Accessibility of Institutional Support to Nonfarm Micro Manufacturing Enterprises in Rural Tanzania

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Abstract

This study contributes an understanding on how the rural nonfarm micro manufacturing enterprises in Tanzania access institutional support for their growth and survival. It aimed at exploring the extent to which rural nonfarm micro manufacturing enterprises access institutional support and approaches that the responsible institutions are using to provide support to them. A total of 62 micro manufacturing enterprises were sampled for this study. Primary data were collected using questionnaire, semi-structured interview and observation. Secondary data were collected through review of relevant documents and policies. Qualitative data were analyzed through content analysis while quantitative data were analyzed through SPSS. Results indicate low level of accessibility of institutional support to rural micro manufacturing enterprises from responsible institutions. Furthermore, the study learnt that that the responsible institutions are insufficiently providing support which do not reach the rural nonfarm micro manufacturing enterprises. It appears that unintended enterprises are likely receiving support that were primarily targeting rural nonfarm micro manufacturing enterprises. This study established that the responsible institutions do not use appropriate approach that can help them reach a voluminous number of targeted rural nonfarm micro manufacturing enterprises. It is recommended that the responsible institutions change the approach and make use of the participatory approach that engage more closely the LGAs. This will facilitate easy identification of the rural micro manufacturing enterprises that really need support and see more of their services penetrate and reach targeted rural nonfarm micro manufacturing enterprises.

Keywords: Accessibility; Institutional Support; Rural Nonfarm; Micro Manufacturing Enterprises
Introduction

This study focuses on accessibility of institutional support from public institutions to rural nonfarm micro manufacturing enterprises (MMEs). It present evidence from MMEs survey in Kyela District Tanzania by exploring the manner to which these enterprises get the needed support and the kind of approaches the public institutions are using while providing support.

Tanzania has evidently showed the motive to push for industrial development, with focus on development of rural micro manufacturing enterprises (Chipman, 2016). One of the prominent sectors for industrial development is the rural nonfarm sector. The rural nonfarm sector is rapidly growing in Africa and has drawn attention and recognition (Nagler & Naude, 2017; Nagler & Naudé, 2014; World Bank, 2017). A significant number of rural households are pushed into engaging on nonfarm enterprises (World Bank, 2017). While a good number of rural nonfarm enterprises are established, Msamula et al., (2018) argue that advancement of rural nonfarm enterprises is associated with presence of institutions responsible for nonfarm sector development. Equally, Andreoni (2017); IFAD (2017) and Nagler and Naude (2017) claim that growth and performance of nonfarm enterprises depends on existence of the suitable and appropriate institutional support. Even though majority of the rural nonfarm enterprises are considered survivalists that their owners do not target growth yet they require support from the responsible support institutions in order to achieve their goals (Chipman, 2016). Generally, the whole rural nonfarm sector require necessary support from public responsible institutions, the manufacturing subsector need more support than the other subsectors. Nagler and Naude (2017) describe at some length why manufacturing subsector need more support than other subsectors. They argue that manufacturing activities are not easy-to-enter activities and that they can only grow if there is relevant support to economize transaction and production costs.

To see the support for growth and development reach the urban and rural enterprises, Tanzania initiated four main responsible institutions for that: SIDO, CAMARTEC, TEMDO and TIRDO. Small Industries Development Organization (SIDO) through Act No.28 of 1973, bearing the functions of promoting development of small industries; train and conduct market research for goods produced by small industries; facilitate well-ordered and balanced development of small industries in regions and providing technical assistance to small industries. The Tanzania Industrial Research and Development Organization (TIRDO) is a multi-disciplinary research and development organization established by an Act of Parliament No. 5 of 1979 and came into operation on April, 1979. TIRDO’s main functions are to carry applied research in various aspects of local and foreign industrial techniques and technologies and evaluate their suitability for adaptation and alternative use and to provide to enterprises engaged in industrial production advisory technical services relating to the establishment of systems for the control and regulation of industrial processes.

The Tanzania Engineering and Manufacturing Design Organization (TEMDO) is an applied Engineering Research and Development institution established through Parliament Act No 23 of 1980 which became operational in July 1982. TEMDO’s functions are to design and promote the designing of products and processes for Tanzania industry in accordance with national Industrial development Policy, to adopt foreign design for machinery and equipment to suit local conditions of manufacture, use and maintenance and lastly to manufacture and develop prototypes and spares based on the designs produced by the organization as well as those which may be brought to the organization.

Further, The Centre for Agricultural Mechanization and Rural Technology (CAMARTEC) was established by the Act No. 19 of Parliament of the United Republic of Tanzania in November 1981. The Centre aimed at improving the quality of rural life through development, adaptation, adoption and dissemination of the appropriate technologies in the fields of agricultural mechanization, housing, rural transport, renewable energy and post-harvest.
With notable institutional support framework in place in Tanzania, rural nonfarm micro manufacturing subsector is reported to be relatively not growing (Diao, Magalhaes, & Mcmillan, 2018). Manufacturing sector in Tanzania has largely shown a slowdown trend in recent years. The sector grew at 7.8 percent in 2016, while recorded 7.1 percent growth rate in 2017 and sector contribution to GDP fell from 7.9 percent in 2015 to 5.5 percent in 2017 (URT, 2018; 2019). The 2012 data on rural nonfarm sector in Tanzania shows that the sector is dominated by trading subsector (54.5 percent of all enterprises in rural nonfarm sector) while manufacturing subsector is only 18.2 percent making a 2.8 percent drop from 2006 data (Sundaram-stukel, Deininger, Jin, Bank, & Dc, 2006; URT, 2012). It is not clear what actually caused sector downfall. On the one hand, MMEs slowdown trend is associated with policy failure while the failure of the responsible institutions and actors to implement policies is a concern, on the other. URT and UNIDO (2012), argue that SME Development Policy 2003 aimed at addressing constraints to industrialization growth but many constraints it aimed at still exist. However, URT and UNIDO (2012) suggest that probably policy failure might have been caused by problems encountered in the implementation stages with responsible institutions and actors failing to provide support and translate the policy into reality.

**Literature Review**

1. **Accessibility**

   There is difficulties in defining accessibility as such there is no universally agreed definition of the term (EPF, 2016; IOM, 1993). Accessibility is a multi-dimension concept and has been differently defined by different authors. Although, Frenk (2015) restrain from using the term interchangeably, a widespread trend is to use “accessibility”, “access”, “availability” and “acceptability” interchangeably (Aday & Andersen, 1974; Fielder, 1981; Salkever, 1976). The Oxford (2006) defined accessibility as gain, retrieve, obtain or acquire something you desired. IOM (1993) describes accessibility as a broad set of concerns that center on the degree to which individuals and groups are able to obtain needed services from responsible institutions. This study come to an agreement with IOM (1993) and Frenk (2015) on how to define access as the extent to which the population in this case the rural nonfarm MMEs are capable to obtain the needed services from the provider who in this case are the public responsible institutions; SIDO, CAMARTEC, TEMDO and TIRDO.

2. **Measuring Accessibility**

   Measuring accessibility is not an easy task. WHO (2004) argue that accessibility is a complex concept and thus measuring it is not straight as it may considered at first place. Knox (1979) in Frenk (2015) provide accessibility index as:

   \[
   A_i = \sum_{j=1}^{n} \frac{S_j}{D_{ij}K}
   \]

   Where:

   \(A_i\) = accessibility in geographical area \(i\)
   
   \(S_j\) = MMEs consultation time with public institution available in geographical area \(j\)
   
   \(D_{ij}\) = distance between \(i\) and \(j\)
   
   \(K\) = function representing the hampering effect of the cost of transportation, known as the “distance reduction function”
While this study agrees with accessibility index suggested by Knox (1979) it was difficult to use since capturing data in rural setting on consultation time and distance was challenging. On the other hand, EPF (2016); IOM (1993) and WHO (2004) provide important indicators that can be useful in measuring accessibility. WHO (2004) delineate that accessibility can be measured by looking on five components: availability, affordability, acceptability, appropriateness and equality. EPF (2016) outline the 5As of measuring accessibility: adequate, accessible, affordable, appropriate and available. Furthermore, IOM (1993) argue that accessibility can be measured by looking on appropriateness, efficacy, quality and equity. Through summing and filtering the three studies: EPF (2016); IOM (1993) and WHO (2004), this study decided to measure accessibility of institutional support to rural nonfarm MMEs by looking on five indicators: availability, adequate, affordable, equity and appropriateness. The five indicators were chosen based on the nature and forms of support the responsible public institutions are providing to rural nonfarm MMEs.

3. Accessibility to Institutional Support Model

Accessibility regulate institutional support outcomes. In fact, Donabedian (1973) and Frenk (2015) conceives accessibility as a “mediating factor” or a functional relationship between the population (MMEs in this case), facilities (responsible public institutions in this case) and resources (institutional support in this case). Conceptualization of accessibility of institutional support is shown in figure 1 below encompasses series of events from the moment when the need for support arises up to moment when support is provided and used or continue to be used. The illustration given by Frenk (2015) on conceptualization of accessibility is that, if there is a need and desire for support, then the analysis will center on factors that stand in the way of or facilitate the processes of seeking and of obtaining support. He argue that, a simple extension of this abstract would include in realm of accessibility not only the initial connections and interactions with the support system, but also continuing contacts throughout the accessibility episode.

![Conceptualization of Accessibility of Support](image)

Figure 2.1: Conceptualization of Accessibility of Support
Source: Adapted and Modified from Frenk (2015) and Donabedian (1973)
Methodology

1. Research Location

The paper is a result of the study, which was conducted at Mbeya region covering Kyela District, Tanzania. Mbeya was chosen as it had the highest business density as per last national SME baseline survey (URT, 2012). Mbeya has the highest crop harvest volume (URT, 2017). Loening et al. (2008) argue that local variability in expected crop performance have impact on existence and growth of nonfarm MMEs because of the main role played by agriculture sector. Thus, conducting this study in Mbeya provided an opportunity to explore a trend on accessibility of institutional support to rural nonfarm micro manufacturing enterprises in Tanzania. District selection was basically decided using SIDO ODOP product list. ODOP list indicated that Kyela District had significant number of MMEs engaged on nonfarm activities.

2. Type of Research and Respondents

The study used descriptive cross-sectional research design basing on its nature. The design allowed data to be collected at one point in time and produced explanation of variables. Convergent parallel mixed method approach with qualitative dominance was adopted. The use of mixed method aided in providing better understanding on extent to which the rural nonfarm MMEs access institutional support. The study targeted rural nonfarm MMEs with four years or above. Hanks, Watson, Jansen and Chandler (1993) argue that a mean age for start-up enterprise is four years claiming that the period is enough to assess the need and desire for support of an enterprise. By a using Yamane formula a sample of 62 micro manufacturing enterprises represented the population.

The sample size was considered suitable as the sample size of least 30 respondents is sensibly large in social science research studies to guarantee normal distribution of the sample mean (Maas & Hox 2005). Micro manufacturing enterprises with four or more years of life were purposively chosen to constitute a desired sample of 62 respondents.

3. Data Collection and Analysis Techniques

In this study, both primary and secondary data were collected in which quantitative and qualitative methods were used in collecting primary data. Content analysis was used in analyzing qualitative data. Interviews were recorded and checked several times. The emerging patterns and trends was then matched with the respective interviewees’ background characteristics and patterns and trends were grouped into themes, sub-themes, problems and issues consistent with research questions. Quantitative data were analyzed using SPSS. The tool for analysis was the mean score obtained from the quantification of the construct in a linear summated rating scale.

Results and Discussion

1. Forms of Support Provided by Responsible Institutions to Rural Nonfarm MMEs

Conceptualization of the accessibility posits the existence of the need for support, search for support, resource utilization and continuity. In this regard, there are should be assurance if resources to be provided are available at first place. In this endeavor, the study examined forms of support ever provided by responsible institutions to rural nonfarm MMEs so that the three domains of accessibility is explored.

Basically from theoretical review, support forms are categories into four main types; technology and technical enhancement; business skills development; promotion, linkage and marketing; and access to finance (Chipman, 2016; SIDO, 2014a). Interview results were consistent with theoretical review.
Findings suggest that SIDO affirmed to have had the four forms of support. Interview with SIDO revealed that, the organization has been supporting rural enterprises including the nonfarm enterprises in all four earlier mentioned categories. CAMARTEC mentioned technological enhancement as a form of support the organization do provide to micro enterprises regardless of the location. TEMDO and TIRDO also asserted to have no specific support provision to rural micro manufacturing enterprises in Kyela. Although, the three institutions: CAMARTEC, TEMDO and TIRDO are responsible and mandated for technological enhancement support but acknowledged to have had provided other forms of support to rural enterprises whenever there is a need and a guarantee that enterprises can pay for services offered.

Table 1: Self-reported Type of Support by Institutions in Kyela DC (n=7)

<table>
<thead>
<tr>
<th>Institution</th>
<th>Type of Support provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIDO</td>
<td>Facilitate MMEs Innovative capacity, Access to Technology, Infrastructure and Technical Services in Kyela</td>
</tr>
<tr>
<td></td>
<td>Facilitate Business Skills Development for MMEs’ Growth and Competitiveness in Kyela</td>
</tr>
<tr>
<td></td>
<td>Facilitate MMEs Access to Market and Information. SIDO link MMEs with local and international markets</td>
</tr>
<tr>
<td></td>
<td>Facilitate MMEs Access to Finance</td>
</tr>
<tr>
<td>CAMARTEC</td>
<td>Trained technicians who are also training other technicians on how to make bio gas plants</td>
</tr>
<tr>
<td>TEMDO</td>
<td>No support has been given in Kyela. TEMDO don’t have considerable works in Mbeya region</td>
</tr>
<tr>
<td>TIRDO</td>
<td>No specific support has been given in Kyela</td>
</tr>
</tbody>
</table>

Source: Field Data, 2020

Five out seven respondents from the study affirmed that the responsible institutions are strategically supporting rural nonfarm MMEs. It appeared that CAMARTEC and SIDO have supported the rural MMEs in Kyela. It was learned from interview data that under technology and technical enhancement, MMEs are enabled to access technology, improve innovative capacity, assisted to work in improved infrastructure and provided with technical services. On accessing technology, MMEs are linked with technology developers from within and outside Tanzania. Data from documentary review revealed that for technology and technical enhancement to be useful, MMEs need to be provided with appropriate machinery, get advisory services and training, linked with incubator programme, provided with industrial estates, and access TDCs services (Chipman, 2016; SIDO, 2014a).

In an endeavor to check all of the above traits of technology and technical enhancement, findings indicate that it has been a while now since rural micro manufacturing enterprises in Kyela last received support on this category. Evidence from interviews data indicate that CAMARTEC and SIDO last provided support in 2009 to rural nonfarm MMEs on technology and technical enhancement. In 2006 CAMARTEC did a comprehensive training to rural welders in Kyela on how to construct bio gas plants in their respective villages. CAMARTEC further provided training to farmers in Mbeya and other regions on making handmade sunflower processing machine and transferred energy serving cooking stoves. SIDO donated two palm extracting machines in 2009 to boost soap production in Ipinda which have highest number of soap producing enterprises. Rural MMEs in Ipinda were also trained on soap production technology. Training is believed to be quite important and relevant to rural nonfarm MMEs and specifically to start-up enterprises as it highlight which machine to purchase, installation, repair and maintenance. On the other hand, without specifically mentioning rural MMEs in Kyela DC, TEMDO claimed to have had their designs and manufactured machines being mostly used in rural areas.
Table 2: Last Support given to Rural MMEs in Kyela (n=7)

<table>
<thead>
<tr>
<th>Year</th>
<th>Institution</th>
<th>Type of Support</th>
</tr>
</thead>
</table>
| 2006 | CAMARTEC    | Comprehensive training to rural welders in Kyela on how to construct bio gas plants  
| | | Training on making handmade sunflower processing machine  
| | | Technology transfer – energy cooking stoves |
| 2009 | SIDO        | Donated two extracting machines to boost soap production in Ipinda ward |
|      |             | Source: Field Data, 2020 |

As shown in Table 2, the last support received by rural MMEs in Kyela was in 2009. The results suggest that the rural MMEs established in 2010 and above have never received any kind of institutional support from the responsible institutions. The evidence assembled from observation and interviewing rural nonfarm MMEs, thus offers some empirical support to the view that responsible support institutions do not commendably provide the necessary support to rural MMEs and when support is provided falls in the hands of trading nonfarm enterprises who in most cases appears to link MMEs and market. Specific scenario was learnt in Matema where clay ports making enterprises in Ikombe village transport produced clay ports to market in Matema village and traders buy all clay ports to distribute in other big markets. The traders are likely in most cases claiming that they are also clay ports producers thus receiving support that primarily targeting the rural nonfarm MMEs. For instance, in doing promotion, linkage and marketing activities which is one of the support to be provided to rural MMEs, SIDO sensitized and mobilized rural nonfarm MMEs in Kyela participate in exhibitions and trade fairs. Rural nonfarm MMEs participated in 2006 SIDO regional exhibition and in 2018 national exhibition in Singida. Data shows that rural MMEs largely from clay ports making enterprises in Matema participated in these exhibitions. However, it was further learned from interview with clay ports makers that they did not attend the national exhibitions in Singida as seller who are actually not involved in production were picked to attend. The finding here suggest that trading enterprises are likely enjoying support on behalf of the rural MMEs.

2. Need, Desire and Search for Support by Rural Nonfarm MME

As explained in this paper, in literature review section on narrow and intermediate domains of accessibility, the need for, desire for and search for support are important aspects to measure accessibility. In fact, accessibility issues might not be a case if there is no need, desire and search for support (Frenk, 2015). This study therefore assessed the rural nonfarm MMEs’ need for, desire and search for support from responsible institutions. On a five-point scale where 1 is strongly disagree and 5 is strongly agree, respondents answered an average of 4.9 for need for support, 4.6 for desire for support and 2.6 for regular searching for support. In this regard, results implies that majority of the rural nonfarm are in need and desire to get support from responsible institutions. On the other hand, results imply that the rural nonfarm are not regularly searching for support from responsible institutions such as SIDO, CAMARTEC, TEMDO and TIRDO. The reasons attached to this is that of nonexistence of these institutions in rural area and long distance to reach their offices which normally are in district or regional headquarters. Frenk (2015) and Knox (1979) has discussed in length the relationship between accessibility, geographical area and distance between the support provider and the recipients.
Table 3: Proportion of Rural nonfarm MME in Need, Desire and Search for Support (n=62)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Need, Desire and Search for Support (%)</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>My enterprise is really in need of support</td>
<td>98.4</td>
<td>1.6</td>
</tr>
<tr>
<td>My enterprise really desire to get support</td>
<td>74.2</td>
<td>16.1</td>
</tr>
<tr>
<td>My enterprise is regularly searching for support</td>
<td>3.2</td>
<td>8.1</td>
</tr>
</tbody>
</table>

Source: Field Data, 2020

3. Accessibility of Institutional Support to Rural Nonfarm MMEs

Generally, the rural nonfarm MMEs do not access institutional support. Results shows that all aspects of accessibility scored an average of less than 2 on five-point scale where 1 is very low and 5 is very high (Table 4). The highest score was recorded on appropriateness and the lowest on affordability and equity. The implication here is that, the level of support is not satisfactory to cater for needs of the rural nonfarm MMEs. There is an increasing need and desire for support from responsible institutions (Table 3) thus the level of demand and supply for support do not match. There is an increase of new nonfarm MMEs joining the sector while the level of resources to be utilized from the responsible institution is not increasing. Furthermore, the lowest score on equity denotes the very important aspect of this study, as it signifies the state to which the rural nonfarm MMEs are left without institutional support. Observation made by this study indicate that rural nonfarm MMEs are generally surviving on their own.

The growth, performance, survival and existence of the rural nonfarm MMEs have largely been neglected. Diao et al. (2018); Nagler and Naude (2017); and SIDO (2014) assert that support services to rural nonfarm MMEs has remained limited and largely concentrated to urban counterparts. Support services from responsible institutions are heavily concentrated in urban (Chipman, 2016). In fact, there is fragmentation of initiatives to serve SME sector as such support services are being implemented in different forms by different responsible institutions without any coordination (SIDO, 2014). The finding echo the previous studies in Tanzania. A study by Makombe (2007) revealed that rural enterprises survive with little or no support from responsible institutions. Katapa (1999) and URT (2012) argued that the responsible institutions consider supporting the rural enterprises as too expensive thus supporting the urban enterprises becomes their priority.

Table 4: The Level of Accessibility of Institutional Support to Rural MMEs (n=62)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level of Accessibility (%)</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very High</td>
<td>High</td>
</tr>
<tr>
<td>Availability</td>
<td>1.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Adequate</td>
<td>3.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Affordable</td>
<td>6.3</td>
<td>93.7</td>
</tr>
<tr>
<td>Equity</td>
<td>6.3</td>
<td>93.7</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>6.6</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Source: Field Data, 2020
4. Approach Used by Responsible Institutions in Providing Support

Disagreement of results between survey and interview data pushed for further probing on what approach the responsible institutions use to reach and provide support to rural MMEs. It was revealed that the approach that are used by these support institutions is not appropriate. One of the interviewed senior community development officer asserted:

“…. often these institutions do not follow the proper channel to identify the right targeted MMEs to provide support...”

As a consequence of not following the correct path for support, support services are generally falling to unintended enterprises. This study learned that the responsible institutions usually work directly with enterprises in the community without much involving the duty bearers. Knowing the availability of support, some trading and silly enterprises are taking advantages and grab the opportunity that was meant for MMEs.

Conclusion

Rural nonfarm MMEs do not access support services from responsible institutions as envisioned while the need for and desire for support is rapidly increasing. The rural nonfarm MME are surviving without support from formal public support institutions. In rare cases where support is given is likely falling in hands of unintended enterprises or forged MMEs. Furthermore, the approach to which the responsible support institutions are using in proving support to rural nonfarm MMEs is not appropriate.

To ensure support services reach the right rural nonfarm MMEs the responsible support institutions need to change the current approach and make use of a more participatory approach. The use of a participatory approach to which DCDO’s office, WEOs and WCDOs are fully involved will easy identification of the MMEs that are really in need of support and ensure support services reach them. In fact, linking and involving the LGAs will reduce the distance to which the rural nonfarm MMEs have to travel to district and regional headquarters searching for support.

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