Industrial Property Rights Commercialisation Survey Report in Kenya

Managing Director
Kenya Industrial Property Institute
KIPI Centre, Kabarsiran Avenue
Off Waiyaki Way, Lavington
P.O. Box 51648-00200

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Acronyms and Abbreviations

ASEAN	Association of Southeast Asian Nations
COVID	Coronavirus Disease
IP	Industrial Property
IPA	Industrial Property Act
IPR	Industrial Property Right(s)
IPRP	Industrial Property Rights Protection
KeNIA	Kenya National Innovation Agency
MSMEs	Micro Small and Medium Enterprises
R&D	Research and Development
SDG	Sustainable Development Goal(s)
SME	Small and Micro-Enterprises
TOR	Terms of Reference
TVET	Technical and Vocational Education and Training
WIPO	World Intellectual Property Organisation

Executive summary

Commercialisation of IPs enables enterprises to generate revenue that can produce profits in addition to covering research and development costs. If commercialisation does not take place, then the creation process remains in limbo and frustrating for owners of IPs. It also means that the anticipated socio- economic benefit cannot be derived in the short-term. In the long term, innovators may be resigned to the process. The Institute in fulfilling its mandate has set promotion of commercialisation of industrial property as one of its strategic objectives in the current strategic plan 2018-2020. This survey was set to establish the extent to which commercialisation is taking place in Kenya and the challenges enterprises face.

The study was carried out in 22 counties across Kenya considering 2,249 clients who had interacted with the Institute in way of seeking to register their patents. A sample of 338 was determined out of which 101 responses were returned. The survey found out that:

i. 58 percent of those surveyed were substantive IP rights holders, the rest were applicants.
ii. Most innovation activities in Kenya occur in micro and small enterprises as evidenced by number of employees and turnover. These count for about 60 percent of innovations, yet they lack organisation competencies to support commercialisation.
iii. Participation in IP acquisition by gender is almost uniform.
iv. Enterprises surveyed undertook various activity towards commercialisation but the level of activity is rather low to warrant expected outcomes. Licensing and franchising was done only by 4% and 3% of enterprises.
v. Most of the enterprises surveyed were aware of the link between their creations and customer needs.
vi. Enterprises were observed to have mobilized internal resources towards commercialisation in the form of identification of distribution channels, developing a business plan and engaging personnel.

vii. As far as mobilizing internal resources towards commercialisation little effort had gone into allocation of finances, obtaining training or engaging partners

viii. Institutional challenges which face innovative enterprises are mainly occasioned by informal nature of the business others include high costs of commercialisation and limited financial resources.

ix. Innovators' own financing provide the greatest source of financing at 44 percent followed by Kenya National Innovation Agency (KeNIA) and loans from financial at 8 and 7 percent, respectively. Partnerships were responsible for the least proportion of sources at one percent.

x. Of the funds raised, 35 percent was seed money applied to prototype development and other start up activities; 18 percent used it in product development and 10 percent in marketing activities.

xi. The number of enterprises accessing business support services for commercialisation is quite low.

xii. Unfavourable market conditions either locally or internationally were an impediment to 51 percent of enterprises.

xiii. Key policy issues identified were lack of financial access and incentives to innovate legal and regulatory support, inadequate support services including sensitization on IP rights protection and inadequate technology transfer mechanisms.

The study makes the following recommendations:

i. In aid of innovation effort concentrated is MSMEs, the Institute should:
   - Provide information sensitizing possible sources of business support services
   - Create an information resource centre which will help them identify possible sources of business support that they require in the course of commercializing the IP.

ii. Review the IP law to accommodate innovations in emerging technologies.

iii. Create a one-stop-shop for all registration processes and advisory in all counties.

iv. Enhance cooperation and collaboration of government institutions with complimentary mandate.

v. Capacity build IP holders on various commercialisation options by:
   - Develop commercialisation guidelines.
   - Conduct sensitization workshops on the guidelines in all counties.

vi. Develop an ICT-based system of identifying and validating patent registration status.

vii. Create linkages between IP holders and private sector players to promote a conducive business environment for commercialisation.

Chapter One: Introduction

1.0 Introduction

The survey was set to establish the extent of commercialisation of IPs in Kenya and factors that make it feasible. A total of 22 counties across country were surveyed. Taking into account of 2,263 clients who had interacted with the Institute in way of seeking to register their IP rights, a sample of 338 clients was determined out of which 101 responses were returned.

This report is organised into chapters and sections and encompasses a total of five chapters. Chapter one provides the background, rationale and purpose of the study. It also provides the specific objectives and delineates the Terms of Reference. Chapters two presents the situational analysis on innovation vis-à-vis commercialisation. The methodology is detailed in Chapter three and in Chapter four, analysis on innovation and commercialisation is provided. Lastly, Chapter five details the survey findings, implementation matrix and recommendations.

1.1 Background

The Kenya Industrial Property Institute (KIPI), herein the Institute, was established on 2nd May 2002. The Institute is a public service body corporate established by section 3 of the Industrial Property Act, 2001 currently under the Ministry of Industrialization, Trade and Enterprise Development. The Industrial Property Act, 2001 protects the five elements of intellectual property rights which include: Patents; Utility models; Industrial designs; Trade mark and Technovations. The Institute's vision is to be **"A world class institution in administration of industrial property rights"** while the mission is **"To protect and promote industrial property rights and foster innovation for sustainable development in Kenya".** The Institute has committed to offering efficient and effective public service in matters IPRs with confidentiality, customer focus, innovation, integrity, professionalism, and teamwork. The Institute's core functions are to;

a. consider applications for, grant and registration of industrial property rights;
b. screen technology transfer agreements and licences;

c. provide to the public, industrial property information for technological and economic development;
d. promote inventiveness and innovativeness in Kenya; and
e. organize and conduct training, competitions and awards relating to industrial property matters.

In the current structure, the Institute has a Research, Innovation and IPRs information functional department, which is mandated to perform the function of creating public awareness on IPRs. This function is anchored in the Strategic Plan 2018-2022.

In recent years, advances in technovations have seen Industrial Property Rights Protection (IPRP) emerge as an important determinant of the gains accruable to inventors from an innovation. Broadly, IPRs determine the extent to which the inventor can exploit the potential value of an invention in a defined industry where it occurs. The strength of IPRs is an incentive for the economy to invest in a climate that nurtures innovations and importantly ensures innovator(s)' IP rights are well protected. Patents provide protection to innovators and inventors. It is therefore their entitlement to earn reward for Research and Development (R&D) costs incurred in the course of designing and developing a given product or service.

The imperativeness of IPR protection is appreciated as one of the drivers towards the realization of the 2030 global Agenda for Sustainable Development Goals (SDGs), which is aligned to Kenya's Vision 2030 - as enablers for innovation, competitiveness and creativity needed in obtaining the goals[1]. Ideas, works, innovation, art and technology that is created, mainly through R&D are, in their tangible or intangible forms, IP that can be owned solely or as a joint venture[2]. Patentable IP creations play a critical role in responding to pressing national and global challenges, if managed properly can be commercialized, that way, creating wealth and employment

[1] Birkbeck, C. D. (2016). The World Intellectual Property Organization (WIPO): A Reference Guide. Edward Elgar Publishing.
[2] Parr, R. L. (2018). *Intellectual property: valuation, exploitation, and infringement damages*. John Wiley & Sons.

opportunities[3].

Commercialisation is the application of technology to a production or consumption process with an ultimate aim of generating rewards to both the inventor and the right holder[4]. Whereas IPR protection is imperative, registration process and production cost remains an obstacle in scaling up production or consumption processes and optimize revenues or royalties[5].

Section 34 of the IP Act 2001 spells out the grant and refusal of grant of patent application. Various provisions under the section spell the application procedure and requirements for Kenyan nationals and on incidental procedures to be followed should an innovation involve a foreign national. As espoused under sub-section 34 (3) and 34 (4), the applicant should indicate the inventor and the agent (if any). Subsequent sub-sections detail the exactness of a patentable product – information that is contained in an abstract, which provides the technical information on whether application is granted or rejected.

1.2 Rationale of the Survey

It is through commercialisation of IPs that an enterprise generates revenue that can produce profits in addition to covering research and development costs. If commercialisation does not take place, then the creation process remains in limbo and frustrating for owners of IPs. It also means that the anticipated socio- economic benefit cannot be derived in the short-term. In the long term, innovators may be resigned to the process. The Institute in fulfilling its mandate has set promotion of commercialisation of industrial property as one of its strategic objectives in the current strategic plan. During a mid -term review it was established that this has been done effectively only to 55 percent[6]. This could mean that there is a high attrition level between IPs registered and those commercialised. It is imperative that the Institute establishes factors that impede the commercialisation as experienced

[3] Suryahartati, D. Commercialisation and management of higher education research results in the industrial age 4.0: intellectual property rights perspective.

[4] Han, J. (2017). Technology commercialisation through sustainable knowledge sharing from university-industry collaborations, with a focus on patent propensity. *Sustainability*, *9*(10), 1808.

[5] *Athreye, S. S., Fassio, C., & Roper, S. (2020). Small firms and patenting revisited. Small Business Economics, 1-18.*

[6] *KIPI Strategic Plan 2018/2022 Midterm Evaluation Report.*

by IP owners.

1.3 Purpose of the Survey

The purpose of this study was to undertake a survey to establish the factors that impede the commercialisation of IP in Kenya. This was also to inform development of guidelines for commercialisation.

1.3.1 Specific objectives of the survey

The specific objectives of the survey are to:

i. Determine the status of commercialisation of IP in Kenya;

ii. Determine the institutional factors that enhance or impede commercialisation of IPs in Kenya;

iii. Determine the environmental factors that enhance or impede commercialisation of IPs in Kenya;

iv. Determine the policy issues that enhance or impede commercialisation of IPs in Kenya.

1.4 Terms of Reference

The client required KSG to undertake a survey on the level of commercialisation of industrial property in Kenya. The Terms of Reference was interpreted as follows:

i. Undertake a national survey on commercialisation of IP in Kenya, using appropriate methodology;

ii. Report on the findings of the survey;

iii. Make actionable recommendations on how the client can enable IP commercialisation in Kenya;

iv. Propose an implementation matrix and a suitable monitoring and evaluation mechanism;

The survey achieved four outputs based on the ToRs above.

Chapter Two: Situational Analysis

2.0 Innovation versus commercialisation

Kenya Vision 2030 captures the essence of science technology and innovation in promoting national development. Kenya also subscribes to African Union Agenda 2063[7] which advocates for application of at least 2 percent of GDP in research and development by governments in Africa. Though this has not been attained, in Kenya the government has made progress by creating a KES 3 billion research fund[8]. This effort is complemented greatly by other actors in private and development sector. Suffice it to say, in so far as research and innovation is concerned, policy is now in tandem with action.

Investments in research and development lead to novel creations most of which are recognised as IPRs. It is a foregone conclusion that innovation national policy frameworks that recognise intellectual or industrial property rights tend to grow investments in research and development to a large extent coupled by large number of creations[9]. IP protection is therefore synonymous with investment in R&D a role well-articulated by the Institute.

Studies, however, have not been keen on showing the intersection between IP acquisition and product development which would otherwise be referred to as commercialisation. Yet, according to Forbes[10], out of the 2.1 million active US patents hardly 5 percent have reached the market. About 90 percent of the patents fail to be commercialized or find angel investors or licensees. These unlicensed patents include over 50,000 high-quality patented inventions belonging to universities. Whereas the validity of this data may be debatable, it goes to show the challenge surrounding commercialisation of IP rights.

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[7] African Union Commission. (2015). *Agenda 2063*. The African Union Commission.

[8] *Republic of Kenya (2019). MINISTRY OF EDUCATION SESSIONAL PAPER NO. 1 OF 2019 on A Policy Framework for Reforming Education and Training for Sustainable Development in Kenya Towards Realizing Quality, Relevant and Inclusive Education and Training for Sustainable Development, Government printer- Nairobi.*

[9] Edler, J., Cameron, H., & Hajhashem, M. (2015). The intersection of intellectual property rights and innovation policy making: a literature review. *World intellect. Prop. Organ. http://www. wipo. int/publications/en/details. jsp*.

[10] The Real Patent Crisis Is Stifling Innovation- https://www.forbes.com/sites/danielfisher/2014/06/18/13633/?sh=19162cc36f1c

A study carried out by Arundel and Bordoy[11] in an attempt to map patent commercialisation indicators found varying but low levels of commercialisation in various developed countries as depicted in Table 1. It can be observed from this study that less than 10 percent of the invention disclosures in most cases end up as startups for instance, UK- 2004 and Australia managed to convert 8 percent of the inventions to business. License execution seems to be the most plausible commercialisation route given a success rate of between 28- 61 percent. However, from the same study, commercial outcomes are a bit disheartening since license income expressed as a percentage of investments in research barely close the 5 percent mark. The analysis in this study represents the intricacies in acquisition and commercialisation of IP rights globally.

Table 1: Commercialisation status in selected countries

Country	United kingdom	United kingdom	Canada	USA	Europe	Australia
Year	**2004**	**2002/03**	**2003**	**2004**	**2004**	**2002**
Invention disclosures	2871	2710	1133	16792	3481	841
Priority patent applications	31%	34%	111%	82%	46%	61%
Patent grants	5%	14%	17%	22%	9%	17%
Licenses executed	5%	28%	37%	28%	38%	61%
Start ups	8%	7%	2%	3%	6%	8%
License income (million US $) as % of R&D expenditure	2%	1%	1%	3%	2%	2%
Research expenditures (million US $)	4062	5605	3439	41244	9699	3386

Locally, an MSMEs enterprise survey carried out in Kenya in 2016 found out that product innovation was apparent in small establishments engaged in manufacturing, ICT, financial and health activities at 31.6, 33.3, 44.4, and 42.5 per cent, respectively. Survey results also showed that process and marketing innovations were largely not common features among MSMEs[12]. If the latter would denote commercialisation

[11] Arundel, A., & Bordoy, C. (2008). Developing internationally comparable indicators for the commercialisation of publicly-funded research. *Workpackage 4 Solutions for Missing Indicators*, 49.

[12] Kenyan National Bureau of Statistics., (2016). *A survey by the Kenya National Bureau of Statistics, 2016 MSME Basic report*. Naitobi: Government Printer.

activities, then this results go to confirm the challenge of commercialisation of innovation as experience in Kenya.

2.1 Bottlenecks of commercialization

Investors in various economies face different challenges towards commercialising their creations. Considering that most R& D activity occurs in institutions of learning, coupled with the fact that innovations in this institutions is highly organized, studies tend to evaluate commercialization as it occurs in this environment. It therefore follows that most evaluations on challenges of evaluation follow this setting.

Studies have found that self-efficacy of the innovator and their motivation towards commercialization are key starting points[13]. Other personal factors include competitiveness, seeking power and success among others. In micro and small enterprises, the person is the same as the enterprise meaning personal attributes often are synonymous with institutional attributes hence the challenges pervade. While the individual may be a very proficient innovator, they may lack business management skills that will enable them to plan, carry operations including manufacture, develop product and market to meet the needs of customers. In return, the patent remains just a thought.

Even in structure organization such as learning and research institutions, institutional issues have been identified as main barriers to commercialization of innovations created over the years. Some of these factors have been identified as the financial problems, lack of skilled and expert manpower, and unfamiliarity with the real business environment[14]. A study in Nigeria found that organizations suffered from lack of funding, inadequate infrastructures and equipment, research personnel, technology information and Reward system[15]. Shakeel (2017)[16] while studying the south African

[13] Jahed, H., Arasteh, H., Jafari, P., 2011. Determination and Explanation of Effective Personal Factors on Commercialization of Research Findings; Case Study of Islamic Azad University, Science & Research Branch. Science and Technology Policy, Volume 4(1), pp. 1–16.
[14] Hossein-gholipour, H., Gholipour, A., Roshandel Arbatani, T., 2011. Barriers to the Knowledge Commercialization of Academic Entrepreneurship. Entrepreneurship Development, Volume 14(4), pp. 183–165
[15] Ukwuoma, P. O., Amade, B., & Moghalu, E. I. (2013). The Management of Research and Development (R&D) for Commercialization in Nigeria. International Journal of Advanced Scientific and Technical Research, 1(3), 477-497.
[16] Shakeel, S. R., Takala, J., & Zhu, L. D. (2017). Commercialization of renewable energy technologies: A ladder building approach. Renewable and Sustainable Energy Reviews, 78, 855-867.

renewable technologies landscape also observed institutional barriers to commercialization. Similar findings have been made by Maphumulo (2019)[17] and Manaczynski (2011)[18], with the latter acknowledging that institutional barriers are so rife in small enterprises and yet they are more likely to subdue any commercialization effort if they are not addressed.

Studies also indicate that organizations face environmental barriers. Shakeel (2019)[19] classifies the barriers as either technical or non -technical. In which as technical include high cost of raw materials and other economic while whereas non-technical barriers include policy, and legal issues.

Lack of linkages and cooperation among institutions, industry and government has been cited as a barrier by Ogada (2017)[20] and Maphumulo (2019) among others. These authors state that each party has unique responsibilities under this traid. Institutions innovate and create since they have the knowledge edge. Industry provides business support sometimes packaged as incubation because it understands the reality of doing business and know the customers. Of course, government is responsible to an enabling policy and economic environment. It is expected that these three players complement each other in their effort towards commercialization of R&D which if successfully undertaken will cause economic growth.

It is critical to identify challenges of commercialisation that inventors in Kenya face. This will aid the prescription of resonating interventions to the mandate of the Institute. It is against this background that this survey has been commissioned.

[17] Maphumulo, S. D., & Nel, H. (2019, December). Transfer and Commercialization of Technologies from Universities to Small Companies in South Africa. In 2019 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM) (pp. 674-680). IEEE.
[18] Manaczynski, M. (2011) Factors affecting commercialization of newly developed products: A study of selected small and medium enterprises in South Africa (Masters dissertation).
[19] Shakeel (2019) ibid
[20]Ogada T. (2017) Innovation and Intellectual Property as Engines for Competitive Agribusiness: Importance of IP Management in the technology transfer of publicly funded R&D for agriculture and agribusiness WIPO conference, Morocco.

Chapter Three: Methodology

3.0 Survey Design

The purpose of this study was to undertake a survey on commercialisation of IP. This was also to inform development of guidelines for commercialisation. This was achieved by considering the status of commercialisation in the Kenyan economy; institutional, economic, environmental and policy issues that enhance or impede commercialisation of IPs.

The study carried out a descriptive cross-sectional survey of IP owners in Kenya. This yielded an in-depth understanding of the commercialisation effort by the IPR owners and circumstances surrounding their success or otherwise. While commercialisation is a long haul effort, it is possible to evaluate its status at one particular point in time, thus the cross-sectional nature of the survey.

The research used quantitative data methods to complement different data sources and subtle information bits and opinion to improve the validity and credibility of the outcomes.

In exercising its mandate, the Institute registers various IPRs and issues creators with certificates of ownership. These creators are expected to proceed with commercialisation effort within the course of their business so that they reap the benefits of their creations. The Institute maintains a register of rights holders, which served as the population for this survey. As at the time of the survey, the Institute's database contained 2,249 clients eligible for this survey. The sample size of 338 was determined using Yamane formula's[21] as shown on Table 2.

Table 2: Sampling and sample size

Region	County	Population	Sample
North Eastern	Mandera	**2**	**0**
Nyanza	Homabay	14	2
	Kisii	19	3
	Kisumu	90	14
	Nyamira	1	0
	Siaya	2	0
Sub-total		**126**	**19**
Rift valley	Baringo	44	7

[21] *Yamane, Taro. 1967. Statistics, An Introductory Analysis, 2nd Ed., New York: Harper and Row.*

Region	County	Population	Sample
	Eldoret	220	33
	Kajiado	19	3
	Kericho	24	4
	Nakuru	86	13
	Nandi	5	1
	Narok	20	3
	Turkana	5	1
Sub-total		**423**	**64**
Western	Bungoma	19	3
	Busia	5	1
	Kakamega	47	7
	Vihiga	2	0
	Trans Nzoia	21	3
Sub-total		**94**	**14**
Total		**2249**	**338**

The criteria for selection of the respondents of the survey by the consultant included the geographical location of the patented (or patentable) innovations and their concentration(s). The Institute's database for the registered utility model and patent owners in the country was used in enabling positive acquisition of the required number of responses by respondents for analysis. Analysis was done using standard formulae as expounded in Chapter Four.

The survey was done across the selected counties in Kenya where inventions are active as shown on **Appendix A2**. The study was conducted in the counties of Baringo, Bungoma, Busia, Homa Bay, Kakamega, Kajiado, Kericho, Kisii, Kiambu, Kisumu, Mombasa, Makueni, Machakos, Murang'a, Meru, Nairobi, Nakuru, Narok, Nyeri, Trans Nzoia, Uasin- Gishu and Vihiga as guided by the creators' address and location.

3.1 Data collection Tools

The main research instrument for this research was a questionnaire. The questionnaire was divided into enterprise characteristics, stages of commercialisation and support service for commercialisation. Different types of questions were incorporated in the tool design such as closed and open ended questions, and five-point Likert from 1 (strongly disagree) to 5 (strongly agree), and examined the factors influencing commercialisation of IP in Kenya.

3.2 Data Entry and Analysis

Data coding and entry was done concurrently with data collection in the field. The data was cleaned, analysed on MS Excel environment and the descriptive findings presented in Chapter Four.

3.3 Workplan and Preparatory Activities

The survey was completed as per the terms of reference agreed upon with the Institute. Regrettably, the COVID-19 pandemic outbreak in the country adversely affected the study due to restricted movement and limited accommodation facilities during travel. This meant that some counties could not be covered by the study. However, the results were found can be generalized to the whole country as they are representative.

During the inception phase of the study and as part of the preparation of the report, the consultants held a meeting with representatives of the Institute at the Kenya School of Government. The meeting focused on the review and understanding of the TORs, modalities of gathering data for the present study and understanding the principal players and representatives of the Institute. The field study was conducted as per the survey schedule detailed in **Appendix A3**.

3.4 Ethical Considerations

High ethical standards during questionnaire preparations, while conducting interview sessions and administering the data collection instruments were observed. The questionnaires were structured in a cordial manner. Respondents were recruited and allowed to participate in the study voluntarily. In addition, the researchers gave clarifications to the background of the study and assured respondents that their responses were to be treated with the utmost discretion, confidentiality and strictly for the purposes of the survey.

Chapter Four: Analysis

4.0 Introduction

In line to the methodology laid out in the previous section the study set to collect data and present findings in the form of figures and tables. Data was collected in enterprises compared to a sample size of 338. The low response rate can be attributed to the fact that most of the enterprises mapped were sole proprietors and micro enterprises whose physical locations were not found. It was also apparent that the population data provided by the Institute regarding its clients has changed over time thus the variations.

4.1Status of commercialisation

4.1.1 Status of IP Ownership

The survey sought to determine the extent to which the Institute's clients have interacted with patent registration process. Part V of the IP Act spells application, grant and rejection of grant of patent. Analysis revealed that 40 percent of the applications were being considered for grant. Those granted were 39 percent while 11 percent of the respondents revealed that their applications had just been granted. A paltry 8 percent indicated that the applications were under review for renewal making a total of 57 percent of all innovations that are actively being commercialized. As revealed in **Error! Reference source not found.**, 2 percent declined to reveal the stage of their development.

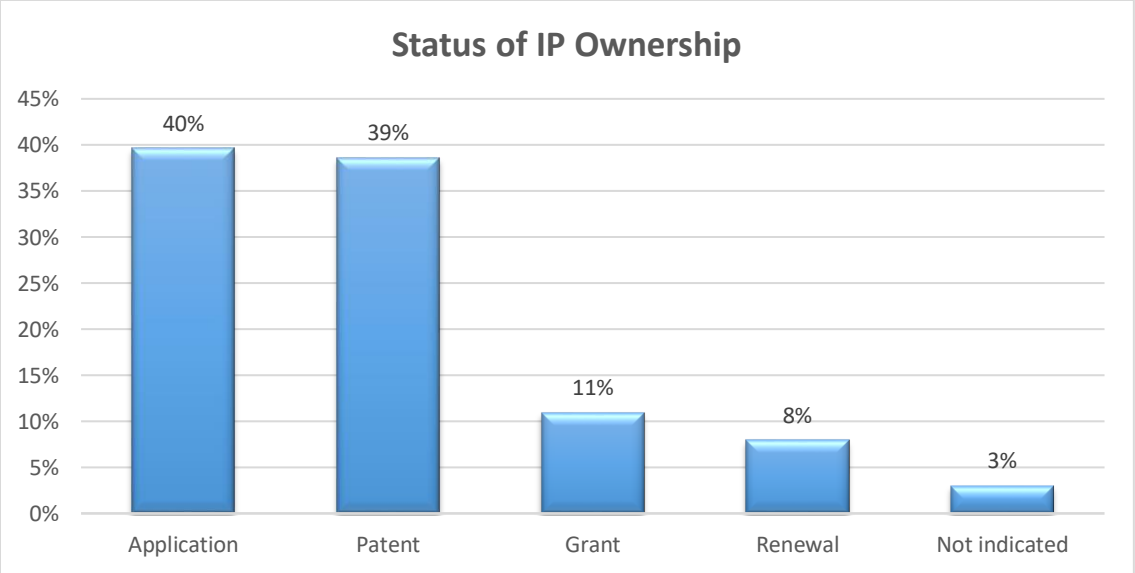

Figure 1: Status of IP Ownership

4.1.2 Level of commercialisation by turnover

It is revealed in that commercialized entities generate revenue; majority (52 percent) generate less than Sh. 500, 000; 14 percent generate Sh. 500,000 to Sh. 5 million. Those generating Sh. 10 million to Sh. 50 million were a paltry 6 percent with just one percent generating Sh. 5 million to Sh. 10 million.

This data suggests that majority of the patented entities turn out to be small and micro-enterprises (SMEs) plausibly because they are new in the market, prototypes developed and commercialized have existing substitutes in the market or that there is lack of financial resources to scale up productivity. Data in this respect, is as detailed on **Error! Reference source not found.**

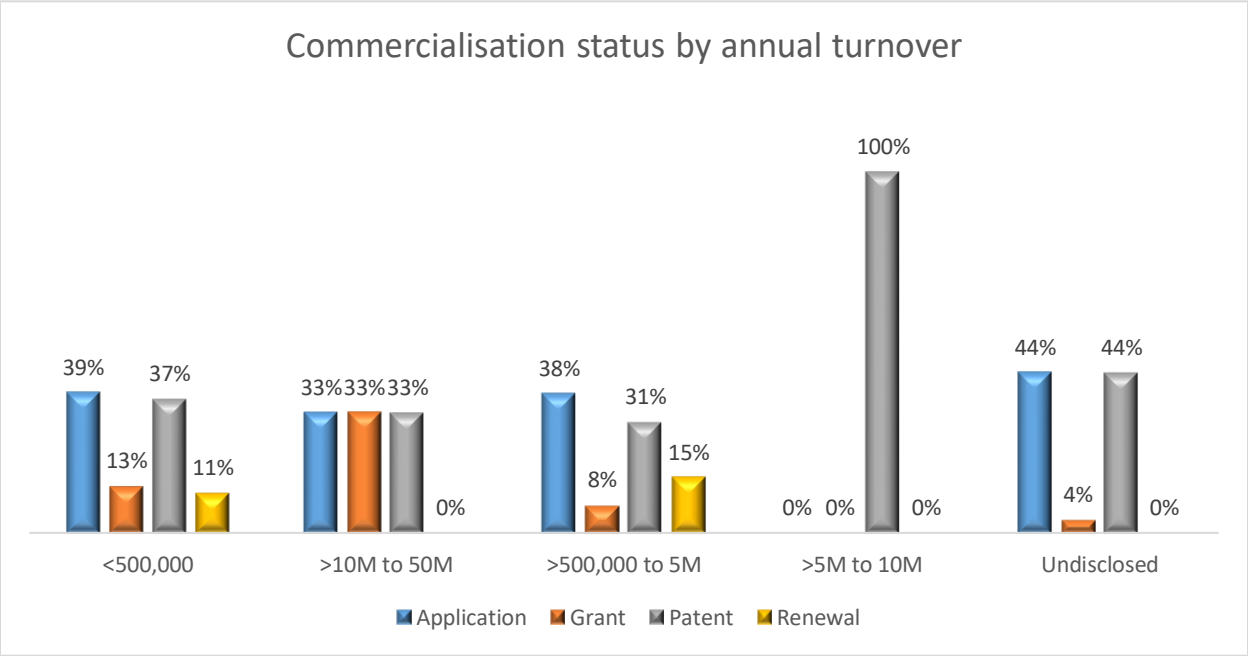

Figure 2: Level of Commercialisation by turnover

4.1.3 Commercialisation by acquisition of trading license

The survey found that among the creators who are at the application stage of innovation development, 46 percent have actually acquired trading licenses for the Year 2020/21 while 38 percent of respondents at the patent stage also have acquired trading licenses. Worryingly of the innovators at the grant and renewal stage of development only 11 percent and 4 percent, respectively have trade licenses for the Year 2020/21 as shown on Figure 3.

This indicates that a large number of innovators are currently operating without valid licenses. Consequently, they run their enterprise informally meaning that they can only a small range of business support services which hinders commercialisation of IPs

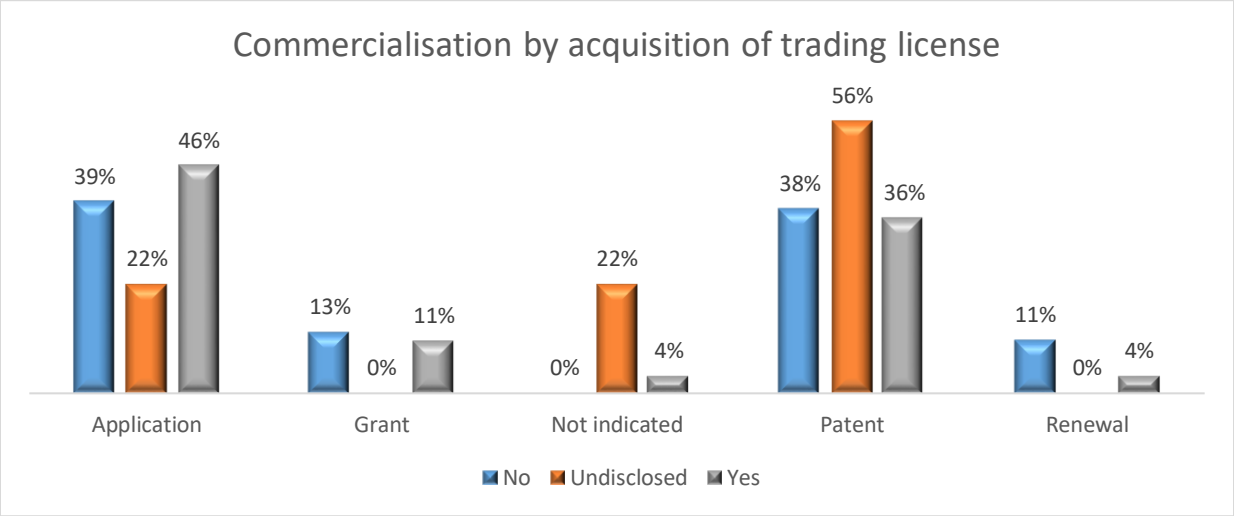

Figure 3: Acquisition of Trading License for the Financial Year 2020/2021

4.1.4 Level of commercialisation by number of employees

While innovation is a journey that can be well managed by individuals, commercialisation requires a range of skills and competencies that may not be found in the individual. As such there is a direct relationship between elaborate organization structures and commercialisation because of resource dependence[22]. This study found that most innovation activities in Kenya occur in micro and small enterprises[23]. This is so because as indicated in table 2, this category of enterprises accounted for about 60 percent of innovations, the classification notwithstanding. Larger organizations were responsible for 12% of IP rights acquired. However, as explained before, the MSMEs can only be expected to pursue commercialisation successfully if they access business support services and partnership building mechanism to complements lacking competence base. The same can be indicated for large organizations that are actually learning or research institutions as was the case in this study.

[22] Chiu, S. and Chang, K. (2009), "Organizational structure, support mechanism, and commercialisation performance: A governance perspective", *International Journal of Commerce and Management*, Vol. 19 No. 3, pp. 183-194.

[23] Micro-, Small, and Medium-Sized Enterprises and their role in achieving the Sustainable Development Goals. UNDESA. https://sustainabledevelopment.un.org/content/documents/25851MSMEs_and_SDGs_Final3120.pdf

Table 3: Level of commercialisation by number of employees

Number of employees	Application	Grant	Patent	Renewal	Undisclosed	Total
0-9	26	5	17	8	2	59
10 - 49	5	0	3	0	0	8
50 - 249	2	0	0	0	0	2
250 and above	3	5	4	0	0	12
Undisclosed	4	1	14	0	1	20
Total	**40**	**11**	**38**	**8**	**3**	**101**

4.1.5 IP status by sector

The survey found that IP rights granted in various sectors of the economy. The data on **Error! Reference source not found.** revealed that combined, the three sectors of manufacturing, agribusiness and education had a total of 75 innovations developed, translating to 58 percent of all the innovations disclosed by the respondents. 8 percent of the respondents were not clear on innovations sector application, an indication of multiple use. Financial intermediation services, water supply and sewerage, and public administration and defense sectors have the least number of innovations. While the number of innovations in manufacturing and related sectors may not be large enough, it can be observed that these are gathering traction. Creation of IPs however need to be encouraged in the service sector in general towards propelling a knowledge economy, as envisaged by Vision 2030. The low commercialisation uptake observed in the ICT sector may not be a representation of the current innovation activity in the sector in the country. It actually indicates that the law as currently is does not enhance patenting, yet, some soft ICT components are conventionally patentable. This creates a need for reviewing the Kenyan law.

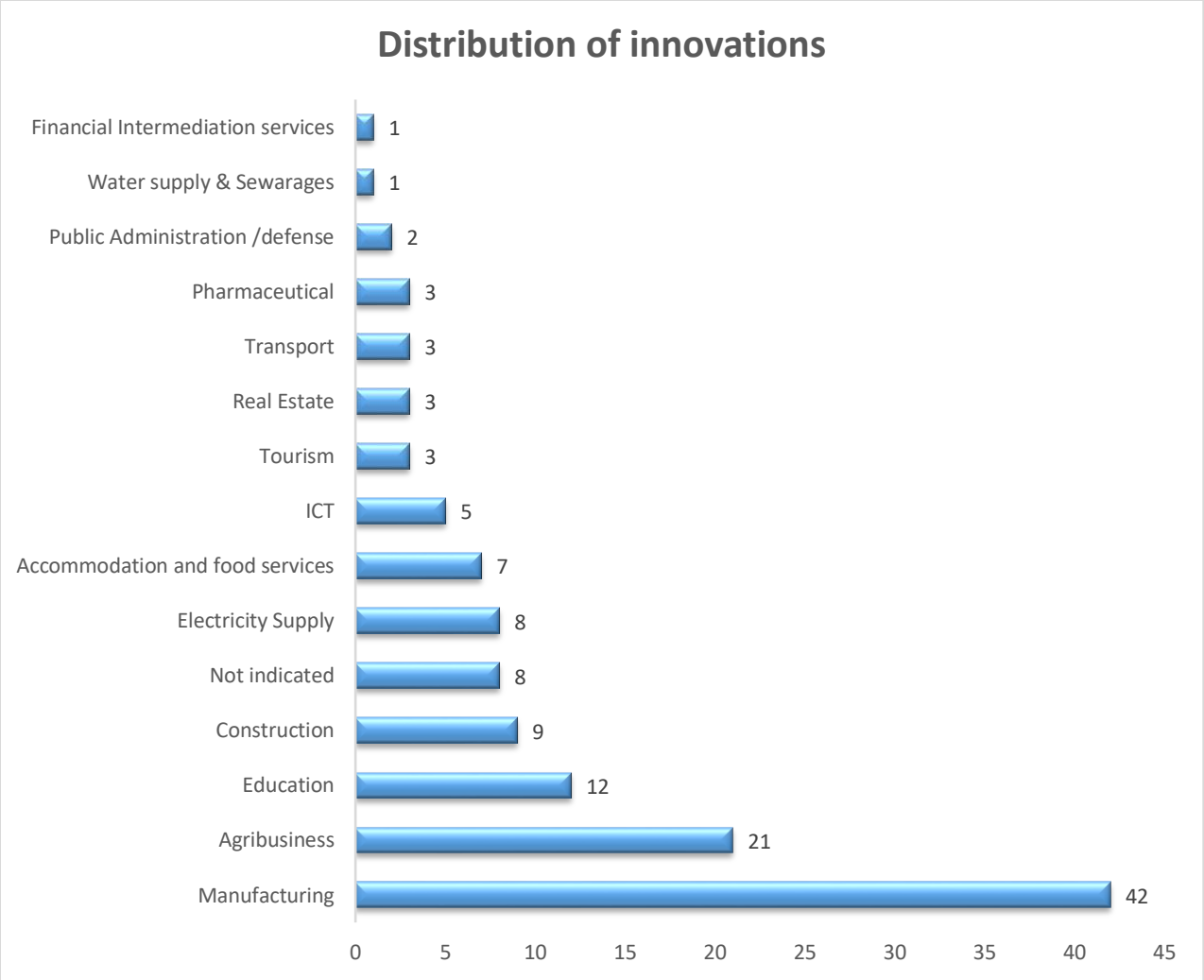

Figure 4: Distribution of innovations by sectors

4.1.6 Registered innovations by business form

The survey sought to understand how commercialisation status aligned with respondents' businesses are registered. Formal business arrangements are more likely to provide an internal base for deliberate business registration strategy which includes management of IP rights as opposed to informal set ups. As shown on Figure 5, the survey found that the distribution of those pursuing registration of IP was 50 percent for business name, while 28 percent of them are not registered. Even as regards to patent ownership, the trend pervades as 44 percent of the enterprises remain unregistered. When businesses are not registered, the plausibility to formulate feasible strategic interventions to stimulate commercialisation of IPs is impeded, an aspect that also impaired non-disclosure by business owners (on which category their businesses fall).

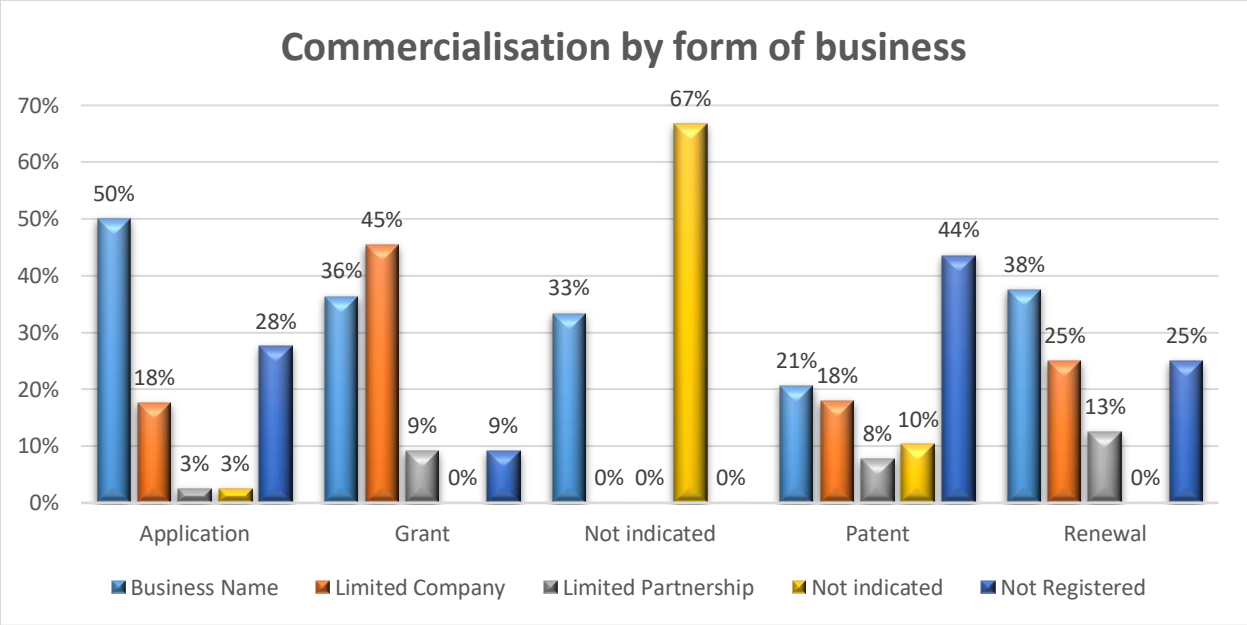

Figure 5: Business Registration across the country

4.1.7 Registration options by clients

The study set out to determine status of IP ownership but when it became apparent that we were dealing with both owners and applicants, finding the registration route was important especially from a service delivery view point. According to Section 34 of the IP Act 2001, clients have the option of making individual registration or register their innovations through an agent. The survey found that 56 percent of the respondents used an agent while 34 percent considered individual registrations. 10 percent of the respondents failed to indicate on whether they undertook individual registration or registered their innovations through an agent as shown on **Error! Reference source not found.**. Although the Institute provided an alternative service delivery channel, a large number of prospective clients still consider it more favorable to deal with the Institute directly.

Figure 6: Proportion of individual registrations and through an agent

4.1.8 Route to commercialisation

Innovators have the option of pursuing commercialization as individual entities or as partners working jointly. The study revealed that majority of the respondents pitched the innovation idea on their own a claim espoused by 3 in every 5 respondents. As shown on **Error! Reference source not found.**7, joint-venture accounted for a paltry 32 percent of innovations. This may indicate that idea creation is largely an individual resolute. Alternatively it shows that here is one sole proprietor for every two joint-ventures – implying sole –proprietorship is the engine for innovation. From viability point of view, joint ventures provide synergy especially for resources and business management skills which are critical for sole inventors who are Micro Small and Medium Enterprises (MSMEs). These may be lacking for the sole creators.

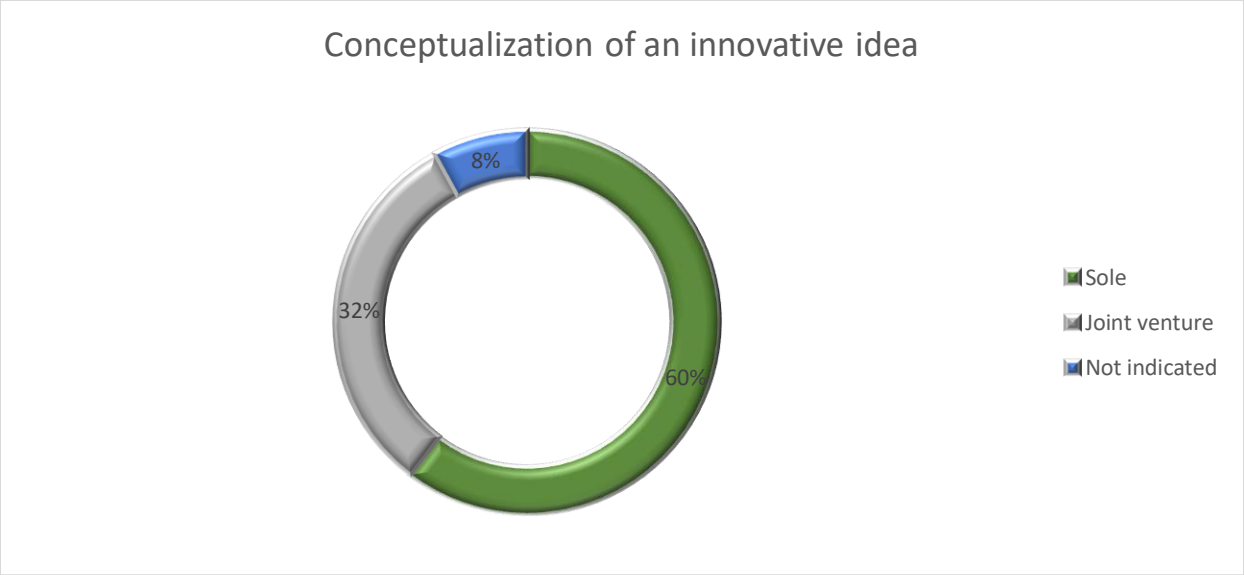

Figure 7: Business ownership

4.1.9 Commercialisation status by Gender

It is perceived that, generally, male patent at a rate that is about 3 times that of female or reap greater rewards that come with commercialisation of their IPs as opposed to female [24] . This perception could, however, not be generalized from the survey. Other than among the innovators whose creation was at the application stage where the proportion of male (43 percent) outnumbered that of female (25 percent), the proportion of female among innovators that had just been granted the IP rights, hold the patents and those renewing the patents outnumbered that of male as shown on Figure 8.

[24] Whittington, K. B., & Smith-Doerr, L. (2005). Gender and commercial science: Women's patenting in the life sciences. *The Journal of Technology Transfer*, *30*(4), 355-370.

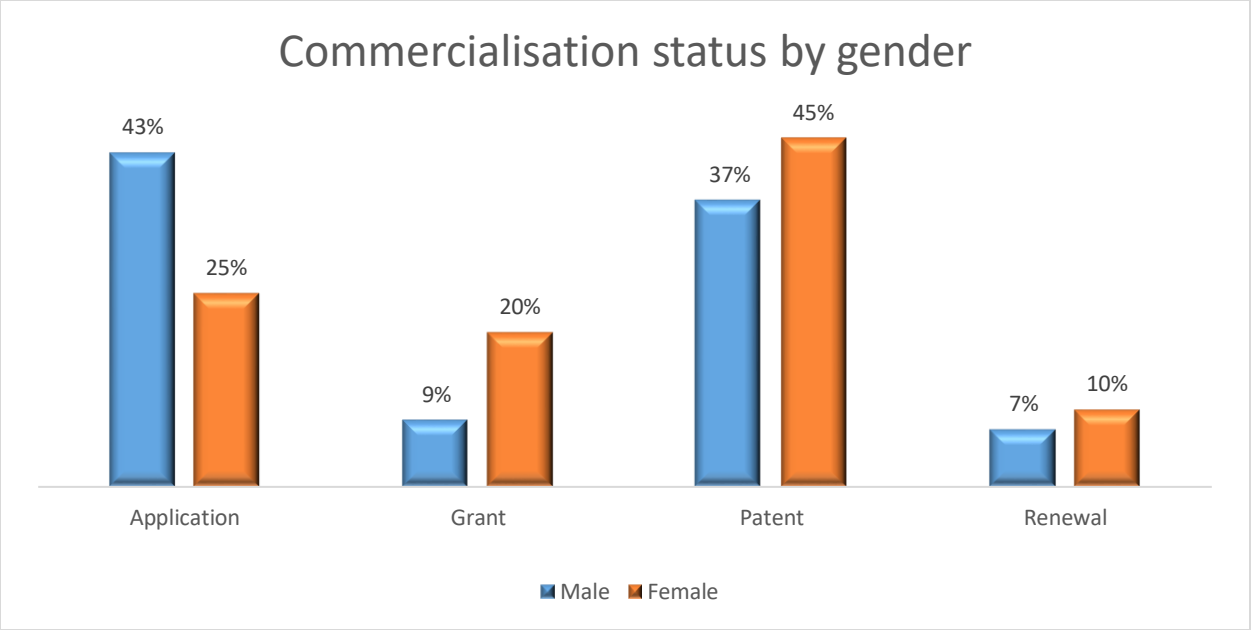

Figure 8: Commercialisation status by Gender

4.1.10 Commercialisation by County

The survey was carried out across the country with targeted regional counties represented. Out of the possible total of 47 counties, 22 counties were involved. As illustrated on Table 1 the response rate was high in Nairobi and Kakamega counties at 17 and 13 percent, respectively. Nakuru and Kisumu counties, Bungoma and Mombasa counties, and Nyeri and Kiambu counties all tied 8, 7 and 6 percent in that order. Trans-Nzoia, Uasin-Gishu and Murang'a all tied at four percent. The remaining counties that were involved in the study namely; Kisii, Makueni and Kericho, Narok, Baringo and Kajiado, Meru, Vihiga and Machakos, Busia and Nyamira had less than four percent and a cumulative total of 29 percent, which is slightly less than the combined response rate for Nairobi and Kakamega.

Table 4: Commercialisation by County

County	Application	Grant	Not indicated	Patent	Renewal	Grand Total
Baringo	3%	0%	0%	0%	0%	1%
Bungoma	8%	0%	0%	10%	0%	7%
Busia	0%	0%	0%	3%	0%	1%
Kajiado	0%	0%	0%	3%	0%	1%
Kakamega	5%	0%	0%	26%	13%	13%
Kericho	5%	0%	0%	0%	0%	2%

Kiambu	10%	0%	0%	5%	0%	6%
Kisii	8%	0%	0%	0%	0%	3%
Kisumu	5%	9%	0%	10%	13%	8%
Machakos	3%	0%	0%	3%	0%	2%
Makueni	3%	0%	0%	3%	0%	2%
Meru	0%	9%	0%	0%	0%	1%
Mombasa	0%	0%	33%	10%	25%	7%
Muranga	3%	0%	33%	3%	13%	4%
Nairobi	18%	18%	33%	13%	25%	17%
Nakuru	5%	27%	0%	8%	0%	8%
Narok	3%	9%	0%	0%	0%	2%
Nyamira	0%	0%	0%	0%	13%	1%
Nyeri	15%	0%	0%	0%	0%	6%
Trans Nzoia	5%	9%	0%	3%	0%	4%
Uasin-Gishu	5%	18%	0%	0%	0%	4%
Vihiga	0%	0%	0%	3%	0%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

4.2Institutional factors enabling commercialisation

4.2.1 Commercialisation of activities undertaken

The commercialisation of IPs involves a number of pathways in making the creation a viable venture. These pathways involve, and are not limited to, conducting extensive market research, feasibility studies and prototype development. This is followed by marketing and promotion efforts in the form of demos and exhibitions, issuance of samples to customers, and advertising. Alternatively, an IP holder may choose to license or franchise the product among other commercial agreements.

While 18 percent of the respondents indicated they have developed prototypes, only 14 percent have conducted a feasibility study about the viability of their creations. As indicated on Figure 9¸ only 4 percent have launched their innovations. Other marketing efforts that lead to commercialisation have also been marginally conducted. Licensing had been pursued by 16 percent of the respondents as opposed to franchising, which is

3 percent. This indicates that creators in Kenya are less likely to seek partnerships that

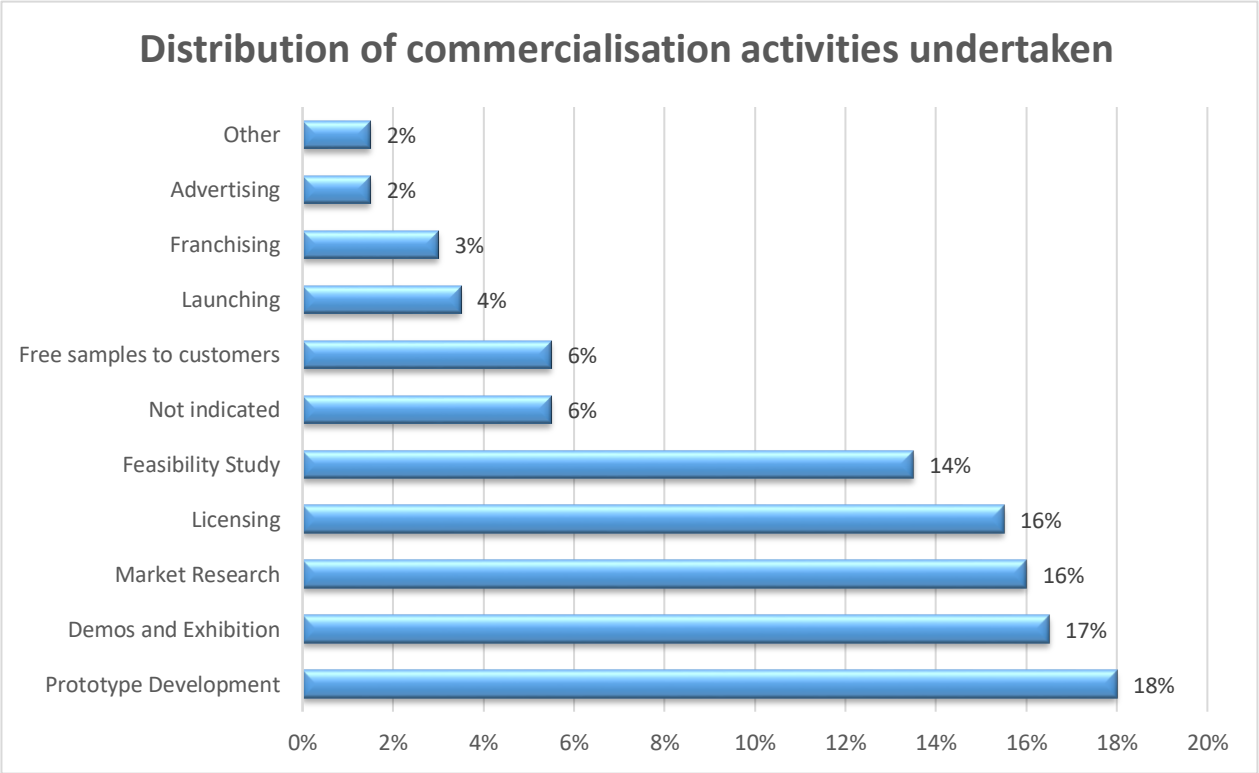

Figure 9: Distribution of commercialisation activities undertaken

lead to licensing and franchising. IP rights are in essence tangible creations whose commercialisation hinges on prototype development. The low engagement in commercialisation activities suggests a high level of difficulty encountered.

4.2.2 Customer Value Proposition

Creating a need among potential users of a given innovation is critical. This ensures that attendant costs that are injected in market research and advertising are met by the returns from the sale of the product. Ensuring this encompasses innovators and inventors having a clear product concept, provision of product specifics or product offering chat for the potential users alongside the identification of the ideal customers who are likely to utilize the product. This identification could be informed by region, age, gender among other factors. This understanding is important in pitching the product.

There were 87 percent of the respondents who agreed that they have a clear product concept and product offering modalities, compared to 3 percent and 10 percent who were not sure and that disagreed, respectively. In addition, and as shown on **Error! Reference source not found.**, 78 percent of the respondents also agreed that they have elaborate customer targeting mechanisms, an aspect that 15 percent disagreed while 7 percent were unsure. The level of disagreement and uncertainty accrue to

institutional challenges, especially in MSMEs environment, where the entrepreneur also doubles as the creator of an invention and the manager, some of which they may be unfamiliar.

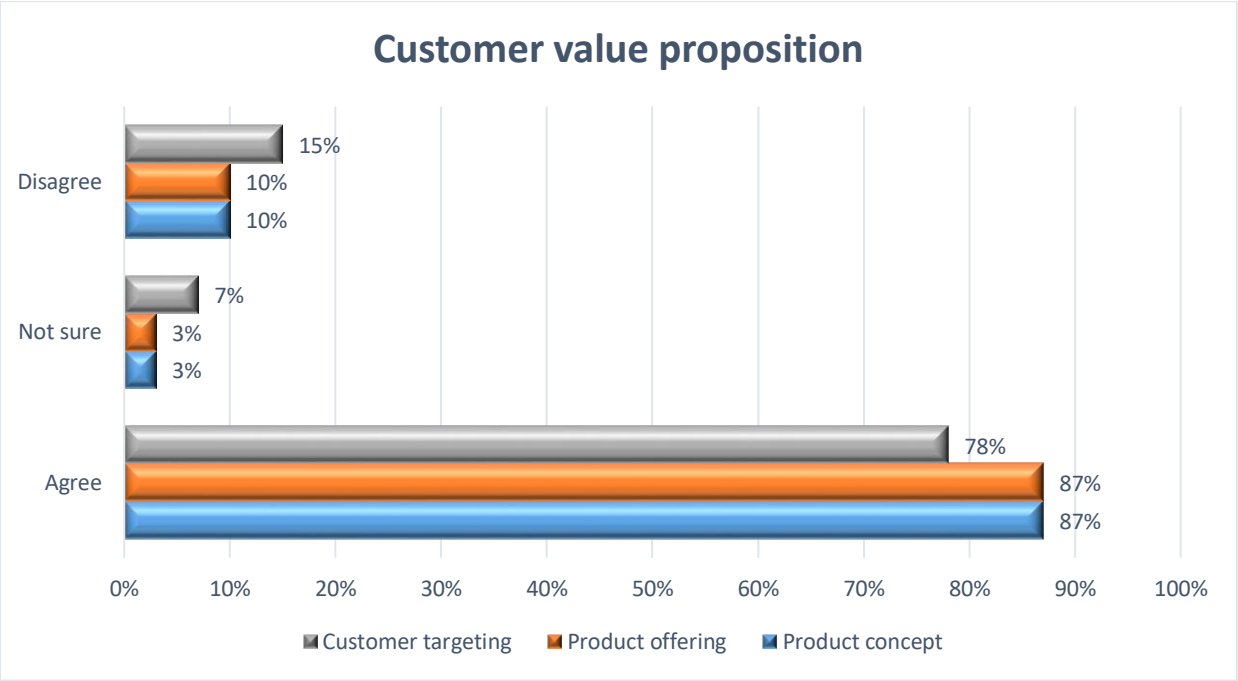

Figure 10: Customer value preposition

4.2.3 Resource provision for commercialisation

Commercialisation of innovations and inventions is a resource intensive process. It involves the identification of distribution channels, engagement with personnel and creation of partnerships with relevant firms. It also involves development of the business plan, acquisition of augmenting technology, relevant training and allocation of necessary financial resources. Over 50 percent of the respondents indicated to have established clear distribution channels and to have partnered with other entities for their growth. As shown on **Error! Reference source not found.**, only 1 in every 3 respondents indicated to have allocated sufficient resources for commercialisation purposes.

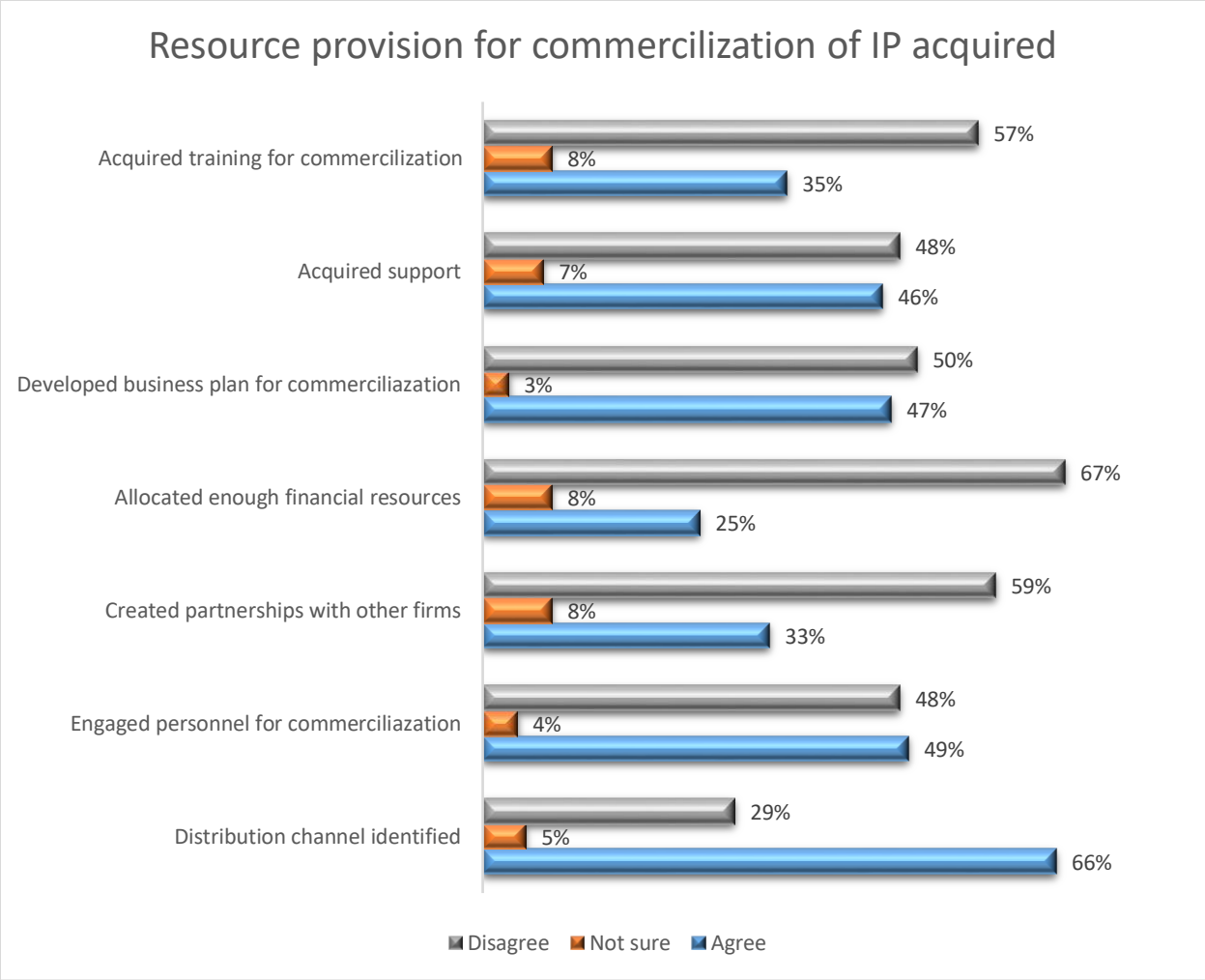

Figure 11: Resource provision for commercialisation of IP acquired

4.2.4 Effects of commercialisation

Innovators and inventors bring variant benefits to the economy. As an economic development force, ownership of IPs ensures that the monetary benefits accrued from the sale of products benefits the innovators. These benefits are in turn used in the acquisition of augmenting technology, creation of wealth and employment opportunities other than contributing to the reduction of production cost.

As shown on Figure 12, 26 percent of the respondents attributed increased revenues to their innovations and inventions. This in turn improved service delivery as attested by 15 percent of the respondents. Only 5 percent indicated increased return on investment. The survey also finds that commercialisation of products creates employment, produces cost-saving in production and improves utilization of the exiting

capacity. This means that where commercialisation occurs successfully, it brings about expected benefits.

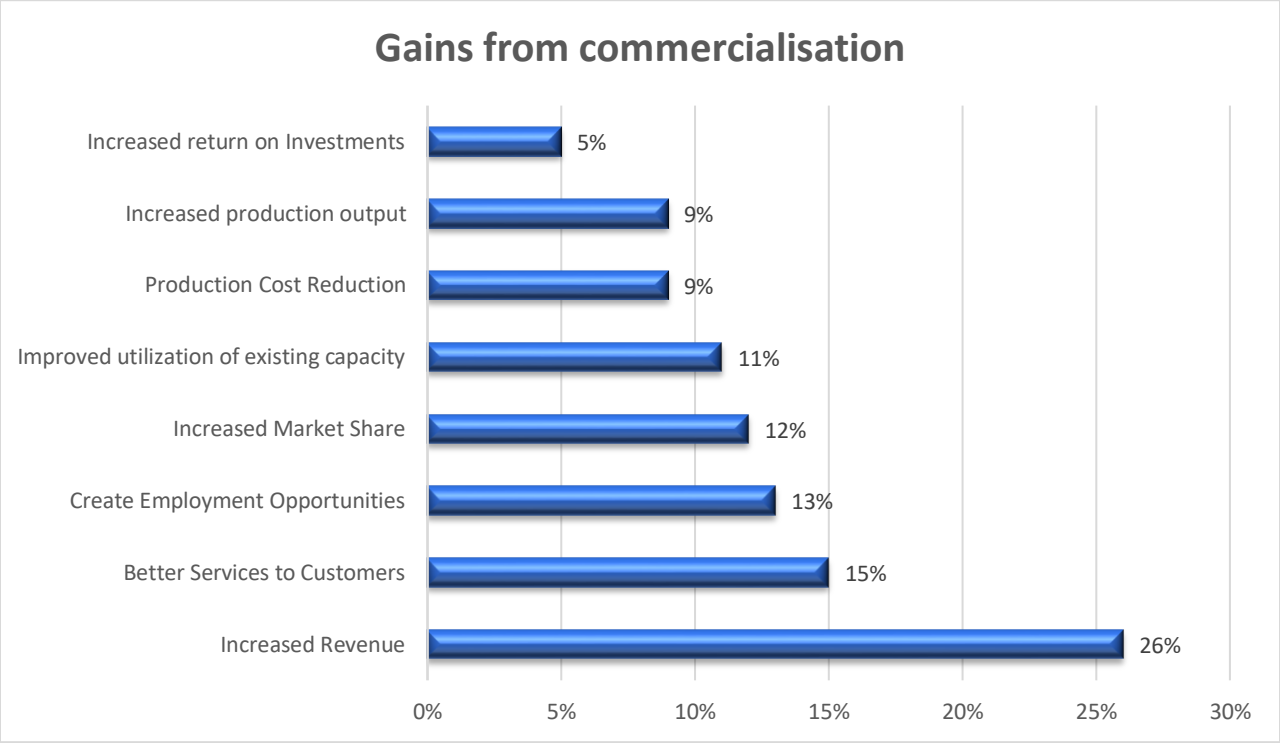

Figure 12: Gains from Commercialisation

4.2.5 Institutional challenges impeding commercialisation

It is argued within literature that when institutional issues are at play, they can influence the probability of a patent being licensed or not[25]. Failure to attract investment for commercialisation, associated commercialisation cost and innovator conflicts among others were perceived as key institutional challenges by respondents, with scores ranging 15-18 percent as detailed on **Error! Reference source not found.**.

Respondents also admitted that their enterprises suffered from lack of adequate support systems for commercialisation, delay in undertaking the commercialisation processes which occasioned lapse in interest, inadequate financial resources and managerial competencies matching the requirements of commercialisation. As

[25] Wu, Y., Welch, E. W., & Huang, W. L. (2015). Commercialisation of university inventions: Individual and institutional factors affecting licensing of university patents. Technovation, 36, 12-25.

observed earlier most creators have organized their businesses informally and therefore lacked institutional competencies to manage the rigor of patent commercialisation however there are opportunities in pursuing partnerships that can lead to complimentary synergies that match the innovation effort.

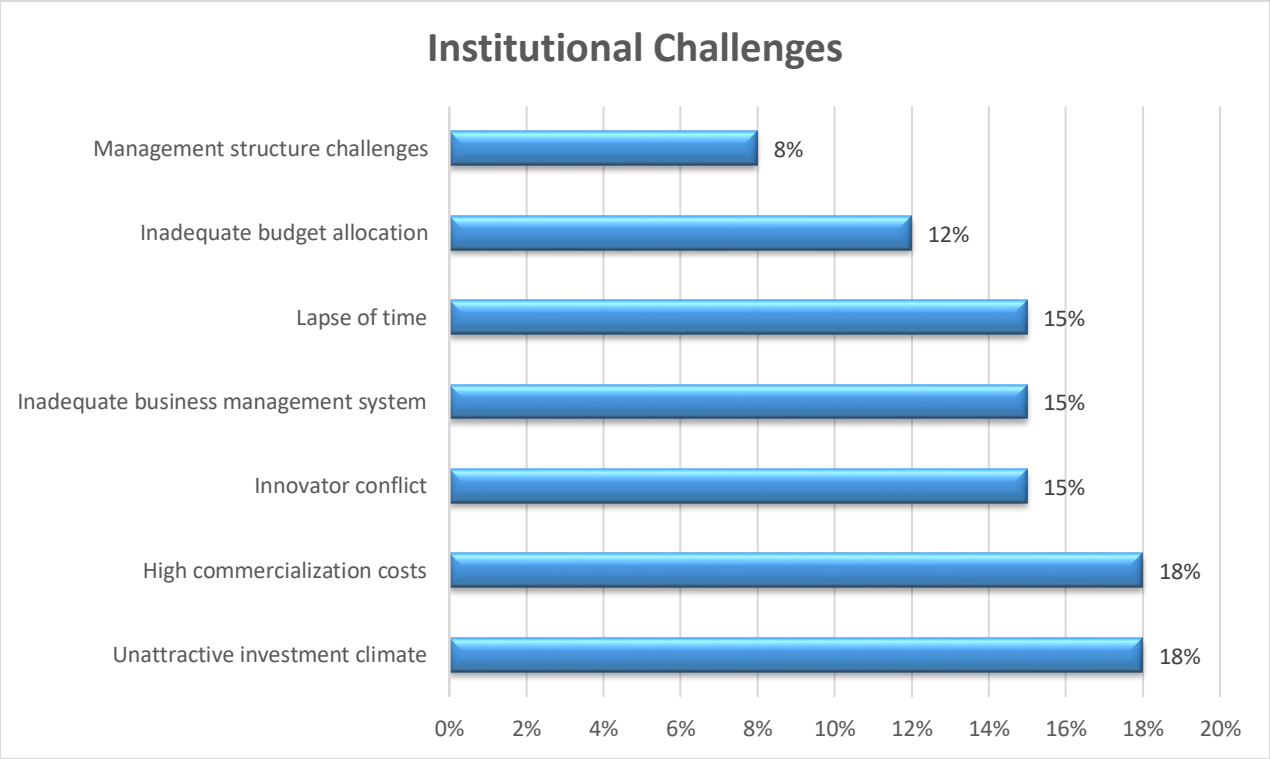

Figure 13: Institutional Challenges

4.3Environmental enablers to commercialisation

4.3.1 Financial access for commercialisation

Innovation and eventual patenting of a product involves a range of activities. The roll out of mass production require financial resources. The survey sought to establish the sources of these finances. As shown on **Error! Reference source not found.**4, it is the innovators' own financing that provide the greatest source of financing at 44 percent. This is followed by Kenya National Innovation Agency (KeNIA) who provided financing to 8 percent of respondents. loans from financial institutions were sourced by 7 percent of enterprise. Partnerships were responsible for the least proportion of sources at one percent. This is a pointer that innovators require more support to commercialise their products.

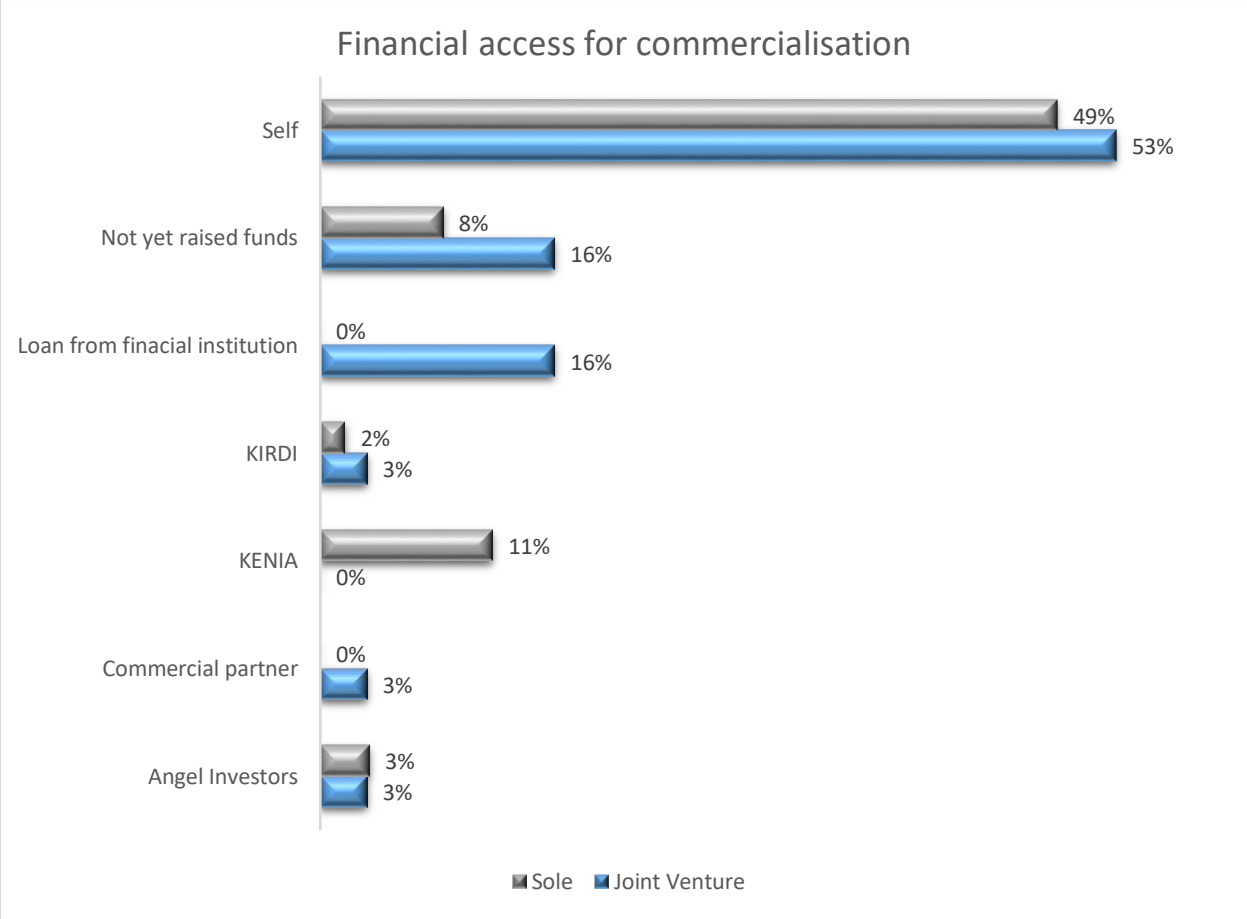

Figure 14: Financial access for commercialisation

4.3.2 Nature of Funds Raised for Commercialisation

Monies raised enable activation of a set of activities. The monies can be used as seed money, support product development or marketing activities. Whereas 32 percent of the respondents did not disclose the nature of funds raised, 35 percent of the respondents indicated that they used it as seed money applied to prototype development and other start up activities; 18 percent used it in product development and 10 percent in fostering marketing activities as shown on Figure 15.

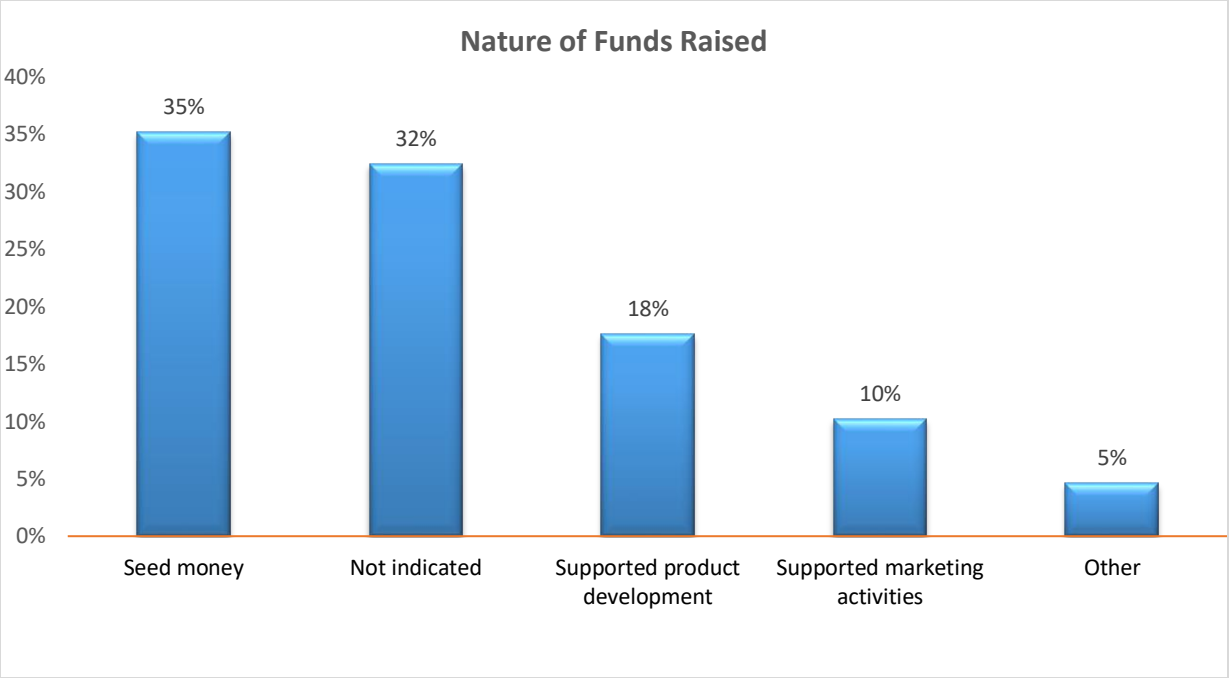

Figure 15: Nature of Funds Raised

4.3.3 Access to support services for commercialisation

Market research, experts' advisory opinion, product promotion and design alongside provision of training and extension services to innovators are critical service for commercialisation. Nearly one in every four respondents indicated that they have gained from training and extension; 15 percent have gained from networking while 14 and 12 percent have gained form design and product promotion in that order. Figure 16 reveals that those that have gained from market research and advisory services are 10 and 8 percent, in that order. While the trend is encouraging, the number accessing these support services is too low to bring about significant impact in commercialisation.

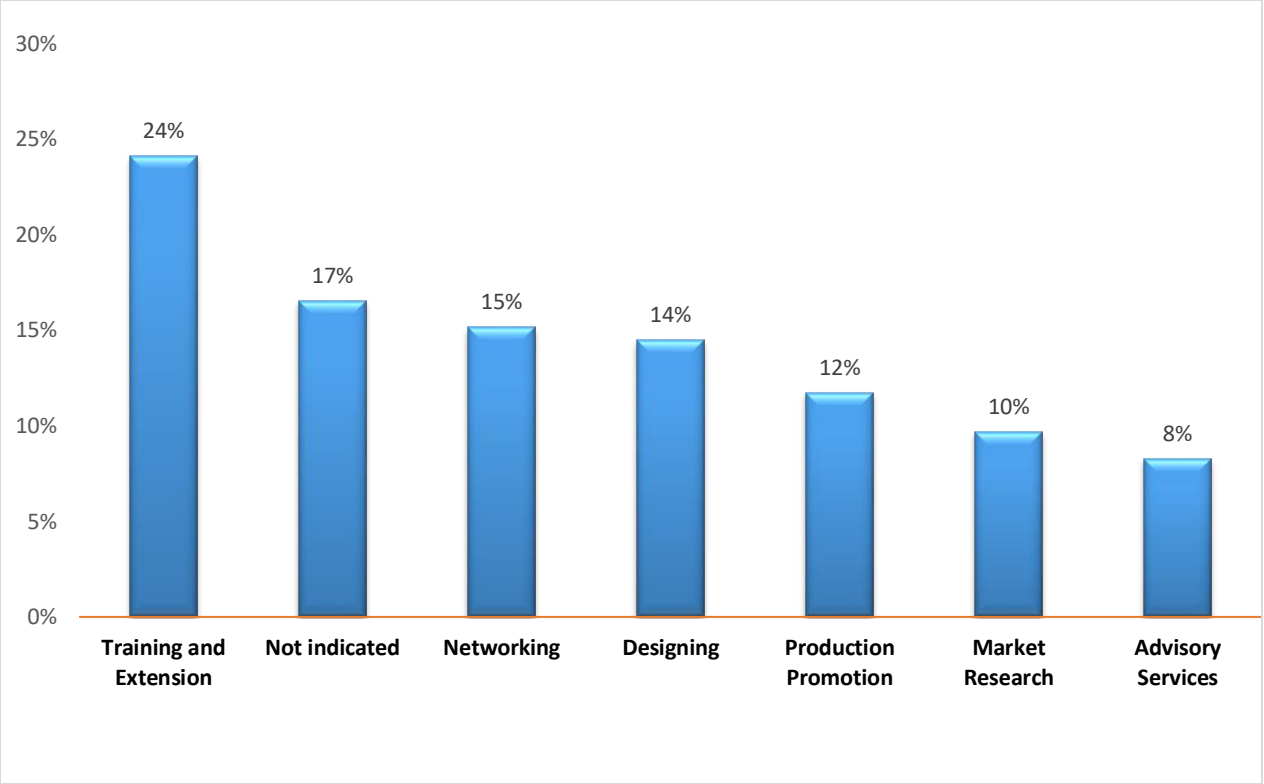

Figure 16: Selected Services and Commercialisation

4.3.4 Environmental Challenges

Commercialisation as an avenue for wealth creation can be undermined by an array of environmental issues. Prime among these is the general local and international economic climate, which if not well thought out, can scuttle product pitching in a given product or geographic market, an impediment that 51 percent of the respondents perceived as important. Unfavorable domestic and international market, if not attractive for innovations and inventions, scaling up products is undermined by market disruptions, an aspect that 13 percent of the respondents indicated as a likely outcome. As detailed on Figure 17, inadequate traction of a given product in a defined market and inadequate stakeholder involvement are other additional challenges that respondents perceive as challenges in the success of product pitching and ensuring that it remains afloat in the market.

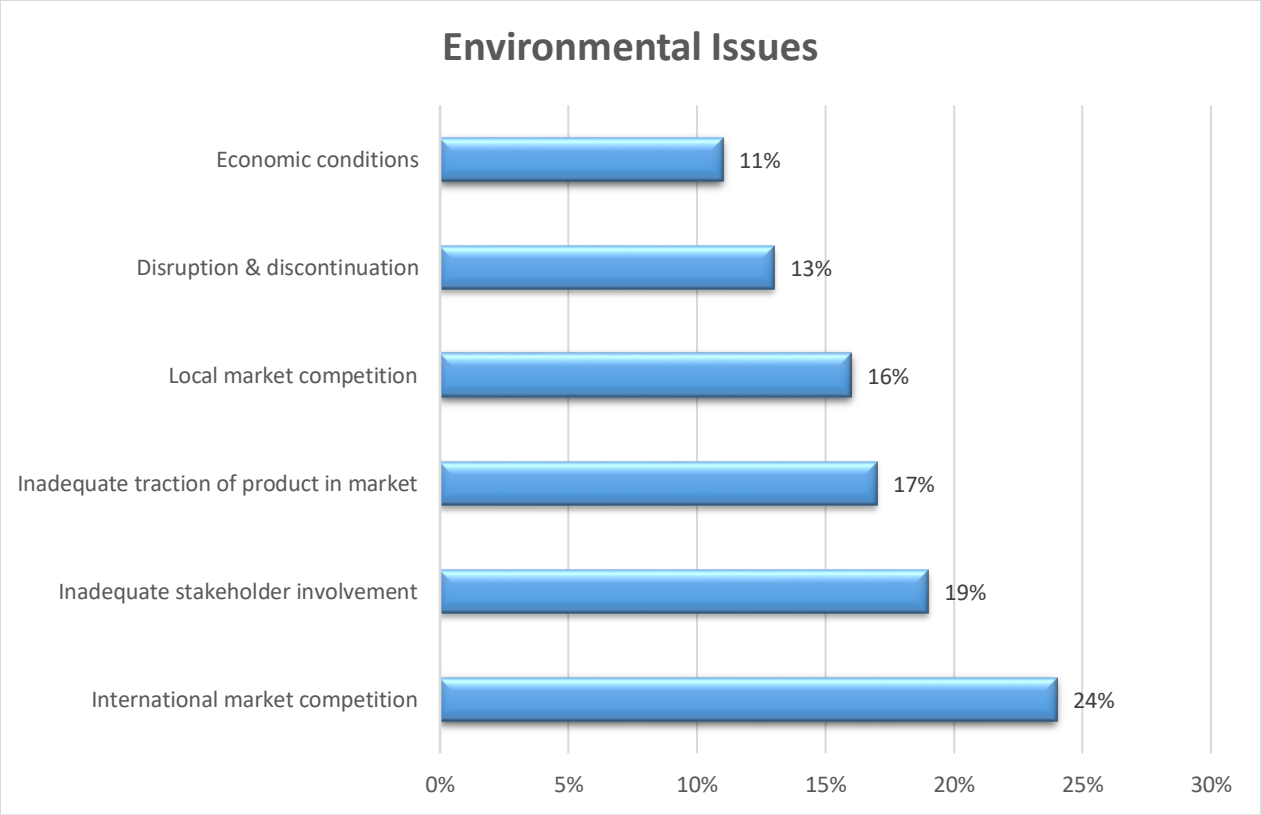

Figure 17: Environmental Challenges

4.4Policy issues that impede commercialisation

4.4.1 Policy issues and commercialisation

Product innovations vary, often, greatly. Pegged on the sector of their applicability, policy impositions also vary from one product to another. Legal regimes that do not foster accessibility of credit for commercialisation were perceived by 22 percent of the respondents as a leading policy issues that does not incentivize commercialisation. Unfavorable legal and regulatory regimes that lack clarity in support of product commercialisation were perceived by 20 percent of the respondents as an equally pressing challenge. Next are policies that lack robustness when it comes to product protection. This, as the respondents explained, is highly attributable to associated costs that come with patenting and the procedure that is involved. As detailed in Figure 18, inadequate technology transfer techniques, trade protocols and barriers were also perceived as critical challenges by 8, 12 and 9 percent of the respondents.

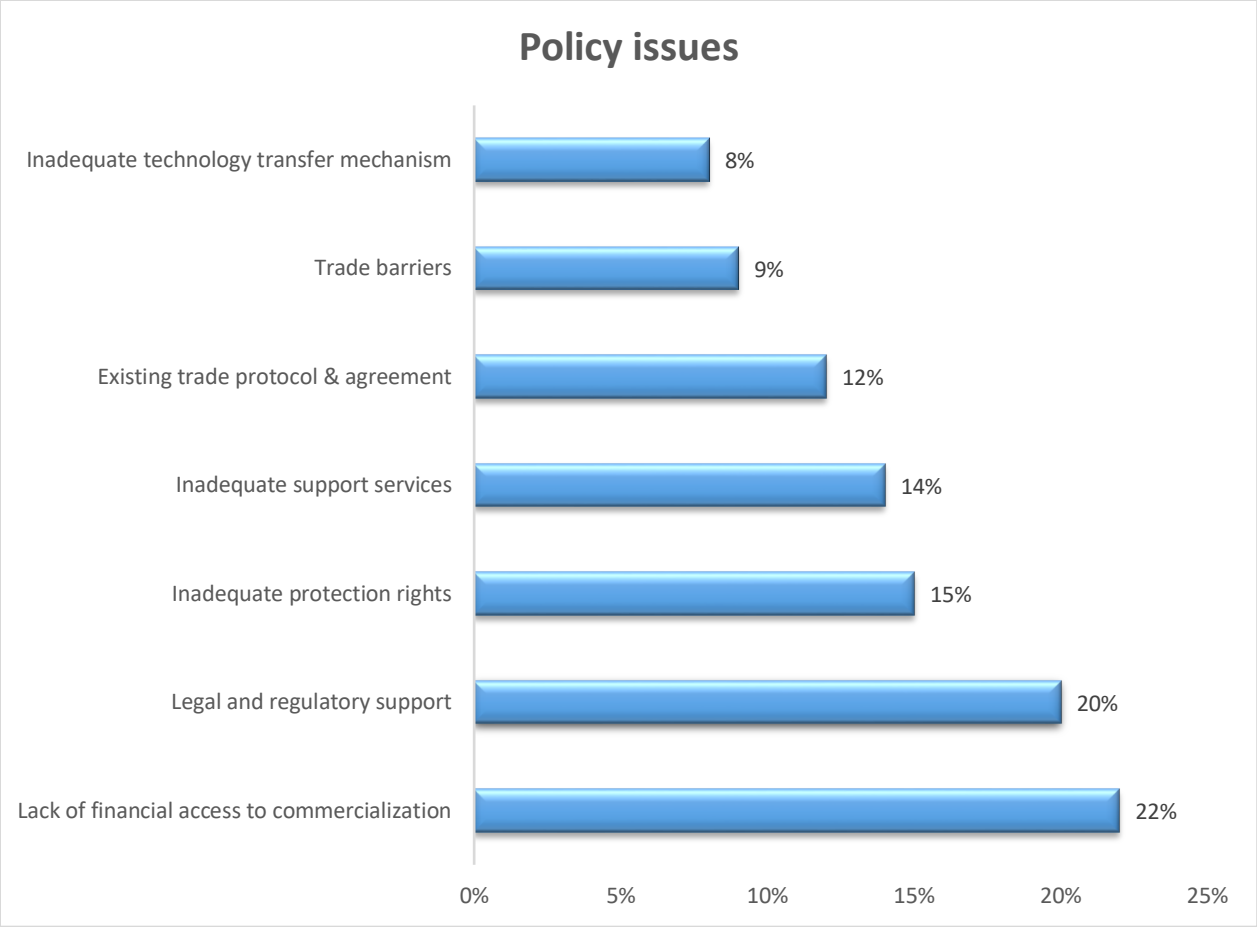

Figure 18: Policy Challenges

Respondents were also required to articulate verbatim some of the challenges they have encountered in the process of innovation, IP registration and commercialisation. Some of the views are summarized as follows:

The challenge of communication and disclosure

Although the innovators can develop a unique product, many find it difficult articulating the idea(s). They felt that it is in the process of pitching their ideas that they lose them to unscrupulous individuals. They are therefore at loss on how to balance communication and disclosure aspects of patent information.

Unavailability of local investors

Certain innovations and inventions are resource intensive in scaling up. Given that majority of the innovators are youth in colleges or who have just completed college,

local investors can be an asset in injecting the much needed capital to buy material inputs and in identifying local consumers across the geographic and product markets.

Consumers' attitude towards locally produced goods

Respondents felt that customers were less loyal to locally manufactured goods, services or processes. Others felt that local market may consider these products inferior to those manufactured elsewhere. This which means that local inventions will require to match their competition from international markets if they are to enjoy favourable outlook.

Market access and product safety

Market penetration can be an obstacle for young innovators. As such, a noble idea that would have unlocked opportunities for wealth creation may end up being undiscovered. Importantly are the legal requirements as pertains product safety so that there are no detrimental outcomes to the ultimate consumers. The ability for a given entity to supply enough so that there are no shortages in the market is also important. However, as aforementioned, this aspect requires capital injections.

Patent acquisition process

It was argued that the patenting process is generally complex and costly. Simplifying the process and revising down the charges will be a desirable move in protecting innovations fast enough as they come.

4.4.2 Suggested interventions by respondents

Table 5: Suggested interventions below shows the suggested interventions given by innovators and inventors on ways in which policy makers including the Government can support the commercialisation process.

Table 5: Suggested interventions

Suggested interventions
1. Harmonise policy in the commercialisation process; 2. There is need for financial support from the Government to assist innovators in realization of their commercialisation goals;

3. There is need for capacity building on various aspects of IP protection;
4. Subsidized tax rates for innovators;
5. The Institute should be more decentralized and have support offices within the Government innovation centers now found all over the country;
6. Public sensitization and awareness of IP rights;
7. There is need for a central inventory of patents in public domain;
8. Intellectual property should be included into school curriculum for ease of knowledge flow;
9. Deepen cooperation among Government agencies with complementary mandates to boost commercialisation prospects;
10. Improve access to financing;
11. Government needs to provide easier access to international markets;
12. Reduction of entry barriers to the market.

Sensitization

The respondents felt that all Kenyans as consumers of innovations or creators require to understand legal provisions of the IP Act 2001, as established. On one hand, the knowledge gained will enable consumers to not only know where to direct their grievances and understand the procedure of reporting infringement.

Incentives

It was noted that creating a unique product is not an easy undertaking. Incentives, financial and/or otherwise are needed to create a conducive environment for innovators, an aspect that should encapsulate the financially and time constraining patent application procedure. Accessibility to financial services at affordable cost is an equally important incentive. Among others, there is need to set up innovation and incubation hubs across the counties to unlock youth's innovation potential, which can not only bring about new products but create new avenues for wealth creation. The youth in Technical and Vocational Education and Training (TVET) and at the grassroots should be motivated to innovate.

Buy Kenya

Often than not, local consumers are less confident with the local innovations. To reverse this narrative, supporting local products by provision of monetary and non-monetary incentives alongside technological support can amplify the ability of startups to meet consumers' needs, identify new local markets and scale up production.

Creation of a flexible legal regime

Some innovators although well educated, may not have a comprehensive understanding of the legislation and regulation framework surrounding the IP rights. Whereas patent protection ensures that gains accrued from their industrial properties benefit innovators, it also ensures that they are right in the purview of law to manufacture and market a given product innovation.

Simplified registration process

As it is, the patenting application procedure was argued to be difficult for innovators, especially young innovators who lack required knowledge and finance. Leveraging on technology to ensure that the application process is easy and affordable for all is important.

Chapter Five: Findings and Recommendations

5.0 Introduction

This Chapter summarizes the findings from the survey. It also makes recommendations of the actions that require to be undertaken by the Institute to unlock the commercialisation potential of innovators and creators in Kenya. The Chapter provides an implementation matrix to be used as a guide in implementation of the proposed strategies and activities.

5.1 Summary of the findings

The survey findings are summarized as follows:

5.1.1 Status of commercialisation

i. 58 percent of those surveyed were substantive IP rights holders, the rest were applicants.

ii. The higher the turnover an enterprise had, the better the standing it demonstrated as regards to IP rights. This indicates the ability to absorb costs associated with IP acquisition and incomes accruing from commercialisation.

iii. A large number of innovators are currently operating without valid licenses. Consequently, they run their enterprise informally meaning that they can only a small range of business support services which hinders commercialisation of IPs.

iv. Most innovation activities in Kenya occur in micro and small enterprises which account for about 60 percent of innovations, yet they lack organisation competencies to support commercialisation.

v. IP registered targeted mainly in three sectors of the economy- manufacturing, agribusiness and education. The low commercialisation uptake observed in the ICT sector may not be a representation of the current innovation activity in the sector in the country since some soft ICT components are conventionally patentable.

vi. Creation activities and IP acquisition were mainly carried out by businesses that were informal in nature either operating with a business name or unregistered. For instance, 65 percent of patent holders belonged to this category. Similar observations were made as regards 38 percent of patent holders who did not have current trade licenses from respective authorities.

vii. Sole IP ownership has been undertaken by two in every three IP rights holders. Also 34 of prospective IP owners seek direct registration of patents by the Institute as opposed to using appointed agents.

viii. Participation in IP acquisition by gender is almost uniform. Female-led enterprises performed better as regards to patent ownership being reflected at 45 percent against 37 percent for males.

5.1.2 Institutional factors enabling commercialisation

i. Enterprises surveyed undertook various activities towards commercialisation but the level of activity is rather low to warrant expected outcomes. Prototype development was carried out by 18 percent of the enterprises, licensing was done by 16 percent so is marketing. Partnerships through licensing and franchising were low key while assignment was non- existent.

ii. Customer value proposition either expressed as product concept (customer benefit); product offering (features) and customer targeting (who they are) was well articulated by most of the creators. Conversely, about 15 percent of them were not clear in their mind about these issues meaning they could have started with the idea before identifying the need. It could also infer a situation of multiple use for their creations.

iii. Enterprises were observed to have mobilized internal resources towards commercialisation in the form of identification of distribution channels, developing a business plan and engaging personnel. However, little effort had gone into allocation of finances, obtaining training or engaging partners, the latter being a plausible route for such endeavors.

iv. Commercialisation benefits accruing to enterprises were observed as increased revenue, brought about by increased service to the customers and a larger

market share. Operational benefits included higher capacity utilization, reduction in production cost and increased level of production. However, only 5 percent of the respondents attributed increase in return on investment to commercialisation.

v. Institutional challenges which face innovative enterprises are mainly occasioned by informal nature of the business others include high costs of commercialisation and limited financial resources.

5.1.3 Environmental enablers to commercialisation

i. Innovators' own financing provide the greatest source of financing at 44 percent followed by Kenya National Innovation Agency (KeNIA) and loans from financial at 8 and 7 percent, respectively. Partnerships were responsible for the least proportion of sources at one percent.

ii. Of the funds raised, 35 percent was seed money applied to prototype development and other start up activities; 18 percent used it in product development and 10 percent in marketing activities.

iii. The number of enterprises accessing business support services for commercialisation is quite low. One in every four enterprises have gained from training and extension with even lower rates for support in networking, design and product promotion.

iv. Unfavourable market conditions either locally or internationally were an impediment to 51 percent of enterprises. Other challenges observed were inadequate stakeholder disruption and discontinuations and unfavorable economic conditions.

5.1.4 Policy issues that impede commercialisation

i. Key policy issues identified were lack of financial access and incentives to innovate legal and regulatory support,, inadequate support services including sensitization on IP rights protection and inadequate technology transfer mechanisms.

ii. Other policy issues include challenge of communication and disclosure, unavailability of local investors, market entry barriers, and consumer attitude towards locally produced goods.

5.2 Recommendations

The survey makes the following recommendations:

i. Innovation activities are predominant in micro enterprises in Kenya. The Institute should:

   a. Provide information sensitizing possible sources of business support services in workshops and other foras.

   b. Create an information resource centre which will help them identify possible sources of business support that they require in the course of commercializing the IP.

ii. Review the IP law to accommodate innovations in emerging technologies.

iii. Create a one-stop-shop for all registration processes and advisory in all counties.

iv. Enhance cooperation and collaboration of government institutions with complimentary mandate.

v. IP holders should be capacity build on various commercialisation options by:

   a. Develop commercialisation guidelines.

   b. Conduct sensitization workshops on the guidelines in all counties.

   c. Prepare and publish tool kits, forms and templates available for use to the members of the public.

vi. Develop an ICT-based system of identifying and validating patent registration status.

vii. Create linkages between IP holders and private sector players to promote a conducive business environment for commercialisation.

5.3 Implementation Matrix

Recommendations should be implemented as guided in the matrix provided.

Table 6: Implementation Matrix

S.No	Recommended strategies	Activities
1.	Provide information sensitizing possible sources of business support services.	Publish sensitization materials
		Conduct sensitization in counties
2.	Create an information resource centre	Develop the commercialization information system
		Establish information repository
3.	Review the IP law to accommodate innovations in emerging technologies.	Develop emerging technologies position paper
		Stakeholder engagement workshops
4.	Create a one-stop-shop for all registration processes and advisory in all counties.	Establish county offices
5.	Enhance cooperation and collaboration of government institutions with complimentary mandate.	Symposia
		Draft position paper
6.	IP holders should be capacity build on various commercialisation options	Develop commercialization guidelines
		conduct stakeholder validation sessions
		Conduct capacity building fora
		Prepare and publish tool kits, forms and templates
7.	Develop an ICT-based system of identifying and validating patent registration status.	Develop online IP identifier system
		Create online IP register
8.	Create linkages between IP holders and private sector players	Identify private sector players to work with
		Establish contact and modalities of engagement
		Create modalities of engagement

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Appendix A1: Questionnaire

Survey on commercialization of industrial property rights and guidelines for commercialization

July, 2020

INTRODUCTION

My name is ---------- from the Kenya School of Government. We are carrying out a survey for the extent of commercialization of IP rights obtained from KIPI. Your responses will be treated with utmost confidentiality and only used for purposes of report for improving service delivery in future. Kindly note that you are not coerced to undertake the survey.

Enterprise Characteristics

a. Name of respondent: _____ Telephone:

b. Physical Address: _____ GPS Coordinates:

c. Gender of the respondent Male ☐ Female ☐

d. County of operation _____ Designation _____

e. Number of Employees in the Organization _____

f. Name of prototype _____

g. Field where your prototype/innovation is applied _____

h. How did you register your patent? *Tick appropriately*

Through an Agent	
Individual registration	

i. In which stage of innovation development is your business? *Tick appropriately*

Application	
Grant	
Patent	
Renewal	

j. When coming up with the invention, was it: ☐e Joint ver☐e

k. How is your business registered?

No	Type	√
1	Business Name	
2	Limited Company	
3	Limited Partnership	
4	Not Registered	

l. What is new/unique in the invention that is not in the market yet?

_____

m. Has your business acquired a trading license for Y2020? Yes ☐ No ☐

n. What is your annual turnover in KES

<500,000		>500,000 to 5M		>5M to 10M		>10M to 50M	

o. How many employees do you have?_____

p. Which sector does your business fall?

No	Sector	√
1	Manufacturing	
2	Education	
3	Real Estate	
4	Construction	
5	Public Administration/ defense	
6	Electricity Supply	
7	Accommodation and food service	
8	Tourism	
9	Water Supply & Sewerage	
10	Financial Intermediation Services	
11	Agribusiness	
12	Transport	
13	Pharmaceutical	
14	Activities of Household as Employers	

PART B: STAGES OF COMMERCIALIZATION

a. Which of these commercialization activities have you undertaken? *Multiple responses* allowed

No	Activity	√
1	Licensing	
2	Franchising	
3	Market Research	
4	Launching	
5	Advertising	
6	Feasibility Study	
7	Prototype Development	
8	Demos and Exhibitions	
9	Free Samples to Customers	
10	Other	

b. With regard to commercialization of PI how would you rate the extent to which your business is prepared for the customer value preposition-(creating a need for the product)?

No	Customer value preposition	Agree	Somewhat agree	don't know	Somewhat disagree	Disagree
i.	We have a statement defining how the customer will benefit (product concept)					
ii.	defined features of the product to be delivered (Product offering)					
iii.	We know who our customers are (Customer targeting)					

c. Has your business provided any of the following resources for towards commercialization of PI acquired?

No	Resources	Agree	Somewhat agree	don't know	Somewhat disagree	Disagree
i.	Distribution channel has been identified					
ii.	Engaged personnel for commercialization					
iii.	Created partnerships with other firms					
iv.	Allocated enough financial resources					

v.	developed business plan for commercialization					
vi.	Have acquired support or augmenting technology					
vii.	Acquired training for commercialization					

d. How has your business benefited from commercialization of the IP?

No	Benefit	√
i.	Increased Revenue	
ii.	Increased Market Share	
iii.	Production Cost Reduction	
iv.	Better Services to Customers	
v.	Increased return on Investments	
vi.	Create employment opportunities	
vii.	Increased production output	
viii.	Improved Utilization of existing Capacity	

PART C: SUPPORT SERVICES FOR COMMERCIALIZATION

a. How did you raise funds for commercialization?

No	How you raised funds	√
i.	Self	
ii.	Kenya National Innovation Agency	
iii.	Kenya Industrial Research and Development	
iv.	Loan from a financial institution	
v.	Angel Investors	
vi.	Commercial Partner	
vii.	I have not raised funds to support commercialization	
viii.	Other	

b. How would you describe nature of funds raised for commercialization?

No	Nature of funds raised	√
i.	Seed Money	
ii.	Supported product development	
iii.	Supported marketing activities	
iv.	Other	

If others, please specify_____
_____
_____

c. Has your business benefited from any of the following services towards commercialization?

No	Services	√
i.	Training and Extension	
ii.	Designing	
iii.	Production Promotion	
iv.	Market Research	
v.	Advisory Services	
vi.	Networking	

d. What challenges have you faced during commercialization and marketing of products? *Multiple response* allowed

No	Institutional Challenges	√	No	Policy Issues	√
i.	Innovator Conflict		i.	Inadequate protection rights (fakes/ counterfeit)	
ii.	Inadequate business management system		ii.	Lack of financial access to commercialization	
iii.	Failure to attract investment for commercialization		iii.	Legal and regulatory support	
iv.	Management Structure doesn't support commercialization		iv.	Inadequate support services	
v.	Lack of required staff competencies		v.	Existing trade protocols & agreement	
vi.	Inadequate budget allocation		vi.	Trade barriers	
vii.	High Commercialization costs		vii.	Inadequate technology transfer mechanisms	
viii.	Lapse of time (innovation becomes irrelevant)				
No	**Environmental Challenges**				
i.	Local market competition			Inadequate stakeholder involvement	
ii.	International market competition			Disruption & discontinuation	
iii.	Inadequate traction of product in market			Economic conditions	

If other, please specify _____

e. What other factors do you think should be considered during commercialization?

_____

_____

f. Suggest ways in which policy makers, Including the government, can support you in product commercialization

_____

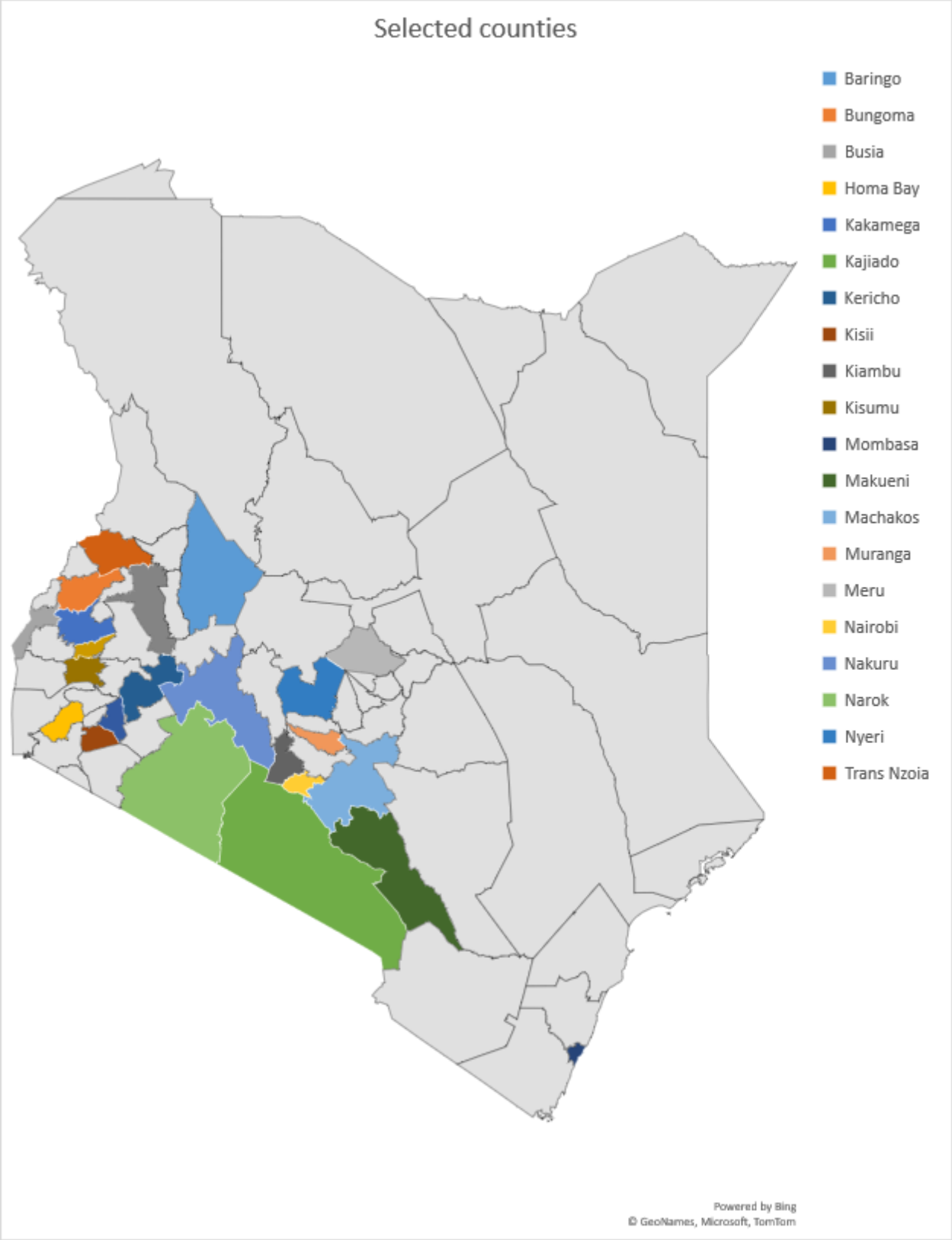
_____

_____

_____

Thank you for your Participation

Appendix A2: Survey Area



Appendix A3: Schedule

	Activity
1	Consultant's response to KIPI and request for an inception meeting
2	Inception meeting with KIPI and request for relevant documents by the consultants
3	Review of relevant documents and preparation of inception report
4	Review and approval of the inception report by KIPI.
5	First consultative meeting with KIPI outreach committee and senior management staff.
6	Preparation of research questionnaire.
7	Review and approval of questionnaire by KIPI.
8	Administration of questionnaire to respondents across the selected counties.
9	Data entry, cleaning, coding and analysis.
10	Compilation of first draft.
11	Presentation of first draft for validation by KIPI.
12	Incorporation of corrections and presentation of second draft.
13	Presentation of second draft for validation by KIPI.
14	Preparation of final report.

Appendix A4: List of contributors