AFRICA UNIVERSITY

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UTILIZATION OF UTILITY MODEL REGIME IN UGANDA

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER IN INTELLECTUAL PROPERTY IN THE COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE.

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Abstract

This research's aim was to study the utilization of the utility models regime in Uganda. It focused on and identified the factors influencing the current level of utilization of utility models. The research employed an explanatory sequential mixed methods research approach with the quantitative data collection expounded by in-depth interviews with identified key informants in the follow-up after. The researcher noted that the need to prevent copying of innovation and securing funding for commercialization were among the major reasons for seeking utility models among the innovators. Although there is growing number of innovators seeking utility model protection, a significant number still do not appreciate the value utility models they possess. Conversely, the low levels of awareness, lack of technical expertise, high gazette publication fees and the treatment of the after tenth claim as if contained in another application increased the costs associated with acquisition of Utility model rights. Utility models greatly enrich the public knowledge base and can offer competitive advantage to innovators and firms. Although a few firms and innovators noted having secured licensees for their utility models, a significant number still does not appreciated their financial potential. To improve usage of this regime, the researcher recommends reforms that will adopt the use online journal publication, a claims range charge approach to avert the publication and the after tenth claims treatment cost effects. Implementation of policies that promote and create awareness, improve public-private partnerships towards R&D and cohesion in the innovation landscape that will stimulate the innovativeness of the country. Uganda has however recognized the importance of IP as a development tool in both its NDP IV and National IP Policy.
Keywords: IP (Intellectual property), Utility Models, Labour theory, Innovation.

Declaration Page

I declare that this dissertation is my original work except where sources have been cited and acknowledged. The work has never been submitted, nor will it ever be submitted to another university for the award of a degree

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List of Acronyms and Abbreviations

URSB	Uganda Registration Services Bureau
ICTSD	International Centre for Trade and Sustainable Development
IPR	Intellectual Property Rights
IPOs	Intellectual Property Offices
WIPO	World Intellectual Property Organization
WTO	World Trade Organization
ARIPO	Africa Regional Intellectual Property Organization
OAPI	African Intellectual Property Organization
OECD	Organisation for Economic Co-Operation and Development
UNCTAD	United Nations Conference on Trade & Development
PCT	Patent Cooperation Treaty
TRIPS	Trade-related Aspects of Intellectual Property Rights
USD	United States Dollars
SME	Small Medium Enterprise
R&D	Research and Development
URI	Uganda Industrial Research Institute
IDI	Infectious Diseases Institute

UNCST	Uganda National Council for Science and Technology
PRO	Public Research Organizations
MFN	Most Favored National
NDP	National Development Plan
AfCFTA	Africa Continental Free Trade Agreement

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CHAPTER 1 INTRODUCTION

1.1 Introduction

All around the world, patent frameworks have been utilized to protect innovation and inventions to drive developments. A less type of patent insurance in particular Utility models portrayed by less severe innovative advance prerequisite with protection normally conceded for a very long time are a portion of the major contrasts. It is important to note that this lesser system of protection is referred by names according to different national regimes as that include utility models, utility certificates, petty–or *petite*- patents, short-term patents, and innovation patents. This chapter lastly high lights the significance, limitations and delimitations of the study.

1.2 Background of the Study

Utility models regimes or laws have been adopted in different countries across the world as a tool for economic development and the impact of such laws has been influenced by different factors that include the level of development, investment in R&D of a country and technology absorption capacity. Utility models are commonly used to ensure creations that don't meet the "innovative advance" test under patent law, however they contribute to the innovative capacity of the society. An expanding number of developing nations have put in place industrial property laws as significant apparatus of technological and economic development (Noerhadi, 2013). According to Boztosun(2010), it is of great importance to providing legal protection amounting to a property right for all innovations to secure a sustainable innovation landscape.

Uganda has a feeble homegrown technological and innovative base, relying on the acquisition of foreign-owned technology and expertise to support industrial development (ICTSD, 2007)

It is affirmed that a compelling innovation movement can't happen without the capacity of homegrown firms and businesses to make use of the expertise accessible to them. This point is of specific significance in the LDC setting. In addition, if foreign investors are to be attracted to participate in joint endeavors creating innovation overflows, they must be convinced of real advantages gathering their partnerships (UNCTAD-ICTSD Project on Intellectual Property Rights, 2010)

According to the National Planning Authority (2020), Uganda's development strategies and policies have and continue to emphasize innovation through science and technology capacity development for various core sectors, including manufacturing and agro-processing, which continue to grow. Increased number of IP registrations, Gross Expenditure on R&D, business enterprise sector spending on R&D, Increase in the Global Innovation Index, are some of the key expected results. The increase in the application of appropriate technology in the production and service delivery processes can be realized through the development of a well-coordinated STI eco-system by using Innovation, Technology Development and Transfer Program.

The use of Intellectual property as a policy tool for development is not something new. Countries have for so long protected their innovations to encourage certain industries to develop. Although there are multitudes of variables that influence how intellectual property rights (IPRs) affect the process of economic growth, its effectiveness is considerably dependent on the specific situation of an individual nation. This can also explain the transition period extension given to LDCs from applying substantive TRIPS

standards until 2021 (article 66.1). LDCs were not required to implement TRIPS standards other than Article 3 (national treatment), Article 4 (MFN treatment) and Article 5 (precedence of WIPO procedures) for a period initially of 10 years from 1 January 1996, then subsequently extended. The latest extension, adopted in 2013, is until 2021 (WTO, 2013). A number of LDCs has since undertaken legal reforms to comply with the requirements of accepting to improve the standards of protection of IPRs as provided by the TRIPS Agreement. Least developed countries however continue to face serious economic, financial and administrative constraints and are still struggling with various challenges to uplift the socio-economic conditions with very limited capacities. It is based on this background and in light of COVID-19, that Chad on behalf of the LDC members of the WTO presented a proposal to the Council for Trade-Related Aspects of Intellectual Property Rights for the further extension of the transition period for LDCs under Article 66.1 of the TRIPS Agreement (WTO, 2020)

Utility models can be used to encourage innovation, product development and technology transfer largely because it favours technology diffusion through low-cost imitation of foreign products and technology. This in turn increases the competitiveness of firms by offering consumers varying alternatives of choice on the market, for example, local producers in Brazil used the utility models approach to adapt farm machinery to local conditions thereby gaining a significant share on the market (Maskus, 2000).

Due to the low cost, simple procedure and little time taken to prosecute utility model applications, utility models can be easily used by the local innovation industry to protect their innovations and inventions. Further utility models can be used to strengthen the position of SMEs, especially in developing countries (Odman, 2010).

Suthersanen(2006) notes that on top of being used as a source of revenue for government through registration, search and publication, utility models prevent free-riding by firms that expend no R&D investment and this encourages more research in turn.

1.3 Problem statement

In 2017, only 16 utility model applications were received by the URSB compared to 31 patent applications and 1,225 local trademark applications. It is further noted from the report that while the number of local trademark applications rose to 1,314 in 2018, the number of patent applications was 7 compared to 16 utility model applications (URSB, 2019). The amount of IP and startup companies attributed to Makerere University remains very low, however the university has since inception been acclaimed as a beacon of research in Africa (Wamai, 2020). The factors influencing the level of utilization of the utility model regime in Uganda have not been studied.

This emphasizes the need to study the utilization of this regime in the Ugandan context. HeikkilÃ (2015), notes that while the impact of changes in patent protection intensity on innovation activity has been extensively studied, a neglected research subject has been the role of second-tier patent protection in national innovation systems.

1.4 Research Objectives

The objectives of the study were:

1. To establish the reasons for the adoption of utility models in Uganda
2. To establish the role utility models play in the growth and development of Uganda
3. Assess the gaps and snags to the use of the utility model system in Uganda
4. Make proposals to improve the use of the utility model system in Uganda.

1.5 Research Questions

1. What are the reasons for and against utility model registration in Uganda?
2. What role have utility models played in the growth of Uganda?
3. What gaps does the current system have that could be affecting its level of utilization?
4. What approaches can be adapted to improve the level of utilization of this regime in Uganda?

1.6 Assumptions

1. The number of utility model registration and applications is positively influenced by the level of innovation and development of a nation.

1.7 Significance of the Study

The study will bring to light the issues relating to the utilization of the utility model framework in Uganda by providing the clarifications for its adoption. It will also give a comprehension into the utility models in Uganda and lay forward a proposition to engage practical utilization of this framework.

1.8 Delimitation of the Study

1. The study was confined only to the area around the central region of Uganda. The uniqueness of the study within a specific context makes it difficult to replicate exactly in another context (Cresswell, 2003)
2. The study didn't look at statistics before the current regime came into force (Industrial Property Act 2014)

3. Participants' reactions and impressions were restricted to their encounters with the utility model system.

1.9 Limitation of the Study

1. The researcher cannot state with absolute certainty that the sample will represent the actual population because convenience sampling will be employed for the quantitative phase of the study (Ayuen, 2015).
2. Because of the interpretative nature of qualitative research, the researcher may bring his opinion to bear on the findings of the study.
3. Due to the limited time available, the study will be focused on the geographical area of Kampala and the sample size might not be representative of the actual national picture.

CHAPTER 2 REVIEW OF RELATED LITERATURE

2.1 Introduction

Suthersanen (2006), notes that there is no global acceptance of the term “utility model” due to there being fundamentally different concepts from one country to another. Australias calls it Innovation Patents, Utility innovations is the term used in Malaysia and France calls it Utility certificates. Some systems define utility models as intangible subject matter such as technical concepts or inventions or devices, while others anchor their definitions to three-dimensional forms. However others profess to grant “utility model” protection which, in actuality, is equivalent to patent protection without examination and for a shorter duration. “utility model” is a generic term which refers to subject-matter that hinges precariously between that protectable under patent law and sui generis design law (Suthersanen,2001)

Ladas (1975) noticed that utility model protection was just accessible at the time in Brazil, Germany, Italy, Japan, the Philippines, Poland, Portugal, South Korea, Spain and Taiwan. Until the 1990's utility model Protection was viewed as being something of an anomaly in the protected innovation world. It is further noted by John Richards Ladas & Parry LLP (2010) that from that point forward, several nations have since adopted protection of this sort or some other type of "second-tier" protection for incremental innovations.

The importance of intellectual property rights regarding innovation was first recognized in the Paris convention with the aim of providing protection for technical solutions. The recognition of the role that intellectual property has in modern trade resulted in the negotiations leading to the development of the TRIPS Agreement whose aim was to emphasize the need for the protection of IPR in modern trade. PCT aims to provide for

the prosecution of patent and utility model applications internationally. This would facilitate applicants to obtain multijurisdictional protection using the right of priority in the subsequent related application that would other be destroyed due to disclosure and publication in the country of the first application.

Over the years several countries have used Utility models or some sort of second-tier protection to encourage innovation and development. Ugandan's private sector is dominated by Micro, Small and Medium Enterprises (MSMEs) contributing nearly 80% to the GDP share of the national budget in FY 2015/16 notes the Ministry of Finance, Planning and Economic Development report of 2017.

Industrialization plays a crucial role in the economic development process. It does not only promote the development of other sectors of the economy through backward and forward linkages but it is also strongly associated with an increase of foreign exchange earnings leading to an improvement in the balance of payment outcomes. However, the sector's contribution to GDP in Uganda has not changed significantly over time and has stagnated at approximately 20% since 2009 and thus remains low compared to other countries in the region.

2.2 Theoretical framework

One of the powerful bases for justifying Intellectual Property Rights lies in the belief that "a person deserves the fruits of his labour". This would mean that an IPR would belong to the person who created it because it involves his labour and all the benefits derived from it would be the fruits of his labour irrespective of the consequences. It is argued that God provides all that is in existence and that it is accessible to all men as it is kept in common for the good of all. Therefore, as it is intended for the enjoyment of the whole of

mankind, no person can have prior claim over substances that are accessible in nature. In the process of mixing ones labour with land or any other tangible asset the right to property is acquired and hence intellectual creation would not exist but for that person creating it The Locke version of this labour rationale is based on the premise that all men own their bodies completely, any product of their physical labour also belongs to them .

Locke's theory puts forward the notion that because labour is unpleasant many people would like to avoid it. Based on the assumption that every person should own what he/she earns from his or her labour, Locke justified private property ownership. Like any other property applying the same to IPRs, the creation of ideas requires labour and effort from an individual, the ideas themselves come from a common universe without being exhausted and that ideas can become property without being wasteful and people that sacrifice need to be compensated with the property rights.

Locke asserts that property rights should only be tolerated if they do not deny resources existing in nature to others. If there are enough resources available in nature, then when an individual exercises labour over it, property rights may be asserted over resources. He expresses concern, however, that if a specific substance was not available in abundance, property rights over it would restrict access to that scarce resource to others. In such situations, a person who has exercised his labour over the scarce resource does not assert property rights in it (Drahos, 1996).

2.2.1 The relevance of the Theoretical Frame to the Study

The granting of IPRs to those who 'work' justifies this theoretical structure. In terms of value-addition, Locke's theory can also be shown, namely that labour generates social value. This 'value-addition' is deserving of reward. In certain jurisdictions, the *'non-*

obviousness' criterion for patents and utility models is intended to stress the addition of meaning. IPRs are granted because of the advantages that are likely to accrue to society, according to this thinking (Konrad Adenauer Stiftung, 2009). For example, James Watt used his work to build and upgrade steam engines that could be used in locomotives, and Fruits of Labour was rewarded. The invention of Watt added value and spurred the economy's growth

Furthermore, the labour theory emphasizes individual right ownership and utility models must be noted as a type of IPR that is always individually or jointly owned. Therefore, it is individuals who would have worked out the concept that exclusive property rights under this regime are granted.

2.3 International protection of utility models

Suthersanen (2019) contends that the absence of a transnational pattern is reflected in the unavailability of global standards with respect to the nature and degree of a second-level patent system. For example, Article 1(2) of the Paris Convention states: 'The protection of industrial property has as its object patents, utility models, industrial designs, trademarks, service marks, trade names, indications of source or appellations of origin, and the repression of unfair competition.'

2.3.1 The Paris Convention

The main International accord to emphasize the significance of protection of intellectual property and especially industrial property is the Paris Convention of 1883. This convention has gone through a few revisions with the latest being the revision of 1979. This Convention accommodates the protection of utility models as a part of industrial property rights. As of November 2020, WIPO indicates that 177 Countries are contracting

parties to the Paris Convention. Uganda joined to the Paris convention on May 14, 1965 and became bound by provisions of the convention. The Paris convention is a significant worldwide treaty for the protection and advancement of industrial property by nationals of the contracting states.

Under Article 4 of the Paris Convention, the right of priority is provided to facilitate the filing of an application in another member state of the union (Paris union) within a certain period. The period is 12 months for patents and utility models and 6 months for industrial designs and trademarks from the filing date of the first application.

2.3.2 Patent Cooperation Treaty

The PCT (Patent Co-operation Treaty) is another international system that allows for the prosecution of patents internationally. It allows for a simple procedure for filing patent applications in the contracting states by filing a single internal application with a competent receiving office. The treaty was concluded in 1970 and entered into force in January 1978 and has been modified several times. Uganda joined the PCT on 9th February 1995. This international system currently has 153 countries with Samoa being the most recent having joined on 2nd October 2019.

An international application filed through the PCT goes through the following steps: 1) filing of an international application with WIPO's International bureau. 2) The International Search for Innovation (Conducted by the International Searching Authority). 3) The International Publication and the Internal Analysis (Conducted only at the request of the applicant) are performed before each designated State enters the national process. The PCT system promotes and preserves utility models on a procedural basis. Later utility model applications can enjoy priority based on earlier Patent applications. Thus, PCT

allows the filing of a utility model application via the national process, while using the priority date and the flexibility given applied to the patent.

2.3.3 The TRIPS Agreement

The TRIPS agreement signed in 1994, is another international agreement relating to intellectual property. The agreement lays down minimum requirements relating to the availability, scope and use of intellectual property with regard to copyright and related rights, trademarks, geographical indications, industrial designs, patents, integrated circuit layout designs (topographies), defence of undisclosed knowledge and enforcement of anti-competitive contractual licensing practices. It does not allow for the establishment by a Member State of a utility model scheme, but refers, by the provisions of Article 2, 3 and 4, to the provisions of the Paris Convention. Because the TRIPS agreement focuses on minimum standards, nothing prohibits countries from using the utility model regime as a tool for growth and to safeguard incremental innovations.

There are strong differences between the various countries concerning the subject of granting protection of the utility model, with most variations following a regional approach. Countries in the same area tend to have a structure and subject matter of security that are closely similar. The subject matter is restricted in most countries to computers, instruments, implements and objects used for mechanical work. Argentina, Brazil, Chile, Guan-Tamara, Spain, Uruguay, Ukraine, the Philippines and Mexico are only some examples of these countries. Other nations such as Bulgaria, Finland, Greece, Hungary, China, Japan, South Korea, and Taiwan restrict the shape, composition, design type and construction of the product to utility models. ARIPO restricts the subject matter and defines utility models as “means any form, configuration or disposition of elements of some

appliance, working tools and implements as articles of everyday use, electrical and electronic circuitry, instrument, handicraft, mechanism or other object or any part thereof in so far as they are capable of contributing some benefit or new effect or saving in time, energy and labour or allowing a better or different functioning, use, processing or manufacture of the subject matter or that gives utility advantages, environmental benefit, and includes micro-organism or other self-replicable material, products of genetic resources, herbal as well as nutritional formulations which give new effects'' (Harare Protocol on Patents and Industrial designs, 1982, P 15).

The aim of the utility model in all these countries is to resolve the gap in the law between patents and design. Some of the countries whose laws provide for both patents and utility models are Australia, ethnicity, Indonesia, Netherlands, and Malaysia (Lakshmikumaran & Bhattacharya, 2004). The African countries offering utility model protection include Botswana, Eswatini, The Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Rwanda, Sao Tome and Principe, Sierra Leone, Sudan, Tanzania, Uganda, Zambia and Zimbabwe all of whom are members of ARIPO. The OAPI regional office also offers unitary utility model protection that is effective in all its member states.

2.3.4 The Patent Law Treaty

PLT is an international treaty that was concluded in 2000 and came into force in 2005 whose aim is to harmonise and streamline formal procedures in respect of national and regional patent applications and patents and, thus, to make such procedures more user friendly. With the significant exception of filing date requirements, the PLT provides the maximum sets of requirements the office of a Contracting Party may apply. This means that a Contracting Party is free to provide for requirements that are more generous from the viewpoint of applicants and owners, but that the requirements under the PLT are

mandatory as to the maximum an office can require from applicants or owners. (WIPO, 2021)

The PLT leads to reduced risks of formality errors, and thus results in less frequent loss of rights as well as cost reductions. On the other hand, by eliminating the unnecessarily complicated procedures and streamlining the whole process, Offices may operate more efficiently and, therefore, cut their costs.

The provisions of the PLT apply to national and regional applications that are: (i) applications for patents for invention; (ii) applications for patents of addition; (iii) divisional applications for patents for invention or for patents of addition (PLT Article 3(1)(a)). The "applications for patents for invention" and the "applications for patents of addition" above are to be construed in the same sense as these terms in PCT Article (i) and are restricted to those types of applications that can be filed under the PCT. It means that the PLT does not apply to, for example, inventors' certificates, utility certificates, utility models, certificates of addition, inventors' certificates of addition and utility certificates of addition. A Contracting Party is, however, free to apply some or all of the provisions of the PLT to these other applications, even though it is not obliged to do so.

2.3.5 International Patent Classification

The international patent classification is established by the Strasbourg Agreement of 1971 to classify patent documents for their retrieval enabling the conduction of both the prior art search and Novelty search. Article 1 of the IPC covers not just "patents for invention", but also "inventors' certificates, utility models and utility certificates"

2.4 Benefits of international protection

International treaties provide protection for Utility model applications in today's modern multijurisdictional setting where firms are not just based in a single country or even a region but rather run enterprises across different nations. Today's modern economies are highly characterized with high levels of cross board trade and with the ever-increasing role of IP in trade, cross boarder protection of more important than ever. As at 2019, the global PCT application had grown to an estimated 265,800 with china for becoming the leading source of majority of the applications. The PCT system is highly dominated by developed economies including USA, Japan, Germany, Republic of Korea, and France among the top filing countries (WIPO, 2020).

SMEs in Uganda like any other least developed country does not have sufficient R&D potential to perform their innovation "in house" and more so they have constrained financial depth. This makes utility models an attractive approach for the protection of their innovations that are mostly adaptive in nature and can't meet the strict requirements for patent protection. Whereas inward FDI can generate important spillovers for developing economies, resulting in the upgrading of domestic innovative capacity, increased R&D employment, better training and support to education. Countries like Germany, China, Japan, and the Korean Republic have made good use of this second-tier model evidenced by the filling statistics. FDI helps developed countries to transform underutilised resources and surplus labour into foreign exchange, in order to pay for imports to support further economic growth.

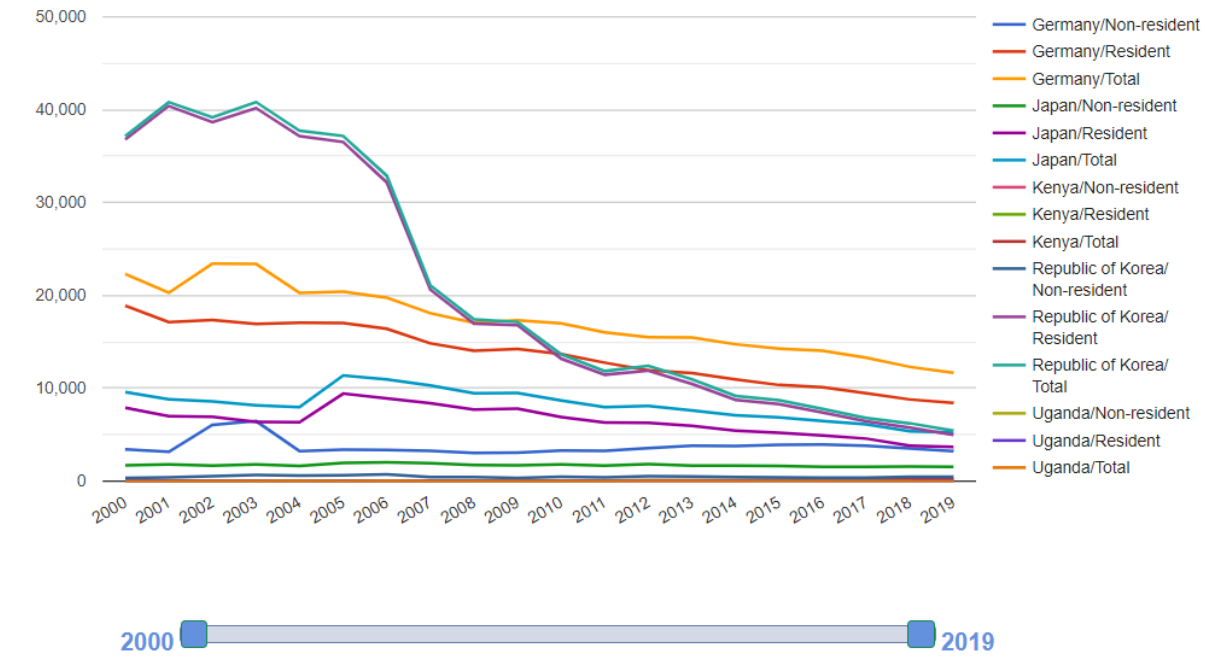

Figure 2.4.1 A graph showing utility Model Applications for selected countries

Source: WIPO statistics

International protection of IPRs help countries generate revenue through application fees, examination fees, publication fees payable to the receiving offices. This supplements other government efforts for revenue generation that later facilitates provision of other services like education, healthcare, infrastructure among other. Like the case of Uganda a significant, number of foreign applications are received compared to local application with the exception of utility models dominated by local applicants (URSB, 2019).

2.5 Regional protection of Utility models

Several Regional offices exist around the world with several offering express model utility protection and other like the EPO that don't have utility models protection offering to transmit the such application that can be converted at national level for individual countries offering utility model protection. ARIPO offers utility model protection under

its Harare Protocol on Patents and industrial designs with AOPI offering the same under its unitary system where a grant of a utility model is effective in all the member states. Under the Patent office of the cooperation council for Arab states of the gulf commonly known as the GCC , the regional doesn't provide Utility model protection. However the protection is available through the national route in countries like Bahrain, Kuwait, Oman, Qatar, United Arab Emirates (UAE) with exception of Kingdom of Saudi Arabia (KSA).

Regional offices help in the harmonization of IP laws, both substantive law and administrative procedures, within a region. Regional harmonization and procedural integration of laws is relevant in today's geopolitical and economic framework considering the importance of IP for regional trade as well as the relevance of regional organizations as alternative fora for advancing trade and intellectual property (IP)-related negotiations instead of (or in addition to) multilateral negotiations at the World Trade Organization (WTO) and the World Intellectual Property Organization (WIPO).

These offices further conduct capacity-building programs in form of training, workshops and seminars for member states. These training are have gone a great length in improving human resource capacity and skill in the administration, examination, prosecution and litigation of intellectual property matters in several countries Uganda inclusive. Particularly ARIPO has increased its technical support to address key IP priority areas including IP advocacy, capacity building, awareness creation, and enhancing the IP ecosystem for the social, cultural, economic and technological development of Africa. One of the objectives of ARIPO is to assist its members, as appropriate, in the acquisition and development of technology relating to industrial property. In a knowledge-based

society, IP has become integral to such diverse areas as trade, investment, food, health, culture, science and technology (New African Magazine, 2017).

Regional offices provide IP system users a cheaper means of acquiring utility model rights in several through simple steps, while filing single application indicating designated states where protection is though in the case of ARIPO, and payment of single set of fees. It further provides users a single window for the subsequent management of their utility models rights in the different countries such as renewal, transfer and assignment. These can be can easily be effected in simple procedural steps with the regional office that communicates the same to the member states.

Regional offices act as a repository of technological information, which, upon request, can be made available to users of IP information in member and potential member states for facilitating the adaptation, transfer and acquisition of appropriate technology, the development of local research, and the creation of indigenous technology (UNCTAD-ICTSD Project on Intellectual Property Rights, 2010)

Uganda is a member of the African Regional Intellectual Property Organization (ARIPO). The Harare Protocol empowers ARIPO on behalf of the contracting states to issue patents and register industrial designs as well as utility models. In December 1982, the Protocol was first introduced and came into effect in April 1984. The Protocol is currently in effect in all 19 member states of the Organization, except Somalia. In 1993, to add the PCT, the Protocol was amended. Under the PCT, ARIPO itself can be designated. It is also a member of the Paris Convention for the Protection of Industrial Property. With the exception of Eswatini, all ARIPO members states are party to the Patent Cooperation Treaty (PCT) The current members of ARIPO are Botswana, Eswatini, Gambia, Ghana,

Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia (not a member of the Harare Protocol), Sudan, the United Republic of Tanzania, Uganda, Zambia and Zimbabwe (ARIPO, 2019).

Section 45 of the Intellectual Property Act acknowledges the effect of the Harare Protocol on patents and industrial designs and specifies that a patent granted by ARIPO under this Protocol in respect of which Uganda is a designated state has the same effect in Uganda as a patent or utility model granted under this Act, except where the registrar notifies ARIPO of the application of the patent or utility model granted under this Act (Industrial Property Act 2014, 2018).

2.6 Utility Model protection in Uganda

2.6.1 Substantive provisions in the law and regulations

The history of utility models in Uganda dates back to pre-independence when Uganda inherited the British IP System. Britain's Patents, Designs and Trademarks Ordinance of 1912 governed utility models until 1964. The Act on Patents, Cap. 216 of 1993 repealed Cap 82 of 1964 of the older Patent Act and accepted patents issued under ARIPO's Harare Protocol (Adopted in 1982), which Uganda joined on 8 January 1978. Both the Patents Act (Cap 216) and the United Kingdom Designs Protection Act (Cap 218) were repealed by the Industrial Property Act 2014 with the fundamental objective of encouraging creative and innovative practices, facilitating the acquisition of technology through the grant and control of patents, utility models, industrial designs and technology inventions and allowing for the classification of technology (Industrial Property Act 2014, 2018). The key provisions for utility models in the existing legislation are as follows:

2.6.2 Registerable and Non- registerable matter

Industrial Property Act 2014 (2018) notes that Utility model protection is available under section 8(2) for all inventions related to a product or process. However, section 8 (3) of the Act specifies that a utility model shall not be granted for discoveries, scientific theories and mathematical methods; schemes, rules or methods for doing business, performing purely mental acts or playing games; diagnostic, therapeutic and surgical methods for the treatment of humans or animals; mere presentation of information; plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes; natural substances, whether purified, synthesized or otherwise isolated from nature; except the processes of isolating those natural substances from their original environment; and the human body and all its elements in whole or in part. Section 13 of the act further note that utility models certificates shall not be granted to:

a) Plant varieties as provided for in the law providing for the protection of plant varieties;
b) Inventions contrary to public order, morality, public health and safety, public policy, principles of humanity and environmental conservation.

2.6.3 Grace period

There are provisions under section 11(1) of utility model law read with provisions of section 30 of the patent law, provide a grace period of six months to apply utility model even after publication of the invention after its publication under certain circumstances (Industrial Property Act 2014, 2018)

2.6.4 Technical Examination

The examination of utility model applications in Uganda is carried out solely to verify compliance with specific requirements. It should be noted that unlike as in the case of patents, the utility model law in Uganda does not provide for a thorough review of an innovative step or substantive examination. Section 69 of the Act states that it must be new and industrially applicable for an invention to qualify for a utility model certificate, hence utility models take a short time to prosecute further accelerating their grant speed (Industrial Property Act 2014, 2018).

2.6.5 Term of protection

The Industrial Property Act 2014 (2018) under section 69(3) specifies that the term of protection for a utility model certificate shall be 10 years from the date of grant of the utility model and shall not be renewable. Before the 2014 reform, however, the length of utility model rights was just seven years.

2.6.6 First to file rule

Where two or more individuals, independently of each other, have made the same invention, the person whose application has the earliest filing date or if priority is claimed, the earliest priority date validly claimed leading to the grant of a patent shall have the right to the patent as provided in section 24 (Industrial Property Act 2014, 2018).

2.6.7 Priority rights

Section 24(1)-(6) of the Act likewise provides for a priority duration of 12 months for a patent and utility model application. (Industrial Property Act 2014, 2018) This is in accordance with the provisions of the Paris Convention, Article 4. This means that an application shall not be invalidated on account of an act carried out between the filing of

the first application (priority date) and the subsequent filing, in particular, of the subsequent filing, publication or exploitation of the invention, and such actions shall not give rise to the right of third parties or any right of personal ownership.

2.6.8 Rights of the owner of the utility model.

The owner of the utility model right after registration as indicated under section 38 is entitled to make, use, exercise and sell the invention exclusively, and may preclude any person from exploiting the invention without his or her authorization by any of the following acts;

i. where the patent has been granted in respect of a product, making, importing, offering for sale, selling and using the product or stocking the product for the purposes of offering for sale, selling or using the product
ii. where the patent has been granted in respect of a process or doing any of the acts referred to in paragraph (a) in respect of a product obtained by means of that process

However if the holder of the right has given the licensee an exclusive license, then the exclusive licensee has the right to work the registered utility model. (Industrial Property Act 2014, 2018)

2.6.9 Conversion of the application

According to the provisions of section 70 of Industrial Property Act 2014 (2018), at any time prior to the grant or rejection of a patent, the applicant for a patent may, upon payment of the prescribed fee, convert his or her application into an application for a utility model certificate, and the date of filing of the initial application shall apply to the utility model certificate. Similarly, at any time prior to the grant or denial of a utility model certificate,

an applicant can, upon payment of the prescribed fee, convert his or her application into a patent application shall be accorded the filing date of the initial application. However, it is important to highlight that this conversion is permitted only once.

2.6.10 Surrender, revocation and Invalidation

Surrender, revocation and invalidations are provided under Sections 89, 90 and 91of the Act respectively. The owner of a patent, utility model or certificate for the registration of an industrial design may surrender it to the registrar. The surrender may be restricted to one or more claims relating to a patent or utility model, or one form of product or class of products, in the case of industrial designs. The surrender shall be registered in the registry immediately and shall be published by the registrar. Only after its publication does such a surrender take effect. Where a license is registered in the registry, the surrender shall be registered only upon the submission of a declaration of consent of the licensee to the surrender, unless the licensee specifically waives the right to consent to the surrender in the license agreement (Industrial Property Act 2014, 2018).

2.6.11 Amendments and Corrections

Section 23 of the Act provides for both the amendment and division of an application for a utility model and a patent application as well. An application may be amended by the applicant, but the amendment shall not go beyond the substance of the disclosure made in the initial application by the applicant. This section also allows the applicant to split the initial application into one or more applications known as 'divisional applications,' but each divisional application shall not go beyond the disclosure made in the initial application and shall be entitled to a date of filing and where applicable, the priority date of the initial application (Industrial Property Act 2014, 2018).

2.6.12 Exceptions

It is not an infringement of a patent or utility model to use the protected invention without the authorization of the patent holder in any of the following circumstances;

a) (a) To carry out all acts, whether for scientific or commercial purposes, relating to experimental use or research on a patented invention.
b) Use of a patented invention for teaching or educational purposes.
c) The execution of acts, including the testing, use, use or sale of a patented invention, solely for purposes reasonably linked to the development and presentation of knowledge needed under any law of Uganda or another country regulating the use, manufacture, use or sale of any product.
d) Use of the patented invention for the preparation, on a case-by-case basis, in a pharmacy or by a medical doctor, of pharmaceutical products according to a medical prescription.
e) To produce and export a patented healthcare invention to another country where the export of the invention meets a health need defined by the other country, where either the product is not patented in the third country or the use of the patent has been approved by the government of another country without the permission of the proprietor of the patent and the production for export of the invention is planned.

2.6.13 Infringement

The Industrial Property Act 2014 (2018) under Section 93 provides that in the event of an infringement, the right holder of the utility model or the exclusive licensee may request an injunction from a competent court to prevent an infringement if the infringement is

imminent or to preclude the continuation of the infringement once the infringement has begun. Section 93 also provides compensation for the harm caused and for any other relief provided by the statute. However, the provisions of sections 38, 44, 49,59,60,68 and 79 are subject to such infringement proceedings.

2.7 Seeking Utility Model Protection in Uganda

Utility models are prosecuted and governed by the industrial property act 2014 that repealed the patent act Cap 216. Just four to six months after the application has been filed with the Uganda Registration Services Bureau (URSB), a utility model can be registered efficiently, a period considerably faster than that needed for the award of a patent, which usually takes many years. The pace at which a utility model grant is obtained stems from fact that URSB merely investigates compliance with the procedural specifications, conducts both prior art search or Novelty search and industrial applicability of the of the utility model application (Upon payment of the official application fee of Ug. Sh. 30,000 for local applicants and 50 USD for foreign applicants) and generally involving no formal substantive examination to inventive step at all. Thus, this procedure provides a major cost benefit to the applicant, as neither examination fees nor attorney fees are charged for processing the application. However, because it is conceivable that a utility model may be registered without an inventive step, its validity maybe challenged in cases of enforcement which may result into expensive and time consuming litigation procedures. Likewise, the requirements for the novelty of the invention that is subject of the utility model is local like in most other jurisdictions. While doing the novelty analysis/search URSB considers the prior art as comprising knowledge that is made available to the public through a written description or in use with in Uganda.

The inventive step standard as applied to a utility model in some countries like Germany requires only some indicia of inventive quality exceeding 'purely handicraft skills(Martin et al., 2006).

Furthermore, any description or prior use of the invention by the applicant in the six months preceding the relevant priority date of the application will not be considered by the URSB, thus providing a kind of 'novelty grace period'. Under these standards, the utility model may offer a mode of intellectual property protection for subject-matter not otherwise fulfilling those requirements applicable to patents and these such innovations are synonymous with SME and the informal sector that make up a significant percentage of the Ugandan economy.

2.8 The Role of Utility Models in Economic Development

Suthersanen (2019) states that while the mechanism of protection has been in effect for more than 160 years, patent protection is still far from being broadly applied and harmonized. Some 70 countries, including countries with highly effective innovation policies, notably Japan, South Korea, China and Germany, have second-tier patent protection that resembles utility model protection in some form or another. Conversely, other nations, including the United States, the United Kingdom, Singapore, Sweden and Canada, which have a common economic tradition of innovation, have not implemented any utility model regime.

In the field of industrial property, trademarks, patents, industrial designs and utility models, where businesses and individuals file applications to obtain protection, the rise in global demand for intellectual property protection since the 1980s can best be recorded. This rising demand for the protection of IPRs has many powers behind it. One relates to

the increasing value, as previously mentioned, of IPRs in international transactions. This has prompted trademark patentees and owners to pursue wider geographical coverage of their intellectual property. Indeed, part of the rise in the number of worldwide industrial property rights grants can be explained by an increase in the number of countries in which the same application is lodged. This "globalization effect" is reinforced by the trend towards strengthened IPR regimes observed since the 1980s in many countries, which has rekindled the interest of knowledge- and information-intensive companies in protecting them. Increased dependence on the patent system and the resulting rise in the number of domestic grants can also represent changes in the titleholder's legal climate. (Braga, Fink, & Sepulveda, 2000).

Branstetter (2004) shares the same reasoning that the advocacy for improving IPR regimes is that the creative operation of domestic companies is presumably facilitated by a stronger regime. The protection of the utility models is insignificantly connected to GDP per capita growth in high-income countries, according to Kim et al. (2012) and has a positive correlation only in middle-income countries.

HeikkilÃ (2015), argues that while the impact of changes in patent protection intensity on innovation activity has been extensively studied, a neglected research subject has been the role of second-tier patent protection in national innovation systems. There is still very limited empirical evidence of the relationship between patent protection and utility models especially in advanced economies. Internationally, since there is no international harmonization of regimes, countries have national systems which differ greatly in terms of utility model protection. This is because the TRIPS agreement helps countries to improve their defense scheme for the second tire patents (utility models). Cummings

(2010) notes that utility models have received less attention from legal scholars and researchers and their impact on economics has been scarce. This emphasizes the need to study the utilization of this regime in the Ugandan context.

Kim et al. (2012) were able to demonstrate from the study of Korean data that utility models are positively correlated with company growth while businesses are technologically lagging. He further argued that such companies could use minor innovations covered by utility models as a learning and step to later develop more patentable inventions" From Australian experience, Cummings (2010) noted that it was surprising that only 1,229 innovation patents were patented in 2007 after the shift leading to a reduction of the innovative step criteria with the innovation patent law. While the number of patent applications for invention increased relative to before the new legislation, he asserted that it meant that the inventing public actually never understood the benefits of patents for innovation.

Besides, strong novelty requirements for grants of patents, for instance, may not be suitable for promoting small, gradual and adaptive inventions typical of developing countries. This is verified by India's experience in patent value and decay rates. Therefore, some critics have pointed to the position of the utility model system or other innovation-registry-type structures that could be more useful for researchers in developing countries. (Braga, Fink, & Sepulveda, 2000).

Sharma & Kumar (2018) note that progress in the formal industry sectors such as pharmaceuticals, biotechnology and chemistry is stimulated by a strict patent regime. This helps such businesses to recover all of their research & development costs. In several low-developed countries, the informal sector is considered to be a pool of information, as

economic activities often take place here. Innovations here vary significantly from those in the formal sector because they are carried out under constraints that limit capital and are not powered by R&D and consist of enhancements and modifications of the technology already in place. These inventions do not always make the cut for the strict criteria under patents.

Ryabokon'et al. (2019) disclosed that many students already have an inventive mentality from an academic bench and implement interesting technical ventures individually, but are not conscious of the probability and necessity of their patenting, attributing this to a misconception that patenting is a very complex and time-consuming method that can only go through eminent scientists or large businesses. The utility model system, which has been incorporated into many business strategies, can be traced to Japan, which today stands very high in technological growth and is considered one of the most advanced nations. Japan has revised its patent law to meet these national needs in order to facilitate the protection of local inventions and thus foster scientific and technological growth.

2.9 Challenge facing African countries in making use of utility models

African countries while making use of utility models experience a couple of challenges that range from social, economic and cultural in nature.

African countries lack enough skilled persons in the field of IP. To very well utilize exploit utility model protection and IP generally a country should have enough technically skill human resource in the different IP areas not limited to policy formulation, implementation, drafting of specifications, administrations among other. More so enterprises with in the country should have such skill set with in its reach for them to take advantage of the IP system (Sikoyo, Nyukuri, & Wakhungu, 2006).

African countries still have relatively low levels of awareness about utility models and the IP system in general. An informed community or society is much more strategically positioned to utilize a system if they are only aware of it. You cannot use or protect what you are not aware of, understanding the ins and outs of the IP systems empowers countries and more so the public and businesses especially SMEs to obtain maximum benefits from the utility model system.

Institutional, financial and organization challenges. Limited resources to for development of a robust IP system. Several African countries still grappling with poverty and have not developed strong institutions ranging from legal, education, research among others. Being a multi-sectoral subject, IP requires strong institutions its administration, prosecutions, enforcement for a country to fully reap benefits (Sikoyo, Nyukuri, & Wakhungu, 2006)

2.10 The role of utility models in SMEs

In developing and least developed countries, a significant number of cumulative innovations are created by SMEs that dominate most industries of the economy. Such industries are characterized by high levels of unregulated copying and it has been argued that a rapid and cheap protection regime like utility model protection would improve the legal environment for SMEs especially those involved in ongoing process of innovation and adaptation (Suthersanen, Utility Models and Innovation in Developing Countries, 2006).

SMEs can use utility models and IPRs in general to enhance their competitiveness in the market. Utility models help SMEs gain competitive advantage even in a market dominated by larger firms, cutthroat competitions call for firms to use whichever resource is at their disposal in the market. Such IPRs could be the only tool available to SMEs due to their

nature and innovativeness that could propel them to growth and survival. IPRs are specifically more important now to African SMEs with the with the conclusion of the AfCFTA which now open up markets previously inaccessible to both SMEs and larger firms (Mupangavanhu, 2018).

SMEs can use utility models an extra revenue stream. Innovative SMEs can license their IPRs for other firms to exploit in exchange for remuneration or loyalties. This can be most appropriate for startup SMEs to break and expand into new market while spending fewer resources (WIPO, 2012).

Utility models can be used by SMEs as collateral to obtain credit from financial institutions. Like any physical property, intellectual property can be used to for accessing credit consider that SMEs may not possess substantial the traditional physical property (OECD, 2015). In 2019 Uganda, also other joined countries that recognize the use of intellectual property as a form of movable collateral that can be used to access credit form financial institutions with the enactment of the Security Interest in Movable Property Act 2019 (URSB, 2019).

SMEs can further Utility models to grow their intellectual property portfolio. This is particularly important in company valuation in preparation for mergers and acquisitions (Mousavi, 2011). These intellectual assets can also be used as signal to investors and financiers of the SMEs potential that could result into possible and meaning fruitful partnerships.

2.11 Role of IP offices in the promotion of Utility Models

Traditionally the roles of the IP office have always been in the area of examination, registration and grant of IP rights, the notions is shifting. The increasing importance of IP rights in a knowledge-based economy has begun to change the way national, regional and local governments view intellectual property rights and the IP system as a whole. Although these traditional still remain the central element of day-to-day work, IPOs are increasingly devoting resources to a range of additional services aimed at facilitating the access and ensuring maximum benefit from the IP system.

IP offices play a critical role in the diffusion of knowlwedge through publication of utility model grants. Publication databases are an invaluable source of techinical infornmation for researchers and firms however the systems remains largely unexplore and underutilized by eterprises, aprticularly SMEs. By the early 1990's several OECD and EPO countries had made their databases availabe online for for the public to consult free of charge (OECD, 2004).

National IP offices also offer guidance and directions to nations to effectively utilize their IP throught leading and enaging staakeholdrs in the fomulation of national IP policies. Such policies are what states the vision of the country in terms of IP and devises the measure to be adopted by the country to effectively work together towards creating, protecting and commercially exploiting research results, innovations, new technologies, and creative works (JLOS, 2019).

IP offices play a catalytic role in the stakeholder cordination and awreness campaigns to promote intellectual property. Limted on no awareness about the role and potential of intellectual property is ephasized by the recent IP audits. While the situation was

improving, public awareness of IP remained either low or very low for ASEAN countries and for the 12 African countries that took part in the audit , low IP awareness was identified as a strategic issue that needed to be addressed in the national IP strategies which were being planned for each of these countries (WIPO, 2016).

2.12 A case study of the use of Utility Models in China

China's first patent law was enacted in 1984 and came into force in April 1985. According to Liang & Xue (2012), the Chinese patent system has evolved in three main stages. The first stage being the founding of China's IPR system which was from 1985 to 1992. Before 1985, China only had a Management System of Science and Technology Achievement, which belonged to the nation and could be freely used**.** Chemical, pharmaceutical, and food or food processing inventions were excluded from patent coverage. This was regarded as creating an intentional tilt towards domestic industries, disadvantaging foreign applicants. These issues reflected the evolving balance between stimulating indigenous innovations and sharing in the worldwide knowledge pool by enforcing patent protection. During the second stage, from 1992 to 2000, China's patent system made substantial progress. In the first revision of the patent law in 1992, the duration of patent protection for inventions was extended from 15 to 20 years, and the duration of utility model and design patents was extended from 5 to 10 years. Food, beverages, flavoring, pharmaceutical products, and substances obtained via chemical processes were also covered by patent protection. Another addition to the law was domestic priorities for filing applications. Individuals were allowed to own patents for inventions created during employment if an agreement was made between individuals and employers

The third stage is from 2001 to the present. China's patent law experienced a second major revision in 2000. In this revision, state-owned and privately owned enterprises were treated as equals for obtaining patent rights. Other amendments were mainly made to fit World Trade Organization (WTO) requirements, especially those in the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement.

In 2008, the Chinese Patent Law was revised for the third time. One main points of the third revision is enhancement the threshold of patentability by changing the criteria of novelty from relative novelty to absolute novelty considering that china is at a takeoff stage in IP and is now strengthen its IP system (Zhang, 2014).

According to Prud'homme (2017), a positive impact of the utility model regime on China has been strenuously claimed [as the following quotes show]:

> 'Increased usage of utility models in China in particular contributed to rising labor Productivity in the country'
>
> 'Utility models in mainland China had a significant impact on [total factor productivity] from 1988 to 1998 and from 1999 to 2009 both invention patents and utility models had significant impacts on TFP (although invention patents had stronger impacts than utility models';
>
> 'individual inventors and SMEs in particular, although also large companies to some extent, in China have benefited from technological learning opportunities afforded by using utility models' (pp. 50-73)

World Bank Group, and the Development Research Center of the State Council (2019), notes that Utility models are useful instruments supporting latecomers' catch-up process. Because of their relatively low eligibility requirements. Although other countries also offer utility patents, the vast majority of the world's utility patents are filed in China.

China alone filed 2,072,311 applications accounting for 96.6% of the global Utility model applications filled, while Germany and Russian Federations follow with 0.6% and 0.5% respectively (WIPO, 2019)

Because of the opportunity Utility models patents provide to late comers, they may not be as useful in China today as they were at earlier stages of development, as they tend to have less technological intellectual value. Utility patents, as well as design patents, have relatively low retention rates, indicating that they often do not hold sufficient economic value to justify paying the retention fees. For utility patents granted in 2013, 61 percent were abandoned within five years, as the patent holders stopped paying the retention fees (World Bank Group, and the Development Research Center of the State Council, 2019)

2.13 Summary

The chapter introduces the theoretical framework, its relevancy to the study and justification of IPRs. It further explores the international, Regional and national provisions and mechanisms for the protection of utility models with a wider emphasis on the local regime. The chapter highlights the role and usage of utility models in economic development especially by SMEs, challenges of usage in the African context and lastly the Chinese experience in the usage of the system.

CHAPTER 3 METHODOLOGY

3.1 Introduction

To achieve the research objectives, a mixed-method research approach was used to examine the use of the utility model regime in Uganda. In this regard, this study considered the quantitative impact on the innovation environment of the new Industrial Property Act 2014. This research further explored the opinions of innovators about the causes and obstacles encountered during the use of this regime. The research design, sampling, research instruments, research procedures, data processing analysis and ethical considerations are discussed in detail in this chapter.

3.2 The Research Design

In recent years, qualitative and quantitative methods have become popular in research because the design of mixed methods can provide accurate and thorough data to achieve research goals and address research questions (Bryman, 2006). An explanatory mixed-method design methodology, which is a combination of a qualitative and quantitative approach to data collection and analysis, was used in this study (Creswell & Tashakkori, 2007).

The research was composed to two major phases, the first quantitative data collection which gathered the opinions of the subjects through a questionnaire. This was followed by a qualitative data collection to provide a clearer view of the quantitative data form the first phase. The input to the qualitative phase was shaped by results from the first quantitative phase of the study. Here the opinions from the quantitative study had been gathered, an explanation of the opinions was thought through conducting interviews with

the selected key personnel from each of the mapped users categories of the Utility model regime.

This resulted in a deeper understanding, interpretation and description of the analysis issues observed in the quantitative phase.

In the first phase of the study, an online questionnaire was sent to the subjects through email. By leveraging the relationship with the IP directorate at URSB, a contact list of innovator attached to TISCs, IP practitioner, and a few independent innovator that had registered Utility models with the office was shared. The use of contacts from the Patent office was key in securing a high response rate, as the subjects were be highly interested in the subject and actively used the regime.

An explanatory design is recognized as the easiest and straightforward of mixed method designs (Subedi, 2016). Quantitative and qualitative approaches complement each other when used in combination and allow analysis that is more complete. (Tashakkori & Teddlie, 1998).

3.3 Population and Sampling

Purposive sampling, a technique that belongs to the non-probability type of technique was employed to develop the sample size for the two phases of this study. In this approach, members were selected based on their expertise, relationship and knowledge regarding the research subject as suggested (Freedman *et al*., 2007).

Forty four individuals were invited to participate in the first quantitative phase, however only 38 participated. All the invited five individuals took part in the second qualitative part of the study to explain the opinions gathered from the first part. All participants had a relationship with the utility model regime within Uganda in a way that they had

interacted it or ought to have in one way or the other. A stakeholder mapping identified three categories of users and participants from each category took part in the qualitative part of the study. The identified categories included officers from Innovation Hubs and TISCs, Law firms and independent innovators. The selected innovation hubs include Makerere University Resilient AfricaNetwork (RAN), Innovation Village, Outbox and the Innovation Consortium. TISCs that took part in the study included UNCST, URI, IDI and NARO. The law firms that took part in this study include MMAKS advocates, Sebalu &Lule Advocates, Signum Advocates and KTA Advocates.

In the second-phase of the study, still using purposive sample one participant from each of the earlier stated categories participated in the study. Two individual from the patent office participated in the second qualitative part of the study.

Table 3. 1 Sampling groups size details

Type of Institution	**Total sample quantitative (1st phase)**		**Total sample qualitative (2nd phase)**
	Invited participants	**Actual participants**	
Innovation Hub & Independent innovators	20	19	1
TISC	12	10	1
Law Firms	12	9	1
IP Office (URSB)	0	0	2
Total	44	38	5

3.4 Data Collection Instruments

As structured online questionnaire developed with google forms was employed to collect data form the subjects in the first quantitative phase of the study. Five members of top Level or senior management officers, one from each of the participating institution's

category were selected for a follow-up interview in the second qualitative part of the study to better understand the finding from the quantitative study conducted using Google's online meeting solution "google meet". Data saturation was reach by fifth interview as views and responses from the participants started were now beginning to be reapeated.The output from the first quantitative phase of the study guided the formulation of the interview guide used in the second qualitative phase of the study. Due to the challenges brought by the COVID-19 pandemic, only one physical interview occurred in the second qualitative part of the study as the other four interviews were conducted via the google meet platform. A notebook was used to make summaries and note of interview proceeding and opinions of the respondents at all times.

3.4.1 Study and review of the documents relating to the utility model regime in Uganda and its utilization.

The annual reports published by the URSB, articles and other relevant documentation were reviewed by gaining access to the URSB library and online catalogue. A data request was further sent to URSB and statistical information was availed.

3.4.2 Online questionnaires

To learn as much a possible from the beneficiaries and would-be beneficiaries and stakeholders of this Utility Model regime an online questionnaire powered by google forms was employed to solicit opinions on the matter. The adaptation to the online version questionnaire helped carry out this activity even during this time of restricted movement. The online questionnaires were sent to the identified subjects to individual innovators, those attached to innovation Hubs, TISCs and IP Practitioners through email. The respondents gained access to the survey by clicking the link to the particular webpage

containing the questionnaire. Evans & Mathur (2005) note that the use of an online version of the questionnaire reduces the cost of data collection, are easy to follow up, controlled sampling, large sample easy to obtain, Control of answer order required complete on of answers and can be custom-tailored to the respondents.

The questionnaire further had an embedded page with both the informed consent form and clearance letter from Africa University Research Ethics Committee. The online questionnaire was strictly used only in the first part of quantitative part of phase of the study

3.4.3 Visits and personal interviews to various innovations hubs, TISCs, Law firms and the Patent office.

For more clarity and understanding of the practical approach to the utilization, challenges of the current utility model regime and trends from the quantitative study, one physical follow-up interview with an officer from the Patent office was held. The other interviews were all conducted online and video recordings stored. These recording were later re-visited for clarity on points made during the interviews.

3.5 Pilot Study

To identify and solve any possible confusing points, eliminate any access issues the online questionnaire was pre-tested before it was sent out to subjects. Only two users from the patent office participated in this pilot test.

3.6 Data management and analysis

A separate document was used to develop a transcript for each interview held with the subjects in the second phase of the study. Regarding the qualitative data, a thematic analysis approach was employed to analyze the transcripts developed from the interviews.

Unique file name codes were given to each transcript for identification purposes. Through coding of the transcripts, thematic explanations were developed for the different research questions and later these explanations were related for the different transcripts using a cross case analysis approach.

The quantitative data collected in the first phase where an online survey questionnaire was used utilized both cross tabulation and trend analysis techniques. Data visualization and interpretations was achieved using Microsoft excel tools. Excel analysis was further used to provide a trend analysis and to visualize relationships. Logical and analytic reasoning were used to supplement and conclude the opinions of the subjects. These conclusions shaped the subsequent interview questions used in the second qualitative phase part of the study.

3.7 Quality control

While conducting the study, best practices were be adopted, including pre-arranging for interviews to ensure the most appropriate interviewee were engaged for the meeting, selected appropriate questions to ask and ask them in such a way that the interviewee is in a position to answer. All the Interviews were video-recorded, but only with prior knowledge and permission of the interviewee. Only one physical follow-up interview to obtain further detail/ clarity was held with the officer from the patent office.

3.8 Ethical Consideration

3.8.1 Anonymity

Anonymity refers to a situation whereby the researcher cannot link the information that a participant gave to that precise research participants. Research subjects are even more likely, to be frank, or afford accurate data if they presumed that no one would pinpoint

them or link them to their answers. (Rose et al., 2008). Participants anonymously answered the online questionnaire to ensure their privacy is guaranteed and no email adrees of any other personal information was solicitated.

Thakhathi et al., (2017) notes that a researcher must "protect the anonymity of the research participants and the secrecy of their disclosures unless they consent to the release of personal information". Confidentiality can be threatened when third parties are involved in the study, for instance, the following measures were implemented to ensure participant information confidentiality;

1. All the information obtained was recorded anonymously.
2. Electronic data encryption was employed.
3. Reporting individual data or statistics wasn't done.
4. Group data only was used.
5. When recording data, codes were used which are free of personal identification information

3.8.2 Informed Consent

Participant in the research were required to review the informed consent section on the first page to the research questionnaire to enable them fully understand what they are being asked to do and ensure that they are informed if there are any potential negative consequences of such participation. An official university letterhead was embedded to the consent form to not only increase the response rate but also inform respondents that the research was an official university activity. Participants were further given three weeks to

respond to the survey, this enabled them to carefully to carefully consider whether they would participate.

3.9 Summary

An explanatory mixed methods approach where interview key informers or subjects are used to explain the results, trends and opinions obtained from the quantitative phase of the study. With the advent of COVID-19 where restricted movement and interactions are highly encouraged, an online questionnaire powered by google-forms were employed to collect opinions in the first phase. A mixture of both physical and online interviews with key persons was adopted for the second qualitative part. One physical interview with an officer from the registry was held while other were conducted online via google meet.

Purposive sampling was employed to develop a suitable sample size of 44 participants in the first quantitative phase and only five in the second qualitative phase. The sample involved participants from innovations Hubs, law firms, TISCs and the Patent office. The chapter further elaborated how the pilot study was conducted, issues pertaining confidentiality of participants, biasness of the researcher, quality control and data management approaches that were employed during the researcher.

CHAPTER 4 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the findings from the three categories of users identified that is, innovators, IP practitioners and Patent office staff. The respondent's answers to the questionnaire are summarized with graphs to visually represent the responses. The chapter further present follow-up discussions on the issues guided by findings initial quantitative part of the research to qualify and further understand the findings.

4.2 Data Presentation and Analysis

4.2.1 Demographic representation of the study

A similar questionnaire was sent to both IP practitioners, innovators from both TISCs and independent innovation hubs around Kampala to ascertain their experience with the utility model regime in Uganda. 20 questionnaires were to innovators from independent innovation hubs and 12 to innovators attached to selected TISCs, 19 and 9 innovators responded respectively. Out of the 12, IP practitioners contacted 10 responded and the summary of the responses is as below.

4.2.2 Level of IP awareness

In response to this question as to whether they are aware of the existence of protection mechanisms for innovations, 23 respondents acknowledge to be aware of the existence of protection mechanism representing 61% while 15 respondent note that they are not aware of the existence of such protection approaches which translates to 39% of the total respondents. The opinion of the respondents is indicated in the graph below.

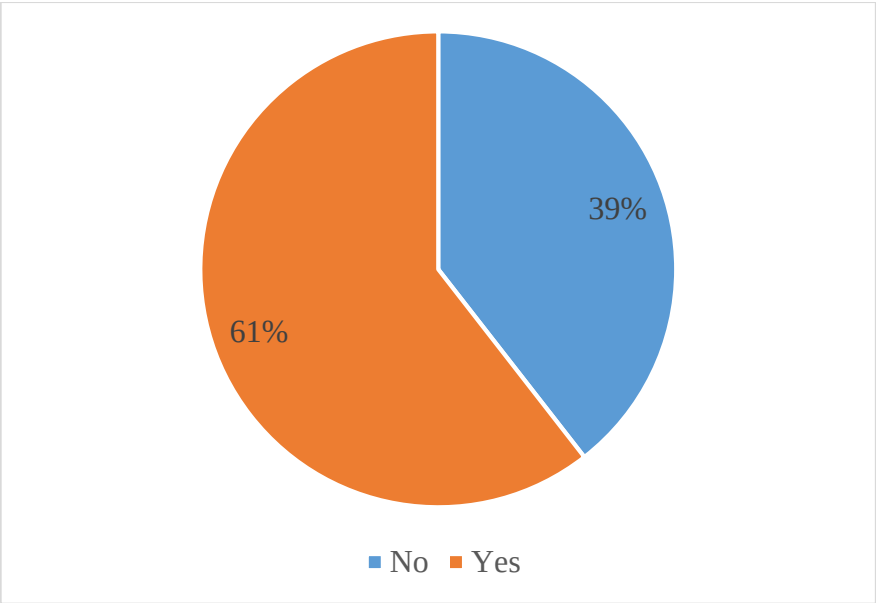

Figure 4.2.1: A graph showing awareness levels for innovation protection mechanisms

Source: Researcher's analysis of data received from respondents

4.2.3 Participation in awareness

In response to whether the respondent had participated or heard about awareness campaigns regarding the protection of innovations, 22 respondents representing 58% agree to have heard or participated in such while 16 respondents representing 42% had not engaged or heard about such campaigns relating to the protection of innovations. A graphical representation of participation in awareness is shown below.

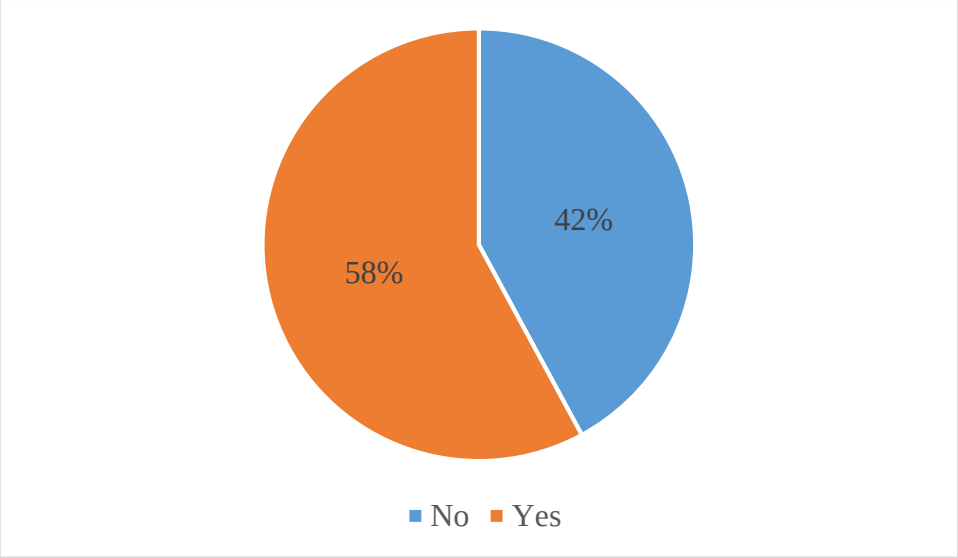

Figure 4.2.2: A graph showing participation in campaigns regarding the protection of innovations

Source: Researcher's analysis of data received from respondents

4.2.4 Level of interaction with the IP regime.

As to whether the respondents had engaged or represented an individual that has any innovation process leading or that resulted in a new product or approach to doing something, 19 respondents representing 50% agree to have engaged or represented an individual that has any innovation process leading or that resulted in a new product or approach to doing something. 50% of the respondents had not engaged or represented and individual that has any innovation process leading or that resulted in a new product or approach to doing something? The level of interaction with the regime is represented below.

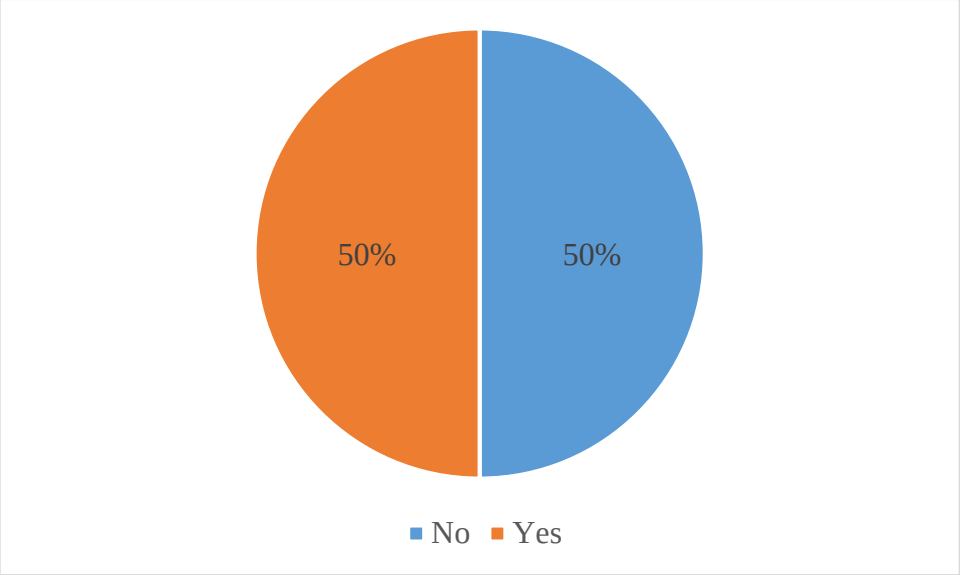

Figure 4.2.3*:* A graph showing interaction with the Utility Model regime of protection

Source: Researcher's analysis of data received from respondents

4.2.5 Interaction with Utility model regime

Regarding whether they had protected their innovation or that of their clients as a utility model, 23 respondents indicated that they had not protected their inventions or that of their clients as a Utility mode representing 61%. While 15 of the respondents translating to 39% had protected or represented their clients in the process of protecting their invention as a utility model. Below is a graph indicating the response from the respondents.

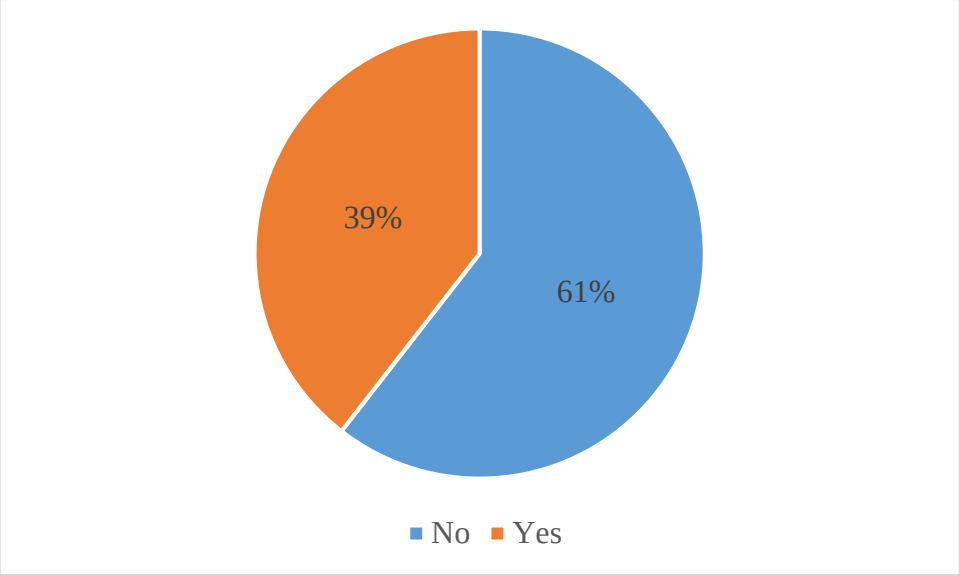

Figure 4.2.4: A graph showing respondents that had protected inventions through Utility Model

Source: Researcher's analysis of data received from respondents

4.2.6 Protections with other IPRs

Regarding the protection of inventions through other forms of IPR, 23 respondents representing 61% had not protected their inventions through other IPRs while 15 respondents representing 39% indicated to have used other forms of IPRs to protect their invention. Below is a graphical representation of the responses.

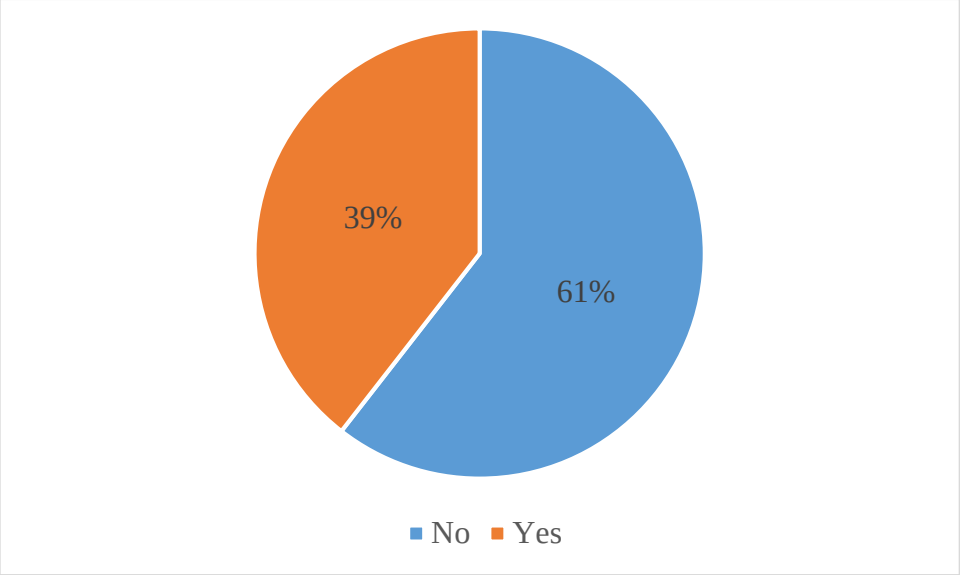

Figure 4.2.5: A graph showing protection through other forms of IPRs for inventions

Source: Researcher's analysis of data received from respondents

4.2.7 Reasons for and against utility models registration

As noted already, the survey indicated that 39% of the respondents who all were innovators from non-TISC institutions showed not to be aware of the existence of these rights for the protection of inventions. This translated into them not seeking the same even when they had inventions that would ordinarily warrant protections if they were aware of their existence. Therefore, it is apparent that the most dominant reason for not registering inventions as Utility models were ignorant about the protection. Among the other reasons cited, include high application fees, lack of application skills, exorbitant legal and consultancy fees sought by IP experts, seeking academic rather than IP protection for career growth and promotions and lastly the lack of IP office branches in up country areas deterred some innovator from seeking registration.

Conversely, the most dominant reason for seeking registration of utility models was to obtain protections from imitation, misappropriations and unauthorized use by third parties. Utility model registration offered an added advantage to innovators during competitions and this increased their stakes of securing funding to commercialize the invention. Increasing the chances of securing funding from both investors and government attracted several innovators to seek utility model protection, career progress

and social status amongst fellow learned friends pushed some to seek registration of utility models for their inventions.

4.2.8 Notable utility model registration benefits.

Respondents noted obtaining a utility model strengthened then their position while seeking funding from both investors and during innovation competitions, baring third parties from the use of the invention with their authorization, career growth and social status were some the benefits respondents to have gained from the registration of their inventions as utility models.

4.2.9 Obstacles to acquiring Utility models

Among the obstacles, user highlighted having difficulty in drafting Utility model applications as one of the key problems they face as the same required technical skill which mods lack. The high and exorbitant fees charged by IP lawyers and consultants was another challenge users noted to have faced while interacting with the regime. The lack of upcountry offices and having no online application reception services made it difficult to apply for some individuals especially during the COVID-19 lock down.

4.2.10 Opinion about benefit from utility model registration.

As to whether innovative industries benefit from a system of legal protection for small scale/incremental innovations, 30 respondents agree that innovative industries benefit from a system of legal protection for small scale/incremental innovation representing 79%. While 8 respondents translating to 21% think innovative industries benefit from a system of legal protection for small scale/incremental innovation or utility model protection. A graphical representation of the respondent's opinions is as shown below.

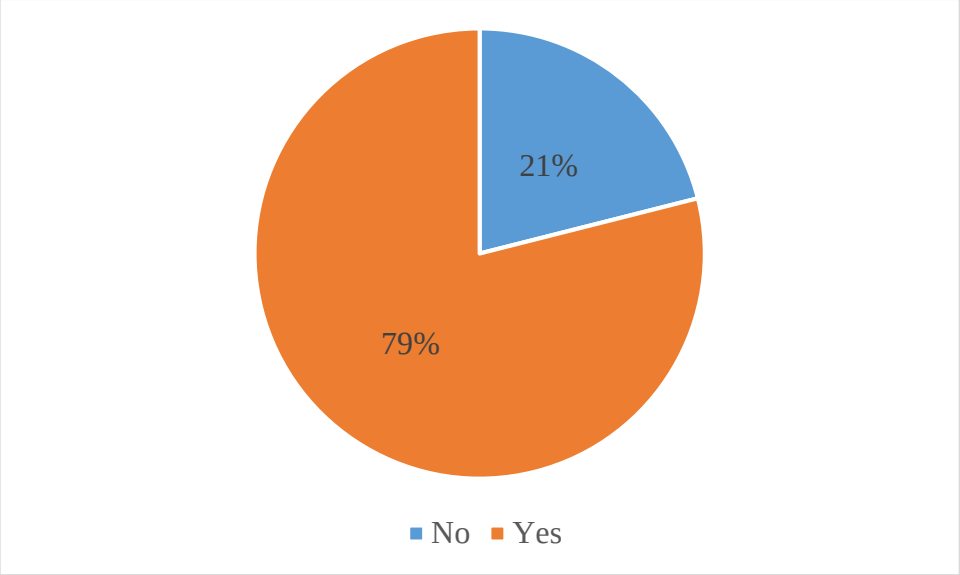

Figure 4.2.6: A graph showing opinion about the benefits of utility models to innovative industries.

Source: Researcher's analysis of data received from respondents

4.2.11 Occurrence of infringement

As to whether there has been a situation where a third party made an infringement on the utility model right or that of their organization or client, 22 respondent translating to 58% noted there hasn't been a situation where a third party made an infringement on the utility model right or that of their organization or client. 16 respondents representing 42% indicated that there has been a situation where a third party made an infringement on their utility model right or that of their organization or client.

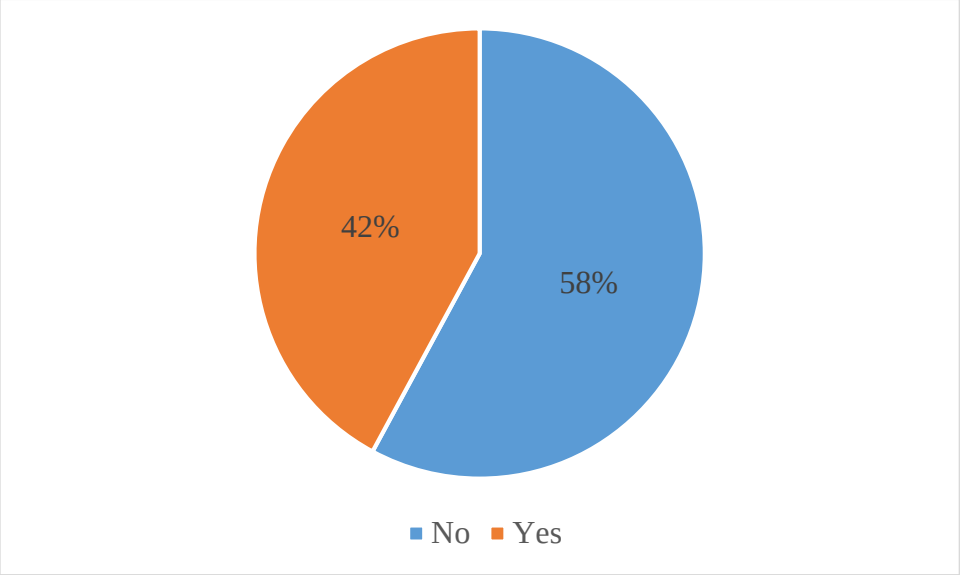

Figure 4.2.7*:* A graph showing situations of infringement on a Utility Model

Source: Researcher's analysis of data received from respondents

4.2.12 Action against infringement

As to whether the respondents had to take any action against the party that copied your innovation without your authorization, 25 respondents translating to 66% had not taken any action against the party that copied their innovation without their authorization while 13 respondents representing 34% had taken action against the party that copied their innovation without their authorization.

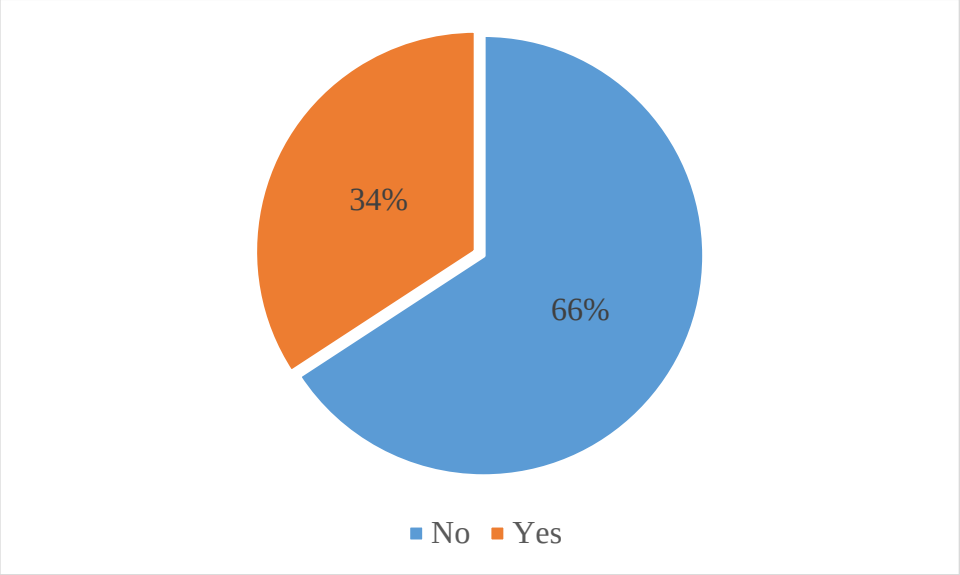

Figure 4.2.8: A graph showing action against infringement of Utility Model rights

Source: Researcher's analysis of data received from respondents

4.2.13 Regulation in tracking and fighting infringement

Regarding what ways tracking and fighting infringement is regulated, 30 respondents representing 79% indicated that the process of tracking and fighting infringement is not formally organized and differs on a case-by-case basis. Four respondents representing 11% indicated that it is conducted by internal capacity whereby external expertise can be acquired for specific requirements. Two respondents representing 5% indicated that it is completely outsourced (patents attorneys or other specialists) while two respondents translating to 5% indicated that there is a limited internal capacity for these activities and is complemented for an important part with external expertise.

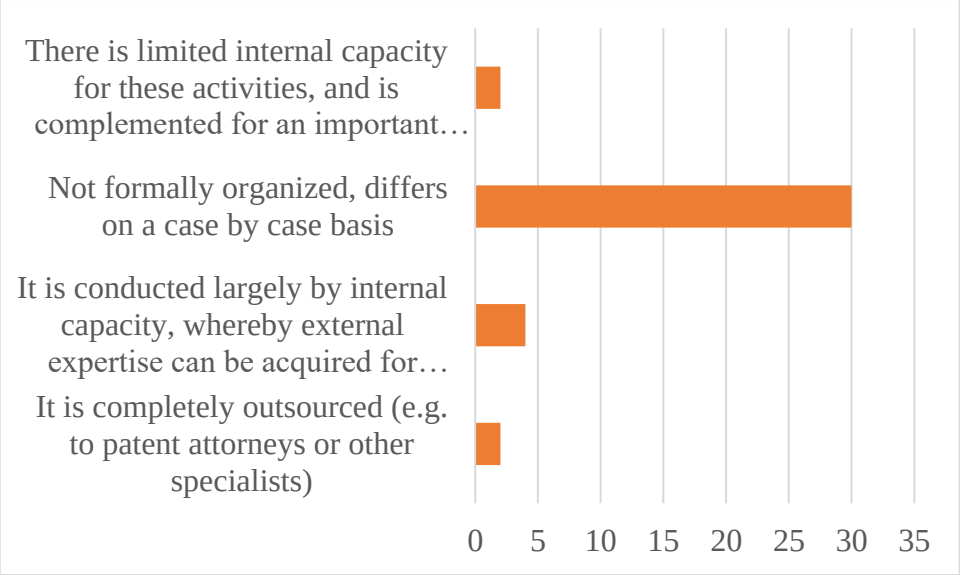

Figure 4.2.9*:* A graph showing regulation of tracking and fighting infringement

Source: Researcher's analysis of data received from respondents

4.2.14 Choice of pursuing Litigation

Regarding to when litigation pursued as an option, 24 respondents translating to 63% indicated that they do not pursue litigation, 8 respondents translating to 21% indicated that it is pursued only when no other option is available. Four respondents representing 11% indicated that it is pursued only when the economic effects of infringement are felt while only 2 representing 5% showed that it is pursued in principle always when infringement is detected.

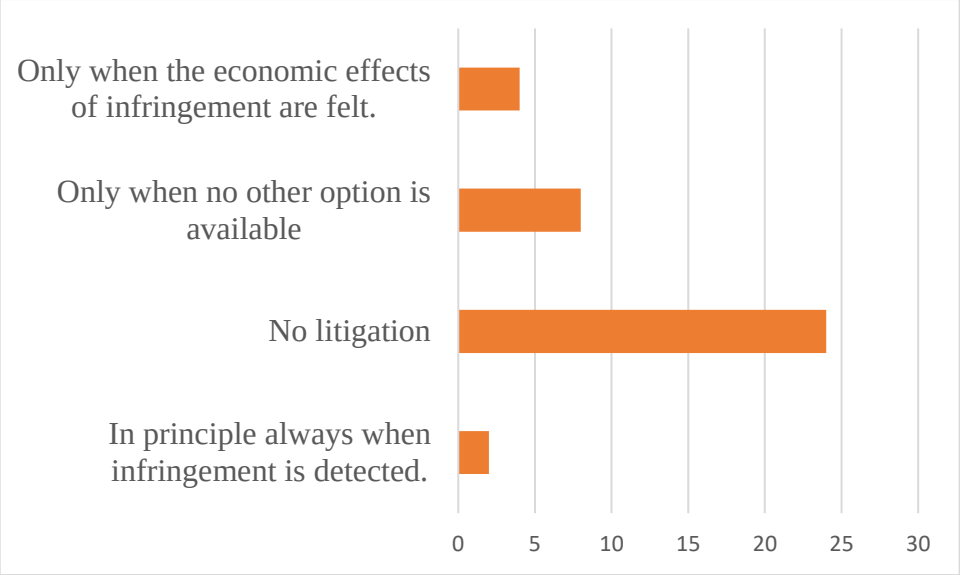

Figure 4.2.10*:* A graph indicating when litigation is pursued by the rights owner.

Source: Researcher's analysis of data received from respondents

4.2.15 Opinion about uncertainty with utility model protection.

As to whether there is a significant threat of legal uncertainty and wasteful litigation due to utility model protection, 18 respondents translating to 47% were neutral about the matter. Nine respondents representing 24% agree that there is a significant threat of legal uncertainty and wasteful litigation due to utility model protection, 5 respondents representing 13% disagree and 4 respondents, translating to 11% strongly disagree while 2 respondents representing 5% strongly agree.

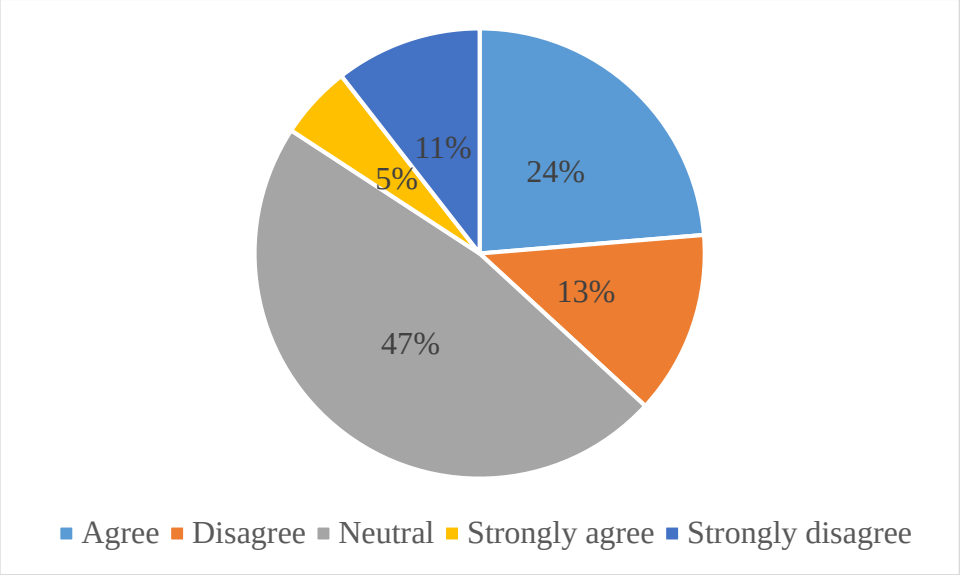

Figure 4.2.11: A graph showing opinions regarding the legal in certainty and wasteful litigation due to Utility Model protection

Source: Researcher's analysis of data received from respondents

4.2.16 Level of utilization of utility model database information.

Regarding how information from Utility model databases is utilized, 20 respondents presenting 53% indicated that they do not use such information at all. 8 respondents representing 21% indicated that such information is used for Utility model applications, but also as input for ideas and or own specific research and 6 respondents translating to 16% indicated they use such information for utility model applications but also as input or ideas and/or own specific research. Four respondents translating to 11% indicated to use such information only for evaluating the chances of own patent application.

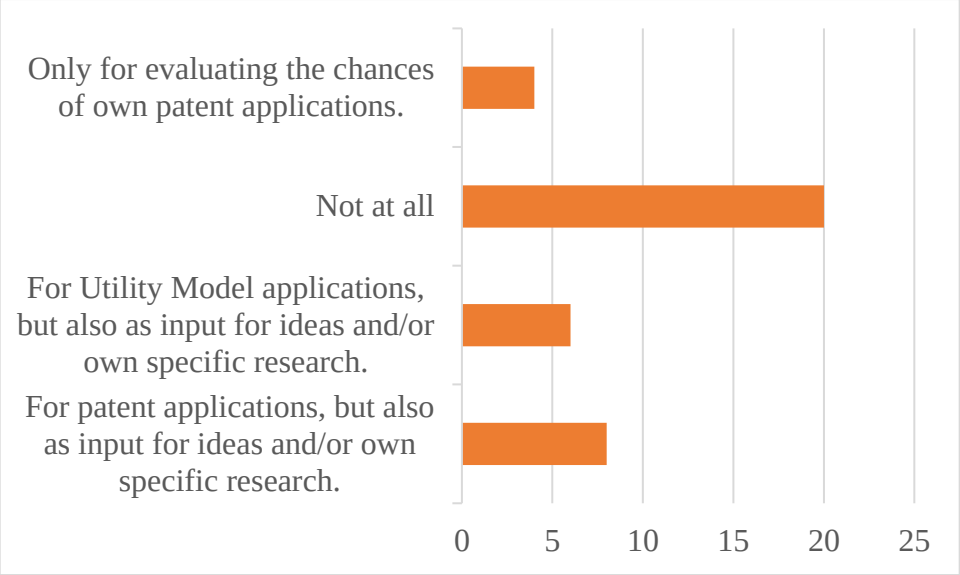

Figure 4.2.12: A graph showing usage of Utility models database information

Source: Researcher's analysis of data received from respondents

4.2.17 Financial appreciation for utility models

Regarding the financial appreciation for utility models, 18 respondents representing 47% indicated not be financially appreciating utility models whereas 9 respondents translating to 24% indicated that utility models are valued based on manufacturing or purchasing costs. Seven respondents representing 18% indicated that Utility Models are valued for external accounting (e.g. financial statements) based on manufacturing or purchasing costs and for Internal reports based on cost price and a standard profit margin while 4 respondents translating into 11% indicated that patents are valued based on manufacturing or purchasing cost.

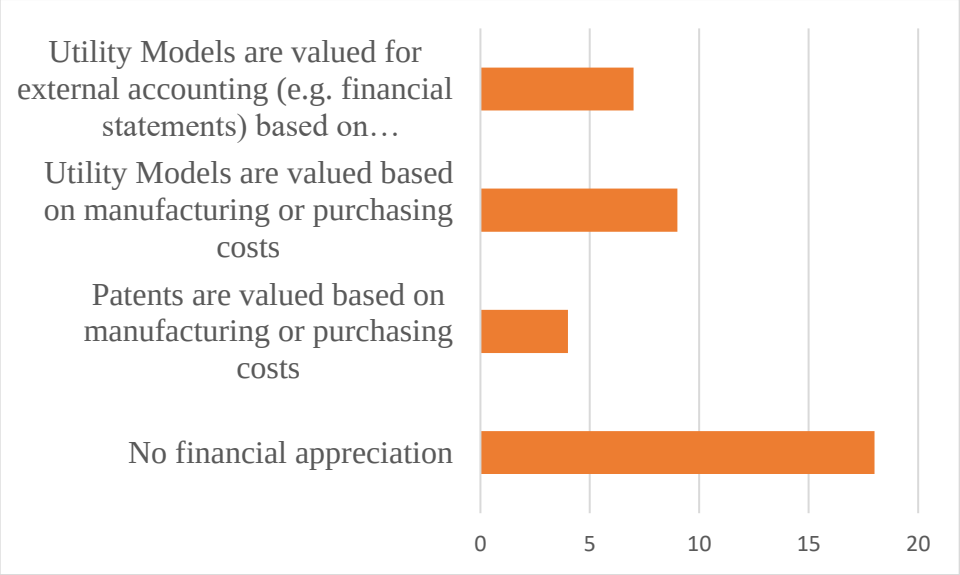

Figure 4.2.13: A graph showing Financial appreciation of utility models

Source: Researcher's analysis of data received from respondents

4.2.18 Level of market products covered by Utility models

In regards to what percentage of clients or company's product and process innovations were filed as Utility model applications 33 respondent representing 87% indicated that 0-20% of the products and process innovations were filed as utility model applications. 3 respondents representing 7%indicated these products and processes to be between 21-40%, 1 responding translating to 1% indicated such products and process innovations that were filed as utility model applications to represent between 81-100% of the product while still, 1 respondent was sure of the percentage it represented.

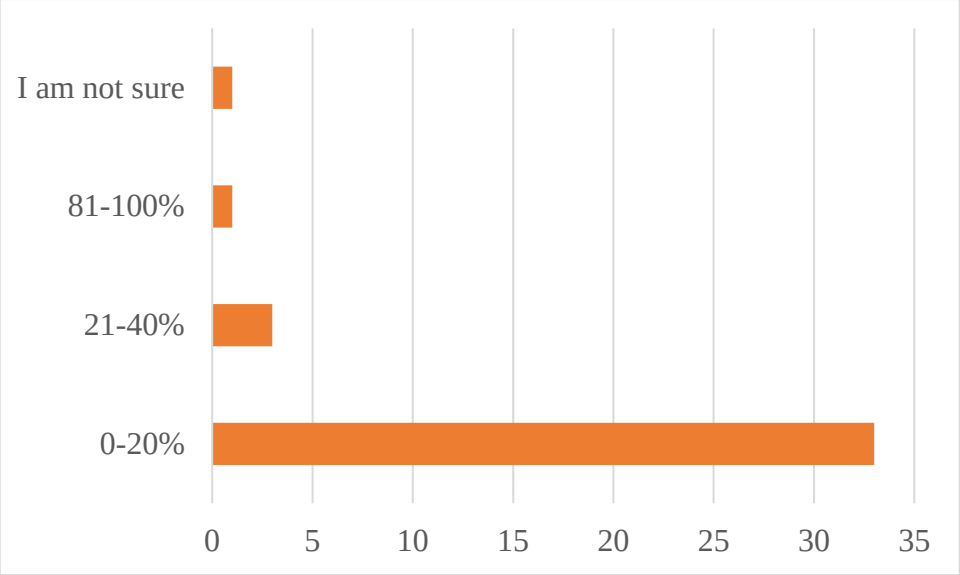

Figure 4.2.14: A graph showing percentage product ranges filed as utility models

Source: Researcher's analysis of data received from respondents

4.2.19 Rate of utility model grant

As to what percentage of Utility model applications were awarded, 35 respondents representing 92.1% indicated approximately 0-20% of the Utility model applications were awarded, while 2 respondents representing 5.3% indicated the this to be between 81-100% while 1 respondent translating to 2.6% indicated the Utility model applications were awarded to be between 41-60%.

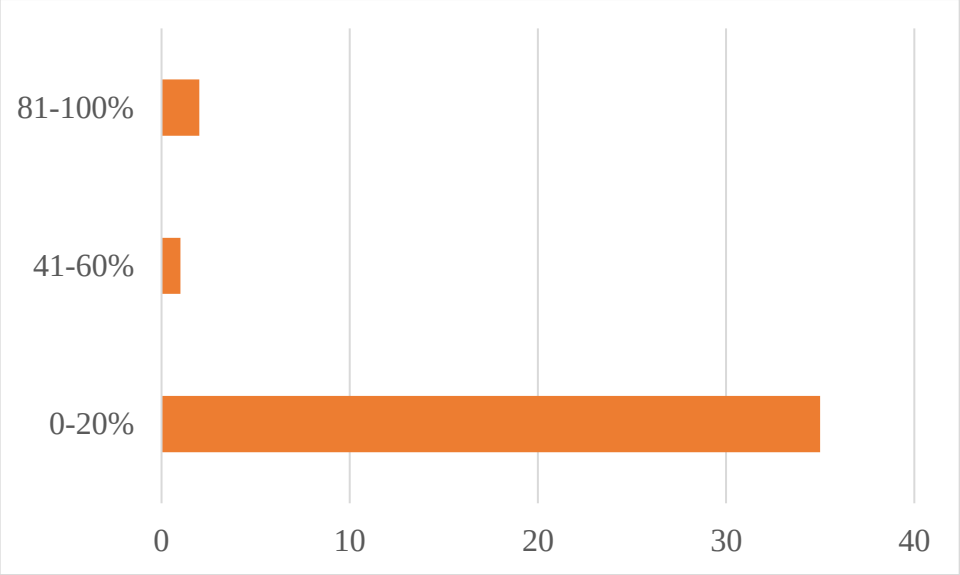

Figure 4.2.15: A graph showing percentage of utility models applications that were awarded

Source: Researcher's analysis of data received from respondents

4.3 Visit to the patent office

The patent office was visited to better understand their perspective regarding the usage of this utility model regime in Uganda. With the aid of the interview guide, the minds of the patent office staff were picked regarding the issues that would help answer the objective of the research and to explain the responses of the innovators and IP practitioners. The findings are discussed below.

Table 4. 1 A table showing Utility Model and Patent Applications Statistics

Year	UM Applications			Patent Applications		
	Local	Foreign	Total	Local	Foreign	Total
2010	0	0	0	2	0	2
2011	0	0	0	1	2	3
2012	0	0	0	5	7	12
2013	0	1	1	10	3	13
2014	3	0	3	5	3	8
2015	1	0	1	8	2	10
2016	2	0	2	16	0	16
2017	16	0	16	24	7	31

2018	13	0	13	5	2	7
2019	18	0	18	14	1	15
2020	19	0	19	12	7	19

Source: Uganda Registration Services Bureau (URSB)

Statistics from URSB indicated a slow steady growth in the number of applications received by the registry in recent years after a stagnant period from 2010 to 2014 where only one application had been received. According to the patent office, the drastic increase in the statistics is attributed to the several awareness campaigns through radio, Television and outreach programs the office has taken. The office also notes that the establishment of TISCs has enormously contributed to these efforts by offering access to online patent and non-patent (scientific and technical) resources and IP-related publications. URSB also facilitates the TISC with assistance in searching and retrieving technology information. Furthermore, training in database searches are also conducted. The demand for TISC services continues to grow, this means that we must allocate more resources to support innovators notes an officer from URSB. The overall benefit is that the technology and innovation support services offered by TISCs create real value, resulting in technology transfer and IP commercialization. It must be noted that a significant number of utility model applications have been filed by TISC attached innovators or hosting institutions.

The office also attributes the increase in the number of applications to the efforts by the government to support and fund research activities at Universities and PROs. In 2016, the government of Uganda created the Ministry of Science, Technology and Innovations to enhance sector coherence and coordination. In 2012 before the creation of the Ministry of science, technology and innovations, the government had through the State House established the Presidential Initiative on science and technology to enhance science and

research. The initiative still support projects that have gone beyond the proof of concept phase nearing industrial production and commercialization with emphasis on linking research to the market.

The number of foreign utility model applications remains lows and according to URSB, this is attributed to the low interest of foreign companies and innovators in Utility models because of the 10-year term of protection it provides them. Most of the foreign patent covered products have a longer product life, hence patents are best suited to them as compared to utility models. Being a foreign market, it might seem not feasible to seek Utility model protection and hence some go for patent protection that offers a much longer time.

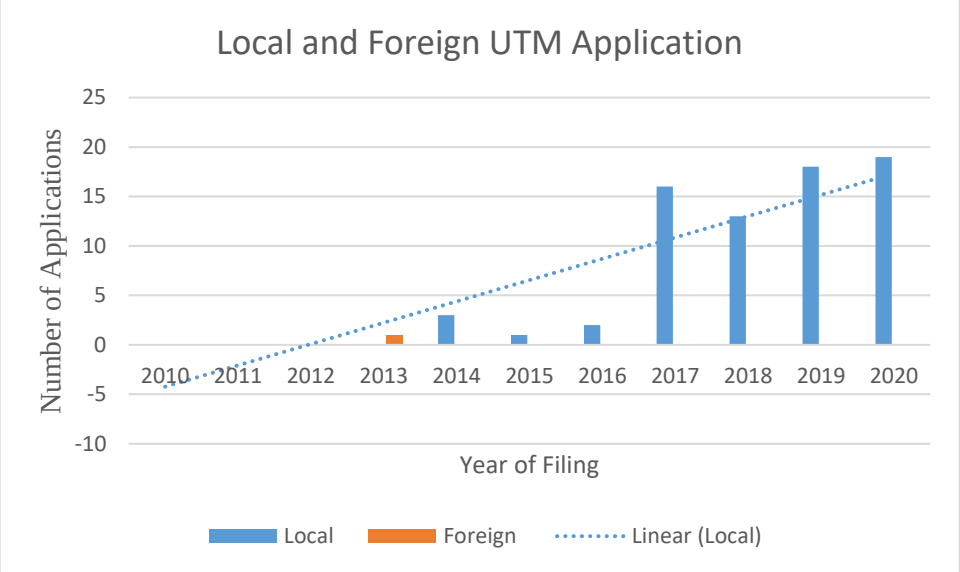

Figure 4.3.1: A figure showing a comparison between Local and Foreign Utility Model Application for the years between 2010 - 2020

Source: Researchers Excel Analysis of data from URSB

The number of utility model applications is less compared to patents but has been growing in the last few years. The Patent Office attributes this to a growing number of local

applications by innovators with incremental technologies that would otherwise not meet the strict patent requirements and increase awareness about IPRs.

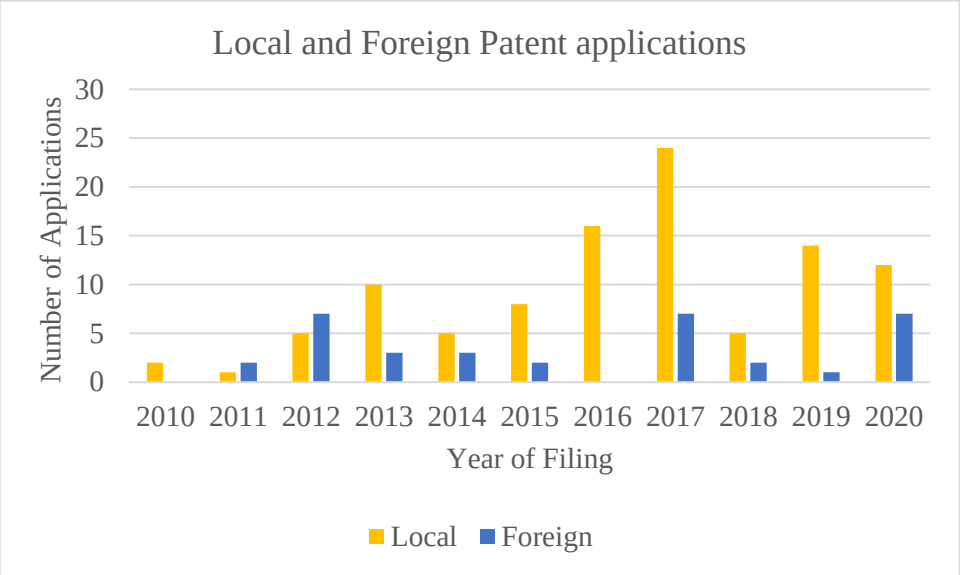

Figure 4.3.2: A graph showing the number of Local and Foreign Patent Applications

Source: Researchers Excel Analysis of data from URSB

The number of patent applications is higher compared to utility models dues to many factors ranging from a high number of foreign patent applications because it seems more attractive to foreign owners. Even amongst the locals, patents are higher notably because of the longer period and the high credibility that comes with such rights specifically among academic researchers. It noted that the growth rate of patents is slightly lower compared to that of utility models and this could probably indicate the popularity the utility models system is gaining among the local innovation communities.

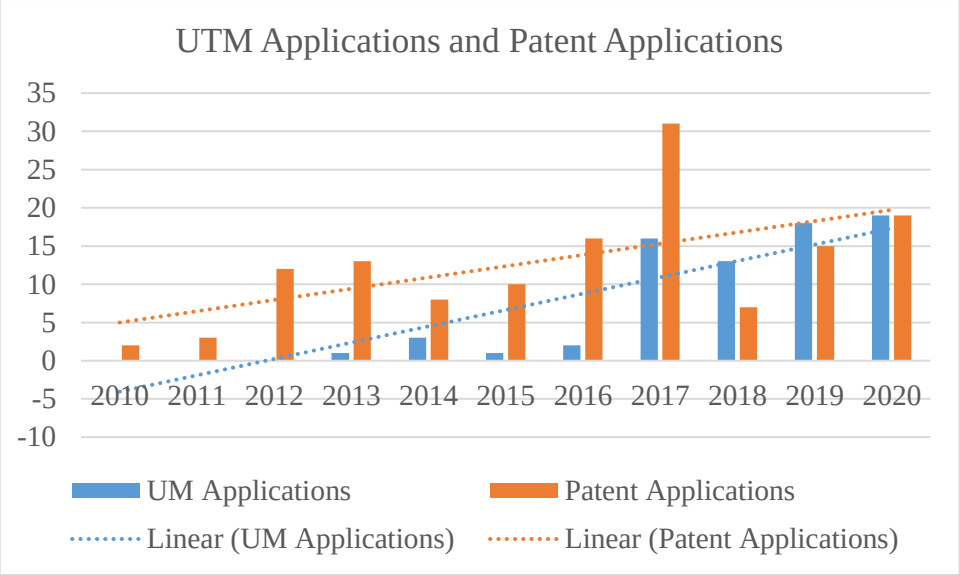

Figure 4.3.3: A graph showing the number of Utility Models and Patent Applications

Source: Researchers excel analysis of URSB data

4.4 Discussion and Interpretation

To guide the discussion and interpretation of the findings, the researcher uses the earlier key questions.

4.4.1 Registrations of Utility models.

Like most IP rights, registration is a way to asserting your ownership to any third party that uses it without due authorization. Registration is the only way to determine ownership in respect to Utility models and this gives the rights holder the right to enforce the same on infringing parties since these rights are exclusive.

This research question was addressed by interviewing key informants after the initial quantitative survey where both innovators and Practitioners pointed out factors like limited and most cases no awareness about the existence of IP rights by the innovation community. It was also evident that a significant number of these innovations takes place in the informal sector that is dominated by illiterate locals that have no idea of such rights.

Cummings (2010) notes that utility models have received less attention from legal scholars and researchers and their impact on economics has been scarce while attributing underutilization to lack of knowledge in the case of Australia.

It was also noticeable that many especially independent innovators and startup businesses lack the expertise in IP matters and later alone skills in drafting applications for these IPRs. This puts them at a disadvantage, as most cannot afford the exorbitant fees needed to acquire expert advice and later on secure their rights.

Innovators noted that the lack of expertise in drafting standard application also discouraged them from seeking protection for their inventions as Utility models and that the same required high fees to hire experts to aid in the process. It was noted that most innovators are from startup companies and SMEs that cannot afford services of IP experts to assist in drafting such documents and this further puts them crossroad as most seek business survival than seeking such rights for the future

The research while interacting with respondents in subsequent follow-ups noted that some academicians were not perusing protection for their research because their ultimate goal of doing the same was purely for academic achievement, recognition from their peers and are not bothered about protecting the same as long as they have achieved that. “Some of these guys just want to be professors, they don’t care” a respondent intimated. This implies that some academic researchers were comfortable perusing academic publications not knowing that both are achievable. The academic publication puts this research in the public domain forming part of prior art that would invalidate the same in case they later chased for protection beyond the grace period that is provided.

On the other hand, some of the people that had utilized to Utility model system referred to the reasons discussed below as some of their motivations for using the system.

The need for protection through preventing misappropriations of the invention drove some innovators to have their innovations registered. The registration of a Utility model gives the holder a right to prevent unfair competition through copying and imitation as this amount to infringement actions. Prevention of unfair competition is one of the practical justifications for the protection of IPRs and incremental innovations specifically as many are vulnerable to such acts due to their nature of mostly being practical. It was noted by the researcher that several farm machinery adaptations had been done and were doing well on the local market. However, a surprising majority of these had not been protected and hence were being replicated by fellow artisans next door.

Some respondents noted that the protection of their invention made it easy for them to attract funding from both local and foreign source that viewed Utility models and patents as a form of a yardstick in their funding criteria. It was also observed that in such cases inventors' valued patents more than utility models and that compelled some innovators to seek patent protection and only opt for utility model registration where chances of securing a patent have failed.

Synonymous academic researchers, securing utility model registration is seen as a form of success amongst peers. It was also noted that some academicians sought utility models protection for promotional reasons and careers advancement as the main reason, and the rest seemed secondary to them. As another twist to the same, some preferred academic publication without seeking Utility or even patent protection for similar reasons along with career advancement.

4.4.2 Role of utility models in the growth Uganda

Utility models are very relevant to the growth of Uganda and the business industry especially as it can be noted from the respondents in agreement to the value that they attach to them with the main purpose of protecting their innovation in the market place. 61% of the respondents indicated to have sought utility models protection for their inventions, even though the grants of such rights seem lower to below with over 92% indicating that it is between 0-20 % of their products. One of the most significant cases that had a share of its tale in media was the less toxic teargas innovation in 2016 for which a utility model certificate was awarded after failiure to secure a patent. The teargas innovator was able to secure a license with the Uganda People Defence Forces (UPDF) and is reaping his economic returns. Such an example demonstrates how innovators have taken advantage of this utility model regime to make significant economic returns from their inventions.

According to URSB, a significant number of issued utility models do not pay annuities which could be a sign that the owners have maybe not been able to reap a significant return after commercialization translating into a loss of interest in maintaining these rights. Such an explanation clearly justifies the low number of utility model protected product that makes up the total products on the market by innovators and their firms.

Utility models have played a huge role in expanding public knowledge through the publication of specifications concerning the protected invention. The monopoly conferred by this type of IP rights is balanced with public interest through enriching the public knowledge reservoir through its disclosure. It is highlighted from the initial survey results that the majority of the innovation community does not use these documents. Slightly

above 50% of the respondents indicated not to be, using documents at all which in a way a waste of public knowledge they could take advantage of in their innovation cycle to further develop innovative solutions.

Uganda must continue to use innovation and the creative use of resources across all sectors of the economy for development. It is however very hard it single-handedly attribute the economic growth, increase in innovations seeking protection of such rights authoritatively to utility models or IPRs as a multitude of factors that are far beyond IP are at play. From interaction with the users, it was noticeable that users that had used the system had in one or the other gotten economic benefits but it is very hard to quantify the extent to which this can be attributed to the registration of Utility modules.

4.4.3 Gaps in the utility model regime.

There was consensus from the interaction with the innovators, IP Practitioners and Patent office staff that Section 68(1) of the Industrial Property Act 2014 makes most of the provisions regarding patents applicable to utility models, including the exclusive rights provided under section 38. Eligible inventions have to be new and industrially applicable in the patent sense but do not need to meet the inventive step requirement (section 69(1) and (2)). While the worldwide novelty standard seems appropriate in the patent context, it is questionable to what extent domestic small-scale inventors, who are expected to benefit most from utility model protection, are capable of meeting this rather strict standard. Local innovators are better served by introducing, through legislative amendment, a domestic novelty standard specified in the context of utility model protection. It is important to note however according to URSB, they have applied the local

novelty principle as an office standard operating concerning the prosecution of utility model application before the office thought the same seems not spelt out in the law.

Section 32(2) requires that the registrar publish the grant of utility model certificates as soon as reasonably practical in the Gazette. It has been a practice that the applicant meets this cost involved in the publication of such grants. This cost has been highlighted by a significant number of innovators as being exorbitantly high and unnecessary bearing in mind the emergency of online publication media and the reducing popularity of the print media. The main reason for publication is public disclosure and it is only prudent to use a publication medium accessible to the majority of the public. The restrictiveness in this article to gazette publication, in turn, increases the cost of securing utility model protection by a factor of more than two for the innovators and hence some shun it due to its high financial publication requirement.

Regulation 43 of the industrial property regulations 2017 applies almost all regulations on patents to Utility models except those specified in 43(2). It indicates that regulations 22, 23(3) and (4) and 24 to 31 do not apply to utility model certificates. This means that relegation 7 about claims applies to utility models in the same sense as to patents. Regulation 7(9) on claims specifies that that for an application containing more than ten claims, the applicant shall pay for each beyond the ten as if it was contained in a separate application. This introduces a significant financial burden to applicants with an application having such claims. Considering that utility models are generally geared to attract individual innovators, small businesses and SMEs, the introduction of such indirect extra costs in such circumstances can act as a disincentive to utilizing this Intellectual Property protection regime.

4.4.4 Approaches to improve regime usage.

Effective public outreach and the awareness-building program is an essential component of the IP system this can be achieved by Incorporating aspects of IPR in the school curricula at the various levels of education to improve awareness. The government can further adopt informal avenues of learning through the training of SMEs in basic IP concepts and applications.

To further supplement the awareness efforts, the introduction of IP in the school curriculum will go a long way in raising a generation that recognizes, appreciate and protect IPRs. You can never protect, seek or appreciate what you do not know. Having an IP conscious generation puts a country in a great position of exploiting the creativeness of its people to foster economic growth and development.

On top of the increased number of TISCs coordinated by URSB with support from WIPO and other stakeholders, the government should adopt and establish fully functional Technology Transfer Offices (TTOs) and IP management office in academic institutions to further develop IP management capacity. Wamai, 2020 notes that it is not until recently that Makerere University has geared up efforts to operationalise an Intellectual property management office. Whereas Makerere has over the years been a centre for research and innovation the amount of IP and startup attributed to the great university is very low. The recognition of the need to protect and commercialize research and innovations from such institutions has been long overdue. The establishment of OTT will further enable such institutions to not only absorb and adapt foreign technologies but also translate academic research to protectable IP that can be commercialized.

The patent office should try to put utility model and other IP application reception services online since the world is now technology-driven and to give access to innovators who cannot physically access the office to submit their applications online for prosecution.

4.5 Summary

The chapter presents the results from the first quantitative phase of the study where data was collected from respondents using an online questionnaire. It further presents data from the subsequent qualitative phase of the study where one key informant from each of the categories of the identified utility model regime stakeholders was interviewed to explain the initially collected quantitative data. The identified regime stakeholders included independent innovators and those attached to TISCs, IP practitioners and Patent office staff. The chapter lastly shows interpretation of the collected data in view addressing the research questions at hand that included; the reasons for and against Utility model regime usage in Uganda; the role of utility models in the growth of Uganda; the gaps affecting regime utility model regime usage; and lastly approaches that can be adopted to improve the utility model regime usage.

CHAPTER 5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the research findings, the implications of the research, the conclusions, the recommendations and suggestions for future research.

5.2 Summary

The research met the objectives by reviewing relevant literature and adopting a justified mixed explanatory method approach to explain the finding of the quantitative part of the research using qualitative study for deep insight into the users' mind.

The literature looked at how other countries have employed utility models in the past for their development agenda. The effectiveness of the use of utility models in stimulating the growth of a country is dependent on the stage of development as in the case of Brazil, Japan and the Korean Republic. The United States, which is one of the largest producers of intellectual property, does not have a utility law system to protect the small innovations. One of the possible reasons could be that in the United States, most of the innovations are originated from large corporations which have a very high level of competition among them and therefore would like to protect their such innovations under the patent law which provides a very wide and longer protection rather than utility model.

A key element of utility model protection is that it is a legal instrument that is outside the sphere of international influence and hence countries tend to make legislation that is specifically tailored for domestic/regional needs and concerns. This was the spirit while passing the Industrial property Act 2014 which is now the basis of IPRs like Utility Models, Patents among others. The Industrial Property Act of Uganda 2014 address

almost all the issues required for an ideal utility model law to propel Uganda to the next development level like the appropriate subject matter of protection, a renewal based with fees system term of protection that weeds out unusable utility models, a non-substantive system that speeds up the grant process and Novelty of the invention.

5.3 Conclusions

Legislation of IPRs is a fundamental but insufficient precondition needed to take advantage of IPRs as a development policy tool. What is also needed is a strong human and institutional capacity for an IPRs regime to work for the benefit of Uganda's development. The Utility model regime in Uganda is fundamentally well structured for Ugandan to take full advantage of IP as a tool to deliver economic development. However, its usage remains lows due to factors highlighted in this research like low levels of awareness amongst the innovation community, low level of technical expertise in drafting IP related documentation especially applications, limited resources in form of legal fees and application fees among others. It must be noted that the majority of these factors are not due to the IP laws exclusively but rather relate mostly to the innovation environment in the country which calls for a multi-stakeholder effort to improve the regime's utilization. With the ever-increasing globalization and development of knowledge-based economies, there is no doubt that a better understanding of IPRs is indispensable to informed policymaking in all areas of human development. suggestions for further research

5.4 Implications

Policymakers and institutions in the IP sector devise ways to supplement the awareness efforts as expressed in the 2019 IP policy as it is evident that a significant number of

Uganda in the innovation circles are still not aware of IP and how they can leverage it. Policymakers can further utilize the results from this research by addressing the notable deficiencies pointed in the law that is; novelty standard as applied to utility models, the gazette publication requirement for utility model certificate grants and treatment of each after the tenth claim as if it were in a separate application. Through suitable amendments most of which are suggested by the researcher in the recommendations to improve the utilization of this regime.

The need to emphasize IP protection for academic research is significant issue since a number of academic researchers and innovations have not been translated to protectable IPRs. At times academic researchers prefer peer-reviewed academic publications for reasons related to carrier development and social status.

5.5 Recommendations

This research recommends a multi-sectoral approach to address the issues impeding the utilization of the utility model regime if Uganda is to fully take advantage of such intellectual property rights to their full potential to spur economic growth.

I. The government through its agencies should make sure that the innovation landscape in Ugandan is harmonized to enable information flow at all levels. This will encourage and develop synergies amongst the different stakeholders, create linkages and staff capacity building.

II. An amendment that is geared to tailor the novelty standard under utility model protection to the capacities and needs of local inventors to promote incremental domestic innovators, the novelty standard in sections 68(1) and 69(1) of the

Industrial Property Act 2014 for purposes of utility models should refer to domestic novelty, as opposed to the novelty standard as applied to Patent law even though the Office standard procedure according to URSB has been a local novelty.

III. URSB through the line Minister should consider an amendment to the industrial property regulations to rectify the concerns relating to the treatment of claims beyond ten. A claim range costing approach can be adopted for utility model applications by specifying claim rages and their cost instead of treating each after the tenth claim as if it is contained in a separate application. This will absorb the burden of this hidden cost especially for utility model applications with more than ten claims that are associated with the current system.

IV. An amendment to rectify the publication means or mode for utility model certificate grant be introduced. This will check the current high fees associated with the publication of Utility model grants in the gazette. It is important to note that with the advent, it has become cheaper, accessible and easier to publish online than in print media and this spirit the Industrial property Regulations recognize the use of the Industrial Property Journal. Under regulation 5(2), it specifies that the Journal shall contain reports of cases relating to industrial property rights whether in Uganda or elsewhere and any other information relating to industrial property or contained in the register of industrial property that the registrar considers necessary. This amendment will reduce the burden financial burdens associated with the current print media publication through the use of the Industrial property Journal.

V. Government should make a deliberate effort to encourage and support public-private partnerships in developing key infrastructure to facilitate innovations,

especially in the ICT sector for example through Tax incentives to lower the cost of doing business. The current innovation fund should be streamlined and standardized to follow excellent practices and not focus only on high impact innovations but also the small incremental and critical ones from individual innovators and SMEs. This will accelerate their commercialization process and encourage investment in R&D dues to cheap access to information and finance

VI. The responsible ministries should collaborate with the National curriculum development Centre to enhance and integrate IP into Lower, secondary school and tertiary institution curricula to supplement the awareness efforts by institutions like URSB and UNCST. Improving awareness will enlighten the public to not only protect, appreciate but also encourage them to acquire such IP protection for their inventions as a reward for their innovative creations. It must be noted that you cannot seek to protect what you do not know.

VII. The establishment and operationalization of TTOs especially in higher institutions of learning will further supplement the already established TISCs in not only sensitizing the academicians but also building their capacity in the different areas of IP. This effort can further aid in translating academic research and publications to knowledge not just for academic excellence and progress but also as an important asset with high financial returns through applying for IP protection especially if the research has potential for commercialization. Commercialization of research through IPRs requires that research and academic institutions and firms develop their IPRs' policies and expertise. This approach will go a long mile in ensuring that such academic researchers take full advantage of IP protections to impact society.

VIII. As raised amongst the challenges especially with independent innovators and startup SMEs, the government can through an amendment to the regulations consider the implementation of a tiered fees structure kind of system that favours such marginalized groups of users. This will enhance the system uptake and make the system more attractive in an appeal to encourage more people to seek registration for their innovations as these groups generate most of the innovation activity that could benefit from the use of the Utility model regime.

5.6 Suggestions for further research

To further study this regime, the research recommends a study of the usage of utility models in a broad context probably at a regional level like east Africa and even Africa in general. Such research will share experience for other African countries and provide an analysis on how best to use such a protection regime to deliver development for our continent.

Utility models in Uganda can further be studied in the context of a given industry or sector for example agriculture where several adaptations for especially farm machinery takes place and several other contexts.

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APPENDICES

Appendix 1: Informed Consent

COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

INFORMED CONSENT GUIDE

My name is Keneth Nuwagaba, a Masters in Intellectual Property (MIP) student at Africa University in Mutare, Zimbabwe. l am researching to assess the level of utilization of the Utility Model regime in Uganda. I am kindly asking you to participate in this study by answering a few questions.

The study aims to assess the level of utilization of utility model protection by shading light on the factors influencing the same. You are among the few study participants and you were selected because of your exposure and knowledge of the study subject matter.

There will be no risk, discomforts or inconveniences what so ever. Participation is voluntary and there will be no benefits/compensation for participation. Any information that is obtained in the study that can be identified with you will not be disclosed without your permission. Names and any other identification will not be asked for in the question. If you decide not to participate in this study, your decision will not affect my future relationship with you. If you choose to participate, it is expected that this will take about

20 minutes at maximum and you are free to withdraw your consent and to discontinue participation without penalty.

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

If you have decided to participate in this study, please sign this form in the space provided below as an indication that you have read and understood the information provided above and have agreed to participate.

---------- ----------

Name of Research Participant (please print if applicable) Date

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Signature of Research Participant or legally authorised representative

If you have any questions concerning this study or consent form beyond those answered by the researcher including questions about the research, your rights as a research participant, or if you feel that you have been treated unfairly and would like to talk to someone other than the researcher, please feel free to contact the Africa University Research Ethics Committee on telephone (020) 60075 or 60026 extension 1156 email aurec@africau.edu

Name of Researcher ----------

Thank you

Appendix 2: Questionnaire

COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

Questionnaire

Purpose of Survey The main purpose of this survey is to assess the utilization of the utility model regime in Uganda.

In this survey, we will ask you about the practical experience while interacting with the utility model regime in Uganda. Please answer all the questions listed below. If you do not understand a question, or a question does not apply to you or your organization, please skip this question and move on to the next. Good luck!

User Category (Select applicable)

☐Innovator ☐IP Lawyer ☐TISC Innovator

1. Have you engaged or represented an individual that has in any innovation process leading that resulted in a new product or approach to doing something?

   ☐Yes ☐No

2. Are you aware of the existence of a protection mechanism for innovation?

   ☐Yes ☐No

3. Have you protected your innovation as a utility model before?

   ☐Yes ☐No

4. What were your reasons for or not registering your innovation for utility model protection? (state the reasons in each case)

   ☐Yes ☐No

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5. What benefits have you realized due to the protection of your innovation through utility model registration? (State the reasons in each case)

☐Yes ☐No

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6. Did you face any challenges/obstacles while acquiring utility model protection for your innovation? (State the reasons if yes)

☐Yes ☐No

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7. Have you participated or heard about any awareness campaign about innovation protection?

☐Yes ☐No

8. In your opinion, do innovative industries benefit from a system of legal protection for small scale/incremental innovation (utility model protection)?

☐Yes ☐No

9. Has there been a situation where a third party made an infringement on a utility model of your organization or client?

   ☐Yes ☐No

10. Have you taken any action against the party that copied your innovation without your authorization? (State the action if yes)

    ☐Yes ☐No

    ---

11. In what way is tracking and fighting infringement regulated by you/ your client/ company? Fighting infringement (skip if not applicable)

    ☐Not formally organized, differs on a case by case basis

    ☐It is completely outsourced (e.g. to patent attorneys or other specialists)

    ☐There is a limited internal capacity for these activities and is complemented for an important part with external expertise

    ☐It is conducted largely by internal capacity, whereby external expertise can be acquired for specific inquiries

12. When do you/ your client or company decide to pursue litigation?

    ☐No litigation

    ☐Only when the economic effects of infringement are felt

    ☐In principle always when infringement is detected.

    ☐Only when no other option is available

13. Is there a significant threat of legal uncertainty and wasteful litigation due to utility model protection?

☐Yes ☐No

14. To what extent do you/ your client/ your company use information from patents/Utility model databases?

☐Not at all

☐Only for evaluating the chances of own patent applications

☐For patent applications, but also as input for ideas and/or own specific research

☐The same, but also to gain insight into the strategy of competitors

15. How do you / your client or your company financially appreciate Utility models?

☐No financial appreciation

☐Patents are valued based on manufacturing or purchasing costs

☐Patents are valued for external accounting (e.g. financial statements) based on manufacturing or purchasing costs and for

☐Internal reports based on cost price plus a standard profit margin

☐Utility Models are valued for external accounting (e.g. financial statements) based on manufacturing or purchasing costs and for internal reports based on expected return (market potential)

16. In the last five years, approximately a Utility model application was filed for approximately what percentage of your/your clients or company's product and process innovations

☐0-20% ☐21-40% ☐41-60% ☐61-80% ☐81-100%

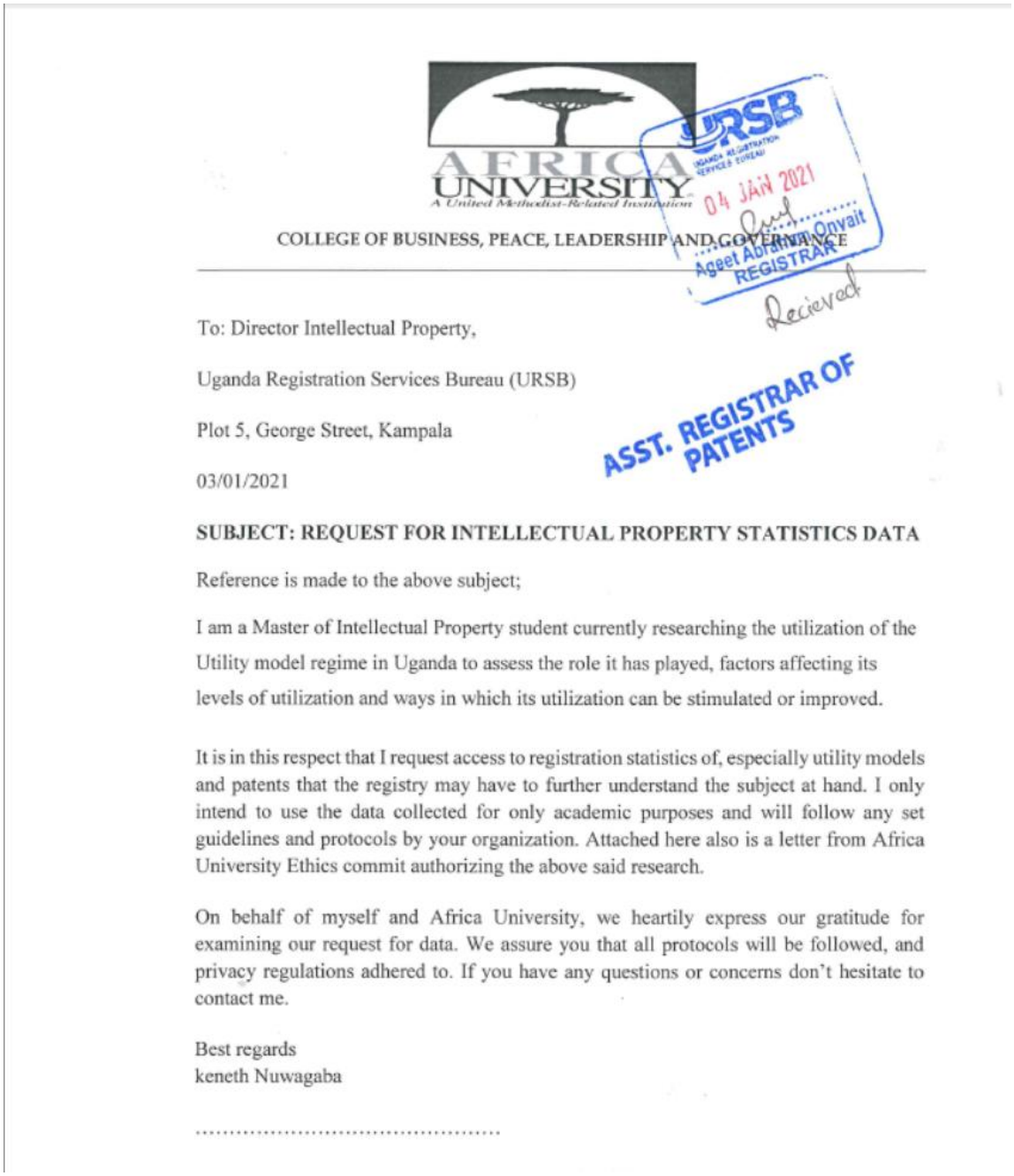
17. In the last five years, approximately what percentage of your Utility model applications were actually awarded?

☐0-20% ☐21-40% ☐41-60% ☐61-80% ☐81-100%

Appendix 3 Thesis Gantt chart

	Year and Month					
	2020		2021			
Research Activity	**November**	**December**	**January**	**February**	**March**	**April**
Develop a research proposal						
Literature review						
Development of questions for data collection						
Pilot Study						
Data collection						
Data analysis						
Write up of the first draft						
Write up of final draft						
submission of dissertation						

Appendix 4: Data Request Letter



AFRICA UNIVERSITY
A United Methodist-Related Institution

COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

URSB 04 JAN 2021 Ageet Abraham Onyait REGISTRAR Recieved

To: Director Intellectual Property,

Uganda Registration Services Bureau (URSB)

Plot 5, George Street, Kampala

ASST. REGISTRAR OF PATENTS

03/01/2021

SUBJECT: REQUEST FOR INTELLECTUAL PROPERTY STATISTICS DATA

Reference is made to the above subject;

I am a Master of Intellectual Property student currently researching the utilization of the Utility model regime in Uganda to assess the role it has played, factors affecting its levels of utilization and ways in which its utilization can be stimulated or improved.

It is in this respect that I request access to registration statistics of, especially utility models and patents that the registry may have to further understand the subject at hand. I only intend to use the data collected for only academic purposes and will follow any set guidelines and protocols by your organization. Attached here also is a letter from Africa University Ethics commit authorizing the above said research.

On behalf of myself and Africa University, we heartily express our gratitude for examining our request for data. We assure you that all protocols will be followed, and privacy regulations adhered to. If you have any questions or concerns don't hesitate to contact me.

Best regards
keneth Nuwagaba

.....

Appendix 5: Interview guide Summary (Patent office/ Practitioners/Innovators)

1. Why the awareness are very low for independent innovators outside TISCs and could this the reason for fewer registrations. Does URSB have any programs specifically tailored for such innovators?
2. What do you think explains the identified numbers and trends of Utility model registration especially in light of Patents?
3. Why do we have less utility model registration in relation to trademarks?
4. Why is the number of patents less than that of utility models, what are the possible factor influencing this trend?
5. Has there been any infringement cases of utility models brought to your notice and why they are nonexistent. Why don't companies and innovators have systematic ways of identifying and trucking infringement?
6. What is the current number of Utility models paying annuities, do we have any redundant utility models that have expired due to not filing renewals?
7. Where do you get the basis for local novelty within the law since it is not expressly provided for as Article 69 applies seems to apply novelty in the same sense to utility models as in patents?
8. What amendment and recommendation do you think are required to make the utility model system more attractive for innovators?
9. Do you think that the Utility model system is overly generous given that it has a very low inventiveness threshold but the same remedies against infringement as a standard patent? (Raise and include a lower inventive step).

Appendix 6: AUREC Approval Letter

AFRICA UNIVERSITY
(A United Methodist-Related Institution)
INVESTING IN AFRICA'S FUTURE

AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 website: www.africau.edu

Ref: AU1879/21 29 January, 2021

KENNETH NUWAGABA
C/O CBPLG
Africa University
Box 1320
Mutare

RE: **UTILIZATION OF UTILITY MODEL REGIME IN UGANDA**

Thank you for the above titled proposal that you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

a) Research proposal
b) Data collection instruments
c) Informed consent guide

- **APPROVAL NUMBER** AUREC1879/21
  This number should be used on all correspondences, consent forms, and appropriate documents.
- **AUREC MEETING DATE** NA
- **APPROVAL DATE** January 29, 2021
- **EXPIRATION DATE** January 29, 2022
- **TYPE OF MEETING** Expedited
  After the expiration date this research may only continue upon renewal. For purposes of renewal, a progress report on a standard AUREC form should be submitted a month before expiration date.
- **SERIOUS ADVERSE EVENTS** All serious problems having to do with subject safety must be reported to AUREC within 3 working days on standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.

AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC) APPROVED P.O. BOX 1320, MUTARE, ZIMBABWE

Yours Faithfully

MARY CHINZOU – A/AUREC ADMINISTRATORFOR CHAIRPERSON, AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE