Networks, information and small enterprises: New technologies and the ambiguity of empowerment

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Abstract. Is information a problem in the Micro and Small Enterprise (MSE) sector? If so, does the empowerment of MSEs necessarily come through information and communication technology? To address these questions, this study uses firm-level cross sectional data from manufacturing MSEs from selected sites in Nairobi, Kenya. Empirical analysis reveals considerable information gaps in the sector. The paucity of formal organizations and inaccessibility of small-scale entrepreneurs to market networks often drive them towards informal networks. Further evidence indicates that access to electricity and telephone is poor. Internet penetration rates are still low and there is a feeling among some respondents (about 40 percent) that IT was not useful. This was taken to imply that apart from the traditional factors that have marginalized the MSE sector, the entrepreneurs perceive further marginalization by the more modern and sophisticated technologies. Although IT is important, there are other more critical constraints to information flow that deserve priority. The success of ICT projects will depend not only on how they address these constraints but also on how they complement the local institutions and social networks that permeate the sector. Public policy should mainstream small informal enterprises to enable them to interface with formal support institutions and should encourage the establishment of local information centers.

1. Introduction

In developing countries, economic agents operate in business environments characterized by fragmented and incomplete information where there is limited awareness of markets, technology, policy, regulations and finance. For micro and small enterprises (MSEs) and enterprises located in rural areas, these problems are more acute. In the context of globalization, it is difficult to see how these enterprises will take advantage of emerging opportunities in local and export markets in the presence of both imperfect markets and incomplete information. Markets therefore fail poor entrepreneurs not just in terms of information chain processes but also in terms of input: they do not provide enough raw data for poor entrepreneurs [19]. Where delivery systems exist, they are usually haphazard, unsustainable, driven by the needs of the source rather than the needs of the recipient, and are inaccessible to poor entrepreneurs.

Emerging evidence suggests that information is a basic requirement for enterprise creation, growth and survival, and that information and communication technologies (ICTs) are capable of easing information

1Such traditional factors include credit, skills, infrastructure, markets and so on.
gaps in the business sector. Similarly, there is a growing interest in the concept of “social capital” and how it can affect development outcomes. Unfortunately, little is known about the information-search process and the institutions governing information flow in the MSE sector, the implementation of socially equitable ICT projects and perceptions of entrepreneurs about the ICTs.

This study is guided by the question: Is information a problem in Kenya’s micro and small enterprise (MSE) sector? If so, what are the prospects that ICT could be applied to empower the MSE’s by easing the information bottlenecks? Thus, the objective of the study is to identify the information delivery channels and information gaps in the sector and examine the institutional and social structures governing information flow. In addition, it will identify the information needs and main impediments to information flow. The study will also shed some light on how networks and local level institutions complement the information search process and assess the perceptions of entrepreneurs about ICT.

The benefits of the information revolution should not be limited to large businesses but should also be exploited by small enterprises to make contacts, check prices, display goods and enter into contracts. Information technology has the potential of linking even poor buyers and sellers to daily market prices for commodities in cities, thus changing their negotiating power in fundamental ways [24]. Evidence from Ghana indicates that MSE’s without telecommunications waste up to half their work time traveling from place to place [25]. Resource constraints preclude small enterprises from seizing these opportunities on their own; implying that supportive mechanisms are likely to have higher payoff.

There is increasing evidence that ICT-based projects that ignore the “organic information systems” and “indigenous knowledge” prevalent in poor communities fail to meet their objectives. Usually, such knowledge and systems are embodied in social networks and local level institutions. Since communication is essentially a social process, the essence of communication and development should not be to change people, but to give people access to useful information and to create new opportunities so that people can change themselves [2].

2. Social and electronic networks

According to Collier [5], social interaction generates three main externalities. These include knowledge about the behavior of other agents, knowledge about the non-behavioral world (such as prices and technologies), and the benefits of collective action. Networking – a component of personal interaction – affects enterprise performance directly since it generates information on technologies and markets (Barr, cited by [14]). The acquired information can be applied to enhance enterprise productivity, profit and market share. This is what happens especially in innovation networks prevalent among larger regional firms.

Small local firms in traditional industries coalesce into “solidarity networks”, sharing information about members’ conduct and intentions; the primary function of which is to reduce risk and uncertainty [23].

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2 See, for example, Duncombe and Heeks [6], Kabiru [11], Kapoor, Mugwara and Chidavaenzi [17], Kenya [13], Pineda and others [19] and Busenitz [3]. It must be noted that, though understanding information gaps is important, information is not the be-all and end-all of enterprise development. Enterprise development is a multi-dimensional process that requires an understanding of other critical factors such as credit, skills, markets, finances and so on.

3 For instance, Heeks [9] highlights two case studies of failure and success of ICT projects in South Africa. The successful project identified the communities’ needs and projects. Since social development comes about through a partnership between change agents and communities, to be effective, change agents must perceive, understand and identify with the communities goals [1].
Therefore, it is reasonable to conclude that entrepreneurs with small, closed and knowledge-poor social networks will suffer isolation from informal information (Barton, cited by [6]). According to Pedersen [18], market clusters facilitate larger market information since prices and qualities of goods are freely available. This implies that traders involved in simple exchange have limited access to market information relative to those operating in clusters.

Studies on enterprise clusters and networks identify several ways in which enterprises gain from these arrangements. McCormick [17] argues that clustering can build industrial capacity by increasing market access, fostering communication and information sharing, enhancing technological spillovers, increasing efficiency, and contributing to the development of supportive institutions. Evidence from five clusters in Kenya, one in Ghana, and one in South Africa indicates that inter-firm collaboration leans more towards horizontal joint action and less towards vertical joint action [16].

In Kenya’s informal sector, further evidence indicates that ethnic networks play a substantial role in the allocation of premises on which to do business, in the transfer of skills and technology, entry into the informal sector and, in establishing markets [15]. In so far as ethnic networks serve these roles, they act as barriers to information flow since, in this case, there is exclusive information flow among co-ethnics. In poor communities, including clusters of MSEs, networks affect both social and economic outcomes. It is social networks that capture local knowledge and circulate it within the communities. Local knowledge belongs to and is controlled by the community. Based on this, it can be inferred that the relevance of ICT-based projects will depend not only on how well they interface with the traditional communication channels but also how they incorporate locally generated information. This is based on the premise that the adoption of innovation can be greatly facilitated by the proper identification of traditional communication systems through which members of the community acquire and diffuse their existing knowledge, attitudes and practices [1]. The traditional media have their own shortcomings in the modern world but they can be strengthened with modern communication techniques.

A major weakness of most ICT projects targeting MSE’s is the assumption that the sector should be provided with technology, information, and knowledge. This underlies the assumption that entrepreneurs in the sector don’t produce knowledge and information. In reality, entrepreneurs in MSE’s produce information. They should be perceived not only as recipients of information but also as producers of information. For empowerment to take root via information and communication technologies, information generated by MSEs in developing countries should be blended with foreign knowledge in ways that do not alienate MSEs.

Evidence from rural India indicates that information technology is an effective strategy of reducing the development gap at the village level and that the Internet may make a significant contribution to the economy and quality of life in developing nations [20,22]. The village communication project in Pondichery in Southern India has established information shops in six villages. However, before the implementation of the project, there was an in-depth study of users and their requirements in order to understand the state of existing communication habits and channels in the project areas. The predominant sources of information in the project areas were local petty shopkeepers, market places, agri-input suppliers as well as rural poor households.

3. Survey design

The construction of the sampling frame involved two stages. In the first stage, area maps were used to create three clusters namely Industrial Area, Kariobangi Light Industries and Gikomba area. In the second stage, it was necessary to perform a “quick count” of enterprises within each cluster. This was
followed by a random selection of enterprises whose owners were interviewed. Therefore, the study adopted a sampling procedure that combined a purposive selection of the clusters with a randomized selection of the sample units (the enterprise was the variable used as the unit of analysis). This approach is justified by the difficulty in obtaining a database of firms due to lack of a directory of all enterprises in Nairobi.

The selection of clusters was guided by the need to provide clusters/blocks of units with relatively homogeneous characteristics. Cluster selection was also guided by spatial and sectoral concentrations of manufacturing activity as well as physical and economic characteristics. This was to improve the balance in the sample. Enterprises in Gikomba were predominantly informal, family owned and sole proprietorships while those in Kariobangi lay between very small informal enterprises and large size enterprises. As such, most of the enterprises in Kariobangi performed light manufacturing processes. Unlike Gikomba, industrial activity within Kariobangi was more organized in terms of access to public utilities and trunk infrastructure but the set up did not match the level that existed in Industrial area. Industrial area is mainly comprised of medium and large formal enterprises.

The construction of the survey instrument involved three stages. The first stage employed documentary research to generate relevant sources of information useful to MSEs. Then, a focus group discussion was conducted to confirm the sources identified in the first stage. The focus group discussion was also intended to reveal the extent to which the identified sources conformed to theoretical expectations. In the third stage, the instrument was pre-tested to assess its suitability. This was done before the commencement of the actual survey.

Data collection commenced on September 16, 1999 and lasted one and a half weeks. The sample had an urban bias since Industrial Area, Kariobangi Light Industries and Gikomba area are located within Nairobi. The sectors covered were food, metal, wood products, textiles and chemical (primarily paints). Sampling was restricted to MSE manufacturers with 50 and less employees. A micro and small enterprise is defined as one employing between one and fifty persons. For analytical convenience, the sample was broken down as follows; micro-enterprise (1–5 employees), small enterprise (6–20 employees) and medium enterprise (21–50 employees). These definitions are adopted in the rest of the paper.

Sixty questionnaires were administered to the sampled enterprises. The sampling procedure resulted in the following distribution of the enterprises (in brackets); Industrial area (14), Kariobangi Light Industries (26) and Gikomba area (20).

4. Study findings

4.1. Information: Is it a problem?

The results in Table 1 indicate that organizations providing business information are very few. At least 75 per cent of the respondents lack access to such organizations. This result is expected because there has been limited effort by government, non-governmental and community based organizations to offer business advisory services. Despite the absence of formal organizations, a large proportion of respondents (over 64 per cent) consulted at least one main alternative source. Unfortunately, information gathered via the alternative sources is found to be unreliable. Unreliability levels are higher in the textile (100 per cent) and chemical (100 per cent) sectors relative to metal (68 per cent), wood (66 per cent) and food (62 per cent). This reflects the differentiated nature of markets that these enterprises face. Producers in the textile and chemical sectors predominantly serve distant markets. For food, metal and wood sectors, customers are mainly in close proximity to the producer. This enhances closer interaction,
Table 1
Selected Attributes by Sector (%)

<table>
<thead>
<tr>
<th></th>
<th>Textiles</th>
<th>Metal</th>
<th>Wood</th>
<th>Food</th>
<th>Chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Do useful organizations providing market information exist?</td>
<td>14.3</td>
<td>85.7</td>
<td>0.0</td>
<td>100</td>
<td>9.1</td>
</tr>
<tr>
<td>Does firm have main source of market information?</td>
<td>71.4</td>
<td>28.6</td>
<td>52.6</td>
<td>47.4</td>
<td>63.6</td>
</tr>
<tr>
<td>Is source identified above adequate and reliable?</td>
<td>0.0</td>
<td>100</td>
<td>31.6</td>
<td>68.4</td>
<td>33.3</td>
</tr>
<tr>
<td>Is firm willing to pay fee in exchange for market information?</td>
<td>57.1</td>
<td>28.6</td>
<td>84.2</td>
<td>15.8</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Note: The initial study had a bias towards market information. In this table, it is assumed that market information best represents other types of information (credit, technology and so on).

faster feedback and therefore easier verification of fragmented information. Overall, the reliability of the alternative sources is lower since information is in most cases incomplete.

Willingness to pay fee varies from a low of 57 per cent in the textile sector to a high of 100 per cent in the food sector. This result is surprising but important in the sense that MSEs have been assumed to be too poor to pay for such services. Though fee is important, for cost effectiveness (of the projects), the levels charged need not be prohibitive given the low profit levels that characterize the sector. This willingness to pay fee should be seen as a sacrifice the entrepreneurs have to make. It should also be seen as an extension of the give-and-take principle that drives reciprocal transactions in the MSE sector.

Results in Table 1 suggest that market information is scarce and, therefore, a problem. In cases where information becomes available, it is fragmented and unreliable. Because of this constraint, respondents accept to bear the cost (definitely not the full cost which may be beyond their means) through fee payment. There is also the possibility that part of that payment could be by supplying information (information barter). Policy should support organizations providing business information on cost recovery basis.

4.2. Supportive formal institutions

Study findings suggest that there are very limited formal mechanisms supporting the flow and exchange of information in the small business sector. Out of the total sample, only seven enterprises (8.5 per cent) had access to formal institutions providing business-related information. The formal institutions (and the number of beneficiaries – in brackets) include parastatals (two enterprises), NGOs (three enterprises), donor agencies (one enterprise), and other institutions (one enterprise).

Arguably, weak institutional support emerges as a major constraint to the flow and exchange of information in the micro and small enterprise sector. It can also be argued that the proliferation of informal networks is partially driven by the absence of formal organizations so that such networks play a substitution role. It is interesting to note that though the government offers business advisory services through trade officers stationed in each district, none of the respondents seem to have benefited from this service. There are two possible explanations. Either the extension services discriminate against small-scale manufacturers or the small enterprises (especially the informal ones) avoid dealing with these institutions in order to remain invisible.

*The concept of information barter is due to an anonymous external reviewer of this study.*
Table 2
Distribution of information sources by frequency of use

<table>
<thead>
<tr>
<th>Frequency of use (%)</th>
<th>Not at all</th>
<th>Occasionally</th>
<th>Regularly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert advice</td>
<td>15.5</td>
<td>43.1</td>
<td>41.4</td>
</tr>
<tr>
<td>Industry standards</td>
<td>15.5</td>
<td>27.6</td>
<td>56.9</td>
</tr>
<tr>
<td>Customer reactions</td>
<td>3.3</td>
<td>8.3</td>
<td>88.3</td>
</tr>
<tr>
<td>Competitor reactions</td>
<td>8.6</td>
<td>19.0</td>
<td>72.4</td>
</tr>
<tr>
<td>Employees</td>
<td>5.2</td>
<td>24.1</td>
<td>70.7</td>
</tr>
<tr>
<td>Personal judgement[a]</td>
<td>3.4</td>
<td>8.6</td>
<td>87.9</td>
</tr>
<tr>
<td>Research[b]</td>
<td>44.8</td>
<td>31.0</td>
<td>24.1</td>
</tr>
<tr>
<td>Friends and relatives</td>
<td>27.6</td>
<td>24.1</td>
<td>48.3</td>
</tr>
</tbody>
</table>

Notes: \[a\] Is a product of internally generated knowledge accumulated within the present or past business, or previous employment.
\[b\] Restricted to market research and not the conventional research and development (R & D) which is wide and more relevant to large enterprises.

4.3. Information sources

Table 2 indicates that the most frequently used sources of information are customer reactions, competitor reactions, employees and personal experience. These sources are mainly personal and informal. Compared to other sources of information, research, friends and relatives, expert advice, and industry standards are either less frequently used or never used at all. This suggests that apart from friends and relatives, the less popular sources of information are market-based, impersonal or formal, or a combination of any of these attributes. Thus cost, proximity, and convenience assume a primary role in the information function. These results could be attributed to the way production is structured in small enterprises. Small producers are fully occupied in the production process and are often reluctant to leave their workshop (except to search for raw material) or feel that they already have a secured market i.e. among family, friends and members of their social group [7].

4.4. Cost of information

Mean scores derived from ordinal rankings by enterprises are given in Table 3. Expert advice, research and industry standards emerge as the most costly sources. Information derived from these sources is absent in the informal institutions that predominate the small enterprise sector. It has therefore to be sourced from formal or external sources that happen to be costly.

Small-scale entrepreneurs may not know where to obtain appropriate information, and even when they do, there is likely to be a social or economic cost to obtaining that information [19]. They will therefore opt for the most readily available information sources, rather than employ the optimal source and incur the additional cost. Given the resource configuration of such enterprises, this behavior could be defined as being adaptively or boundedly rational. Rational because instability and low profits characterize the markets in which these enterprises operate.

4.5. Social and business networks

Networks act as conduits through which information flows. In a business sense, networks are important because they facilitate tangible production, distribution and consumption of goods and services. Table 4
suggests that trust and norms of reciprocity are entrenched in the small business sector. Over 70 per cent of the respondents devoted a proportion of business earnings to offer mutual assistance to extended family members, certain unrelated individuals and associations. Entrepreneurs who refer their clients to other firms also stand a higher chance of receiving referrals from elsewhere. This implies that though the institution of referrals derives from trust, it is sustained by reciprocity. The incidence of inward referrals increases with the size of enterprise so that, larger (and therefore older) enterprises receive more inward referrals than average. Outward referrals are, however, inversely related to size. Since reputation and trust are durable, owners of larger enterprises are likely to have cumulatively greater reputation relative to smaller enterprises.

4.6. Information needs

If information is indeed a problem, what type of information is critical to the enterprises? Respondents were asked to identify the type of information that was very critical for their operations. Table 5 indicates that financial and market information are the most critical. Taken together, these two components represent about 80 percent of the responses. Relative to larger enterprises, micro-enterprises suffer most
Table 5
Enterprise information needs by size

<table>
<thead>
<tr>
<th>Size of enterprise (%)</th>
<th>Micro</th>
<th>Small</th>
<th>Medium</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to credit</td>
<td>48.6</td>
<td>40.4</td>
<td>21.7</td>
<td>39.0</td>
</tr>
<tr>
<td>Market information</td>
<td>42.9</td>
<td>38.3</td>
<td>43.5</td>
<td>41.0</td>
</tr>
<tr>
<td>Government policy</td>
<td>2.9</td>
<td>4.3</td>
<td>13.0</td>
<td>5.7</td>
</tr>
<tr>
<td>Technical assistance</td>
<td>5.7</td>
<td>8.5</td>
<td>8.7</td>
<td>7.6</td>
</tr>
<tr>
<td>Access to inputs</td>
<td>0.0</td>
<td>8.5</td>
<td>13.0</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Table 6
Major Constraint by Sector

<table>
<thead>
<tr>
<th>Sector (%)</th>
<th>Textiles</th>
<th>Metal</th>
<th>Wood</th>
<th>Food</th>
<th>Chemicals</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor infrastructure</td>
<td>21.4</td>
<td>18.8</td>
<td>11.8</td>
<td>33.3</td>
<td>18.8</td>
<td>19.2</td>
</tr>
<tr>
<td>Government bureaucracy</td>
<td>28.6</td>
<td>25.0</td>
<td>23.5</td>
<td>33.3</td>
<td>25.0</td>
<td>27.3</td>
</tr>
<tr>
<td>High costs</td>
<td>35.7</td>
<td>50.0</td>
<td>58.8</td>
<td>33.3</td>
<td>50.0</td>
<td>47.5</td>
</tr>
<tr>
<td>Poor technology</td>
<td>14.3</td>
<td>6.3</td>
<td>5.9</td>
<td>0.0</td>
<td>6.3</td>
<td>6.1</td>
</tr>
</tbody>
</table>

from the dearth in credit-related information. This is expected because the enterprises are discriminated against by formal lending institutions due to risk factors and lack of collateral. With the onslaught of increased competition, small enterprises have experienced declines in market shares. This probably explains the importance attached to market information.

Other factors such as government policy, technology, and inputs are size-specific. Therefore, information bottlenecks emanate from structural and institutional barriers and limited capacity by the entrepreneurs to screen the environment and access particular information. In terms of priority, provision of market and financial information would considerably ease information gaps.

4.7. Constraints to information flow

Access to information about market incentives, credit, investment and other profitable opportunities should be widely available to avoid the isolation of excluded sectors. Access to information can be enhanced through ease of communication and movement of people. This would require investment in physical infrastructure such as roads, power, telephones, post offices and community halls. Yet, from Table 6, it is evident that this has not been the case in the small-scale manufacturing sector. On average, about half of the respondents cite cost as a major hindrance to the search process. Government bureaucracy and poor infrastructure also act as major impediments to the search process. Poor technology seems to affect firms in the textiles sector more than the rest.

Relative to other constraints, technology is not as critical as factors like high costs, government bureaucracy and infrastructure. It is clear that though technology is certainly an issue, there are other more important impediments. This suggests that policy that gives priority to the more important impediments is likely to have higher payoff. Alternatively, it can be argued that the success of ICT projects will depend on the extent to which other complementary problems are eased.

4.8. Information and communication technologies

With the growth in ICT’s, there is increasing concern that marginalized sectors need to keep pace with the associated technological, organizational and human resource imperatives [8]. While this concern
Table 7

<table>
<thead>
<tr>
<th></th>
<th>Electricity (%)</th>
<th></th>
<th>Telephone (%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Have access</td>
<td>No access</td>
<td>Total</td>
<td>Have access</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>56.5</td>
<td>43.5</td>
<td>100.0</td>
<td>36.4</td>
</tr>
<tr>
<td>Rural</td>
<td>23.4</td>
<td>76.6</td>
<td>100.0</td>
<td>18.1</td>
</tr>
<tr>
<td>All</td>
<td>49.3</td>
<td>50.7</td>
<td>100.0</td>
<td>32.4</td>
</tr>
<tr>
<td><strong>Type of Ownership</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>50.1</td>
<td>49.9</td>
<td>100.0</td>
<td>33.2</td>
</tr>
<tr>
<td>Women</td>
<td>45.3</td>
<td>54.7</td>
<td>100.0</td>
<td>30.7</td>
</tr>
<tr>
<td>Jointly owned</td>
<td>49.2</td>
<td>50.8</td>
<td>100.0</td>
<td>36.0</td>
</tr>
<tr>
<td>All</td>
<td>49.2</td>
<td>50.8</td>
<td>100.0</td>
<td>32.3</td>
</tr>
</tbody>
</table>


Note: Access to electricity and telephone was defined as the availability of the service on the work site. This should be contrasted against the availability of the service inside the premises. Availability of the service on the work site does not necessary mean the availability of the service within the premises. Had this been the case, the percentages of the enterprises accessing the services would have been much lower than reported.

is justified, MSEs can take advantage of new technologies if the enterprises are supported to access prerequisite “capital stock”. This includes the stock of telecommunications equipment; the stock of computers and computer related inputs; and the stock of related human skills.

Inaccessibility or poor accessibility of MSEs to infrastructure is one of the key impediments to information flow, competitiveness and growth in the sector. A baseline survey (Table 7) revealed that about 50.7 per cent and 67.2 per cent of MSE’s lack electricity and telephone, respectively, in close proximity to their work sites. Enterprises located in urban areas and those owned by men had better access to both electricity and telephone than those located in rural areas and those owned by women. It is also surprising that access to electricity is better compared to access to telephone.

The poor access of these enterprises to crucial infrastructure implies that the MSE’s have to spent much time, effort and resources in receiving and relaying information to customers, suppliers and business colleagues. This obviously inflates business costs and impinges on the competitiveness of the products from this sector. There is also an additional risk that accompanies poor access to electricity and telephone. The enterprises are likely to miss out the benefits associated with information technology expansion.

Supportive IT programs are crucial in the MSE sector to mitigate the high costs of equipment, complex regulatory environment and poor managerial capacity. Table 8 indicates overall, about 13 per cent of the respondents were ignorant about the Internet. However, in the micro-enterprise sub sector (1–5 employees) levels of ignorance were high with 31 per cent citing lack of awareness. In the same sub-sector, about 45 per cent of the respondents felt IT was not useful.

Out of the total sample, only 6.7 per cent of the enterprises had access to the Internet. This reflects low Internet penetration rates in the MSE sector. Not surprisingly, it is the enterprises towards the large size spectrum that account for much of the 6 per cent. The 31 per cent of micro-enterprises (1–5 employees) citing lack of awareness and the 39 per cent of all enterprises that indicate “not useful” can be interpreted in two ways. First, it can be argued that the logic of redundancy explains the “not useful” response. If the logic of redundancy holds, then it is the entrepreneur’s feeling of “helplessness” in the face of new and unaffordable technology, rather than the “uselessness” of the technology, that accounts for the response. Apart from the traditional factors (such as credit, skills, infrastructure, markets and so on) that have marginalized the MSE sector, the entrepreneurs in this sector perceive further marginalization by the more modern and sophisticated technologies. Second, the “not useful” response may reflect the
absence of local content on the Internet so that MSEs see the technology as being irrelevant. It may also be attributed to their lack of control of such technologies. By and large, the content on Internet has originated from the North. Obviously, such content alienates MSE’s and, therefore, becomes irrelevant to them.

Perhaps, the extent of information scarcity in the MSE sector is exemplified by the 31 per cent of micro-entrepreneurs citing lack of awareness. For obvious reasons, information scarcity in the micro sub-sector (1–5 employees) is more acute relative to the small (6–20 employees) and medium (21–50 employees) segments. It should be noted that very little effort has gone into improving the access of MSE’s to telecommunications. Currently, the only known effort in Kenya is the IDRC’s Acacia project to establish tele-centers in rural areas [10]. The tele-center concept was hatched to empower rural communities through ICTs. This is based on the perception that information is one of the most effective mechanisms by which marginalized segments of the population can be mobilized and made more responsive to development concerns. The same concept should be replicated in other lagging sectors such as the MSE sector. Unless this is done, the growth in the “network society” threatens greater marginalization of lagging sectors so that gains derivable from its growth are likely to be inequitable, disharmonic and asymmetric.

5. Conclusions and policy implications

This study uses firm level data from Kenya’s small-scale manufacturing industry to identify the channels through which information is exchanged and diffused, and to assess the prospects that IT could be applied to empower the MSE sector. Arguably, understanding the potential of information and communication technologies in the MSE sector is preceded by, and necessarily requires, the understanding of the information delivery channels in the sector.

Empirical analysis reveals that there is scarcity of information in the MSE sector. In addition, the results suggest that most entrepreneurs are willing to pay for business information. The most frequently used sources of information are mainly personal, informal and non-market based. Therefore, information bottlenecks emanate from structural and institutional barriers and limited capacity by the entrepreneurs to screen the environment and access particular information.

A large percentage (about 40 per cent) of respondents indicated that IT was not useful. This is attributed to the poor access of the sector to telephones and electricity as well as low Internet connectivity. On this basis, the entrepreneurs perceive further marginalization by the more modern and sophisticated technologies. It is argued that though ICTs are important in the sector, there are other more critical constraints to information flow that deserve priority. The success of ICT projects will depend on the extent to which they address such constraints.
On the one hand, ICT projects should complement the existing local institutions and social networks since communication is, essentially, a social process. Specifically, the projects should take into account the important role attached to informal institutions and therefore serve to preserve rather than destroy them. On the other hand, though informal institutions play a prominent role in the MSE sector, they should not act as substitutes to formal sources (including ICTs). Rather, the two should not act as alternatives but as complementary activities within a single system.

Public policy should encourage the establishment of local information centers. Cost-effectiveness, acceptability and ownership would require that such centers receive approval of local associations, locate within enterprise clusters, be linked to each other and should operate on a cost-recovery basis. Similarly, the design of MSE projects should include information and communication components to maximize informational spillover and, therefore, allow greater participation of the beneficiaries. There will also be need to increase local content on the Internet as a means to make it more relevant and, therefore, generate interest of MSE operators in the technology.

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References


Elsewhere, these have been termed “information shops” (see, for example [22]).


