

## **EFFECT OF INTELLECTUAL PROPERTY MANAGEMENT ON THE DEVELOPMENT OF ENTREPRENEURSHIP IN ENUGU STATE**

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**Abstract:** *The study evaluated the effect of intellectual property management on the development of entrepreneurship in Enugu State. However, the specific objectives include to: Ascertain the effect of trademark on sales turnover and determine the effect of patent on customer patronage of the selected firms in Enugu State. The study used the descriptive survey design approach. The primary source of data was the administration of questionnaire. A total population of 314 staff was used. One hundred and seventy-six (176) sample size was determined using Taro Yamane's formula. One hundred and sixty (160) returned the questionnaire and accurately filled. Data was presented and analyzed using Likert Scale and the hypotheses using Z - test. The findings indicated that 1. Trademark had significant positive effect on sales turnover (X value = 32.61, p value 0.0000 < 0.05) and Patent right had significant positive effect on customer patronage of the selected firms in Enugu State. The evidence is shown in the (X value = 30.86, p value 0.0000 < 0.05. The study concluded that the study therefore concluded that intellectual property management has significant positive effect on the development of entrepreneurship in Enugu State. The study recommended among others that Entrepreneurs should use trademark to identify their goods and stop counterfeiters in faking their products.*

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**Keywords:** *intellectual, property, management, development, trademark, patent customer patronage*

### **Introduction**

#### **1.1 Background of the Study**

Intellectual property is a category of property that includes intangible creations of the human intellect (Goldheim, 2016). Intellectual property encompasses two types of rights: industrial property rights (trade marks, patents, destinations of origin, industrial designs and models) and copyright. Tushman (2016) posits that the main purpose of intellectual property is to encourage the creation of a large variety of intellectual goods. To achieve this, the law gives people and businesses property rights to the information and intellectual goods they create (usually for a limited period). This gives economic incentives for their creation, because it allows people to profit from the information and intellectual goods they create (Teece, 2014). These economic

incentives are expected to stimulate innovation and contribute to the technological progress of countries, which depend on the extent of protection granted to innovators.

In today's knowledge society where the dependence on physical assets is increasingly replaced by intangible assets such as intellectual property rights, the management of intellectual property has moved from a mere legal matter to a strategic agenda. As a result, the role of intellectual property has increasingly been the subject of discussion in research and practice. Creating knowledge and capturing this knowledge in intellectual property rights such as patents, trademarks and industrial designs are key competitive components for firms (Carlow, 2014). In many successful firms, intellectual property serves as powerful instruments

of corporate strategy to protect innovation and to strengthen the firm's technological leadership, thereby promoting entrepreneurship.

Akinyemi (2019) states that entrepreneurship is the lifeblood of the Nigerian economy. It is the cradle of job and wealth creation in the most innovative ways. The prosperity and progress of a nation, depends on the quality of its people. If they are enterprising, ambitious, and courageous enough to bear the risk, the community/society will develop quickly. Such people are identified as entrepreneurs and their character reflects entrepreneurship. Entrepreneurship is no monopoly of any religion or community (Timus, 2019). Entrepreneurial potential can be found and developed anywhere irrespective of age, qualification, experience, or socio-economic background, only efforts are required in the right direction. However, these entrepreneurs need to protect their investment. It is based on this background that this paper examined effect of intellectual property management on the development of entrepreneurship in Enugu state.

### **1.2 Statement of the Problem**

Ideally, every company will like to manage its intellectual property because intellectual property rights can set your business apart from competitors. Intellectual property can be sold or licensed, providing important revenue stream for the company and offering customers something new and different. Unfortunately, there are some challenges facing intellectual property management like if the company is getting the protection for the first time, it could be bit expensive particularly if the product is complex and involves methods, designs, and processes. Other challenges include registry issues, lack of expert in patent claim, cost of [protection, lack of awareness, intellectual property lawsuits piracy and protecting business concepts.

The consequence of not managing the intellectual property of an organization is that it could lead to decline in the sales turnover due to piracy activities. Another consequence is that it could lead to lack of customer patronage.

### **1.3 Objectives of the Study**

The broad objective of this paper is to examine Effect of intellectual property management on the

development of entrepreneurship in Enugu State. However, the specific objectives include to:

1. Ascertain the effect of trademark on sales turnover of the selected firms in Enugu State
2. Determine the effect of patent on customer patronage of the selected firms in Enugu State

### **1.4 Research Questions**

Based on the objectives of the study, the following research questions were raised:

- i. What is the effect of trademark on sales turnover of the selected firms in Enugu State?
- ii. What is the effect of patent on customer patronage of the selected firms in Enugu State?

### **1.5 Statement of Hypotheses**

To realize the objectives of the study and to provide answers to the research questions, the following null hypotheses were formulated.

- i. Trademark does not have significant positive effect on sales turnover of the selected firms in Enugu State
- ii. Patent right does not have significant positive effect on customer patronage of the selected firms in Enugu State

### **1.6 Significance of the Study**

Many people will benefit from this study. Among them are entrepreneurs, the general public and the government.

**Entrepreneurs:** Entrepreneurs will benefit from this study because findings from this study will promote innovation and creativity in the sector.

**General Public:** The general public will benefit from this study because it will lead to job creation.

**Government:** The government will benefit from this study because it will lead to economic development.

## **REVIEW OF RELATED LITERATURE**

### **2.1 Conceptual Review**

#### **2.1.1 Intellectual**

Intellectual means involving a person's ability to think and to understand ideas and information (Anderson, 2019). It means something related to or using the minds or intellect. An intellectual is a person who engages in critical thinking, research, and reflection about the reality of society, and who proposes solutions for the normative problems of

society. Coming from the world of culture, either as a creator or as a mediator, the intellectual participates in politics, either to defend a concrete proposition or to denounce an injustice, usually by either rejecting or producing or extending an ideology, and by defending a system of values.

### **2.1.2 Intellectual Property**

Intellectual property can be defined as the creations of the mind: inventions; literary and artistic works; and symbols, names and images used in commerce (Shapiro, 2018). Intellectual property (IP) is a category of property that includes intangible creations of the human intellect (Quintas, 2017). Intellectual property encompasses two types of rights: industrial property rights (trademarks, patents, designations of origin, industrial designs and models) and copyright. It was not until the 19th century that the term "intellectual property" began to be used, and not until the late 20th century that it became commonplace in the majority of the world (Bhatt, 2018).

The main purpose of intellectual property law is to encourage the creation of a large variety of intellectual goods (Murray, 2017). To achieve this, the law gives people and businesses property rights to the information and intellectual goods they create – usually for a limited period of time. This gives economic incentive for their creation, because it allows people to profit from the information and intellectual goods they create (Horwitch and Armacost, 2018). These economic incentives are expected to stimulate innovation and contribute to the technological progress of countries, which depends on the extent of protection granted to innovators (Anderson, 2019).

### **2.1.3 Trademark**

A trademark is a distinctive sign that identifies certain goods or services produced or provided by an individual or a company (Blackman, 2016). Its origin dates back to ancient times when craftsmen reproduced their signatures, or “marks”, on their artistic works or products of a functional or practical nature. Over the years, these marks have evolved into today’s system of trademark registration and protection. The system helps consumers to identify and purchase a product or service based on whether its specific characteristics and quality – as indicated

by its unique trademark– meet their needs. Trademark protection ensures that the owners of marks have the exclusive right to use them to identify goods or services, or to authorize others to use them in return for payment. The period of protection varies, but a trademark can be renewed indefinitely upon payment of the corresponding fees. Trademark protection is legally enforced by courts that, in most systems, have the authority to stop trademark infringement.

### **2.1.4 Patent**

A patent is an exclusive right granted for an invention– a product or process that provides a new way of doing something, or that offers a new technical solution to a problem (Hawkings, 2019). A patent provides patent owners with protection for their inventions. Protection is granted for a limited period, generally 20 years. Patents provide incentives to individuals by recognizing their creativity and offering the possibility of material reward for their marketable inventions. These incentives encourage innovation, which in turn enhances the quality of human life. Patent protection means an invention cannot be commercially made, used, distributed or sold without the patent owner’s consent. Patent rights are usually enforced in courts that, in most systems, hold the authority to stop patent infringement. Conversely, a court can also declare a patent invalid upon a successful challenge by a third party.

### **2.1.5 Intellectual Property Management**

The term intellectual property management refers to the administration and organisation of intellectual property matters in institutions such as companies, public or private research institutions and any other entity engaged in the creation and commercialization of immaterial rights (Gurrero, 2018). Typically, the management of IP rights – which, for the purpose of this guide, include any immaterial asset that may have commercial value or that may be required for facilitating future exploitation – requires a centralized organization responsible for overseeing the creation and commercial exploitation of rights. The rights include, depending on the jurisdiction, registered patents, utility models, trademarks, designs and plant variety rights as well as unregistrable rights including copyright in research

documents, computer programs, databases and database rights, unregistered design rights, topography rights and any other immaterial asset including, of course, inventions prior to patent application, and should also stretch to any other right such as domain names, rights in the name of an institution and, ultimately, rights that have been acquired by way of a license or assignment from third parties

### **2.1.6 Entrepreneurship**

The word entrepreneurship is defined by the Oxford Advanced Learner's Dictionary of Current English (Hornsby, 1975), as one who organizes a business undertaking assuming the risk for the sake of the profit. Entrepreneurship can be defined as the willingness and ability of a person, or a firm or an organization to see environmental change as an opportunity and use the factors of production to produce new goods and services (Ile, 2010). It is also defined as a person who organizes controls and directs the processes of production of goods and services and bears the attendant risks. Thus, entrepreneurs are calculated risk takers. People who go into business have no guarantee of making profit. They assume the risk of losing what they have invested in their firms. Their willingness to assume the risk depends on how healthy they think the economy will be in the future, the past and political stability in the country government incentives, the expected return from undertaking the risk, their abilities, among other factors.

### **2.1.7 Development**

Development has been variously defined by many scholars; development is not purely an economic phenomenon but rather a multi-dimensional process involving re-organization and re-orientation of entire economic and socio-political system. In essence development must be seen as representing the whole gamut of change by which an entire system turns to the diverse basic needs and evolving aspirations of individuals and groups within that system, moves away from condition of life widely perceived as unsatisfactory toward a situation or condition of life regarded as socially, politically and economically better, (Todaro and Smith 2018).

### **2.1.8 Entrepreneurship Development**

Ile (2019) states that entrepreneurship means providing people, society, firms and other organizations with entrepreneurial knowledge, skills, behavior, attitudes, characters and resources which empowers them with the capability or ability or competencies and willingness to identify investment opportunities, establish and run the enterprise successfully. Entrepreneurship development can be measured by some variables like self-employment, inflows and outflows of businesses, total entrepreneurial activities, number of startups, business ownership rate etc

### **2.1.9 Sales Turnover**

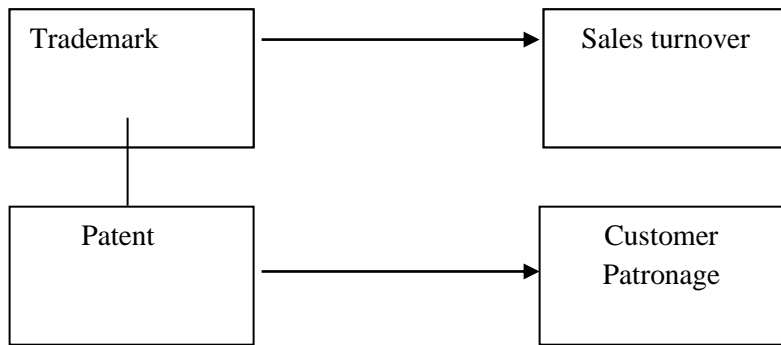
Anderson (2019) defines sales turnover as the total amount of money that a company receives from the sale of products or services in a particular period of time. It is the company's total revenue, both the invoice, cash payments and other revenues. Sales turnover represents the value of goods and services provided to customers during a specified time period—usually one year. The term is often just referred to as sales or net sales, which means revenues without VAT. Sales turnover is usually expressed in monetary terms but can also be in total units of stock or products sold. It is often described by being converted into the company's accounting currency. Sales turnover is the total amount of revenue generated by a business during the calculation period. The concept is useful for tracking sales levels on a trend line through multiple measurement period, in order to spot meaningful changes in activity levels. The calculation period is usually one year. The revenue included in this calculation is from both cash sales and credit sales. The measurement can also be broken down by units sold, by geographic region, by subsidiary, and so forth.

### **2.1.10 Customer Patronage**

Taylor (2018), states that the word customer or consumer patronage mean a person or thing that eats or uses something or a person who buys goods and services for personal consumption or use. People patronize organizations products/services at one time or the other. In the context of this study, we may use customer patronage and loyalty interchangeably because customer patronage precedes loyalty.

There is a strong relationship between patronage and loyalty. Patronage is born out of a desire to be committed to an organization either based on its service quality or perceived service qualities. Hence, the extent to which a customer will patronize the services of a bank depends on how the customer perceives the bank's physical environment (servicescape) and how the customer also thinks and feels that the condition of the service environment is consistent with his / her personality. Banks in the 21st century often compete for customers in order to increase their market share. The possibility of any of these money deposit or retail banks to achieve their stated aims is hinged on their ability to evolve products

**Independent Variables Dependent Variable**



Source: Researcher's Compilation, 2023

**2.2 Theoretical Framework**

There are many theories of intellectual property management but this study adopted Resource Based Theory and Property Rights Theory.

**2.2.1 Resource-Based Theory**

This theory was proposed by Penrose in 1959. Resource Based Theory uses resources as the central unit of analysis. Penrose (1959) argues that a firm consists of productive resources being administered in order to render services useful to the firm. The combination and synergies of material resources and human resources enable unique services, leading to competitiveness of firms (Chandler, 1990). Being more concerned with growth than size of firms, Penrose (1959) argues that unused resources (at least partly) direct the expansion of firms, while available managerial resources limit the growth.

(services) that will satisfy the needs and wants of their chosen target customers better than their competitors. Also, their service quality and delivery strategies should be improved while looking for new avenues to regularly attract and retain their customers.

**2.1.11 Conceptual Framework**

This is a schematic diagram showing the relationship between the independent and the dependent variables. In this study, trademark and patent were the independent variables, while sales turnover and customer patronage are the dependent variables. The relationship is presented in Figure 2.1

**2.2.2 Property Rights Theory**

This theory was proposed by Demsetz in 1990. Property Rights Theory emphasizes the importance of (private) property rights in economic organization, especially when dealing with externalities (Demsetz, 1990). Three types of rights related to properties are usually distinguished; the right to use and transform a resource, the right to earn income from a resource, and the right to transfer ownership of the resource (Eggertsson, 1990). This distinction of different types of rights is important in IP management, since a licensing deal might, for example, give the licensee (license buyer) the right to use and profit from a technology, while the right to transfer ownership is left with the licensor (license seller). Early advocates of PRT were optimistic in their views of how private property rights could enable efficient economic organization.

### **2.3 Empirical Review**

The empirical review is in line with the objectives of the study

#### **2.3.1 Effect of Trademark on Sales turnover**

In a study conducted by Hill (2020), in New York on the extent trademark affects sales turnover in the pharmaceutical industry, a population of 372 employees was studied using the survey method of research and questionnaire as the major instrument of data collection. The analysis of variance (ANOVA) was used to analyze the data and it was found that trademark affects sales turnover in the pharmaceutical industry to a large extent.

Furthermore, Ibrahim (2020) conducted a study in Lagos State on the effect of trademark on the sales turnover in the manufacturing firms. In the study a population of 235 workers was studied using the survey method of research and questionnaire as the major instrument of data collection. The non-parametric chi-square technique was used in the analysis and it was found that trademark has significant positive effect on the sales turnover of the manufacturing industry to a large extent.

In a study conducted by Inga (2020), in Massachusetts, USA on the relationship between trademark and sales turnover of the brewery industry, a population of 580 workers was studied using the survey method of research and questionnaire as the major instrument of data collection. The Pearson Product Moment Correlation was used in the analysis and it was found that trademark has significant positive relationship with the sales turnover of the brewery industry.

Ajaegbo (2020) conducted a study in Anambra State on the effect of trademark on the sales turnover of the manufacturing industry using a population of 232 employees. The survey research method was adopted while the questionnaire was the major instrument of data collection. The non-parametric chi-square technique was used in the analysis and it was found that trademark has significant positive effect on the sales turnover of the manufacturing industry.

#### **2.3.2 Effect of Patent on Customer Patronage**

In a study conducted by Clulow (2021), in New Jersey on effect of patent on the customer patronage of the manufacturing industry, a population of 205 workers was studied using the survey method of

research and questionnaire as the major instrument of data collection. The regression method of analysis was used while the f-ratio was used to test the hypotheses and it was found that patent has significant positive effect on the customer patronage of the manufacturing industry.

In related study carried out by Ebieri (2021), in Lagos State on the relationship between patent and customer patronage in the paint industry, a population of 272 employees was studied using the survey method of research and questionnaire as the major instrument of data collection. The Spearman rank order correlation coefficient was used in the analysis and it was found that patent has significant positive relationship with the customer patronage of the paint industry.

In a study conducted by Christensen (2021) in New Jersey on the extent patent affects the customer patronage of the pharmaceutical industry, a population of 253 workers was studied using the survey method of research and questionnaire as the major instrument of data collection. The analysis of co-variance (ANCOVA) was used in the analysis and it was found that patent affects customer patronage to a large extent in the pharmaceutical industry

Finally, Akinyele (2021) conducted a study in Ogun State on the effect of patent on the customer patronage of the manufacturing industry. The study was conducted using a population of 378 employees from two manufacturing firms. The E-View was used in the analysis and it was found that patent has significant positive effect on customer patronage of the manufacturing industry.

### **METHODOLOGY**

#### **3.1 Research Design**

Research design deals with planning the strategy or overall design of the study. This paper used survey research design. Ogutu (2012) posits that a survey research method is probably the best method available to social scientists who are interested in collecting original data for purposes of describing a population which is too large to observe directly. Survey has several advantages; they can be used to investigate problems in realistic setting. The cost of survey is reasonable, when we consider the amount of information gathered. A large amount of data can

be collected with relative ease from a variety of people. Surveys are not constrained by geographical boundaries. They can be conducted anywhere. This is the basis for the researcher’s choice of survey as the research design for this paper.

**3.2 Area of the Study**

The geographic location of the study is the offices of the three selected manufacturing companies. They include Juhel Pharmaceuticals, Hardis and Dromedas and Nalin Paints all Enugu East Local Government Area of Enugu State.

**3.3 Sources of Data**

Data for this study were obtained from the primary and secondary sources of data. The primary source

includes the questionnaire while the secondary sources of data are those sources of data, which are not the original material of the researcher. They include textbooks, journals, internet materials, seminar etc.

**3.4 Population of the Study**

Sekaran (2001) posits that population is the entire group of people, events or things of interest that the researcher wishes to investigate. With respect to three manufacturing firms. The breakdown of the population is as follows:

**Table 3.1: Distribution of the Population**

S/NO	Firms	Number of workers
1	Juhel	104
2	Hardis & Dromedas	98
3	Nalin Paints	112
	<b>Total</b>	<b>314</b>

Source: Personnel Audit, 2023.

**3.5 Sample Size Determination**

In determining the sample size for this research work, the researcher drew the population from the three selected manufacturing firms making use of the Taro Yamane’s formula.

The formula is stated thus:

$$n = \frac{N}{1+N(e)^2}$$

Where:

n = Sample Size

N = Population of the Study

e = Margin of error and in this case, e = 5% or 0.05

$$n = \frac{314}{1+314 (0.05)^2}$$

$$n = \frac{314}{1+0.785}$$

$$n = \frac{314}{1.785}$$

$$n = 175.91$$

Approximately equal to 176

**3.6 Sampling Techniques**

The study used the simple random sampling technique. The simple random sampling technique involves distributing copies of questionnaire to the

respondents in a random manner without control of the respondents chosen.

**3.6 Instruments of Data Collection**

The writer collected data through the use of questionnaire. There are two types of questionnaire, the close-ended and open ended questionnaire.

**3.7 Validity of the Instrument**

Validity of the instrument, means the extent to which the research instrument measures what it is supposed to measure or accomplishes what it is supposed to accomplish. The writer made use of expert (face) validity where the supervisor scrutinized the questionnaire items to confirm that they are related to the research questions.

**3.8 Reliability of the Instrument**

Reliability refers to the consistency of scores obtained by the same individuals when presented with the same test on different sets of equivalent items, or under other variable examining conditions (Ikeagwu, 1998). The researcher made use test re-tests method.. This is to ascertain the consistency in the first and second responses.

**3.9 Method of Data Analysis**

The method of data analysis consists of inferential statistics. The descriptive statistics such as

percentages, frequency tables and mean were used while the z-test statistics was used to test the hypothesis.

**Data Presentation and Analysis**

**4.1 Data Presentation**

**4.1.1 Distribution and Return of Questionnaire:**

**Table 4.1: Distribution and Return of Questionnaire**

Telecommunication Firm	Number of Questionnaire Distributed	Number of Questionnaire Returned	Number of Questionnaire Lost	% of Questionnaire	Valid
Juhel	58	53	5	30	
Hardis & Dromedas	55	50	5	28	
Nalin Paints	63	57	6	32	
<b>Total</b>	<b>176</b>	<b>160</b>	<b>16</b>	<b>90</b>	

Source: Field Survey, 2023.

Table 4.1, shows that out of a total of 58 copies of questionnaire distributed to the workers of Juhel, 5 copies were lost, while 53 copies representing 30% of the total copies were returned. Out of a total of 55 copies of questionnaire distributed to the workers of Hardis & Dromedas, 5 copies were lost while 50 copies representing 28% of the total copies were

returned. Out of 63 copies of questionnaire distributed to the workers of Nalin Paints, 6 copies were lost while 57 copies representing 32% of the total copies were returned.. Therefore the total number of valid questionnaire is 160 copies representing 90% of the total copies of questionnaire distributed.

**4.2 Data Relating to Research Questions**

**4.2.1 What is the effect of trademark on sales turnover of the selected firms in Enugu State?**

**Table 4.2.1: Mean rating of the effect of trademark on sales turnover of the selected firms in Enugu State**

S/N	ITEMS	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	Mean
1	Hinders counterfeiters in the use similar signs	56 (35%)	62 (39%)	20 (11%)	12 (13%)	10 (6%)	160	3.89
2	Owners use trademark to identify their goods	57 (36%)	59 (37%)	18 (11%)	14 (9%)	12 (7%)	160	3.84
3	Helps consumers to purchase a product based on quality and characteristics	54 (34%)	58 (36%)	19 (12%)	15 (9%)	14 (9%)	160	3.77

**Grand Mean of Table = 3.83**

Table 4.2.1 shows that 56 respondents strongly agree that hindering counterfeiters in the use of similar signs is the effect of trademark on sales turnover of the selected firms, 62 respondents agree, 20 respondents were undecided, 12 respondents

disagree while 10 respondents strongly disagreed with a mean of 3.89

Table 4.2.1 shows that 57 respondents strongly agree that owners use trademarks to identify their goods is the effect of trademark on sales turnover of the

selected firms, 59 respondents agree, 18 respondents representing 11% were undecided, 14 respondents disagree, 21 respondents disagree while 12 respondents strongly disagree with a mean of 3.84 Table 4.2.1 shows that 54 respondents strongly agree that helping consumers to purchase a product based

on quality and characteristics is the effect of trademark on sales turnover of the selected firms, 58 respondents agreed, 19 respondents were undecided, 15 respondents disagreed while 14 respondents strongly disagreed with a mean of 3.77. The grand mean of table is 3.83

**4.2.2 What is the effect of patent on customer patronage of the selected firms in Enugu State?**

**Table 4.2.2: Mean rating of the effect of patent on customer patronage of the selected firms in Enugu State.**

S/N	ITEMS	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	Mean
1	Stimulates free market competition via increasing consumer options	42 (26%)	49 (31%)	22 (14%)	26 (16%)	21 (13%)	160	3.41
2	Through exclusive licensing patent promotes innovations and creativity	48 (30%)	51 (32%)	19 (12%)	23 (14%)	19 (12%)	160	3.54
3	Patent protects innovation thereby attracting customers to the firm	47 (29%)	50 (31%)	21 (13%)	19 (12%)	23 (14%)	160	3.49

**Grand Mean of Table = 3.48**

Table 4.2.2 shows that 42 respondents strongly agree that stimulating free market competition via increasing consumer options is the effect of patent on customer patronage of the selected firms in Enugu State, 49 respondents agree, 22 respondents were undecided, 26 respondents disagree while 21 respondents strongly disagreed with a mean of 3.41 Table 4.2.2 shows that 48 respondents strongly agree that through exclusive licensing, patent promotes innovations and creativity, 51 respondents agree, 19

respondents were undecided, 23 respondents disagree while 19 respondents strongly disagree with a mean of 3.54 Table 4.2.2 shows that 47 respondents strongly agree that patent protects innovation thereby attracting customers to the firm, 50 respondents agreed, 21 respondents were undecided, 19 respondents disagreed while 23 respondents strongly disagreed with a mean of 3.49. The grand mean of the table is 3.49

**4.3 Test of Hypotheses**

**4.3.1 Test of hypothesis One**

**H<sub>01</sub>:** Trademark does not have significant positive effect on sales turnover of the selected firms in Enugu State

**Table 4.3.1: Contingency table for testing of Hypothesis One**

S/N	ITEMS	SA (5)	A (4)	U (3)	D (2)	SD (1)	Mean	Std
1	Hinders counterfeiters in the use similar signs	56 (35%)	62 (39%)	20 (11%)	12 (13%)	10 (6%)	3.89	1.11
2	Owners use trademark to identify their goods	57 (36%)	59 (37%)	18 (11%)	14 (9%)	12 (7%)	3.84	1.12
3	Helps consumers to purchase a product based on quality and characteristics	54 (34%)	58 (36%)	19 (12%)	15 (9%)	14 (9%)	3.77	1.10

**Grand Mean of Table = 3.83**

**Associated Standard Deviation =1.11**

The cluster mean of 3.83 > 3.00 (Likert mean) and associated standard deviation of 1.11 < 1.581 (Likert standard deviation) indicates that the out listed are the effects of trademark on sales turnover of the selected firms

**Level of Significance (α) = 0.05, Test statistic:**

**One-sample t**  $= \frac{\bar{x} - \mu_o}{\frac{s}{\sqrt{n}}}$  where  $\bar{x}$  = Average mean,  $\mu_o$

= mean of weights,  $\frac{s}{\sqrt{n}}$  = Standard deviation divided by square root of number of observations. **One-**

**sample t**  $= \frac{\bar{x} - \mu_o}{\frac{s}{\sqrt{n}}} = 32.61$  **P-value** = 0.0000

**Decision rule:** Reject  $H_o$  if p-value  $\leq$  0.05, otherwise do not reject. OR reject  $H_o$  If the calculated value > the critical table value, otherwise, do not reject.

**Interpretation:** The one-sample t-test result with t-statistic value of 32.61 and associated probability value of 0.0000 < 0.05 shows that trademark has significant positive effect on sales turnover of the selected firms in Enugu State.

**4.3.2 Test of hypothesis Two**

**H<sub>o1</sub>:** Patent right does not have significant positive effect on customer patronage of the selected firms in Enugu State

**Table 4.3.2: Contingency table for testing of Hypothesis Two**

S/N	ITEMS	SA (5)	A (4)	U (3)	D (2)	SD (1)	Mean	Std
1	Stimulates free market competition via increasing consumer options	42 (26%)	49 (31%)	22 (14%)	26 (16%)	21 (13%)	3.41	1.09
2	Through exclusive licensing patent promotes innovations and creativity	48 (30%)	51 (32%)	19 (12%)	23 (14%)	19 (12%)	3.54	1.08
3	Patent protects innovation thereby attracting customers to the firm	47 (29%)	50 (31%)	21 (13%)	19 (12%)	23 (14%)	3.49	1.10

**Grand Mean of Table = 3.48**

**Associated Standard Deviation = 1.09**

The cluster mean of 3.48 > 3.00 (Likert mean) and associated standard deviation of 1.09 < 1.581 (Likert standard deviation) indicates that the out listed are the effects of patent on customer patronage of the selected firms

**Level of Significance (α) = 0.05, Test statistic:**

**One-sample t**  $= \frac{\bar{x} - \mu_o}{\frac{s}{\sqrt{n}}}$  where  $\bar{x}$  = Average mean,  $\mu_o$

= mean of weights,  $\frac{s}{\sqrt{n}}$  = Standard deviation divided by square root of number of observations. **One-**

**sample t**  $= \frac{\bar{x} - \mu_o}{\frac{s}{\sqrt{n}}} = 30.86$ , **P-value** = 0.0000

**Decision rule:** Reject  $H_o$  if p-value  $\leq$  0.05, otherwise do not reject. OR reject  $H_o$  If the calculated value > the critical table value, otherwise, do not reject.

**Interpretation:** The one-sample t-test result with t-statistic value of 32.61 and associated probability value of 0.0000 < 0.05 shows that patent right has

significant positive effect on customer patronage of the selected firms in Enugu State

**4.3 Discussion of Findings**

**4.3.1 Trademark and Sales turnover**

Trademark has significant positive effect on sales turnover of the selected firms in Enugu State. The evidence is shown in the (X value = 32.61, p value 0.0000 < 0.05). In the empirical review conducted by Hill (2020) on the effect of trademark on sales turnover of manufacturing firms, although both studies were conducted using different populations and different locations, it was found that trademark has significant positive effect on sales turnover of the selected firms in Enugu State.

**4.3.2 Patent and Customer Patronage**

Patent right has significant positive effect on customer patronage of the selected firms in Enugu State. The evidence is shown in the (X value = 30.86, p value 0.0000 < 0.05). In the empirical review conducted by Clulow (2020) on the effect of

patent right on customer patronage of the brewery industry and it was discovered that patent right has significant positive effect on customer patronage of the selected firms in Enugu State.

### 5.1 Summary of Findings

1. Trademark has significant positive effect on sales turnover of the selected firms in Enugu State. (X value = 32.61, p value 0.0000 < 0.05).

2. Patent right has significant positive effect on customer patronage of the selected firms in Enugu State. The evidence is shown in the (X value = 30.86, p value 0.0000 < 0.05)

### 5.2 Conclusion

In many successful firms, intellectual property serve as powerful instruments of corporate strategy to protect innovation and to strengthen the firm's technological leadership, thereby promoting entrepreneurship. Creating knowledge and capturing this knowledge in intellectual property rights such as patents and trademarks are key competitive components for firms. The study therefore concluded that intellectual property management has significant positive effect on the development of entrepreneurship in Enugu State

### 5.3 Recommendations

The following recommendations were made

1. Entrepreneurs should use trademark to identify their goods and stop counterfeiters in faking their products
2. Entrepreneurs should also use patent to protect their innovation and creativity

### 5.4 Contribution to Knowledge

The study made some contributions to knowledge. This included:

1. **Design:** The researcher adopted the survey research method on the subject matter (effect of intellectual property management on the development of entrepreneurship in Enugu State) unlike other researchers that used Ex-post Facto research method and experimental research method.
2. **Analytical Tool:** The researcher adopted the z-test statistical tool in the analysis. Other researchers that have carried out similar studies used the chi-square, SPSS, Spearman rank order correlation coefficient and Pearson product moment correlation.

### References

- Anderson, A. (2029). Impact of intellectual property on organizational performance: an empirical study of companies in the Hang Seng Index (part 1). *Learning Organization*, 16(1), 4-21.
- Akinyemi, D. (2021). Assessing knowledge assets: a review of the models used to measure intellectual capital. *International journal of management reviews*, 3(1), 41-60.
- Bihatt, Y. (2018). An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual property*, 6(2), 159-176.
- Barsky, L. and Bremser, A. (2020). A resource-based theory of the firm. *The strategic management of intellectual capital and organizational knowledge*, 103-131.
- Blackman, Z. (2016). Knowledge transfer: A basis for competitive advantage in firms. *Organizational behavior and human decision processes*, 82(1), 150-169.
- Carlow, O. (2019), Evaluating environmental and social performance of large Portuguese companies: a balanced scorecard approach. *Business Strategy and the Environment*, 14(2), 73-91.
- Christensen, F. (2019). The influence of flexibility in buyer-seller relationships on the productivity of knowledge. *Journal of Business Research*, 56(6), 443-451.
- Goldheim, S. (2016). Organizational Learning: A theory of action approach. *Reading, MA: Addison Wesley*.
- Horwitch, M & Armacost (2019). (2019), Collective Strategy: Social Ecology of Organizational Environments. *Academy of management review*, 8(4), 576-587.

- Shapiro, C. (2018). Aligning human resource management practices and knowledge strategies. *The strategic management of intellectual property and organizational knowledge*, 4(5); 277-295.
- Teece, B. (2014). Intellectual property and value creation: Evidence from the Portuguese Banking Industry. *Electronic Journal of Knowledge Management*, 4(1), 11-20.
- Quintas, H. (2019). *The strategic management of intellectual capital and organizational knowledge*: Oxford University Press.