

Investigation on Entrepreneurial Viability of Indigenous Innovations in Kenya. A Survey of Baringo and Nakuru Counties on *Mursik* Milk

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Abstract

Indigenous innovations can aid developing nations embark on a cumulative path of positive growth. *Mursik* is a traditional milk preservation technology among Kalenjin community in the Great Rift Valley in Kenya. However, its success and commercial performance or future potential has remained unknown. This study was aimed at investigating on entrepreneurial viability of *Mursik* commercialization. Data was obtained using semi-structured questionnaires administered on a snow-balled sample of 59 accessed enterprises. The findings obtained indicated that there was huge supply of milk in the proximal catchment area but suppliers preferred delivering their milk to large milk processors who unfortunately had not yet adopted *Mursik* product line. Prospectively, the innovation possessed necessary characteristics for potential massive adoption. The researcher therefore recommends further research on rapid production techniques that could conserve the quality of the original *Mursik*, deliver value packaging, and establish promotion and distribution beyond the traditional *Mursik* users.

Keywords: *indigenous innovations, entrepreneurship, Mursik, milk products*

1.1 Introduction

Varying individual communities' world over face varying local challenges and opportunities. That notwithstanding, by capitalizing on their indigenous unique knowledge and resources these communities can stimulate economic growth out of those hitherto challenges and opportunities (Mehta & Mokashi-Punekar, 2008). Perhaps, aided by indigenous innovations, developing nations could embark on a cumulative path of positive growth to join the ranks of the more advanced nations. According to Matthews (2017) in a study on "Understanding Indigenous Innovation in Rural West Africa", the missing piece in driving local innovations is the lack of understanding on indigenous or pre-existing systems of innovation as a legitimate aspect for propelling innovations at the community level. The African indigenous knowledge systems, beliefs and practices present African people's ecological conservation methods for agricultural produce, creation of cultural artifacts such as sculptures, basketry, pottery and even medical practice. Unfortunately this African people's indigenous knowledge systems have been misunderstood as barbaric and savagery (Gudhlanga & Makaudze, 2012).

Mursik is sour milk with a sharp almost bitter taste - popular among the Kalenjin community. The fermenting gourds (called sotet) are first cleaned and left to dry in the sun for a few days.

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The cleaning is done using bow shaped branches of palm trees called “sosit” whose edges are pounded until they become brush-like. This cleaning is supposed to remove the inner linings of new gourds as well as the coating of previous milk stored in case of old gourds, hence prevent passing bitter taste to *Mursik*. The gourd is then treated by smoking it with special acacia (*Cassia didymobotrya*) sticks, locally called sertwet. This imparts some preservative and aromatic effect to the milk. After the treatment burning embers of the sticks are processed into charcoal powder to which freshly boiled cool milk is added. This charcoal not only helps to quicken the fermentation but it is also argued to have herbal and undisclosed medicinal value. Other reasons for treatment of milk included the need to improve the quality, flavour, smell, colour and palatability of stored milk. Unlike in the olden days, today the milk is pasteurized first, by boiling and then covered to avoid contamination until it cools before pouring it into the treated gourd. The gourd is then corked tightly with a treated lid and stored in a cool place for three days and up to one week for it to ferment (Network Forest Action, 2000).

This *Mursik* technology originates from this Kalenjin community for whom milk is a staple diet. The Kalenjins are highland Nilotes who are found in Kenya but recently have immigrated to many parts of the world, especially as sports immigrants. In Kenya, the Kalenjins occupy the expansive Great Rift Valley that is very fertile and productive in crops and livestock. The community developed the unique milk preservation technology using indigenous tree species about 300 years ago. This technology has evolved over the years as a practice to avoid wastage of milk by preserving and storing excess milk for use during low supply such as during drought or dry season. *Mursik* as a technology compares with Kalenjin’s closer cousins – the Pokot’s “chekhamwaka” milk preservation; a technique that has been used to treat milk and preserve it for over one year. For the longest, *Mursik* technology has not only withstood the test of time but it has also gained adoption by non-pastoralist communities in modern times (Kipsang, 2010). Further, it also has gained significant publicity from iconic use by community’s prominent sports ambassadors when celebrating their international athletic feats -for which the Kalenjin community is popular for worldwide. Such medalists, as set by tradition, hold the milk so important that it is transported hundreds of kilometres to welcome these national heroes in the Kalenjin style. One then wonders, what is magical about this *Mursik*?

1.2 Problem Statement

Indigenous innovations are products found in every community as part of its unique cultural wealth (Stenou, 2002). The extent to which these cultural products can be commercially viable is not always known. They may remain of great sentimental value with underutilized commercial exploitation yet these communities may be wallowing in poverty while their intellectual property lie in ruin and decay. Worrysome is the fact that such a communal asset is a unique cultural preserve - possibly not duplicated anywhere else. Thus due to lack of exploitation its threat of extinction may be realized. Further, due to its prolonged in-activation, such indigenous innovative products often end up getting “stolen” by foreigners who note their value, and aptly patent and commercialize them (Huaman & Sriraman, 2015). In the case of *Mursik*, it is unfortunate that in spite of it enjoying wide acceptance and use among the expanse Kalenjin community and new enthusiasts from other communities as well, the Kalenjin community and Kenya as country are yet to substantially reap commercial benefits out of this cultural asset (Kipsang, 2010). This study therefore was aimed at investigating on entrepreneurial viability of indigenous innovations

in Kenya - with specific focus on *Mursik*. The study found that the demand side factors, innovation characteristics, and the moderating effect of innovation promoters had significant effect on the viability of this and by extension such similar indigenous innovations. However, the supply side factors did not significantly affect the viability of this innovation. Data was collected using semi-structured questionnaires which were administered by the researcher to 59 businesses' senior management representatives or owner entrepreneurs selected through snowballing technique. Out of the data collected, 35 questionnaires completion was satisfactory. These questionnaires were then analysed and summarized using descriptive and inferential statistics. Conclusions were then made on the research objectives and recommendations given to different stakeholders.

1.3 Objectives of the study

The main objective of the study was to investigate on entrepreneurial viability of indigenous innovations in Kenya based on *Mursikas* an indigenous innovation in the Kalenjin community. Further, the specific objectives of the study were:

1. To determine the effect of supply side characteristics for viability of an indigenous innovation.
2. To evaluate how demand side characteristics effected much viability of an indigenous innovation.
3. To determine the relationship between characteristics of an innovation and the viability of an indigenous innovation.
4. To assess the moderating effect of the innovation promoters on the viability of the indigenous innovation.

1.4 Research question

The study was be guided by the following questions:

1. To what extent do supply side characteristics affect the viability of an indigenous innovation?
2. How much do demand side characteristics effect viability of an indigenous innovation?
3. What is the relationship between characteristics of an indigenous innovation its viability?
4. What effect does an innovation promoter have in moderating the outcome of viability of the indigenous innovation?

2.1 Literature review

The enactment of new innovations has been found to be the greatest means to creating new industries (Braunerhjelm, 2010). This is so because an innovation can break an economy from its static mode and put it into a dynamic path of fits and starts. Therefore, African communities should reconsider the danger of disuse of their indigenous innovations and local knowledge systems while pursuing western modern science at the expense of their own (Huaman & Sriraman, 2015). This study was based on Theory of Innovation by Schumpeter (1934), Demand and Supply Theory by Adam Smith (1776), Diffusion of Innovation Theory by Everett Rogers (2004).

According to Joseph Alois Schumpeter, innovations create new combinations that result in creative destruction (Schumpeter, 1934). Joseph Schumpeter defined five different types of innovative activities: new products, new processes, new markets, new sources of supply and use of raw materials, and new organizations. Although indigenous innovations like *Mursik* are not new combinations in their bedrock of invention, the activity of generating commercial value that transcends their cultural value qualifies for an innovation. It would be expected that their resultant successful commercialization would help move them to new markets and introduce new processes of production, packaging and distribution.

Adam Smith in his book entitled: "The Theory of Moral Sentiments" proposed the idea of the invisible hand - the tendency of free markets to regulate themselves by means of competition, supply and demand, and self-interest. Further, Adam Smith in 1776 in another book entitled: "An Inquiry into the Nature and Causes of the Wealth of Nations", observed that by selling products that people want to buy, the butcher, brewer, and baker hope to make money. If they are effective in meeting the needs of their customers, they will enjoy the financial rewards and a market equilibrium (Smith, 1776). However, Schumpeter (1934) does not agree with the economic theory perspective about equilibrium. That notwithstanding, the economic theory of demand and supply has remained fundamental in explaining how markets establish their prices and instil favourable responses to supply goods and meet demand. According to the European Commission (2015) publication entitled - "Annexes of First Policy Brief on Supply and Demand Side Innovation Policies", successful commercialization of innovation must have profound evaluation of supply and demand side in view of drivers, barriers and challenges for activating an innovation.

Rogers (2004) defined an innovation as an idea, practice, or project that is perceived as new by an individual or other unit of adoption". Further, he noted that favourable attributes of innovations includes five characteristics: (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability. About these five characteristics he observed that "individuals' perceptions of these characteristics predict the rate of adoption of innovations". However, there was a lack of research on the effects of the perceived characteristics of innovations on the rate of adoption (Rogers, 2004).

Hauschildt and Kirchmann (2001) designed a model on innovation promoters. He argued that, "managing innovation requires a careful division of labour between a number of champions (or promoters), who commit to the new product, service, process or business model innovation." Four types of innovation promoters were described as: the technology, process, power and relations promoter. The paper explored the moderating effect of innovation promoters in supporting and championing success of these innovation from entrepreneur's passion about the product, social cultural promoters, institutional promoters, and regulatory environment. These were identified as unique variables that could be injected into the innovation space to catalyse its successful outcome.

2.2 Empirical review

Innovation climates in developing countries are, by nature, problematic, characterized by poor business and governance conditions, low educational levels, and mediocre infrastructure and this raises particular challenges for the promotion of innovation (Aubert, 2005). China

success, for example, has been attributed to concerted efforts to reconcile its primary objective of strengthening indigenous innovation with its leading role in international trade and deep integration into global corporate networks of production and innovation (Ernst, 2011). Further, Ernst (2011) recommended that China needed to find its own institutional and legal approaches to develop a standards system that could both foster indigenous innovation and cope with the challenge of globalization and rising complexity. Lazonick and Mass (1995) found that a central determinant of Japan's phenomenal economic success during the 20th century was indigenous innovations. However, Sanginga, Waters-Bayer, Kaaria, Wettasinha, and Njuki (2009) in their book entitled “Innovation Africa: Enriching Farmers' Livelihoods”, opined that understanding the existing innovation process and learning how to support them will be key to the success of individuals and organizations involved in agricultural research and development. They regretted that the extent to which colonialism ignored indigenous wit, technology and knowledge and thus recommended deliberate focus on indigenous innovation as key to unlocking agricultural economic exploitations in Africa.

2.3 Conceptual framework

On account of the research objectives and the reviewed literature the conceptual framework below summarizes the conceptual view of the study variables.

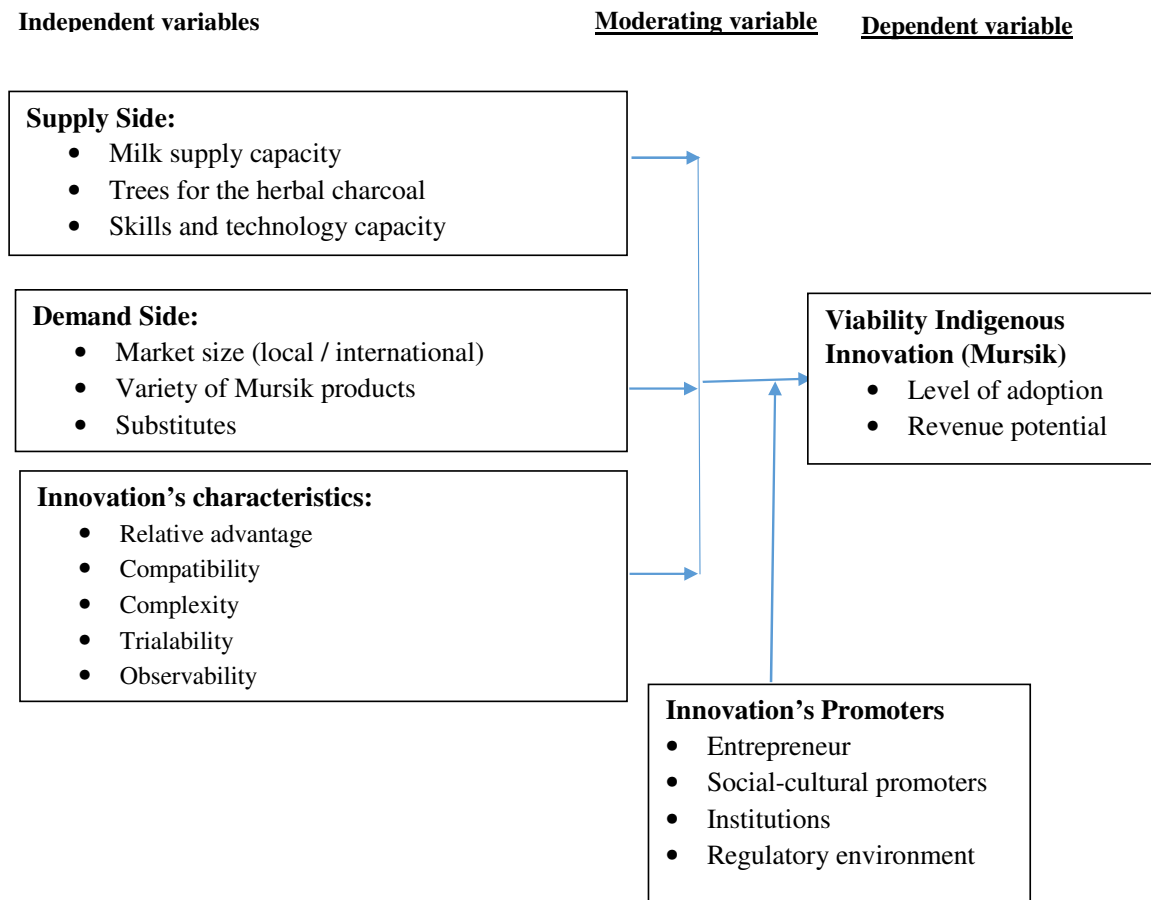


Figure 1: Conceptual framework

3.1 Research methodology

The research was based on interpretivist research philosophy. Interpretivist contend that only through the subjective interpretation and intervention can reality be fully understood Goldkuhl (2012). The study research design was exploratory design. Data was be collected and analyzed using quantitative research methods and descriptive statistics. Exploratory Research is suitable where a problem has not been studied more clearly before and establishes priorities, develops operational definitions and improves the final research design. Quantitative research on the other hand emphasizes objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques (Kothari, 2004).

3.2 Target population

The study targeted enterprises in Nakuru and Baringo Counties in Kenya that produced or sold *Mursik*. Nakuru and Baringo counties were chosen for their proximity to the researcher and that they are both home to the Kalenjin community. Nakuru County constitutes eleven sub-counties: Nakuru Town East, Nakuru Town West, Rongai, Kuresoi North, Kuresoi South, Subukia, Bahati, Gilgil, Naivasha, Njoro and Molo. On the other hand Baringo County constitutes five sub counties: Mogotio, Eldama Ravine, Tiaty, Baringo Central, Baringo and South Baringo North. Both counties had a total of sixteen counties out of which five counties were selected based on accessibility and prevalence of the study group. These were Nakuru Town East, Nakuru Town West, Rongai, Mogotio, and Eldama Ravine. Within these counties data was collected from relevant enterprises where *Mursik* was likely to be sold. They included caterers, hotels, foods outlets and food processors.

3.3 Sampling technique and sample size

The sample size included 59 enterprises selected by snowballing technique starting from several enterprises that were initially identified as selling *Mursik* around Kabarak University then extended field data collection to Baringo and Nakuru sub-counties where other target enterprises were found. However, only 35 of those enterprises completed the data collection adequately for analysis. Each provided one respondent who was the senior manager or owner entrepreneur of the enterprise.

3.4 Data collection instruments

Data was obtained using semi-structured questionnaires administered on the purposively selected 59 enterprises. The questionnaires comprised of close ended and open ended questions grouped into items comprising of general data about the enterprise, supply side characteristics and demand side characteristics of *Mursik*, its innovation diffusion characteristics, and entrepreneur's characteristics in the sampled enterprises. The questionnaires were self-administered by the researcher after they were piloted on 5 hotels in Rongai and Nakuru West sub counties. These 5

hotels were not included in the final data analysis. During the data collection, the researcher used a self-introduction letter backed with university identification card. The respondents would be informed of their right to respond or not to respond to any of the questions in the questionnaire or to opt out any time in the process of the data collection. Questionnaires from any respondent who opted out were destroyed and were not analyzed. The questionnaires were administered at the respondent's office or at a service area desk where the respondent preferred and felt comfortable.

4. Data analysis, presentations and discussions

The study had endeavored to investigate on entrepreneurial viability of indigenous innovations in Kenya. It was based on a research survey carried out at Baringo and Nakuru counties on *Mursik* milk. The guiding objectives were: 1. To determine the effect of supply side characteristics for viability of an indigenous innovation. 2. To evaluate how much demand side characteristics effected viability of an indigenous innovation. 3. To determine the relationship between characteristics of an innovation and the viability of an indigenous innovation. 4. To assess the moderating effect of the innovation promoter on the viability of the indigenous innovation. Data was collected by use of semi-structured questionnaires administered by the researcher to entrepreneurs or senior managers of several enterprises sampled purposively through snow balling as dealing in *Mursik*. Out of the accessed 59 businesses only 35 completed the questionnaire satisfactorily for analysis – representing a response rate of 60%. The response rate was deemed satisfactory and the data was analyzed using descriptive statistics and inferential statistics as presented in this report.

4.1 Distribution of the enterprises sampled

Data about the sampled businesses has been summarized in Table 1.

Table 1: Correlation of characteristics of the enterprises in relation to *Mursik*

		Size of enterprise	Charact eristic 1	Charact eristic 2	Charact eristic 3	Charact eristic 4	Charact eristic 5
Size of enterprise	Pearson Correlati on	1					
	Sig. (2- tailed)						
	N	35					
Character istic 1	Pearson Correlati on	-0.039	1				
	Sig. (2- tailed)	0.822					
	N	35	35				
Character istic 2	Pearson Correlati on	-0.231	.731**	1			
	Sig. (2- tailed)	0.182	0				
	N	35	35	35			
Character istic 3	Pearson Correlati on	0.252	.567**	0.289	1		
	Sig. (2- tailed)	0.144	0	0.092			
	N	35	35	35	35		
Character istic 4	Pearson Correlati on	.485**	.367*	0.162	0.208	1	
	Sig. (2- tailed)	0.003	0.03	0.352	0.23		
	N	35	35	35	35	35	
Character istic 5	Pearson Correlati on	0.009	0.162	0.154	-0.029	0.161	1
	Sig. (2- tailed)	0.961	0.352	0.377	0.87	0.355	
	N	35	35	35	35	35	35

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Enterprise characteristics measured:

1. Selling *Mursik*
2. Makes *Mursik* in-house
3. Have a problem getting adequate milk for *Mursik* is big given demand for raw milk for other products
4. Have a problem of getting the other inputs for processing *Mursik*, such as herbal charcoal and suitable packaging
5. Have difficulties in getting an expert who can make quality *Mursik*

According to the correlations presented in Table 1 as the size of the enterprise increased it was found that apart from Milk other inputs needed for production of *Mursik* became more and more problematic including suitable packaging ($r=0.485$, $p=0.003$). This means that although obtaining milk which is the primary ingredient for producing *Mursik* was not a significant problem to the larger enterprises, these enterprises had a problem adopting production and selling *Mursik* for lack of reliable supply and suitable packaging for *Mursik*. There was a significant positive correlation between enterprises that made their *Mursik* in-house and whether an enterprise sold *Mursik* or not ($r=0.731$, $p<0.001$). These means those enterprises that were finding it easy to sell *Mursik* were those that had capacity to produce it in-house rather than buy ready-made *Mursik*. Majority of the enterprises that sold *Mursik* also agreed that to them there was a problem of getting adequate supply of Milk compared to the demand of raw milk for other products ($r=0.567$, $p<0.001$). However, the significance of the problem of other inputs needed for production of *Mursik* apart from Milk among enterprises selling *Mursik* was not significant in two tailed Pearson Correlation.

3.2 Correlation of the research variables

Correlation of study variables was done to determine whether there was any relationship between them. The findings are presented in Table 2.

Table 2: Correlation of research variables

		Supply	Demand	Innovation characteristics	Innovation Promoters	Innovation viability
Supply	Pearson Correlation	1	-.538**	-.355*	.411*	.483**
	Sig. (2-tailed)		0.001	0.036	0.014	0.003
	N	35	35	35	35	35
Demand	Pearson Correlation	-.538**	1	.523**	0.002	-.785**
	Sig. (2-tailed)	0.001		0.001	0.99	0
	N	35	35	35	35	35
Innovation characteristics	Pearson Correlation	-.355*	.523**	1	-0.038	-.362*
	Sig. (2-tailed)	0.036	0.001		0.829	0.033
	N	35	35	35	35	35
Innovation Promoters	Pearson Correlation	.411*	0.002	-0.038	1	0.16
	Sig. (2-tailed)	0.014	0.99	0.829		0.36
	N	35	35	35	35	35
Innovation viability	Pearson Correlation	.483**	-.785**	-.362*	0.16	1
	Sig. (2-tailed)	0.003	0	0.033	0.36	
	N	35	35	35	35	35

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

According to Table 2, the correlation of the research variables indicate that there was significant positive correlation for all the three independent variables of Supply, Demand, and Innovation Characteristics to the dependent variable of Innovation Viability ($p = 0.05$). However, there was no significant correlation between the moderating variable of Innovation Promoters and the dependent variable Innovation Viability. Further, the observed correlations did not indicate sufficient evidence of multicollinearity. The correlation between Supply and Demand is negative. This fits into the theory of demand and supply where the two have an inverse relationship. The moderating variable Innovation Promoters does not have a significant correlation with the three independent variables and the dependent variable as well. Therefore

the aggregate contribution of Innovation Promoters does not necessarily amount to increase or decrease of the other variables, apart from Supply. This outcome is perplexing and the specific types of Innovation Promoters were evaluated separately to drill down for the segregated contribution to Innovation Viability.

3.3 Multiple Linear Regression Analysis

The conceptual view of the study variables was summarized using a multiple linear regression model that is presented in Table 3.

Table 3: Summary Multiple Linear Regression Models

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	5.566	1.232		4.519	0
	Supply	0.149	0.21	0.093	0.707	0.485
	Demand	0.896	0.166	0.776	-5.403	0
	Innovation Characteristics	0.111	0.186	0.077	0.597	0.055
2	(Constant)	4.722	1.371		3.445	0.002
	Supply	0.006	0.238	0.004	0.027	0.979
	Demand	0.956	0.17	0.828	5.63	0
	Innovation Characteristics	0.11	0.184	0.077	0.598	0.054
	Innovation Promoters	0.419	0.314	0.166	1.336	0.092

Dependent Variable: Innovation Viability

According to model 1 in Table 3, Demand, and Innovation characteristics, (Innovation Characteristics) had significant contribution on Innovation Viability (Innovation Viability) at $p < 0.05$. Further, when the model was loaded with a moderating variable of Innovation Promoters (Innovation Promoters) represented in model 2 in Table 5, the same independent variables remained significant to the multiple linear regression. Further, the added moderating variable of Innovation Promoters (Innovation Promoters) was also significant ($p = 0.092$). However, Supply

was not significant in the model ($p=0.979$). Therefore the moderated conceptual model can be summarized as:

$$Y = 4.722 + 0.956 X_1 + 0.11X_2 + 0.419X_3$$

Where Y = Indigenous innovation viability

X_1 = Demand

X_2 = Innovation characteristics

X_3 = Innovation promoters

This means regardless of the supply capacity of input resources, enterprises that chose to sell *Mursik* were able to carry out their entrepreneurial undertakings under the drivers of Demand capacity, the innovations characteristics and the moderation of innovation promoters, specifically the entrepreneur-promoter and social cultural promoter. However, one may not be certain if this will be the case for other indigenous innovation. Nevertheless, the national and devolved Governments in Kenya should intervene to market their indigenous innovations so as to create demand irrespective of any perceived raw material supply challenges, since entrepreneurs are able to surmount such a challenge. It is also notable that for an indigenous innovation to be viable it is also required that it should possess certain characteristics such as relative advantage, compatibility, less complexity, trialability, and observability - which were the parameters used in measuring Innovation's characteristics. Further, Rogers (1986) proposes four major factors that influence the diffusion process of such an innovation to include; innovation itself, communication, time and nature of the social system into which the technology is being introduced.

5. Conclusion

The study found that (1) whereas there was huge supply of milk in the proximal catchment area the supply was not consistent and suppliers preferred delivering it to large milk processors who had not yet adopted *Mursik* as part of their line of products. Nevertheless, this was not a significant factor in viability of this indigenous innovation. (2) It was noted that demand for *Mursik* was dominated by local community – majority of whom preferred home brewed *Mursik* for better quality and its social cultural associations. However, this variable was found to be a significant contributor to viability of this indigenous innovation. There is therefore a strong case to advocate for interventions that can enhance demand where there is an interest in growing innovation viability for indigenous innovations. (3) It was also found that possession of necessary characteristics for potential of massive adoption of an innovation had a positive significant effect on the viability of an indigenous innovation. (4) The moderating role of innovation promoters had mixed effect. Whereas entrepreneur, and social cultural promoters were enhancing the innovation viability, institutional and regulatory interventions had not created any significant effect on enhancing the innovation viability of *Mursikas* an indigenous innovation. The extent to which these parameters of institutional and regulatory interventions could remain indifferent to the moderated regression model was not

established. Possibly with heightened application of these interventions they might have some favorable contribution and this can be a subject for another study.

6. Recommendations and Areas for further study

Arising from this study the following are the recommendations. First, necessary strategies for promotion and distribution of *Mursik* beyond the traditional users should be encouraged through social cultural promoters such as sports ambassadors, hosting of cultural events, tourism cuisine, seasonal promotions, and so forth. Further research should also be conducted to determine whether variations in institutional and regulatory interventions may eventually have some significant effect on making *Mursik* indigenous innovation more viable. This could include operationalization of specification for fermented (cultured) milks standards DKS 05-941 (Kenya Bureau of Standards, 2013) and inclusion of *Mursik* production funding by trade departments in the National and Devolved Governments.

References

- Aubert, J. E. (2005). *Promoting innovation in developing countries: A conceptual framework*. The World Bank.
- Braunerhjelm, P. (2010). *Entrepreneurship, innovation and economic growth - past experience, current knowledge and policy implications*. Jönköping, Sweden: CESIS.
- Ernst, D. (2011). Indigenous innovation and globalization: The challenge for China's standardization strategy.
- European Commission (2015). *Supply and Demand Side Innovation Policies: Annexes of First Policy Brief*. Luxembourg: Publications Office of European Union.
- Goldkuhl, G. (2012). Pragmatism vs interpretivism in qualitative information systems research. *European Journal of Information Systems*, 21(2), 135-146.
- Gudhlanga, E. S., & Makaudze, G. (2012). Indigenous knowledge systems: Confirming a legacy of civilisation and culture on the African continent. *Prime Journal of Social Science*, 1(4), 72-77.
- Hauschildt, J., & Kirchmann, E. (2001). Teamwork for innovation—the 'troika' of promoters. *R&D Management*, 31(1), 41-49.
- Huaman, E. S., & Sriraman, B. (Eds.). (2015). *Indigenous innovation: Universalities and peculiarities*. Springer.
- Kenya Bureau of Standards (2013). *Specification for fermented (cultured) milks*, DKS 05-941: 2013 (2nd edition), Nairobi: Kenya Bureau of Standards.
- Kipsang, B. (2010). *Mursik: Indigenous Milk Preservation Technology among the Kalenjins of Kenya*. Accessed from <http://ngaruamaarifa.blogspot.co.ke/2010/11/Mursik-indigenous-milk-preservation.html> on Apr 29, 2017: 9.00pm.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Delhi: New Age

International.

- Lazonick, W., & Mass, W. (1995). Indigenous innovation and industrialization: Foundations of Japanese development and advantage.
- Matthews, J. R. (2017). Understanding Indigenous Innovation in Rural West Africa: Challenges to Diffusion of Innovations Theory and Current Social Innovation Practice. *Journal of Human Development and Capabilities*, 18(2), 223-238.
- Mehta, S., & Mokashi-Punekar, R. (2008). *Exploring indigenous innovations: Ascertaining the scope for design interventions for their successful commercialization*. Torino, Italy: OECD Working Paper No.1 (2012)
- NetworkForest Action(2000). Management of trees used in *Mursik* (fermented milk) production in Trans-Nzoia District, Kenya. *Journal of Ethnobiology*, 20(1), 75-91.
- Rogers, E. M. (1986). The role of the research university in the spin-off of high-technology companies. *Technovation*, 4(3), 169-181.
- Rogers, E. M. (1995). Diffusion of Innovations: modifications of a model for telecommunications. In *Die diffusion von innovationen in der telekommunikation* (pp. 25-38). Springer, Berlin, Heidelberg.
- Rogers, E. M. (2004). A prospective and retrospective look at the diffusion model. *Journal of health communication*, 9(S1), 13-19.
- Sanginga, P. C., Waters-Bayer, A., Kaaria, S., Wettasinha, C., & Njuki, J. (Eds.). (2009). *Innovation Africa: enriching farmers' livelihoods*. Earthscan.
- Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle* (Vol. 55). New York: Transaction publishers.
- Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations*, London: W. Strahan and T. Cadell.
- Stenou, K. (2002). *UNESCO universal declaration on cultural diversity. Cultural diversity series no. 1*. Paris: UNESCO publishing.