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African Institute for Science Policy and Innovation
International Biennial Conference

Conference Proceedings

VOLUME 2

2nd AISPI International Biennial Conference on Harnessing Science, Technology and Innovation for Inclusive Development in an Uncertain Future, 2021

# A Survey of Innovation Practices in the Informal Sector in Nigeria: Implications for inclusiveness

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## Abstract

Innovativenes is critical to the success of any business venture. The current study examined the innovative practices adopted by some informal businesses across three sectors in the Nigerian economy: manufacturing, agriculture and services. Primary data were obtained from business owners and managers in the informal business sector in Nigeria. Simple random sampling technique was used to select 778 respondents in three (3) out of six (6) geopolitical zones in Nigeria. Data collection were done with the aid of Google form. The overall aim of the survey was to provide information on the innovation activities of enterprises in the informal business sector. The retrieved data were analyzed using frequency counts and percentage distribution. Findings revealed that majority (76.5%) of the respondents attested that their customers were satisfied with current products, and were willing to pay for and interested in new products. This was closely followed by respondents (66.5%) who introduced environment-friendly products or services. About 60.8% of the respondents changed/upgraded technology (tools & equipment), looked for and used new sources for supply of raw materials and tools that were cheaper and/or better than old sources of supply. The study indicated that frequent changes in policies and government as well as civil unrest and crises are some of the factors hindering innovation activities in informal businesses. Cost of acquiring modern technologies and funding was ranked highest among economic factors that hindered innovation.

**Keywords:** Informal sector; Innovation; Manufacturing; Services


Selected and peer-reviewed by ASIPI, Obafemi Awolowo University, Ile-Ife, Nigeria.
Published 2024 by Koozakar LLC. Norcross GA 30071, United States.
https://doi.org/10.69798/30789153

## 1.0. Introduction

The need for innovation in informal sector enterprises has become imperative in modern business processes. Countries, corporations and individuals now regard innovation as activities that must be carried out for businesses to remain competitive in the global business environment. Innovation activities have been described as the driver of economic growth and development (Ostrom and Avenyo, 2016; Avenyo, 2018). Although, the idea of innovation is not entirely new in day-to-day human activities (Mowery and Sampat, 2004; Ostrom and Avenyo, 2016), nonetheless, measuring innovation in informal sector enterprises is an emerging development, especially in Sub-Sahara Africa.

Experts have argued that innovation is required both in the formal and informal sector enterprises including private and public sector organizations (Raghavendra and Bala Subrahmanya, 2006). Thus, innovation is not just about how business is done, but more importantly, it is about how a business changes its way of doing business, in terms of improvement in its products and services. In order to understand innovation, we need to know how informal sector enterprises learn, where they get information for new products to sell, and how they are organising their businesses differently. It is also important to probe into an idea of how profitable successful innovations have been for individual businesses (or perhaps even for a group of people in a business) working together to make for financial returns. In particular, public sector and household innovations have been well expressed in the literature (Argote and Miron-Spektor, 2011; Wadood *et al.*,2016; Bloch, 2013; Hienerth, von Hippel and Berg Jensen, 2014). Besides, innovation activities and its associated barriers in the formal sector enterprises has also been well articulated in the literature (Egbetokun, *et al.,* 2010; Adeyeye *et al.,* 2018; Adewole and Opele, 2019; Adewole, Okrigwe and Opele, 2021).

Literature has shown that informal sector enterprises contribute more than 60 percent of global employment (Chacaltana, Leung and Lee, 2018). The contributions of informal sector enterprises have increased in the last decade and this has attracted studies on how innovation in this critical sector is being conducted (Charmes, Gault, and Wunsch-Vincent, 2016). Equally, Fu *et al.,* (2016) examined innovation and productivity in formal and informal sectors firms in Ghana and the outcome of their study revealed that firms' innovation activities impacted positively on workers' productivity. Besides, the role of innovation in the growth of firms have been documented in the literature (Dickson and Weaver, 2008). What drives innovation is the deployment of relevant technologies into the business operations of firms Thus, when firms are able to deploy relevant technologies, their effectiveness at innovating becomes obvious. Besides, the power of technology application among firms cannot be overemphasized because of its propensity for growth and service effectiveness among firms (Wadood *et al.*, 2016; Audretsch & Caiazza, 2016).

As indicated earlier, innovation today is widespread, cutting across developed and developing economies. In a study on innovation in the tax industry Gërxhani (2004) established that informal sector innovation is key to effective financial management. According to Gërxhani (2004) many operators of informal sector enterprises face serious policy challenges that often deter their productivity. In Nigeria, there is death of literature on the innovation activities of informal sector enterprises. The overall goal of collecting innovation indicators is to provide empirical evidence that will assist government in making policies that can enhance the capacity of firms in the informal sector in implementing new products and services. Hence, the need for this study which aims to provide information on the extent of innovation activities in informal sector enterprises in Nigeria. In view of the foregoing, the objectives of this study are to investigate innovation practices in the informal sector in Nigeria, determine information sources and collaborators of innovation in the sector and, examine the barriers to innovation in the sector

## 2.0. Methodology

This study employed quantitative method. Primary data were collected among owner-managers of informal sector business enterprises in Nigeria between December, 2019 and January, 2020. Data collection were done online with the aid of Zoho app. The overall aim of the survey was to provide information on the innovation activities of the informal sector enterprises in Nigeria. Also, to identify the information sources, training, barriers to innovation and their innovation collaborators. Thus, the survey was conducted at regional levels with a simple random sampling of 778 in 3 geological zones South-West (Ile-Ife), South-East (Enugu) and North Central (Abuja). The retrieved data were analyzed using frequency counts and percentage distribution. The objectives were analyzed using relative importance index. The following formula was used to determine the relative index.

$$\text{R.I.} = \sum \frac{W}{A*N} \qquad \text{or RII} = \text{Sum of weights } \frac{W1+W2+W3\ldots\ldots\ldots+Wn}{A*N}$$

Where:

**W** = the weighting as assigned by each respondent on a scale of one to five, with one implying the least and five the highest.

**A =**is the highest weight, and

**N=** the total number of the sample.

Based on the Ranking (R) of Relative Importance Index (RII), the weighted average of the two groups were determined. According to Akadiri (2011), five important levels are transformed from (RII) values: High (H) ($0.74 \leq RII \leq 1$), High-Medium (H-M) ($0.69 \leq RII \leq 1$) and Low (L) ($0.59 \leq RII \leq 1$).

## 3.0. Results and Discussion

Table 1 shows the general information about the selected firms. The Table shows that majority (73.5%) of the firms are from Ile-Ife (South-west), followed by Abuja (North-central) (15.6%) and Enugu (South-east) (10.9%).

Out of the firms that are located in the identified cities, 24%of the firms operate from non-residential buildings such as office blocks and factories. This was followed by firms that operate along the road, streets and open spaces (18.5%). Also, 11.3% were located in residential buildings, 9.3% in markets and 8.6% in structures attached to residential buildings. About 8% were located in shopping centres equally, 2.8% were operating from taxi parks, and 2% were without a specific known address (mobile business). The table also shows the time of operations of the firms examined. In this case, 44.2% of the firms busiest time of operation is day time work hours. This was followed by others firms' busiest time of operation which are: early in the morning (18.7%), whole day/24 hours (12.2%), evening/night (8.6%), late morning/lunch time (8.4%), and lastly, afternoon (7.8%). Regarding the operational hours of these organizations, majority of the respondents (61%) affirmed that they work during the day time, followed by whole day/24 hours (16.5%), early in the morning (6.8%), evening/night (5.9%), late morning/lunch time (5.4%), and lastly, afternoon (3.5%).

Results from Table 2 reveal that majority (76.5%) of the respondents were of the opinion that their customers were satisfied with their current products, and that they also were interested in new products or were willing to pay for improved products, followed by 66.5% of the respondents who indicated that they introduce environmentally friendly products or services regularly, while 63.7% trained staff to introduce changes in the goods and services they sell, or how to introduce business improvement process. About 60.8% of the respondents changed/upgraded technology (tools and equipment) and looked forward for the use of new sources of supply for raw materials and tools that are cheaper. Moreover, 59.1% of the respondents brought in tools, machinery and equipment for the purpose of changing what the business produces or how the produce them.

**Table 1:** General information about the firms

| Items | Classification | Frequency | Percentage |
|---|---|---|---|
| City of business? | Abuja | 150 | 15.6 |
| | Enugu | 105 | 10.9 |
| | Ile-Ife | 706 | 73.5 |
| Business Location: From where does this business operate? | No fixed location/mobile | 21 | 2.2 |
| | At a market | 89 | 9.3 |
| | At customer homes or offices | 14 | 1.5 |
| | From a taxi rank | 27 | 2.8 |
| | From outside a shopping center | 76 | 7.9 |
| | In a non-residential building (e.g. an office block or factory) | 231 | 24.0 |
| | In a structure attached to owners dwelling or on the same plot | 83 | 8.6 |
| | On a footpath, street or open space | 178 | 18.5 |
| | Within another person's dwelling (e.g. a neighbor's dwelling) | 109 | 11.3 |
| | Within the owner's dwelling – with its own space (e.g a separate room) | 77 | 8.0 |
| | Within the owner's dwelling – without its own space (e.g a family room) | 45 | 4.7 |
| | Others | 11 | 1.1 |
| Busiest time of operation | Afternoon | 75 | 7.8 |
| | Day time work hours | 425 | 44.2 |
| | Early in the morning | 180 | 18.7 |
| | Evening/night | 83 | 8.6 |
| | Late morning/lunch time | 81 | 8.4 |
| | Whole day/24 hours | 117 | 12.2 |
| What is the operating hour of this site? | Afternoon | 34 | 3.5 |
| | Day time work hours | 594 | 61.8 |
| | Early in the morning | 65 | 6.8 |
| | Evening/night | 57 | 5.9 |
| | Late morning/lunch time | 52 | 5.4 |
| | Whole day/24 hours | 159 | 16.5 |

Close to two-thirds (55.7%) of the respondents encounter unexpected discoveries during production while 54.3% brought in know-how or other types of knowledge (including indigenous knowledge) from other businesses or organizations and made changes to buildings/vehicles as well as other infrastructure for better running of the business. More than half of the respondents (53.9%) searched for new knowledge from sources such as the internet, popular brands by competitors and consultants.

About half (48.1%) of them engaged in a formal apprenticeship system (with certification) and 46.5% brought in internet facilities and other devices to improve how the business is run. Some businesses (46.0%) open credit lines with trusted customers such as salary earners, 43.1% of the respondents engaged in on-the-job training, 28.2% use indigenous knowledge in form of encouraging ancestral family secrets, chronicles, traditions, and flashes of insights, among others.

The results also showed the level of innovation practices among Nigerian businesses in the informal sector.

**Table 2:** Innovation Practices (n = 961)

| Items | Frequency | Percentage |
|---|---|---|
| Bring in tools, machinery and equipment for the purpose of changing what the business produces or how it produces it | 568 | 59.1 |
| Bring in internet facilities and other devices to improve how the business does business | 447 | 46.5 |
| Look for and use new sources for supply of raw materials and tools that is cheaper and/or better to old sources of supply | 584 | 60.8 |
| Use indigenous Knowledge sources (e.g. ancestral family secrets. Chronicles, traditions, flashes of insights, among others) available to the employees or owner | 271 | 28.2 |
| Train staff to introduce changes in the goods and services you sell, or how you do business | 612 | 63.7 |
| Make changes to buildings/vehicles as well as other infrastructure for better running of the business | 522 | 54.3 |
| Find out if customers are satisfied with the current product, or if the customers are interested in new products or are willing to pay for it | 735 | 76.5 |
| Change/upgrade technology (tools & equipment) | 584 | 60.8 |
| Search for new knowledge from sources such as the internet, searching for popular brands by competitors, consultants | 518 | 53.9 |
| Bring in know-how or other types of knowledge (including indigenous knowledge) from other businesses or organizations | 522 | 54.3 |
| Engage in a formal apprenticeship system (with certification at the end) | 462 | 48.1 |
| Engage in on-the-job learning usually from a supervisor at work (without certification at the end of the training) | 414 | 43.1 |
| Encounter “happy accidents” (unexpected discovery) during production | 535 | 55.7 |
| Introduce environmental friendly products or services | 639 | 66.5 |
| Open credit line to trusted customers including salary earners | 442 | 46.0 |

In Table 3, RII of all the items were below 0.5 except sources of information and collaborators from customers that surpassed the threshold of 0.5 on the scale of 4 points. This indicates a low collaboration between informal businesses and formal institutions and strong relationships with customers. Studies have shown that external actors represent important sources of information for innovation (Chesbrough, 2003) and universities (Cohen *et al*. 2002; Laursen and Salter 2004) as sources of information or as partners in formal linkages such as technological agreements.

Collaboration between informal businesses and external actors will improve potential for innovation. The table revealed that the major information sources and collaborators among the respondents were customers (market resources) with RII of 0.67.

On the other hand, other information sources were: adverts, billboards, commercials (other sources) RII = 0.37, and collaborators were larger firms through mentorship (training sources) RII = 0.34, organizations that provide other forms of mentorship (Training sources) RII = 0.34, and service providers (IT support) (support) RII = 0.34. The results revealed that there is weak relationship between the informal businesses and the University or research institutes which could have helped them to carry out research and development (R&D).

**Table 3:** Information Sources and Collaborators (n=961)

| Factors | Not at all | Sometimes | Frequently | Very frequently | RII | Ranking |
|---|---|---|---|---|---|---|
| Customers (Market resources) | 132(13.7) | 270(28.1) | 334(34.8) | 225(23.4) | 0.67 | 1st |
| Adverts, billboards, commercials (Other sources) | 633(65.9) | 220(22.9) | 75(7.8) | 33(3.4) | 0.37 | 2nd |
| Larger firms through mentorship (Training sources) | 686(71.4) | 224(23.3) | 42(4.4) | 9(0.9) | 0.34 | 3rd |
| Organizations that provide other forms of mentorship (Training sources) | 683(71.1) | 229(23.8) | 37(3.9) | 12(1.2) | 0.34 | 3rd |
| Service providers (IT support) (Support) | 692(72.0) | 205(21.3) | 43(4.5) | 21(2.2) | 0.34 | 3rd |
| Trade/technical publications and scientific journals (Other sources) | 706(73.5) | 183(19.0) | 54(5.6) | 18(1.9) | 0.34 | 3th |
| University through outreach programs, workshops, diplomas, certificates, etc. (Training sources) | 712(74.1) | 187(19.5) | 49(5.1) | 13(1.4) | 0.33 | 7th |
| Incubators (Support) | 739(76.9) | 182(18.9) | 28(2.9) | 12(1.20 | 0.32 | 8th |
| Extension workers (e.g. from government, university) (Support) | 744(77.4) | 172(17.9) | 37(3.9) | 8(0.8) | 0.32 | 9th |
| TVET colleges and other technical colleges (Training sources) | 773(80.4) | 152(15.8) | 24(2.5) | 12(1.2) | 0.31 | 10th |

Table 4 presents barriers to innovation. That is, factors hindering innovation activities in the informal sector. Factors such as political, economic, social, legal, and environmental were considered in this study. Under political factors, 'frequent changes in the policies and leadership of government as well as civil unrest and crises' are the factors responsible for hindering innovation activities of the businesses (RII =0.44). Cost of acquiring modern technologies ranked highest among economic factors that hinder innovation with RII of 0.52, followed by high cost of ensuring quality and complying with national standards (RII=0.50). Among social factors, "competitors don't share information and knowledge" ranked highest (RII=0.46), followed by "unwillingness of competitors to work together" (RII=0.44). The legal factor used is "difficulty in getting loans (for innovation) from commercial banks due to business not being registered", (RII=0.46), while lack of access to basic infrastructure and shared facilities such as good buildings, roads, electricity, potable water, energy, health facilities, toilets infrastructure ranked the highest among the environmental factors and high cost of transportation (RII= 0.51). Other factors include "non-availability of people who can manage workers adequately" (RII=0.45), "the owner of the business does not like to change the business" (RII=0.39) and "the owner of the business doesn't see the need to innovate since sales are good and customers are loyal to the business owner" (RII= 0.40).

**Table 4:** Innovation Barriers, Training, Sources of Information and Collaboration (n=778)

| Factors | No effect | Low | Medium | High | RII | Ranking |
|---|---|---|---|---|---|---|
| **Political factors:** | | | | | | |
| Frequent changes in the policies and leadership of government Ministries, Departments or Agencies | 463(59.5) | 137(17.6) | 93(12.0) | 85(10.9) | 0.44 | 1st |
| Protest action, crises inside the community | 456(58.6) | 144(18.5) | 101(13.0) | 77(9.9) | 0.44 | 1st |
| **Economic (financial) factors**: | | | | | | |
| Cost of acquiring modern technologies and tools | 344(44.2) | 164(21.1) | 121(15.6) | 149(19.2) | 0.52 | 1st |
| High cost of ensuring quality and complying to national standards | 357(45.9) | 180(23.1) | 112(14.4) | 129(16.6) | 0.50 | 2nd |
| Unavailability of funding from family or friends | 376(48.3) | 181(23.3) | 106(13.6) | 115(14.8) | 0.49 | 3rd |
| Unwillingness on the part of commercial banks and other financial/credit institutions to fund businesses with low turnover | 395(50.8) | 154(19.8) | 105(13.5) | 124(15.9) | 0.49 | 4th |
| High cost of training of workers to acquire new skills on how to use modern technology | 396(50.9) | 171(22.0) | 109(14.0) | 102(13.1) | 0.47 | 5th |
| **Social factors:** | | | | | | |
| Competitors don't share information and knowledge | 402(51.7) | 174(22.4) | 120(15.4) | 82(10.5) | 0.46 | 1st |
| Unwillingness of competitors to work together | 412(53.0) | 192(24.7) | 111(14.3) | 63(8.1) | 0.44 | 2nd |
| Having too many businesses standalone; and don't come together in clusters | 459(59.0) | 158(20.3) | 110(14.1) | 51(6.6) | 0.42 | 3rd |
| Poor interaction between businesses and knowledge institutions (e.g. NGOs, Universities, Incubators) | 496(63.8) | 133(17.1) | 82(10.5) | 67(8.6) | 0.41 | 4th |
| **Legal factors:** | | | | | | |
| Difficulty in getting loans (for innovation) from commercial banks due to business not being registered | 447(57.5) | 119(15.3) | 101(13.0) | 111(14.3) | 0.46 | 1st |
| **Environmental factors**: | | | | | | |
| Lack of access to basic infrastructure and shared facilities such as good buildings, roads, electricity, potable water, energy, health, toilets | 357(45.9) | 156(20.1) | 134(17.2) | 131(16.8) | 0.51 | 1st |
| High cost of transportation | 340(43.7) | 176(22.6) | 142(18.3) | 120(15.4) | 0.51 | 1st |
| Fierce competition in the industry | 413(53.1) | 143(18.4) | 120(15.4) | 102(13.1) | 0.47 | 3rd |
| Distance of business to sources of raw materials | 426(54.8) | 158(20.3) | 121(15.6) | 73(9.4) | 0.45 | 4th |
| High employee turnover (loss of employees to larger business or to formal sector) | 450(57.8) | 152(19.5) | 102(13.1) | 74(9.5) | 0.44 | 5th |
| Distance between where the goods and services are produced and where it is sold | 440(56.6) | 169(21.7) | 115(14.8) | 54(6.9) | 0.43 | 6th |
| High levels of crime | 444(57.1) | 165(21.2) | 124(15.9) | 45(5.8) | 0.43 | 7th |
| **Other factors:** | | | | | | |
| Lack of people who can manage workers adequately | 427(54.9) | 160(20.6) | 120(15.4) | 71(9.1) | 0.45 | 1st |
| The owner of the business does not like to change the business | 495(63.6) | 153(19.7) | 95(12.2) | 35(4.5) | 0.39 | 3rd |
| The owner of the business doesn't see the need to innovate since sales are good and customers loyal | 498(64.0) | 142(18.3) | 93(12.0) | 45(5.8) | 0.40 | 2nd |

In support of these, studies have shown that resistance to change and traditional operational practices, lack of planning skills, lack of financial resources, fear of failure and lack of adoption of an innovation culture, high cost of innovation have been found to impede innovation (Retkoceri and Kurteshi 2018: Talegeta, 2014).

## 4.0. Conclusion and Recommendations

One prominent innovation activity done by firms in the informal sector, is to 'find out if customers are satisfied with the current product, or if the customers are interested in new products and are willing to pay for it'. This type of interaction invariably creates an avenue for learning and knowledge sharing. From the study, customers within the market are one major sources of information of which they sought for new ways to improve their products or services and introduce environmental-friendly products or services. Hence, the drive to improve and remain competitive made most of the firms to look for and use new supply sources to obtain their raw materials and tools thereby getting cheaper and/or better materials than the ones obtained from previous supply sources. These are some of the innovation activities the firms in the informal sector engage in. This creates the need for them to collaborate and share information within and among themselves. Learning thereby takes place, knowledge increases and competition becomes fiercer within the market. However, there is the dire need for support from incubators and universities especially through outreach programs and workshops to act as the actual sources for information to innovate, and collaborate. Unfortunately, firms' zeal and drive to innovate is hindered by some economic factors. This is a major barrier to innovation in that the cost of acquiring modern technologies and tools, high cost of ensuring quality and complying to national standards, unavailability of funding from family or friends and unwillingness on the part of commercial banks and other financial/credit institutions to fund businesses with low turnover are the challenges firms in the informal sectors are faced with. This is supported by Guijarro*et et al*. (2009), whose study revealed that the most significant barriers to innovation are associated with costs. Although, business owners are unwilling to change the kind of business they are engaged in, they seek to gain more knowledge and have more sources of information to innovation and over the various barriers that hinders them. This will help even the business managers to imbibe innovation culture in the daily running and organization of the businesses in the informal sectors. The study therefore recommends the following to advice the government and business owners in the sector:

i. The creation of avenues for firms in the informal sectors to learn and collaborate
ii. Strengthen informal businesses through strong association connections to formal learning platforms like the incubators or universities

## References

Adewole, G.O., Okrigwe, N.F., and Opele, .J. K (2021). A qualitative analysis of the impediments to business innovation and information management in Nigeria: A policy stance. *International Journal of Business, Economics and Managemant*, *8*(1), 31–88.

Adewole,G. O., and Opele, J. K. (2019). Demographic Change and Industry-Specific Innovation Patterns In Nigeria: The Implication For Knowledge Management Practices. *Noble International Journal of Social Sciences Research*, *4*(2), 25-32.

Adeyeye, D., Egbetokun, A., Opele, J., Oluwatope, O., and Sanni, M. (2018). How barriers influence firms' search strategies and innovative performance. *International Journal of Innovation Management*, *22*(02), 1850011.

Akadiri, O. P. (2011). Development of a multi-criteria approach for the selection of sustainable materials for building projects.

Antonia, M. G., Domingo. G., and Howard, V.A. (2009). Barriers to Innovation among Spanish Manufacturing SMEs, *Journal of Small Business Management 47(4), 465-488* https://doi.org/10.1111/j.1540-627X.2009.00279.x

Argote, L., Miron-Spektor, E. (2011). Organizational learning: From experience to knowledge. *Organization Science*. https://doi.org/10.1287/orsc.1100.0621

Audretsch, D., Caiazza, R. (2016). Technology transfer and entrepreneurship : Cross-national analysis. *The Journal of Technology Transfer*, *41*(6), 1247–1259. https://doi.org/10.1007/s10961-015-9441-8

Avenyo, E.K (2016). Informal sector innovation in Ghana: Data set and descriptive analysis. Working Paper Series, No. 30, University of Johannesburg, Johannesburg, South Africa United Nations University-MERIT, Maastricht, The Netherlands

Avenyo, E. K. (2018). Working Paper Series Data set and descriptive analysis. 31.

Bloch, C. (2013). 'Measuring innovation in the public sector', in Fred Gault (ed.), Handbook of Innovation Indicators and Measurement, Cheltenham, UK and Northampton, MA, USA: Edward Elgar, pp. 403-419.

Chacaltana, J., Leung, V. and Lee, M (2018). New technologies and the transition to formality: The trend towards e–formality. Employment Policy Department Working Paper No. 247

Chesbrough H (2003) Open innovation. Harvard University Press, Cambridge

Charmes, J., Gault, F., & Wunsch-Vincent, S. (2016). Measuring Innovation in the Informal Economy–Formulating an Agenda. *Journal of Intellectual Capital*, *19*(3), 1-50.

Cohen WM, Nelson RR, Walsh JP (2002) Links and impacts: the influence of public research on industrial R&D. Manage Sci 48(1):1–23

Dickson, P. H., & Weaver, K. M. (2008). The role of the institutional environment in determining firm orientations towards entrepreneurial behavior. *International Entrepreneurship and Management Journal*, *4*(4), 467-483.

Egbetokun, A. A., Siyanbola, W. O., & Adeniyi, A. A. (2010). Learning to innovate in Nigeria's cable and wire manufacturing subsector: inferences from a firm-level case study. *International Journal of Learning and Intellectual Capital*, *7*(1), 55-74.

Fu, Y., Rong, M., Yang, K., Yang, A., Wang, X., Gao, Q., ... & Murphy, A. B. (2016). Calculated rate constants of the chemical reactions involving the main byproducts SO2F, SOF2, SO2F2 of SF6 decomposition in power equipment. Journal of Physics D: Applied Physics, 49(15), 155502.

Gërxhani, K. (2004). Tax evasion in transition: Outcome of an institutional clash? Testing Feige's conjecture in Albania. *European Economic Review*, *48*(4), 729-745.

Guijarro, M. A., Garcia, D., & Van Auken, H. (2009). Barriers to innovation among Spanish manufacturing SMEs. Journal of small business management, 47(4), 465-488.

Hienerth, C., von Hippel, E. and Berg Jensen, M. (2014). Innovation as consumption: analysis of consumers' innovation efficiency, Research Policy 43: 190–201.

Laursen K, Salter A (2004) Searching high and low: what types of firm use universities as a source of innovation? Res Policy 33:1201–1215

Mowery, D. C., and Sampat, B. N. (2004). The Bayh-Dole Act of 1980 and University–Industry Technology Transfer: A Model for Other OECD Governments? *The Journal of Technology Transfer*, *30*(1), 115–127. https://doi.org/10.1007/s10961-004-4361-z

Ostrom, E., and Avenyo, E. K. (2016). Product innovations and informal market competition in sub - Saharan Africa : Firm - level evidence.

Raghavendra, N. V., & Bala Subrahmanya, M. H. (2006). Development of a measure for technological capability in small firms. *International Journal of Innovation and Learning*, *3*(1), 31-44.

Retkoceri and Kurteshi (2018). Barriers to innovation in services and manufacturing firms: The Case of Kosovo, *HOLISTICA* Vol 9, Issue 2, 2018, pp. 73-94

Talegeta (2014). Innovation and Barriers to Innovation: Small and Medium Enterprises in Addis AbabaSileshi, *Journal of Small Business and Entrepreneurship Development*, Vol. 2, No. 1,pp. 83-106

Wadood, S., Gharleghi, B., and Samadi, B. (2016). Influence of Change in Management in Technological Enterprises. *Procedia Economics and Finance*, *37*(16), 129–136. https://doi.org/10.1016/S2212-5671(16)30103-4