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Pharmaceutical Entrepreneurs

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Abstract

Objective: This study aims to understand the definition of entrepreneurship, the characteristics of good entrepreneurs, and the types of entrepreneurs in the pharmaceutical sector. **Theoretical framework:** The theoretical framework of this research is based on the concept of entrepreneurship as the ability of individuals to recognize, manage, and develop their potential optimally to create added value and improve their standard of living. In the pharmaceutical sector, entrepreneurship is associated with innovation and managerial ability. **Literature review:** A literature review discusses the definition of entrepreneurship from various perspectives and characteristics of entrepreneurs, such as creativity, innovation, leadership, and decision-making ability. In addition, entrepreneurial opportunities in the pharmaceutical sector were also discussed. **Method:** Research using the systematic review method with the PRISMA approach. Articles are searched using the keyword "pharmaceutical entrepreneur" through Google Chrome, then selected based on topic relevance. **Results:** The results of the study show that there are two articles that are suitable for analysis. Both articles explain that entrepreneurship is the ability to manage and develop one's potential optimally to improve the quality of life. **Implications:** This research provides an understanding of the importance of entrepreneurship in the pharmaceutical sector and can be a reference for students and pharmacy practitioners in developing businesses in the health sector. **Novelty:** The novelty of this research lies in the focus of a systematic review study on entrepreneurship in the pharmaceutical sector, which is still limited, and the incorporation of the concept of entrepreneurship into the pharmaceutical sector.

Keywords: pharmaceutical entrepreneurship, entrepreneurial characteristics, innovation in pharmacy, systematic review, healthcare business development.

INTRODUCTION

Entrepreneurship plays a significant role in improving the quality of life and supporting economic development through innovation, job creation, and business growth [1]. In modern society, entrepreneurship is not only associated with profit generation but also with the ability to create value, solve problems, and improve social welfare. In the healthcare sector, particularly in the pharmaceutical industry, entrepreneurship contributes to the development of healthcare solutions, medical technologies, and pharmaceutical services that are essential for public health [2].

The pharmaceutical sector requires entrepreneurs who possess innovation, creativity, leadership, and managerial skills to address increasingly complex healthcare challenges. The COVID-19 pandemic demonstrated the importance of innovation and collaboration in the healthcare industry, especially in the development of vaccines, medicines, and medical

devices [3]. However, entrepreneurial activities in the pharmaceutical field still face various challenges, including regulatory complexity, limited innovation support, and institutional barriers, particularly in developing countries [4].

Previous studies have emphasized that entrepreneurial competencies are essential for encouraging innovation and organizational competitiveness [5]. In addition, creativity and leadership are important factors in developing effective healthcare interventions and sustainable healthcare businesses [6]. Although entrepreneurship has been widely discussed in general business studies, research specifically focusing on pharmaceutical entrepreneurship remains limited. Most studies concentrate on high-technology industries, while entrepreneurial opportunities and innovation in pharmacy are still underexplored [7].

Based on these conditions, there is a research gap regarding the understanding of entrepreneurship within the pharmaceutical sector, particularly concerning entrepreneurial characteristics and business opportunities in healthcare development. Therefore, this study aims to understand the concept of entrepreneurship, identify the characteristics of good entrepreneurs, and examine the types of entrepreneurs in the pharmaceutical sector through a systematic review approach.

The novelty of this study lies in its specific focus on pharmaceutical entrepreneurship through a systematic review approach, an area that remains relatively underexplored compared with general entrepreneurship and healthcare management research. Unlike previous studies that primarily examine entrepreneurial intention, innovation, or pharmacy practice independently, this review synthesizes evidence regarding the concept of entrepreneurship, entrepreneurial characteristics, business opportunities, and their relevance to pharmaceutical practice within a single analytical framework. By integrating entrepreneurial competencies with professional pharmaceutical responsibilities, this study provides a comprehensive perspective on how pharmacists can simultaneously improve healthcare quality and business sustainability. The review also highlights the importance of entrepreneurial motivation, creativity, innovation, communication, and leadership as interconnected competencies required for success in the evolving pharmaceutical sector [6].

The practical implications of this study are relevant for pharmacy educators, practitioners, policymakers, and healthcare institutions. Pharmacy education programs should incorporate entrepreneurship, business management, digital innovation, and leadership training into their curricula to prepare graduates for increasingly competitive healthcare environments. Professional organizations and government agencies may utilize these findings to develop policies, mentoring programs, and business incubation initiatives that encourage pharmacist-led entrepreneurship. Furthermore, pharmacy practitioners can use the identified entrepreneurial characteristics and business opportunities as guidance for establishing innovative pharmaceutical services, including community pharmacy management, home pharmacy care, herbal product development, and digital healthcare services. Strengthening entrepreneurial competencies among pharmacists is expected to contribute to healthcare innovation, economic development, employment creation, and improved access to high-quality pharmaceutical services [7].

LITERATURE REVIEW

Pharmaceutical entrepreneurship is an important aspect of healthcare business development that combines entrepreneurial characteristics, innovation, and business strategies within the pharmaceutical sector. Entrepreneurship in this field plays a significant role in supporting drug development, healthcare services, and the commercialization of pharmaceutical products. In addition, pharmaceutical entrepreneurship contributes to economic growth and healthcare improvement through innovative approaches and business expansion [8].

Corporate entrepreneurship has become an essential strategy for pharmaceutical companies to maintain competitiveness and encourage innovation. According to Urbano et al, corporate entrepreneurship supports the development of new products and services while improving a company's ability to adapt to market demands and technological changes [9]. This approach enables pharmaceutical organizations to enhance innovation capacity and achieve sustainable business growth.

Innovation in pharmacy is also closely associated with the advancement of healthcare services and professional pharmacy practice. Research conducted by Obaid et al demonstrated that pharmacy practice research has increasingly focused on medication management [10], pharmaceutical services, and professional development. Innovation in pharmacy can improve healthcare outcomes and create new business opportunities within the pharmaceutical industry.

Entrepreneurial characteristics such as creativity, leadership, managerial ability, and decision-making skills are important factors for success in pharmaceutical entrepreneurship. Sadeghi et al explained that social non-profit bioentrepreneurship has emerged as an innovative approach to addressing global health challenges, particularly neglected diseases [11]. Successful pharmaceutical entrepreneurs require strong leadership, multidisciplinary collaboration, and public awareness to ensure sustainability and innovation in healthcare businesses.

Furthermore, business incubators and accelerators play a vital role in supporting pharmaceutical entrepreneurs by facilitating open innovation practices and providing resources for technology-based ventures [12]. These support systems assist entrepreneurs in developing and commercializing innovative pharmaceutical products. However, pharmaceutical entrepreneurship still faces several challenges, including regulatory complexity, funding limitations, and balancing innovation with affordable access to medicines [13].

Although studies on innovation and entrepreneurship in healthcare have grown rapidly, research specifically focusing on pharmaceutical entrepreneurship remains limited. Existing studies mainly discuss innovation and business development broadly, while systematic reviews examining entrepreneurial characteristics and entrepreneurship in the pharmaceutical sector are still scarce. Therefore, further research is needed to provide a better understanding of entrepreneurship in pharmacy and its contribution to healthcare business development.

METHODOLOGY

Search Strategy

This study employed a systematic review method using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach to examine studies related to entrepreneurship in the pharmaceutical sector [14]. The article search process was conducted through Google Chrome using the keyword “pharmaceutical entrepreneurship” and related terms associated with the pharmaceutical business and entrepreneurship.

Based on the search results, a total of 32 articles were initially identified. The articles were then screened and evaluated according to their relevance, research focus, and quality. Irrelevant and low-quality articles were excluded from the review process. After the eligibility assessment, two articles that met the inclusion criteria were selected for in-depth analysis.

Data Selection and Analysis

The selected studies focused on entrepreneurial motivation and business development strategies in the pharmaceutical sector. The first study, entitled “The Influence of Motivational

Factors on Entrepreneurial Interest among Pharmacy Students” by Honifa and Kurnia Kusumawati, analyzed factors influencing entrepreneurial interest among pharmacy students at Pakuan University. The study involved 116 respondents, consisting of 12 male students (10.3%) and 104 female students (89.7%). The findings indicated that the main motivational factors for entrepreneurship were job loss, the desire for higher income, and dissatisfaction with previous employment.

The second study, entitled “Strategic Analysis in Running and Increasing Turnover During the COVID-19 Pandemic” by Mochamad Widya Pratama, Delina Hasan, and Lies Putriana, examined business strategies used to increase turnover during the COVID-19 pandemic. The study involved 283 respondents, including 132 males (46.6%) and 151 females (53.4%). The findings showed that affordable pricing, socialization and educational promotion, online sales, and discount programs were important strategies for increasing business turnover.

The two selected studies were further analyzed and synthesized to understand the factors influencing pharmaceutical entrepreneurship and strategies for healthcare business development. The overall research process is presented in Figure 1.

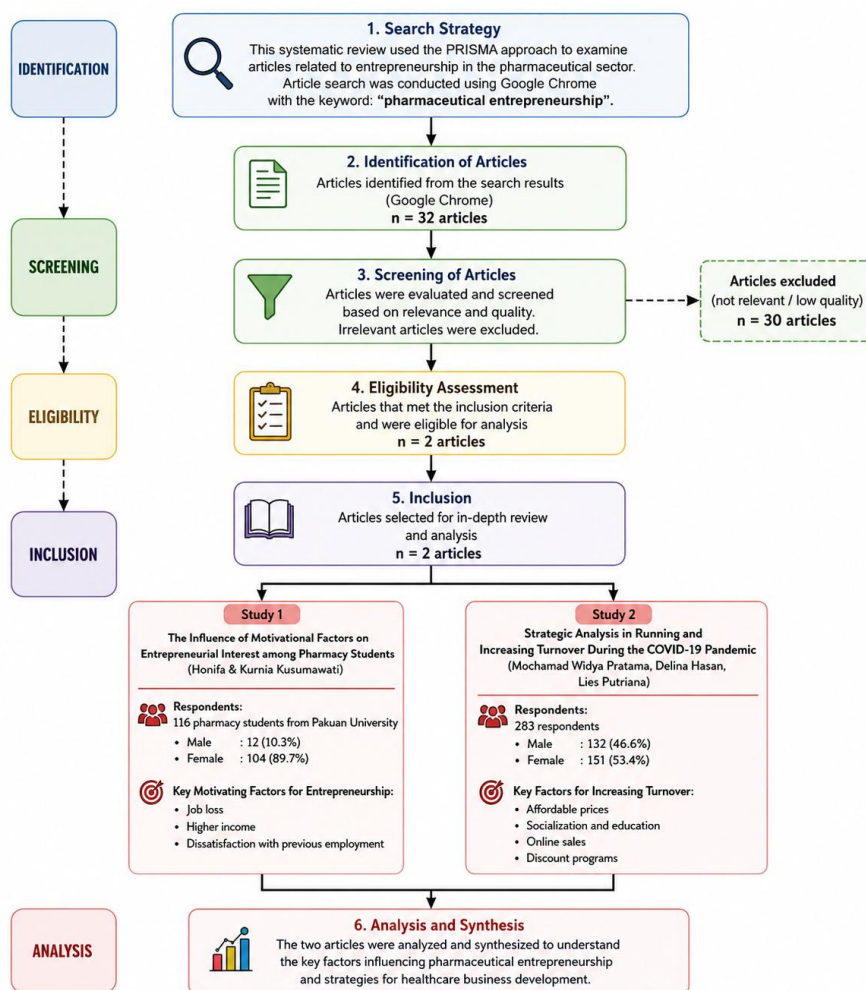


Figure 1. Research Flow

Figure 1 illustrates the systematic review process conducted using the PRISMA framework. The review began with the identification of 32 articles retrieved using the keyword “*pharmaceutical entrepreneurship*.” After screening for relevance, 30 articles were excluded, leaving two eligible studies for in-depth analysis. The selected studies focused on entrepreneurial motivation among pharmacy students and business strategies during the

COVID-19 pandemic. Finally, the findings were synthesized to identify key factors influencing pharmaceutical entrepreneurship and healthcare business development.

RESULTS AND DISCUSSION

Definition of Entrepreneurship

The term entrepreneurship was first introduced in the early 18th century by the French economist Richard Cantillon [15]. According to him, an entrepreneur is an "agent who buys means of production at certain prices to combine them". The etymological meaning of entrepreneur/self-employed comes from Sanskrit, consisting of three syllables: "wira", "swa", and "sta". Wira means a superior human being, exemplary, tough, virtuous, big-hearted, brave, hero, pioneer, warrior/warrior of progress, having the majesty of character. Swa means oneself, and Sta means standing [16].

Entrepreneurship is the equivalent of entrepreneurship in English, unternehmer in German, ondernemen in Dutch [17]. Meanwhile, in Indonesia, it is given the name entrepreneurship.¹ The word entrepreneurship itself actually originates from the French word "entreprendre", which means adventurer, creator, and business manager.

Characteristics of a Good Entrepreneur

1. Mental ability refers to the ability to think and be creative.
2. Clear objective, always focus on profit.
3. Business secrecy, the ability to keep business secrets.
4. Human relations ability, an important factor for the success of an entrepreneur, is emotional stability, personal relationships, consideration, and wisdom. An entrepreneur must have a good relationship with their customers.
5. Communication ability, effective communication means understanding and understanding each other.
6. Technical knowledge is a person's skill that shows that he has tried something difficult or more than the average person.
7. A hard worker, a hard worker.
8. Desire for high achievement, an entrepreneur has a strong desire to achieve high goals in business.
9. Highly optimistic, successful entrepreneurs are not bothered by the problems they face. He is optimistic about the future and the situation he will face in the business in the future.
10. Independence, one of the successful entrepreneurs, also does not follow the guidance of others or his routine. Always believe in his abilities.
11. Good Organizer, the ability to bring common interests in starting an organization to produce a good ending.

Entrepreneurial Functions

The main functions of Entrepreneurship are:

1. Make important decisions and take risks about the company's goals and objectives.
2. Decide on the company's goals and objectives.
3. Determine the business fields and markets to be served.

4. Calculate the scale it wants.
5. Determining the desired capital (own capital or external capital)
6. Selecting and setting criteria for employees/employees and motivating them.
7. Control effectively and efficiently.
8. Finding and creating new ways.
9. Looking for breakthroughs in getting input or input and managing them into interesting goods or services.
10. Marketing these goods and services to satisfy customers and, at the same time, be able to obtain and maintain maximum profits.

The Benefits of Entrepreneurship

Some identified that micro, small, or business owners believe that they tend to work harder, make more money, and be prouder than working for a large company. Before setting up a business, every aspiring entrepreneur should consider the benefits of owning a micro, small, or medium-sized business [\[18\]](#), [\[19\]](#).

The benefits of entrepreneurship are as follows:

1. To provide opportunities and freedom to control one's own destiny. Having your own business will provide freedom and opportunities for businesspeople to achieve their life goals. Businessmen will try to save their lives and allow them to use their business to realize their dreams [\[20\]](#), [\[21\]](#).
2. Providing opportunities for change
More and more businesses are starting their ventures because they can seize the opportunity to make various changes that they think are very important [\[22\]](#).
3. Provide opportunities to reach your full potential
Businesses owned by entrepreneurs are a tool to express self-actualization. Their success is determined by their own creativity, enthusiasm, innovation, and vision. Having their own business or company gives them power and allows them to follow their own interests or hobbies [\[23\]](#), [\[24\]](#).
4. Have the opportunity to make a profit.
The advantages of entrepreneurship are an important motivation factor for establishing your own business [\[25\]](#).
5. Having the opportunity to play an active role in the fan community gets recognition for his efforts.
Entrepreneurs or business owners are often the most respected and trusted citizens of the community. Business owners love the trust and recognition they receive from customers who have been faithfully served over the years [\[26\]](#), [\[27\]](#).
6. Having the opportunity to do something you love and fostering a sense of joy in working. Most successful entrepreneurs choose to enter a certain business because they are interested in and like the job. They channel their hobbies or hobbies into jobs [\[28\]](#), [\[29\]](#).

Types of Entrepreneurs in the Pharmaceutical Sector

The types of entrepreneurs in the field of Pharmacy are:

1. Home Pharmacy Care.

Home Care by pharmacists is patient assistance by pharmacists in pharmaceutical services at home, especially for patients who are not or have not been able to use drugs and/or medical devices independently, namely patients who have the possibility of getting a risk of drug-related problems such as comorbidities, elderly, social environment, drug characteristics, complexity of treatment, complexity of drug use, confusion or lack of knowledge and skills about how using drugs and/or medical devices [30], [31].

2. Cosmetic Production.

Cosmetics are one of the products that are easy to sell, space-saving, durable, and widely needed by various groups of women today. Pharmacy graduates, as well as pharmacists, can make their own cosmetics because a pharmacist knows the ingredients that are safe for all skin types [32], [33].

3. Sales of herbal drinks.

In this sale, the first thing we have to do is produce herbal products. There is no need for much production is sufficient, for example: 50 packages for the first time production as one of the experiments for the closest relatives and the general public. One way to promote is with real evidence. A proof that our herbal drinks can be effective against a disease [34], [35]. We can explain how this herbal drink can work well so that consumers will have more trust in our business products. You don't have to have a store, because we can sell products derived from these natural ingredients through online promotions, one of which is through social media.

4. Opening a licensed Drug Store & or Pharmacy

A licensed drug store is a person or institution that has a license to store over-the-counter drugs and limited over-the-counter drugs for resale to the public in certain places according to the license. Drug stores are only allowed to sell over-the-counter drugs and limited over-the-counter drugs and light medical devices, such as plasters, bandages, cotton, and so on [36], [37]. The person in charge of taking drugs is a pharmacist assistant, who is at least someone who has graduated from a vocational school majoring in pharmaceutical engineering. Meanwhile, pharmacies are allowed to sell all types of drugs, from over-the-counter drugs to prescription drugs. A pharmacist must be at least a graduate of the Faculty of Pharmacy, who is the main person in charge of the pharmacy.

Entrepreneurship for students shows Ambition for freedom, which is an encouragement for students to be entrepreneurial, reflecting their desire to be independent in developing ideas. This is in line with McClelland's view that entrepreneurship is driven by the desire to achieve, establish relationships, and gain power, both financially and socially [38], [39]. It shows that the dimension of ambition for freedom is the main motivation for students in entrepreneurship who have started and run a business, and find that freedom in activities is their biggest motivation in entrepreneurship. By being entrepreneurial, they feel that they can manage steps without any rules from other parties, experiencing firsthand the benefits of this independence. An entrepreneur must have a creative and innovative nature to improve personal well-being and the surrounding environment. Creativity is celebrated when individuals are able to create new things or change something that already exists, while innovation occurs when individuals are able to produce something different from what has existed before [40], [41].

Discussion

The findings of this systematic review indicate that pharmaceutical entrepreneurship represents an integration of professional pharmaceutical knowledge with entrepreneurial competencies to generate both economic and healthcare value. Although only two eligible studies met the inclusion criteria, the synthesized evidence consistently demonstrates that entrepreneurial motivation, innovation, and strategic business management are fundamental

determinants of entrepreneurial success within the pharmaceutical sector. These findings support the argument that pharmacists are no longer limited to traditional dispensing roles but are increasingly expected to become innovators, healthcare managers, and business leaders capable of responding to evolving healthcare demands. The growing complexity of healthcare systems requires pharmacists to possess not only scientific expertise but also entrepreneurial thinking that enables them to identify opportunities and develop sustainable healthcare solutions.

The reviewed studies further emphasize that entrepreneurial motivation plays a central role in encouraging pharmacy students and practitioners to establish independent businesses. Factors such as the desire for financial independence, career flexibility, and professional self-development stimulate entrepreneurial intentions. These findings are consistent with entrepreneurship theory, which explains that achievement motivation encourages individuals to pursue innovation, accept calculated risks, and develop competitive advantages. Furthermore, creativity and innovation enable pharmaceutical entrepreneurs to design patient-oriented services, improve operational efficiency, and introduce new products that address changing community healthcare needs. Such competencies are increasingly important as pharmaceutical services continue to expand beyond conventional medicine dispensing toward comprehensive pharmaceutical care.

Another important finding concerns the diversity of entrepreneurial opportunities available for pharmacists. The review identifies several promising areas, including community pharmacy management, home pharmacy care, cosmetic production, herbal medicine development, and licensed pharmacy businesses. The expansion of digital technology further creates opportunities through online pharmaceutical consultation, electronic commerce, telepharmacy, and digital health platforms. These emerging business models enable pharmacists to improve healthcare accessibility while strengthening business competitiveness. Consequently, entrepreneurial education should be integrated into pharmacy curricula to equip future graduates with leadership, communication, financial management, and strategic planning skills that complement their clinical competencies [40], [41].

Despite these positive findings, this systematic review also highlights important research limitations. The evidence synthesized was derived from only two eligible studies, indicating that pharmaceutical entrepreneurship remains an underexplored research area. Future studies should employ broader database searches, include international literature, and utilize quantitative, qualitative, and mixed-method approaches to generate stronger evidence regarding entrepreneurial competencies and business performance in pharmacy practice. Overall, strengthening entrepreneurial capabilities among pharmacists has the potential to enhance healthcare innovation, promote sustainable pharmaceutical enterprises, expand employment opportunities, and improve public health outcomes through innovative, patient-centered pharmaceutical services.

CONCLUSION

Entrepreneurship is a strategic capability that enables individuals to recognize opportunities, manage available resources, and develop innovative business models that generate economic and social value. In the pharmaceutical sector, entrepreneurship extends beyond profit-oriented activities by integrating healthcare services, professional ethics, and community well-being. Pharmacists who possess entrepreneurial competencies are better equipped to respond to the rapidly changing healthcare environment, technological advancements, and increasing public demand for accessible, affordable, and high-quality pharmaceutical services. Consequently, pharmaceutical entrepreneurship has become an essential component of modern pharmacy practice, contributing to both sustainable business development and improvements in public health outcomes. The findings of this systematic review demonstrate that entrepreneurial success in the pharmaceutical field is influenced by multiple interrelated factors. Entrepreneurial motivation serves as the driving force that

encourages pharmacists to identify opportunities and persist in business development despite challenges. Creativity and innovation enable entrepreneurs to design new products, improve pharmaceutical services, and adapt to changing market needs. Independence, leadership, communication skills, strategic planning, and effective managerial capabilities also play significant roles in establishing and sustaining competitive pharmaceutical enterprises. Furthermore, digital transformation, technological literacy, and continuous professional development strengthen the ability of pharmaceutical entrepreneurs to compete in an increasingly dynamic healthcare ecosystem. This review also identifies a wide range of entrepreneurial opportunities available within the pharmaceutical profession. These include community pharmacy management, home pharmacy care services, pharmaceutical consultation, cosmetic production and distribution, herbal and traditional medicine businesses, pharmaceutical manufacturing, online pharmacy platforms, healthcare technology services, and medication therapy management. Such opportunities illustrate that pharmacists can diversify their professional roles while maintaining ethical standards and delivering patient-centered healthcare services. The integration of entrepreneurial thinking with pharmaceutical knowledge creates additional value for healthcare systems, promotes employment opportunities, and strengthens the resilience of pharmaceutical businesses in both developed and developing countries. Overall, pharmaceutical entrepreneurship contributes significantly to economic growth, healthcare innovation, and social welfare. Strengthening entrepreneurial education within pharmacy curricula, promoting interdisciplinary collaboration, and supporting government policies that encourage pharmaceutical innovation are essential to preparing future pharmacists for emerging challenges. Future research should investigate effective educational models, digital entrepreneurship strategies, and the long-term impact of pharmaceutical entrepreneurship on healthcare quality, patient satisfaction, and sustainable economic development across different national and institutional contexts. By fostering entrepreneurial competencies alongside professional pharmaceutical expertise, the pharmacy profession can continue to evolve as a key contributor to global health, economic resilience, and sustainable healthcare development.

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Author's Contributions

Wahyu Toha Abdul Hak conceptualized the study, designed the review framework, supervised the research process, interpreted the findings, and finalized the manuscript. Rifqoh Fauziyah conducted the literature search, screened and analyzed the selected studies, organized the data, drafted the manuscript, and participated in revisions. Both authors approved the final version.

Conflicts of Interest

The authors declare that there are no financial, professional, institutional, or personal conflicts of interest that could have influenced the research process, interpretation of findings, or publication of this manuscript. The study was conducted independently, and all conclusions presented are based solely on the evidence reviewed.

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