



## Experiential Learning Practices in Entrepreneurial Knowledge Diffusion: a Factor to Innovation Performance in Pharmaceutical Firms

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### ABSTRACT

In the majority of economies, entrepreneurship promotes economic development and growth. Research has indicated that entrepreneurial knowledge diffusion and innovation performance are important, but there is still much to learn. Based on this gap, the study is being conducted to evaluate the effect of experiential learning practices on the innovation performance of pharmaceutical companies in Kenya. Descriptive statistical design and an ex post factor research were applied. The goals included managers learning from one another, employees sharing their experiences and knowledge, and exchanging past experiences. 163 respondents working in Nairobi, Kenya's pharmaceutical sector made up the target group. For the performance of innovation, each goal was crucial. It is advised that the goal of experiential learning be to assist practitioners by giving them opportunities to learn and become more experienced.

## INTRODUCTION

According to Oke and Myers (2012), one of the essential components of entrepreneurial behavior that has a strong correlation with businesses is innovation. Studies point to that fact that innovation is very important concept in the field of production. This factor is commonly recognized as a fundamental influence to increasing efficiency and effectiveness. Thus, in a globalized competitive environment, innovation is one of the key strategies that keeps organizations alive and competitive (Kiraka, Kobia, and Katwalo, 2013). A business can only effectively compete if it develops a distinctive and long-lasting differentiator, and innovation is one of the primary means by which businesses can do this.

According to Tidd (2015), innovation is regarded as a key component of firm competitiveness, and the capacity for innovation is the most crucial component in boosting and maintaining competitiveness. According to earlier research, an organization's competitiveness is also highly impacted by its capacity to distinguish itself from competitors' operations through a distinct and durable feature that can be attained through innovation. The increasing worldwide competitive demands, the reduced product lifecycle and simplicity with which firms can imitate, has made it essential for companies to get innovating in order to withstand competitiveness (Hamid & Tasmin, 2013). However, innovation performance can be defined as the capacity to transform innovation inputs into outputs, or more specifically, the capacity to translate innovation work and ability into market implementation. According to Audretsch (2012), innovation performance evaluates every stage of the process, from invention and development to patenting and product launch.

This study goes hand in hand with the diffusion of innovation theory (Rogers, 1962). In this case, knowledge diffusion represents the rate at which newly created technological content, including products, services and intellectual property spread for subsequent acceptance (Klarl, 2014). Within the innovation environment, an understanding of the diffusion of knowledge is essential, not only from monetary perception, but also as from the innovation point of view that eases and improves on doing things. The occurrence of diffusion of knowledge directly affects economic growth (Grossman & Helpman, 2015).

Knowledge diffusion similarly has effects on entrepreneurship and innovation regionally and nationally particularly in as far as technology plans, technology transfer policies, and in addition to internal and external investment is concerned (Singh and Guha 2024).

In an analysis of a multi-level innovation processes Manniche and Testa (2018) show innovation results in which innovation ecosystems that are directly influenced by the diffusion of created knowledge across all levels of their analysis.

Karl contents that the diffusion of knowledge is not an evenly distributed process across all prospective implementers (Klarl, 2014). Research findings infact; indicate that deliberate knowledge spreads in particular segments,

markets and countries leading to improved competences for better performance in firms in those situations (Boschma & Frenken, 2011; Lundvall, 2007). Capello and Varga (2013) affirm that closely-related benefits among innovating partners can often be found in innovation networks.

This is thought that, when sustained, it would contribute to the increased creation and diffusion of knowledge further, leading to enhanced innovation performance.

Knowledge diffusion among entrepreneurial practitioners can therefore act as a key element in the advancement of a workable competitive advantage. This study which delved into the crucial intersection of experiential learning, entrepreneurial knowledge diffusion, and innovation performance within the pharmaceutical industry, is significant to management studies in various ways. Pharmaceutical firms are provided with actionable insights to improve their innovation strategies; hence enhancing innovation performance.

Additionally, the study sheds light on the importance of integrating experiential learning practices into strategic management processes. This integration can help firms adapt to dynamic environments, foster a culture of continuous learning, and drive organizational innovation. The study equally emphasizes the significance of effective knowledge diffusion mechanisms. It underscores the importance of sharing, disseminating, and applying entrepreneurial knowledge across the organization to foster innovation. Effectively, this improves knowledge management. The research explores the link between entrepreneurial orientation and innovation performance, providing valuable insights into how entrepreneurial mindsets and behaviours can influence a firm's ability to innovate. This is an important aspect in as far as entrepreneurial orientation is concerned. Whereas there may be an extensive research on experiential learning and innovation in general, this study specifically focuses on the pharmaceutical industry.

This context-specific approach offers unique insights tailored to the challenges and opportunities faced by pharmaceutical firms. This research integrates experiential learning practices, entrepreneurial knowledge diffusion, and innovation performance into a cohesive framework. This integrated perspective allows for a comprehensive understanding of the underlying mechanisms that drive innovation in pharmaceutical firms. The study is likely to provide an empirical evidence to support its findings, contributing to the validity and reliability of the research. This empirical approach adds credibility and depth to the study, distinguishing it from purely theoretical discussions (Tidd and Bessant, 2018).

This indicates that diffusion of knowledge has become an essential factor in improving the rate of innovation. Ultimately it makes the firms to remain competitive (Tang et al. 2020). Study findings have postulated that in order for firms to attain better innovation performance, the various players in an innovation setting need to possess the ability to create and generate new knowledge, diffuse it through its system.

This in turn will quickly convert the newly acquired knowledge into new technologies, products, services and processes for competitive advantage.

Therefore, innovation performance is thus regarded as a result of experiential learning and knowledge diffusion among entrepreneurs.

## **LITERATURE REVIEW**

### **Insights on experiential learning**

In other words, this description of innovation performance in its general sense concentrates on the technical aspects of innovation and the introduction of new products to the market, though it ignores the possible economic success of innovations. Experiential learning results to among others, the innovative performance, leading to market innovation success (Zizlavsky, 2016).

Kumar (2018) posits that usually, we denote that the scientific process of disseminating knowledge is the diffusion of knowledge. It re-enforces the concept of transmitting knowledge for certain reasons in organizations. It is worth noting that diffusion of knowledge ultimately occurs between persons, groups and even organizations for sharing of research facts and findings.

### **Experiential learning**

Scholars continue to make their contributions to this important area which is referred to as experiential learning. Experiential learning is the process of learning by doing. It can for instance be by engaging learners, or workers in hands-on experiences and reflection. This makes them better able to connect theories and knowledge learned in the classroom to real-world situations (Holmqvist, 2004). Various firms aspire to be as practical as possible in their operations and performance.

That is why by experiential learning, these organizations try to make it as purposeful and meaningful as possible in order to realize desired results. Studies further indicate that experiential learning provides opportunities for players in firms to take time and have a reflection on what they acquire knowledge -wise. In some cases, this could include faculty being involved throughout the process, learners' work could be evaluated, usually meant to offer or simulate, as close as possible, a "real-world" context (Brown & Johnson, 2023).

### **Experiential learning practices**

Experiential learning practice is an essential component of the pharmaceutical curriculum. In this case, experiential learning can be said to be a practical application of what the students learn from educational courses. Researchers who are involved in such studies try to investigate the significance of experiential learning in developing practical skills among employees in various workplace settings (Mendonça, et.al, 2017). It surveys how organizations can generate purposeful and meaningful learning experiences to achieve desired results, thereby improve performance. Firms can use such a component, when well planned to help the students learn the day-to-day skills; develop professional maturity, and judgment progressively.

### **Entrepreneurial knowledge diffusion**

The entrepreneurial knowledge diffusion denotes a process involving knowledge and innovative ideas originating from entrepreneurs, then spreading throughout the firm, society, and among individuals.

This in turn believed to be responsible for influencing various sectors and fostering economic growth and development. Largely, entrepreneurial knowledge diffusion is crucial in place of driving economic progress and societal advancement. This is because it facilitates the widespread adoption of new technologies, business models, innovative performance and organizational practices that enhance productivity, create jobs, and spur economic growth.

### **Innovation performance**

According to some studies on national innovation systems, the established activities and, and the recorded firm performances, all these result from several corresponding influences that generate innovative activities and products, services, technologies and innovations in the economies (Cirera and Maloney, 2017). Essentially, innovation performance in firms directs how a number of activities take place and the resultant outcomes (Lundvall, 2016). For the firms in pharmaceutical industry, innovation performance is progress that improves the significance, usefulness, or performance of products, services and even manufacturing technology. It has to be an innovation with a clear purpose and must accomplishes a deliberate goal.

### **Pharmaceutical firms in Kenya**

The Kenyan pharmaceutical industry is sector that comprises three main businesses. They are in particular manufacturers, distributors and retailers, who actively sustain the Kenya's health sector and other core players in health sector, thereby supporting its growth.

The enterprises in the three mentioned segments can be classified as large multinational corporations (MNCs), affiliates, joint ventures and even those owned by local firms. The composition of the pharmaceutical firms in Kenya is a mixed one. They range from medium, small, and micro enterprises (MSMEs). For instance the multinational corporations (MNCs) manufacture their products locally or import the same from selected manufacturing locations and supply the medicines to distributors who in turn supply the same to retail channels, such as hospitals, government and non-governmental institutions, among others (Kimunya and Thogori, 2023).

Established in the 1960s, the Kenya Association of Pharmaceutical Industries (KAPI) is in charge of the industry. A consortium of pharmaceutical production companies committed to research and development (R&D) created KAPI during that time to foster strong technical standards. Considerable number of multinational corporations (MNCs) together with their local partners derives their membership from this organization.

KAPI founded to promote an ethical, innovative and responsible healthcare industry. KAPI's other aim is to supply innovative products in meeting the needs of Kenya's growing population. The goal of KAPI is to foster a health care

manufacturing sector that is sustainable, imaginative and conscientious (Wamae and Kungu, 2014).

Companies like Alpha Medical Manufacturers Aventis Pasteur SA East Africa, Bayer East Africa Limited, Didy Pharmaceuticals, Beta Healthcare (Shelys Pharmaceuticals), Cosmos Limited, and Dawa Pharmaceuticals Limited are among the members of The Pharmaceutical Manufacturing. The firms manufacture pharmaceutical products which are used locally while others are exported (Ngugi, 2021).

### **Innovative Firm Performance**

In the past, scholars have had to describe the performance of firms effectively by only focusing on five financial parameters. These indicators include revenue, market share, profitability, cash flows, and value addition to productivity. This study looked at process innovativeness involving the manufacturing of the medicines means of performance. Basically, this involved checking the logistics, or production of services and medicines. However, in contemporary pharmaceutical manufacturing, this arena can be looked at as it ranges from modifications in the process of production of pharmaceutical products to changes in the market place. Traditionally, the description for the positive connection between firm level innovation and firm performance is based on the premise that innovative new products when first introduced to the market face limited direct competition. This is thought to result in firms recording relatively high profits (Herciu, 2017).

Pharmaceutical innovation brings value to society by enabling previously unachievable improvements in patient health. It also necessitates novelty in effectiveness. This improves patient outcomes and gives the industry the ability to handle new healthcare issues. The pharmaceutical industry's capacity to adapt to changing market conditions and societal demands, as well as to conduct ongoing research on productivity and innovation performance, is essential to its sustainable growth.

### **Research Problem**

Innovation performance is a key driver to all sectors including pharmaceutical companies (Parsons, 2011). This means that for a number of processes to reach a viable end stage, this may require innovative behavior backed by accurate knowledge. Finally, compared to businesses that do not innovate, all innovative activities should lead to improved firm innovation performance (Bwisa et al.), 2014). Knowledge diffusion is one of the many factors that are known to affect the performance of innovations. Knowledge diffusion plays a critical role in innovation performance including reduction of production costs, adoption of new technologies, new product introduction, competitiveness, sales per employee, export per employee, growth rates of sales, total assets, employment creation, operation profit ratio and return on investment among others (Sirilli, 2010). An evaluation of the knowledge diffusion in the pharmaceutical industry has not been well documented.

This has led to a number of shortcomings including declining R&D, productivity, higher barriers to commercial success for innovative medicines

and substantial imminent losses of revenue from successful products due to generic competition (Dominique *et al.*, 2012).

Likewise it has been established that the pharmaceutical industry is facing an innovation crisis and this is characterized by the drastic decrease in productivity in its R&D (Souflas, 2014).

Stirling (2010) indicates that firms all over the world are facing very difficult moments in every aspect of their operations. For instance, pharmaceutical firms in Nairobi are currently encountering difficulties in particular, stiff competition. Findings of some studies show that firms that are likely to survive the stiff competition, are those that can develop innovative positioning strategies. Innovative strategies can enable companies to occupy a distinct place in the minds of the consumer. In such a case, a competitive advantage is likely. It is further posited that the pharmaceutical industry's future faces lower growth prospects than in the past, unless innovation is embraced. Innovative firms can easily have an edge over their competitors.

It could also be that experiential learning practices may be lacking in entrepreneurial knowledge diffusion; hence lack of innovation performance. This study therefore sought to evaluate the influences of experiential learning practices in entrepreneurial knowledge diffusion on innovation performance of pharmaceutical firms in Kenya.

### **Research Objective and Scope of Study**

The objective of this study was to evaluate the influences of experiential learning practice in facilitating entrepreneurial knowledge diffusion for innovation performance of pharmaceutical firms in Kenya.

Other specific objectives included sharing past experiences, gaining knowledge through leaders, sharing employee experiences and expertise.

The study focused on specific targets within the pharmaceutical industry in the City of Nairobi. It targeted all the stake holders in pharmaceutical industry in the selected segment. It involved gathering information on various issues in this industry of pharmaceuticals. The industry comprised a number of players with various interests and roles. The targeted stakeholders were therefore included: Entrepreneurs operating as manufacturers, distributors, wholesalers, retailers, employees and other participants for their valuable input. The study was conducted by collection of data on the respondents in the months of June 2018 to August 2018. The targeted respondents were those who had been in the industry for the last two years prior to the study.

## **METHODOLOGY**

### **Research Design**

This research study employed a research design known as ex post facto design. This ex post facto research design is considered suitable for performing social science researches.

This is particularly so in circumstances when it is not possible or desirable to modify the features of human participants. This design is believed

to be a good substitute for actual experimental research and may be used to test hypotheses concerning cause-and-effect or correlational correlations.

This is particularly so where it is not practical or ethical to apply a true experimental, or even a quasi-experimental, design.

Ex post facto research design also referred to as after-the-fact research, is a type of research design in which the search starts after the fact has occurred (Braga *et al.*, 2011).

### Target Population

According to Banerjee and Chaudhury (2010), a target population is a sample drawn from a defined population that was appropriately selected. Before doing study, most researchers choose their target population.

The study's target population comprised all pharmaceutical enterprises in Nairobi that manufacture, market, and distribute prescription drugs. The research study chose respondents from a group that includes pharmaceutical entrepreneurs that run businesses in Nairobi and its surrounding areas. These were chosen from various cadres drawn from production, distribution, and retail. The target population's sample frame includes 684 enterprises. The majority of these enterprises are located in the city of Nairobi, Nigeria.

**Table 1. 1: Target Population**

Target Group	Population	Percentage
Management	35	100
Employees	226	100
Total	261	100

**Source: Pharmacy and Poisons Board (2017)**

### Sampling Frame

Different scholars view sampling frame differently. For instance, Cooper & Schindler (2011) advance the fact that a sampling frame is a list of components from which a sample is essentially obtained. Further, the consideration of this frame is that it should be closely related to the population of interest.

In essence a sampling frame is the list or as it were, list of elements from which a probability sample is selected (Denscombe, 2014). A survey of 261 respondents constitutes this sample frame. This is necessary to include all the variables of the study for equal chances of selection.

The respondents in the study are located mainly in the city of Nairobi. This study therefore selected and targeted a sample from each of the major sectors of pharmaceutical industry including the manufacturers, distributors and retailers.

### Data analysis and Presentation

This study's data analysis was carried out using the Statistical Package for Social Sciences (SPSS Version 20). Additionally, descriptive statistics such as mean, standard deviation, frequency distributions, and cross tabulations were

used. The study's findings were then presented using graphs, charts, and description text, among other methods. Finally, comments and conclusions were made based on clear data patterns or linkages. The data was then subjected to inferential statistics, with Regression Analysis utilized to discover correlations between the variables and the projected values.

**Table 1. 2: Sample Size**

Target Group	Population	Sample Size	Percentage
Management	35	22	100
Employees	226	141	100
Total	261	163	100

### **Sample size and Sampling Procedure**

The sampling procedure used was purposive sampling. According to Mugo (2010) a purposive sample results when the more suitable units are chosen from a population for observation.

The sample size for this study was obtained using Mora and Kloet (2010) formula for finite population as follows;

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

Where,

n = the sample size

N = the size of population

e= the error of 5 percentage points

$$n = \frac{261}{(1 + 261 \times 0.05^2)} = 163$$

The study adopted a purposive sampling in which samples in the various sectors were selected for study.

### **Data Collection Methods and Data Collection Instruments**

In this study, Data was collected using both primary and secondary data as explained as will be explained.

The researcher figured out that it was essential to follow a number of flexible procedures as he was cognizant to the fact that structuring a questionnaire needed to be determined by a number of important factors including the content, format, type, wording and the social structure of the subjects and orders( Rubin & Babbie,2016).

## **RESEARCH RESULT AND DISCUSSION**

### **Effects of Experiential learning Practices on Innovation Performance of Pharmaceutical Firms**

The study sought to determine the effect of experiential learning on innovation performance of pharmaceutical firms and the study findings are presented in table 2.10

**Table 2. 1: Experiential learning Practices on innovation Performance**

Statements		SD	D	U	A	SA	Total	Mean	Std Dev.
Sharing failures experiences in the past have been effective way of enhancing innovativeness.	F	8	13	24	63	42	150	4.00	1.187
	%	5	8.6	15.8	42.4	28.2	100	80.0	
Gaining knowledge through leaders experience enhances innovativeness of the pharmaceutical firm	F	6	18	23	91	12	150	3.55	0.969
	%	4.3	12.2	15.2	60.4	7.9	100	71.0	
Experience of other employees shared enables pharmaceutical firms to be innovative	F	6	18	23	91	12	150	3.55	0.764
	%	4.3	12.3	15.1	60.4	7.9	100	71.0	
Knowledge sharing through expertise of employees enables innovative behavior in pharmaceutical firms	F	16	25	30	76	3	150	3.16	0.606
	%	10.8	16.5	20.1	50.4	2.2	100	63.2	

**Researcher 2023**

The study's findings showed that 80.0% of respondents (mean=4.00) thought that sharing failure stories from the past was a useful way to increase innovativeness, 71.0% (mean=3.55) thought that learning from leaders' experiences increases innovativeness of the pharmaceutical firm, 71.0% (mean=3.55) thought that sharing other employees' experiences makes pharmaceutical firms more innovative, and 63.2% (mean=3.12) thought that knowledge sharing through employees' expertise encourages innovative behavior in pharmaceutical firms.

**Table 2:11 Standard Deviation (SD) in results**

Sharing failures experiences in the past have been effective way of enhancing innovativeness.	Freq.	8	5%
Gaining knowledge through leaders experience enhances innovativeness of the pharmaceutical firm	Freq.	6	4.3%
Experience of other employees shared enables pharmaceutical firms to be innovative	Freq.	6	4.3%
Knowledge sharing through expertise of employees enables innovative behavior in pharmaceutical firms	Freq.	16	10.8%

**Researcher 2023**

Standard Deviation (SD) is a statistical measure that quantifies the amount of variation or dispersion of a set of values from the mean or average. Studies indicate that SD measures the degree of spread in a given set of values. In particular, it brings out the value typically compared to the mean value of

the set (Vetter, 2017). Calculation of the SD will depend on whether what is being measured in the dataset is a sample or the whole population. In the setting of research, Standard Deviation provides an understanding of the consistency or variability of the data points within a dataset. According to Wissing & Timm (2012), SD helps in the identification of trends, assessing data reliability, detecting outliers, comparing datasets, and evaluating risk. A standard deviation is a measure of how dispersed the data is about the mean (Whitley & Ball, 2020). Small SD indicates data are crowded closely around the mean, and a larger standard deviation shows data are more spread out. A high standard deviation indicates a larger spread of values. Understanding this variability is crucial for managers as it helps them gauge the consistency of performance or outcomes related to experiential learning practices and innovation performance in pharmaceutical firms. Standard Deviation can serve as a tool for risk assessment. Higher variability may indicate higher risk associated with implementing experiential learning practices for knowledge diffusion. Managers need to be aware of this variability when making strategic decisions related to innovation and organizational learning. SD can be used alongside mean values to evaluate the performance of different departments, teams, or initiatives within the organization. Managers can identify outliers and investigate the reasons behind the variability to optimize performance. Understanding the variability in innovation performance and its relationship with experiential learning can guide managers in allocating resources more effectively. For instance, departments or teams with higher variability may require additional support or resources to stabilize their performance and enhance innovation outcomes.

Managers can use SD as a bench-marking tool to compare the variability in innovation performance across different pharmaceutical firms or industry standards. This comparison can highlight areas of improvement and inform continuous improvement initiatives.

Qualitative findings demonstrated the need for employees who are experts in their fields in pharmaceutical manufacturing companies. Participating directly or by observation facilitates the sharing of knowledge through personal experience. An interviewee noted that personal expertise knowledge places a firm in a competitive position, it is also an important and effective form of experiential learning as it enhances reduction in cost of production; fasten completion of new projects, team performance, firm innovation and performance and a general increase in revenue from new products and services.

Another respondent noted that: From the finding knowledge sharing through personal expertise will help in creating the necessary value chain for pharmaceutical manufacturing firms that want to remain not just competitive but also proactive in managing change in order to continuously ensure customers satisfaction. The findings show knowledge sharing through expertise to be essential in enhancing performance in experiential learning in the pharmaceutical firms.

The study findings are in agreement with Moore & Benbasat (2014) who conclude that organization-wide expertise search is a valuable tool to connect employees with the experts they need to answer a question.

By the fact that a person who can answer a question in a firm can quickly be found, it means significant time can be saved, hence avoid rework and reinventing the wheel. Collaboration is a major platitude in the enterprise content management and pursuit. If employees can only collaborate with people they directly know or who work in the same building, it is limiting.

## **CONCLUSIONS AND RECOMMENDATIONS**

The study concluded that the variable experiential learning was found to be significant. It could therefore influence innovation performance of the pharmaceutical industry. This indicates that a policy as well as a managerial determination should support the development of human resources by developing innovative culture.

Knowledge management programs ought to have a robust knowledge philosophy component through which an administrative culture of knowledge creation and sharing is stressed in order to benefit innovation programs.

Human resource development should be a priority other than just increasing the number of higher educated employees; by so doing, innovation will be encouraged. This can only be true when the sector variable is included in the models where the variance explained in the share of higher educated employees disappears.

A network of external actors should support the hypothesis that the importance of user producer interaction has to be broadened to include knowledge institutions.

A framework of a closer relationship should be established so that a network of actors will be beneficial in various different ways.

### **Areas for Further Research**

In order to raise awareness of the systemic relationship between innovation and knowledge management as well as the value that it can create in terms of establishing and preserving sustainable competitive advantage for organizations, the researchers advise that more professional research be done on these topics. In order to promote creativity and innovation, research will also be done on knowledge-driven cultures where inventions can be shared and fostered.

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