad and Tata (2010) examined the supply chains of silk sari micro-enterprises in three different weaving locations in India. They found that the micro-enterprises that had better connections with their customers to be more attuned to customer needs. For example, in the study, enterprises in Kanjipuram connected to their buyers through 'buyer-seller' meets organized by their cooperative society. These meets allowed them to display their talents, market their products, enhance their income, as well as understand the needs of the market. In a study amongst women micro-entrepreneurs in Botswana, Nsteane (2004) found use of net- works as a main strategy for achieving success. The women would often assess and help members whose businesses where experiencing problems. In addition, as they operated in a male dominated world, the women in the study all indicated that their success in business depends on their sharing business ideas and profits, as well as teaching and learning from others. Within their networks, 'reciprocal business relationships included giving one another material support. During slow periods of the year, women reported buying merchandise from one another and providing free labour. [The women] also share ideas about commercial success, problem solving and future planning.' (p. 40).

Horizontal networks are also used to provide informal avenues to financing. IS/MSEs typically experience difficulty in accessing regular sources of financing. Many owners, therefore, often participate in variants of rotating savings and credit associations (ROSCAs). ROSCAs have their roots in mutual guarantee systems, typical of most African and Asian societies. Generally ROSCAs have between 5-10 members. The associations hold regular meetings where each member

contributes a fixed amount, with each member getting a turn as the recipient. Interest is not normally charged for the loan or paid on the interest, unless the association uses its mutual strength to 'top-up' its fund from a micro-finance institution. In Kenya, for example, ROSCAs were found to be very popular among women in the informal sector (Stevenson and St-Onge, 2005a). It is worth noting that entrepreneurs who participate in these 'merry-go-round' networks also leverage group membership to share ideas as well as exchange business experience and know-how. For example, in a study of 100 small and medium sized leather shoe manufacturing firms in Ethiopia, Birru (2011) found significant inter-firm cooperation aimed at, amongst others, use of mutual credit schemes as an important source of finance to facilitate the purchase of new equipment and machinery, as well as to reach out to new markets or development of new products. Although not restricted to businesses only, Savings and Credit Cooperative Societies (SACCOs) provide another avenue to financing. SACCOs' main objective is to provide group-based members access to a reliable savings system as well as affordable credit. In Kenya, for example, SACCOs are the largest source of finance to MSEs (Stevenson and St-Onge, 2005a).

Micro and Small Enterprises Typology

Ogot (2012) proposed a two-dimensional generic MSE typology anchored on the competency (low cost/differentiation) and strategic alliance theories. The typology is based on the synthesis from the literature of activities employed by MSEs to achieve competitive advantage, thereby providing the typology with strong theoretical underpinnings.

The typology, illustrated in Figure 1, consists of four key generic business strategies: peer differentiation, peer low cost, mentor differentiation, and mentor low cost. Peer strategies are based on activities carried out by MSEs within networks and linkages with other MSEs to achieve competitive advantage either through differentiation or low cost. Mentor strategies seek to achieve the same through relationships with larger enterprises and organisations (for example forward and backward linkages, membership in organisations and associations) who play both a business partner, and a mentor role. Detail descriptions of the strategies can be found in Ogot (2012).

Research Methodology

Population of the Study

The study used primary data from the MSEs in the manufacturing (wood and metal works) and agro-food processing in Nairobi, among the largest sub-sectors in the informal sector (KNBS, 2015). Stratified sampling was used in six representative regions of Nairobi with high concentrations of MSEs: Eastlands, Westlands, Nairobi West, Industrial Area, Dagoretti Corner/Kawangware and Kangemi. Stratification ensured an equal proportion of manufacturing and agro-food processing MSEs are included in the sample from each of the representative areas. The minimum sample size, $n = 119$, was estimated from Cochran (1977) sample size equation for scaled data, and populations greater than 10,000.

Data Collection

The survey data collection method was used. Due to its heavy reliance on the voluntary participation of MSE owners it is likely that not all questionnaires would be filled. To ensure that the minimum sample size is reached, over sampling was done increasing the sample size to 239. Within each of the six sample regions, therefore, twenty manufacturing (wood and metal works) and twenty agro-food

processing MSEs were sought, totalling 240. The questionnaires were handed to owners/managers of the MSEs, as they are considered the person most knowledgeable of the enterprises key competitive actions.

The research instrument was inductively derived to be able to evaluate the extent to which MSEs employed each of the twenty-eight competitive methods defined within each of the four generic strategies. Respondents were requested to indicate the extent to which they used the competitive business methods using ratings that were based on a 5-point ordinal scale ranging from '1-Never' to '5-All the time.'

Data Analysis

The binary logistic model was used for establishing the extent to which any of the twenty-eight strategies where predictors of sector gender, and therefore not independent, thus not truly generic. The model may be expressed as,

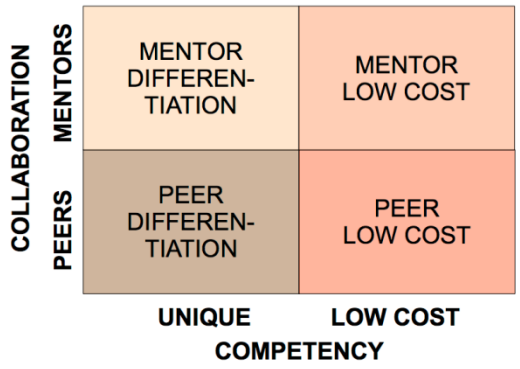
$$log\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_k X_k + \varepsilon \quad (1)$$

where π is the probability that the observed variable meets a stated condition. The term $\pi/(1-\pi)$ is referred to as the odds, and is the ratio between the probabilities of the observed variable meeting a stated condition, to it not meeting the condition, respectively. The dependent variable is referred to as the log odds, and can take on values from negative to positive infinity. Estimation of the model values was carried out using the maximum likelihood technique(Hosmer and Lemeshow, 1989), which for large samples yields regression coefficients that are approximately normal, making significance testing of each coefficient via z-test possible(DeMaris, 1995).

For this study, dummy coding was done for each of the variables (business strategies) for each MSE either as a '1' if they applied the strategy or a '0' if they did not. A business is assumed to apply the particular strategy if the respondent gave it a score of 4 (frequently) or 5 (all the time), when answering the question 'how often do you use each of the following strategies?'. Gender coding used a '1' was used to represent male owner/manager businesses, and '0' female, while sub-sector coding used a code '1' if in manufacturing and '0' if in agro-food processing. The R-Statistical Package version 3.0.0 was used for all data analysis. Determination of the extent of use of the business strategies among the MSEs was accomplished by calculating a normalized index, nR_i, as given by Equation 1

$$nR_i = \frac{A_i}{max(A_{j=1,..,28})} \quad (2)$$

where A_i is the number of enterprises employing the i^{th} business strategy and $max(A_j=1, ..., 28)$ is the number of enterprises employing the business strategy with the highest use among the twenty-eight. Note that an enterprises is assumed to be utilizing a particular business strategy if it gave it a rating of 4 or 5 on the Likert scale where 1, 2, 3, 4 and 5 corresponded to never, rarely, occasionally, frequently and all the time, respectively. The business strategy most used by the sampled enterprises will have a normalized index of 1.



Source: Ogot (2012)

Figure 1 : IS/MSE Competitive Business Strategies Typology

Results

Reliability and Validity

Before carrying out the testing of the hypotheses, the data was checked for reliability using Cron- bach (1951)'s, α, that measures the internal consistency of the items used to measure the same construct within the MSE typology. Values of Cronbach's α where calculated for all the constructs in the model. Values ranged from 0.8519 to 0.9502, all within excellent (0.8-0.9) internal consistency and therefore high reliability.(Nunnally, 1978). Content validity was tested using Pearson's correlations between pairs of variables defining each of the constructs. It is expected that for content validity the correlations should be significant and positive. For all pairs, Pearson's Correlation Coefficient ranged between, 0.19 to 0.84, all with significant with p-values < 0.0001.

Demographics of Entrepreneurs of Sampled IS/MSEs

From the 239 sampled businesses, there were 144 (60.25 percent) males and 95 (39.75 percent) female owner/managers. For the highest level of education, the distribution was secondary education at 6.9 percent, post-secondary diploma at 53.56 percent a university undergraduate degree at 37.66 percent and a post-graduate degree at 2.09 percent. The high percentage with a least a post-secondary education is not surprising due to the nature of the businesses sampled. The selected enterprises involving either value-added activities of manufacturing or agro-food processing typically leverage on skills acquired after secondary education. In addition, the distribution of business activities between the two sectors revealed a 50.84 percent and 49.6 percent distribution between manufacturing and agro-food processing, respectively. Finally, and note- worthy is that *all* the sampled business were members of a business association (13.4 percent), a cooperative (72 percent), or both (14.6 percent).

Ranking of Competitive Business Activities Employed by IS/MSEs

The MSE typology provides a total of 28 possible competitive business strategies that a business can engage in to meet its strategic objectives. For ease of presentation, each of the construct items has been provided with a code as presented in Table 1. The ranked normalized index list of activities employed by the MSEs is provided in Table 2. Included therein is also the percentage of business em-ploying that activity. From the table, the following observations can be made. First the most popular business activity was, 'Through my membership (in a business association and/or cooperative), I have learnt about new technologies that have

helped me develop new products.' With a normalised index of 1.000, this business activity had a high uptake by 74.5 percent of the businesses sampled. Further, the top eight employed business activities, leveraged on their business association and/or cooperative memberships in order to improve the enterprises competitive advantage, with number eight having a relatively high uptake of 60 percent. This outcome finds strong support in the literature where horizontal linkages through associations have been shown to result in reduced transaction costs, faster innovation and problem solv- ing as well as increased market access (Kula et al., 2005; Makombe, 2006; Prasad and Tata, 2010). On the low end of the scale, but still with a respectable uptake > 30 percent were activities that sought to leverage on collaboration with larger enterprises.

Table 1 : Coding of IS/MSE Typology Activities

Code	Activity
3-1	I work with other small businesses to develop new products that we can both then produce ourselves and sell
3-2	I work with other small businesses to solve problems that each of us face
3-3	I get together with other small businesses to borrow money in support of my business
3-4	I work with other small businesses and share specialised labour that I may not need all the time
3-5	I work with other small businesses to solve problems that both of us face
3-6	I get together with other small businesses to purchase raw materials for our businesses in bulk to lower our costs
3-7	I work with a group of small businesses where we support each other by buying each others products or referring clients to them for products I do not have
3-8	I share workspace or specialised equipment with other small businesses
3-9	I get together with other small businesses to submit joint quotations for business from the Government
3-10	I work with larger businesses to help me brand my products
3-11	I work with larger businesses to get new technologies to help me develop new products
3-12	I work with larger businesses to help me get finance or credit to run my business
3-13	I have obtained training as part of my relationship with larger businesses
3-14	I work with large businesses to get new technologies to lower my production costs
3-15	I work with large businesses to get new lower cost raw materials for my business
3-16	I have been sub-contracted by larger businesses as part of a large sale
3-18	Through my membership, I am able to get credit or low cost loans
3-19	Through my membership, I have learnt new about new technologies that have helped me develop new products
3-20	Through my membership, my products have been marketed for me, increasing my sales
3-21	Through my membership, I have been able to maintain quality of my products
3-22	Through my membership, I have been able to get competitive pricing for my products
3-23	Through my membership, I have been able to get additional training that has helped me develop new products
3-24	Through my membership, I have been able to exchange ideas with other business owners that has helped me develop new products
3-25	Through my membership, I have been able to get additional training that has helped me lower the cost of producing my products
3-26	Through my membership, I have been able to exchange ideas with other business owners that has helped me lower the cost of my products
3-27	Through my membership, I have been able to obtain lower cost raw materials
3-28	Through my membership, I have been able to exchange ideas with other business owners that has helped me develop new products

The sampled population consisted of enterprises both in manufacturing and agro-food processing. The popularity of the employed activities were further desegregated between the two sectors, and com- pared with the overall ranking to establish if there are any major sectoral differences. With reference to Table 3, ranking for each of the sectors is provided in comparison with the overall ranking, as well as the percent uptake of each activity by sector. In the table $Rank_o$, $Rank_M$, $Rank_{AF}$, percent$M$, and percentAF refer to the ranking of the overall, manufacturing

and agro-food processing sectors, percent uptake in the manufacturing enterprises and percent uptake in the agro-food processing enterprises, respectively. From the results, the differences across sectors, and as compared to the overall ranking are small, except for a few outliers mainly, in the agro-food sector as further illustrated in Figure 2.

Table 2 : Ranked Normalized Indexed List of Activities Employed by IS/MSEs

Rank	Index	%	Code	Rank	Index	%	Code
1	1.0000	74.5	3-19	15	0.6966	51.9	3-27
2	0.9663	72.0	3-20	16	0.6910	51.5	3-5
3	0.9326	69.5	3-21	17	0.6854	51.0	3-7
4	0.9213	68.6	3-18	18	0.6685	49.8	3-1
5	0.9157	68.2	3-22	19	0.6348	47.3	3-9
6	0.8652	64.4	3-23	20	0.6124	45.6	3-10
7	0.8539	63.6	3-24	21	0.5955	44.4	3-11
8	0.8315	61.9	3-25	22	0.5843	43.5	3-8
9	0.8202	61.1	3-2	23	0.5337	39.7	3-12
10	0.7640	56.9	3-3	24	0.4888	34.7	3-13
11	0.7360	54.8	3-26				
12	0.7247	54.0	3-28	26	0.4663	34.7	3-14
13	0.7247	54.0	3-4	27	0.4494	33.5	3-16
14	0.7135	53.1	3-6	28	0.4045	30.1	3-15

Table 3 : Ranked Normalized Indexed List of Activities Employed by IS/MSEs

$Rank_O$	$Rank_M$	% M	$Rank_{AF}$	% AF	Code
1	1	70.3	1	78.8	3-19
2	3	67.8	2	76.3	3-20
3	2	68.6	4	70.4	3-21
4	6	64.5	3	72.9	3-18
5	4	66.1	4	70.4	3-22
6	5	65.3	7	63.6	3-23
7	9	61.2	6	66.1	3-24
8	7	63.6	8	60.2	3-25
9	8	62.8	9	59.3	3-2
10	11	58.7	11	55.1	3-3
11	12	57.9	14	51.7	3-26
12	10	59.5	19	48.3	3-28
13	14	53.7	12	54.2	3-4
14	17	49.6	10	56.8	3-6
15	13	57.0	21	46.6	3-27
16	15	50.4	13	52.5	3-5
17	15	50.4	14	51.7	3-7
18	18	47.9	14	51.7	3-1
19	19	45.5	18	49.2	3-9
20	20	43.0	19	48.3	3-10
21	23	38.8	17	50.0	3-11
22	21	40.5	21	46.6	3-8
23	21	40.5	23	39.0	3-12
24	24	38.0	24	34.7	3-13
26	25	36.4	25	33.0	3-14
27	26	34.7	26	32.2	3-16
28	27	30.6	27	29.6	3-17

Key: O-Overall; M-Manufacturing; AF-Agrofood

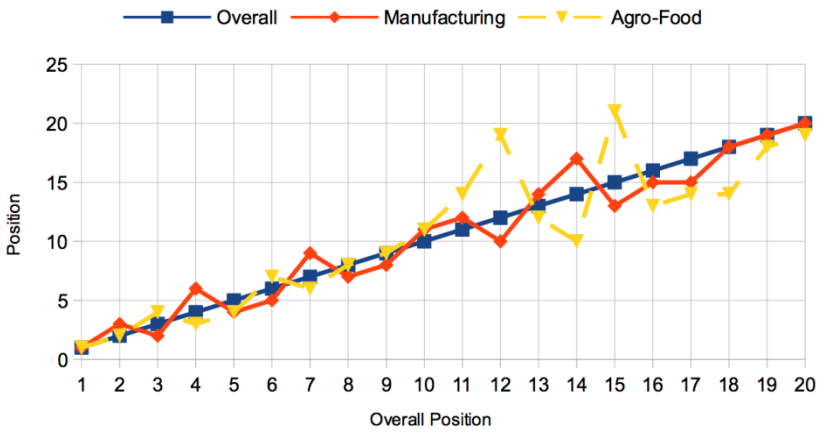


Figure 2 : Variation of Business Activity Use Overall and Per Sector Ranking

For example, with reference to the figure, looking at item 3-28, 'through my membership, I have been able to exchange my ideas with other business owners that has helped me develop new products', ranked 12^{th} overall, was ranked 10^{th} by the manufacturing sector, but 19^{th} by the agro-food sector. Similar, the other large difference also from the agro-food processing, was item 3-27, 'through my membership, I have been able to obtain lower cost raw materials,' that was ranked 15^{th} overall, 13^{th} for manufacturing, but 21^{st} with the the agro-food processing businesses. Of importance is that the leveraging of membership in business associations or cooperatives for competitive advantage dominate the top of the list of utilised strategies across both sub-sectors. This result further strengthens support for the importance and generic nature (that is general applicability) of the proposed strategies.

Hypothesis Testing

H_1: Generic Strategies adoption is independent of gender. To test for the independence of gender, the logit model estimated the conditional mean of the latent measure on gender, that is an enterprise owner likely to be male (dummy coded, 1) or female (dummy coded, 0) based on the business activity they pursue. The activities served as predictors in the model. The exponential of the predictor coefficients, $exp(\beta i)$, is the odds ratio for those in the membership category (in this case males) versus those not (in this case females). In the first step, all the predictors (business activities) were included in the model to determine which ones had p-values < 0.2, as a starting point for sequential modeling. Only activities 3-6 (p=0.134), 3-7 (p=0.172), 3-10 (p=0.110) and 3-12 (p=0.126) met this criteria. These activities now constituted Model I and were again regressed using the logit model onto latent measure.

With reference to Model I results provided in Table 4, the p-values for each of the predictors were now 3-6 (p=0.1025), 3-7 (p=0.1704), 3-10 (p=0.2638) and 3-12 (p=0.0261). Model II was formed by dropping the activity with the highest p-value (lowest statistical significance), activity 3-10, and regressing again. Results of Model II are shown in the same table. Dropping activity 3-10 yield new p-values of 3-6 (p=0.0994), 3-7 (p=0.2756) and 3-12 (p=0.0511). Activity 3-7 is then dropped as has the highest p-value, yielding Model III with new p-values of 3-6 (p=0.1875) and 3-12 (p=0.0327). As 3-6 has statistical significance $p > 0.05$,it is therefore dropped yielding Model IV, which now only remains with activity 3-12 (p=0.0688).

The predictor 3-12 – I work with larger businesses to help me get finance or credit to run my business – was the only one whose statistical significance was $p < 0.1$, and had an odds ratio of $exp(-0.5018) = 0.605$. This means that the odds of those who pursue this business activity being male is 0.605 as large for those who employ this activity as for those who do not. Alternatively this may be viewed as the odds of those who pursue the activity being female are 1.65 times as large as those who do not. The confidence intervals at 95 percent for the estimator ranged from -1.049 to 0.0337, yielding and confidence interval for the odds ratio of $exp(-1.049) = 0.3502$ to $exp(0.0337) = 1.0343$. This means that the odds of those who pursue this business activity being male range from 0.3502 to 1.0343 as large as those who do not. Better stated, the odds of those who pursue this activity being female ranges from 0.97 to 2.855 as large as those who do not.

Table 4 : Model Binary Logistic Regression Results for Gender Predictors (Activities) of Inclusion or Exclusion

Model No.	Code	Estimator	z-value	p-value
I	3-6	0.5192	1.633	0.1025
	3-7	-0.4473	-1.371	0.1704
	3-10	0.3720	1.117	0.2638
	3-12	-0.7386	-2.225	0.0261
II	3-6	0.5213	1.648	0.0994
	3-7	-0.3372	-1.090	0.2756
	3-12	-0.5791	-1.951	0.0511
III	3-6	0.3744	1.318	0.1875
	3-12	-0.6263	-2.136	0.0327
IV	3-12	-0.5018	-1.820	0.0688

Table 5 : Sequential Binary Model Building Summary for Predictors of Gender Differences on IS/MSE Model Activities

Model	Variables in Model	Likelihood Ratio	DoF	Model p-value
0	All	25.0713	27	0.5705
I	3-6, 3-7, 3-10, 3-12	7.5840	4	0.1081
II	3-6, 3-7, 3-12	6.3204	3	0.0970
III	3-6, 3-12	5.1243	2	0.0771
IV	3-12	3.3694	1	0.0664

Due to the large range, as well as the lower bound indicating that the activity is likely to be carried out by a male (albeit a small likelihood), this activity serves as a weak, but statistically significant discriminator between male and female entrepreneurs. The model goodness of fit can be quantified by comparing observed variables to the expected values (means) of the variables in a particular category. The likelihood ratio statistic, G, can be used as a measure of goodness of fit and is defined as

$$G = 2\sum x_o log\frac{x_o}{x_e} \quad (3)$$

where x_o and x_e are the observed variables and expected means, the categories. The likelihood ratio is a non-negative statistic, with smaller values indicating a better fit for a given sample size. Table 5 presents the goodness-of-fit measure by the likelihood ratio statistic for the various models of predictors of gender differences on MSE activities. From the table it can be observed that when all predictors are in the model, it results in a relatively large ratio of 25.0713 (p=0.5705). Non-significant predictors were then sequentially removed from the model, resulting in the goodness of fit and the significance of the likelihood ratio statistic progressively improving to 3.3694 (p=0.0664) for final model IV. The odds ratios for the other 27 business activities were not statistically significant

($p > 0.05$) and therefore did not serve as predictors of gender differences. The business activities, were therefore generally applied, independent of gender.

H2: Generic Strategies adoption is independent of sub-sector. The logit model was also used to estimate the conditional mean of the latent measure on sub-sector, that is, is an enterprise likely to be in manufacturing (dummy coded, 1) or in agro-food processing (dummy coded, 0) based on the business activity the owners chose to pursue, where the activities served as predictors in the model. The exponential of the predictor coefficients, $exp(\beta i)$, is the odds ratio for those in the membership category (in this case manufacturing enterprises that were coded as '1') versus those not (in this case agro-food processing enterprises code as '0'), respectively.

Table 6 : Model Binary Logistic Regression Results for Sector Predictors (Activities) of Inclusion or Exclusion

Model No.	Code	Estimator	z-value	p-value
I	3-6	-0.3029	-1.085	0.2778
	3-11	-0.4527	-1.627	0.1037
	3-24	-0.3345	-1.115	0.2648
	3-28	0.7242	2.466	0.0137
II	3-11	-0.5069	-1.855	0.0636
	3-24	-0.3592	-1.203	0.2289
	3-28	0.6701	2.326	0.0200
III	3-11	-0.55520	-2.057	0.0397
	3-28	0.55359	2.057	0.0396

In the first step, all the predictors (business activities) which ones had p-values < 0.25, as a starting point for sequential modeling. Only activities 3-6 (p=0.1268), 3-11 (p=0.0376), 3-24 (p=0.2176) and 3-28 (p=0.1686) met this criteria. These activities now constituted Model I and were again regressed using the logit model onto the latent measure. With reference to Model I results provided in Table 6, the p-values for each of the predictors were now 3-6 (p=0.2278), 3-11 (p=0.1037), 3-24 (p=0.2648) and 3-28 (p=0.0137). Model II was formed by dropping the activity with the highest p-value (lowest statistical significance), activity 3-6, and regress- ing again. Results of Model II are shown in the same table. Dropping activity 3-6 yield new p-values for 3-11 (p=0.0636), 3-24 (p=0.2289) and 3-28 (p=0.0200). Activity 3-24 becomes the only one with statistical significance $p > 0.05$, and is therefore dropped yielding Model III, where all p-values are now have statistical significance $p < 0.05$.

With reference to Table 6, the final model has two statistical significant predictors, activities 3-11 – I work with larger businesses to get new technologies to help me develop new products; and 3-28 – Through my membership, I have been able to exchange ideas with other business owners that has helped me develop new products. The predictor 3-11 has an odds ratio of $exp(-0.55520) = 0.5739$. This means that the odds of those who pursue this business strategy being in manufacturing is 0.5739 as large for those who employ this activity as for those who do not. Alternatively this may be viewed

as the odds of those who pursue the strategy being in agro-food processing are 1.742 times as large as those who do not. The confidence intervals at 95 percent level of significance for the estimator ranged from -1.0898 to -0.02969, yielding a confidence interval for the odds ratio of *exp*(−1.0898) = 0.3363 to *exp*(−0.2969) = 0.9707. This means that the odds of those who pursue this business strategy being in manufacturing range from 0.3363 to 0.9707 as large as those who do not. Better stated, the odds of those who pursue this activity being in agro-food processing ranges from 1.0301 to 2.9735 as large as those who do not. This activity, therefore serves as a mild, but statistically significant discriminator between agro-food processing and manufacturing entrepreneurs.

The predictor 3-28 had an odds ratio of *exp*(0.55359) = 1.7395. This means that the odds of those who pursue this business strategy being in manufacturing is 1.7395 as large for those who em- ploy this strategy as for those who do not. The confidence intervals at 95 percent level of significance for the estimator ranged from 0.02979 to 1.0863, yielding a confidence interval for the odds ratio of *exp*(0.02979) = 1.0302 to *exp*(1.0863) = 2.9636. This means that the odds of those who pursue this business strategy being in manufacturing range from 1.0302 to 2.9636 as large as those who do not. This businesses strategy, therefore serves as a mild, but statistically significant discriminator between agro-food processing and manufacturing entrepreneurs. Table 7 presents the goodness-of-fit measure by the likelihood ratio statistic for the various models of predictors of sub-sector differences on IS/MSE business strategies.

Table 7 : Sequential Binary Model Building Summary for Predictors of Sector Differences on IS/MSE Model Activities

Model	Variables in Model	Likelihood Ratio	DoF	Model p-value
0	All	25.907	27	0.5241
I	3-6, 3-11, 3-24, 3-28	9.9550	4	0.0412
II	3-11, 3-24, 3-28	8.7729	3	0.0325
III	3-11, 3-28	7.3124	2	0.0258

From the table it can be observed were included in the model to determine that when all predictors are in the model, it results in a relatively large ratio of 25.9017 (p=0.5241). Non-significant predictors were then sequentially removed from the model, resulting in the goodness of fit and the significance of the likelihood ratio statistic progressively improving to 7.2124 (p=0.0258) for final model IV.

Finally, the odds ratios of the other 26 business strategies were not significant (*p* > 0.05) and therefore did not serve as predictors of sub-sector differences. The business activities, were therefore generally applied, independent of sub-sector. The tests therefore support the notion that the prescribed business strategies within the IS/MSE typology meet one of the requirements of generic strategies, that is are applicable independent of industry.

Discussion of Findings and Conclusions

The general objective of this study was to determine the extent to which the business strategies within the MSE typology are generic. The operalization of the variables and corresponding coding were provided in Table 1, with items 3-1 to 3-7, 3-8 to 3-16, 3-17 to 3-23, and 3-24 to 3-28 representing the variables defining the peer differentiation, peer low cost, mentor differentiation and mentor low cost, respectively. A good choice of variables (strategies in our context) should generally be applicable across industry, organisation type or size (Herbert and Deresky, 1989). Despite the limited scope of this study, an initial investigation on the generality of the selected variables was carried out. Although the industry size and locations where the same for all sampled business (MSEs in Nairobi) the study allowed evaluation of generalisation across two sub-sectors (Furniture manufacturing and agro-food processing) as well as gender (taken as male and female). Using binary logistic regression, none of the variables served as statistically significant discriminants between male or female owners.

Turning to generalisability across sub-sector only two of the 28 variables were statistically signifi- cant, albeit mild discriminant, supporting generalisability across sub-sectors. The odds of an agro-food processing business adopting the strategy defined by variable 3-11 – I work with larger business to get new technologies to help me develop new products, agribusiness processing firms, was significant and 1.742 times higher than for a manufacturing business. Although not precluding the generalisability of the variable, the result does show a preference of it by those in agro-food processing. This may be due to the ease of obtaining small-scale food processing equipment, and the requisite training from vendors (larger enterprises) who are often promoting new equipment, couple with new approaches to food pro-cessing. In addition, at the MSE level, new technologies often cost less and easier to have access to through relationships with vendors, than equipment for manufacturing.

Next, the odds of a manufacturing business adopting the strategy defined by variable 3-28 – Through my membership, I have been able to exchange ideas with other business owners that has helped me develop new products, was significant and 1.740 times higher than for an agro-food processing busi- ness. Although business associations are found across sectors, membership in them was found to be more prevalent among those in manufacturing than agro-food processing, thus explaining the higher odds. As expected from typology theory, the generic nature of the defined strategies was established. Future work would seek to establish the generality (or note) across other sub-sectors and geographic location.

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