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SUPPORT SYSTEM FOR START-UPS IN POLAND – SELECTED ASPECTS OF THE HEALTH CARE SECTOR

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Purpose: The purpose of this paper is to analyse the role of innovation and business ecosystems in supporting start-ups, particularly in the healthcare sector. The study focuses on the stages of start-up development - innovation, business model creation, market testing, investor acquisition and product marketisation - and identifies forms of support at these stages. The topic of the article was taken up because of the growing pressure for efficient and affordable healthcare delivery. The growing contribution of start-ups to this challenge is noted, but research in this area is lacking.

Design/methodology/approach: The study uses literature review methodology combined with exploratory secondary data analysis. Key sources include academic publications, industry reports and case studies, looking at innovation ecosystems, business ecosystems and the medtech start-up environment in Poland. The analysis was designed to highlight the interconnectedness between ecosystem actors and the specific needs of start-ups at different stages of their development.

Findings: The study identifies key gaps in the flow of information in the area of healthcare innovation, especially in the relationship between start-ups and investors, customers and other participants in the ecosystem. It highlights the importance of structured support mechanisms, such as mentoring, funding or market access, to overcome barriers at different stages of start-up development. The results also point to the need for synergies and sustainable collaboration to increase the effectiveness of innovation ecosystems.

Originality/value: The paper contributes to the understanding of how innovation and business ecosystems can support the development of start-ups, particularly in the health sector. It provides a structured approach to analysing the needs of start-ups and the types of support needed for their success. The findings are valuable for policymakers, investors and ecosystem stakeholders seeking to strengthen the medtech sector and support innovation in healthcare.

Keywords: start-up ecosystems, innovation ecosystems, healthcare innovation, medtech start-ups, start-up support, business model development, venture capital.

Category of the paper: General review.

1. Introduction

Start-ups, as dynamic and innovative business entities, play a key role in shaping the modern economy by bringing disruptive technological and social solutions to the market (Audretsch et al., 2020). Their development, while full of potential, comes with numerous challenges that often require support in various areas. When considering start-ups, we need to take into account the broader context in which they operate, not only locally but also globally (Mátyás et al., 2019). The challenges currently posed by start-ups are closely linked to a dynamically changing world (Kowalewski, 2020). There is a faster transfer of knowledge, skills, technology or capital between markets (Kusio et al., 2023). The covid-19 pandemic has had a large impact on the growth and acceleration of technological and working model change, with significant changes in thinking about the supply chain or challenges in the health tech sector (Katić, 2020). Demographic and social changes cannot go unnoticed. Changing consumer expectations, especially among new, younger generations (Łukasiński, Nigbor-Drożdż, 2022) and the need to adapt to an ageing population. The global healthcare sector is currently undergoing an unprecedented transformation (Morande, 2020), driven by technological advances, demographic changes and evolving patient needs (Deloitte, 2024). This has given rise to an attempt to review the support system for start-ups in this rapidly changing sector. Effective and affordable health care delivery for all is the prerogative of national governments. Such delivery is quite challenging and there are significant gaps. As a result, startups are trying to feed the market with innovative solutions and reach an underserved market. The phenomenon is noticeable nevertheless lacks confirmation in research (Chakraborty, 2021). The research gap in this area in Poland is even larger which became the reason for taking up the topic of the article. The purpose of the article is to analyze the conditions of the start-up health care sector in the current innovation and business ecosystems supporting start-ups. The intermediate goal is to assess the effectiveness of the support received. The premise of the article was to determine the market and management activities undertaken by start-ups of the health care sector which gives an idea of their condition.

2. The start-up ecosystem

In order for a start-up to develop properly, a properly functioning system is needed to support its development (Grycuk, 2019). Many factors influence the proper development of a start-up, these include: legal regulations, economic regulations, institutional regulations, human capital, social capital and the institutional environment. These factors play a key role at the different stages of start-up development viz: the seed stage in which an idea is conceived

and turns into real action, the growth stage in which the project begins to develop and take on its final version and the final stage or stabilisation and expansion in which the product/service begins to scale. All these stages need to be supported by supporting activities so that innovation development does not stagnate or get lost (Blank, Dorf, 2013). With the growing needs of start-ups, the ecosystem surrounding them is also developing. Therefore, the paper attempts to analyse the start-up ecosystem in Poland to see its current state. Most start-ups die at the initial stage of operation, i.e. the seeding stage. A common problem that prevents them from moving on to the next stage is the lack of financial support, which makes it impossible for the start-up to successfully start growing (Cegielska, Zawadzka, 2017). As research in Poland shows, start-ups are predominantly funded from their own resources, but recently this trend has slowly started to change and more and more money from a private investor is entering the market. The start-up ecosystem, which consists of institutions such as business incubators, accelerators, technology parks, local and governmental activities, university activities and the European Union, is developing quite rapidly in Poland, but it is not as mature as in Western countries (Kuźmińska-Haberla, Bobowski, Michalczyk, 2020). Each enterprise, in order to develop effectively, must function in a favourable environment. The development of an enterprise is influenced by various factors, both intra-organisational and external. The higher the level of risk posed by an enterprise's activities, the more difficult it is to maintain on the market. An important role in its mitigation is played by the ecosystem in which it is located (Dziewit, 2021). A business ecosystem, which fosters cooperation between companies, investors, universities and R&D institutions, creates an environment that enables start-ups to grow effectively. The concept of a business ecosystem was pioneered by J.F. Moore, who argued that, companies are not just members of a specific sector in which they operate, but form a system that interacts with each other (Moore, 1993). Such a system is driven not only by competition but also by co-evolution. The interaction of companies with each other promotes their faster growth. J.F Moore's theory is a kind of extension of the theory on value chain networks. These factors are important for the development of a business and they determine the speed at which a business can grow. In this context, businesses are moving away from focusing solely on competing with other organisations in order to increase their competitiveness in the market. They are setting the customer as their main focus and it is for them that they want to increase the attractiveness of their offering. The consumer becomes the main driving force through which the business ecosystem can develop more rapidly (Wiechoczek, 2020). A well-functioning business ecosystem fosters the development of innovative solutions. Through mutual cooperation, companies can exchange resources, which increases the chances of success. The above considerations indicate the typical characteristics that define a business ecosystem. They include: a large number of organisations operating in a given ecosystem, the existence of interconnections and interdependencies between organisations, and dynamic co-evolution. The traditional approach, where the structure is based on a hierarchy and centred around a single business entity, is now being abandoned. Collaboration between entities is

a fundamental element of any larger organisation. The business ecosystem is a complex system of mutual, value-creating inter-organisational interactions.

According to R. Adner, a business ecosystem is an opportunity to produce value that a company would never be able to produce if it were not for mutual cooperation with other actors (Adner, 2006). A business ecosystem can be likened to an innovation ecosystem. An innovation ecosystem is a dynamically evolving community of organisations and individuals that compete and collaborate, formed for a specific purpose. There are complex interactions between actors, and the basis for their functioning is trust, and the creation of shared value using available technology and knowledge (Autio, Thomas, 2014).

Within the innovation ecosystem, start-ups have access to resources, knowledge and networks that allow them to take their ideas and bring them to market (Knop, 2018). This linking of start-up support to the wider ecosystem fosters the dynamic development of new technologies and business models that change the face of the economy. To achieve the desired success, it is necessary to provide the right conditions for the development of the innovation ecosystem, including start-ups, which play a key role in this process. Creating an enabling environment requires support from various institutions and market participants (Janiszewski, Szmal, 2018). It is important that all elements of the ecosystem, including start-ups, work together in an effective and integrated manner. The development of the innovation ecosystem also depends on creating space for experimentation and risk-taking, especially in the context of young companies (Brzóska, Szmal, 2020). The right conditions will allow for dynamic growth and the realisation of innovative goals in which start-ups can play a key role. For this to occur, they need:

- Central nodes (Central node) This is a kind of base on which cooperation between actors is possible (Bae, Chang, 2012). Examples include:
  - IT platform.
  - Tool.
  - Innovative technology.
  - Configuration of social factors or economic conditions.
- Large number of actors involved in the ecosystem. Each of the actors in the ecosystem brings specific value and mutual cooperation brings success closer. It is characteristic of the innovation ecosystem and the business ecosystem that no single actor acting separately would achieve similar success. Each actor in the innovation ecosystem structure can play one of three roles (Isckia, Lescop, 2009):
  - Keystone - Is responsible for the functioning of the ecosystem by creating the focal nodes. He or she is also responsible for distributing the benefits among the actors co-creating the ecosystem, there is a (win-win) principle here.
  - Physical dominator - Usually a large organisation characterised by the fact that it imposes a development strategy on the entire ecosystem. It benefits from the focal nodes and niches of the ecosystem. An organisation operating in this way often

works against the ecosystem. Often, dominant actors become value controllers (value dominator) or become hub landlords.

- Niche actors - these are small entities or even individuals who provide key value to the development of the ecosystem by gaining access to a central hub. They are responsible for the development of a service or product, thus becoming a key link in the functioning of the innovation ecosystem.

Given the diversity that can exist in an innovation ecosystem, it is important to carefully select stakeholders (Szmal, 2021) to ensure synergistic development, including start-ups, which play a key role in the process. It is also essential to properly regulate collaboration and maintain a balance, which promotes dynamic development. The absence of a key player, responsible for maintaining this balance, can lead to a situation where one of the participants, including start-ups, is less effective in influencing the development of the ecosystem. It is important that each party participating in the ecosystem, including young companies, benefits, thus ensuring a "win-win" situation and enabling start-ups to fully exploit their innovation potential.

3. Start-up entity

In order to better analyse the conditions in which start-ups operate, it is worth looking at the attributes of a start-up. The term start-up in everyday language is currently heavily abused and sometimes extremely different from the definitions quoted in the literature.

The term Start-up was first used in Forbes biweekly in 1976. Nevertheless, one of the most popular definitions is that of S. Blank. He developed a modern management method which is known as Lean start-up (Tomaszewski, 2018), he stated that start-ups can be defined by: purpose, functions and financial structure (Blank, 2013). Purpose is understood to mean that the company has far-reaching plans to become a large enterprise that will influence or create new markets through its operations. Function, understood as continuous change in the business model. The search for the optimum solution to answer the questions raised earlier. Financial structure - characterised by the fact that the company raises external capital, which is needed for the development of innovative solutions, while reducing the share capital of the people who founded the start-up. From the above definition, it can be concluded that the most important characteristics of a start-up are the constant search for the ideal business model and the pursuit of business scalability (Montani, Gervasio, Pulcini, 2020). This definition is often complemented by operating under extreme uncertainty (Ries, 2011). This emphasises how vulnerable the start-up's business is to the uncertainty associated with the changes it wants to make.

Start-ups grow rapidly and focus on identifying and developing the ideal product or service. They stand out for their high growth potential (Kowal, Szmal, 2022), especially in the future, and often operate in areas of the technology industry where innovation plays a key role. Their mission is to bring innovative solutions to existing markets or to create entirely new markets. Start-ups tend to be companies with a short history, operating for no more than five years, and are characterised by a high degree of uncertainty related to the implementation of the intended changes. In addition, the lack of an established market position makes start-ups particularly vulnerable to risk, but at the same time they can be a catalyst for disruptive innovation.

Start-ups are characterised by a high level of uncertainty, which is due to the various factors affecting the launch of a product (Jonek-Kowalska, Wolniak, 2021). During the innovation process, it is difficult to predict how long it will take to match the product to market expectations and needs. This is due to the testing phase that every product/service has to go through in order to finally get the product to the customer (Lara et al., 2011). On the one hand, a lot of time is needed to successfully match an innovative product to customer needs while, on the other hand, the market requires entrepreneurs to act quickly. In order to reconcile these two aspects, entrepreneurs often seek external funding (Szmal, 2017), which will help them accelerate the testing process and, moreover, allow them to further refine their product. The entire operation stage of a start-up company can be depicted in the diagram below.

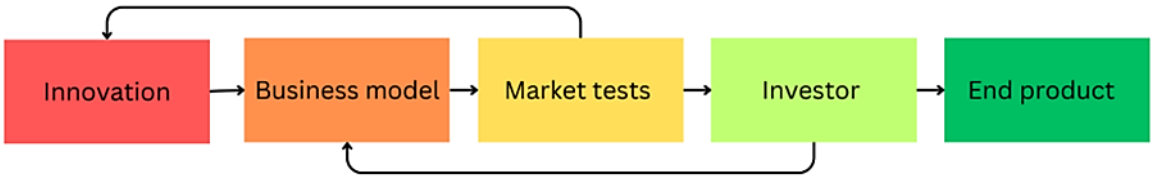

Figure 1. Stages of a start-up.

Source: Own work based on: Adamczyk, Bill, Bohatkiewicz, p. 6.

4. Research model

A literature review on start-up support was conducted using the desk research method. The bibliography includes 40 items, mainly from 1993-2024, including academic papers, books, monograph chapters, industry reports and electronic sources. The following databases were used to collect scientific literature: Google Scholar, ResearchGate, ScienceDirect, EBSCO. The literature search in the above databases used the following combination of words using logical operators (AND, OR): ('start-up support' OR start-up support in Poland) AND (resources OR 'activities'). Searches in the above databases complemented the literature collected for the following keywords: Start-up ecosystems, innovation ecosystems, start-up

support, business model innovation, venture capital, product-market fit, entrepreneurial support.

This paper uses a report created by the Polish Federation of Hospitals and the Young Medical Managers team 'Top Disruptors in Healthcare 2021'. The report is based on an identified list of 380 Polish entities that operate in the healthcare sector. 115 start-ups participated in the 2021 edition. Data collection was carried out through online surveys made available to interested start-ups. The paper also drew on the Deloitte report, 2024 Global Health Care Sector Outlook - Navigating transformation, which provided a rationale for discussing the challenges facing health care. The overview of the challenges enriched the description of the conditions for start-ups and thus the required forms of support.

5. Support for start-ups at different stages of development

Start-ups need the right support at different stages of their business to successfully move through the stages of business model innovation, market testing, finding investors and the final product. In the right ecosystem, start-ups can benefit from the resources, knowledge and contacts that enable them to achieve market success (Scale, 2017). Each stage of a start-up's development is associated with different challenges and needs, which can be met by appropriate support. In particular, start-ups need support in the form of resources, knowledge and contacts to move through each stage in an effective and sustainable manner. In the innovation stage, start-ups often struggle to develop a new idea or technology that will stand out in the market. Consequently, support at this stage focuses on access to research, technology and experts to help validate the idea and assess its market potential (Jajuga, 2020). This support can come from universities, R&D institutions, accelerators and incubators that offer start-ups access to technology resources, laboratories and R&D teams. Additionally, participating in mentoring from experienced entrepreneurs and industry professionals allows for early identification of problems and opportunities in product development, which significantly increases the chance of success (Sanchez-Burks et al., 2017). The next key stage is the development of a business model, which defines how revenue will be generated, the cost structure and how customers will be reached. At this stage, start-ups need support to analyse the market, identify customer segments, and build a marketing and sales strategy. Support can take the form of advice from business experts who help to clarify the business model, build strategy and define the growth path. Incubation and acceleration programmes also offer workshops, training and access to networks, which allows for networking with other companies or institutions that can support the development of the business model. At this stage, start-ups also gain knowledge of legal and regulatory aspects, which allows them to build a solid foundation for future operations. When the product is ready to be tested in the market, start-ups face the challenge of verifying

their idea in real market conditions. At this stage, support is crucial, as start-ups need tools to conduct trials, collect user feedback and test the product under real market conditions. Incubators and accelerators often offer start-ups access to focus groups, testing platforms, and analytical tools to collect data on consumer behaviour and reactions to the product. Marketing and promotional support is also important so that market tests can reach a wide range of potential users and start-ups can get valuable feedback. At the fundraising stage, start-ups often need support in the form of capital and strategic advice. Investors such as business angels, venture capital funds or innovation funds play a key role in this process. In addition to funding, investors also offer start-ups advice on growth strategies, entering new markets, as well as operational and organisational issues. In addition, investors help build networks that can prove invaluable in the further development of the company, enabling collaboration with business partners, customers and other companies in the innovation ecosystem. At the product finalisation stage, support focuses on commercialising the product and bringing it to market. Start-ups need help with sales strategy, marketing and building a distribution network. This support ranges from advice on marketing strategy to access to sales platforms to reach a wide audience. At the same time, start-ups need to focus on further refining the product and adapting it to changing market needs. Incubators and accelerators, as well as business partners, offer support in terms of production, logistics and sales, allowing the finished product to be brought to market faster and scaled up successively.

Each of these stages is crucial to the development of a start-up, and the right support at each stage can significantly increase the chances of success. Understanding these stages and the forms of support at each stage allows for better alignment of start-up development support activities in the context of the overall innovation ecosystem.

6. Findings and discussion

There are factors forcing change in the health care field (Deloitte, 2024) and a significant information deficit a significant information deficit in the healthcare sector, which makes it extremely difficult and time-consuming to get answers to questions about new and interesting solutions, their sophistication and maturity, as well as their needs, challenges, potential users and positioning against competitors. The analysis of the 'Top Disruptors in Healthcare 2021' report points to the need to develop an innovation ecosystem in healthcare, which not only fosters innovation in the economy, but also raises awareness among patients and enables collaboration between start-ups and others. A critical analysis of the 'Top Disruptors in Healthcare 2021' report, which contains a description of 115 Polish healthcare start-ups, allows us to see many interesting facts and relationships.

Seventy-four start-ups participated in the 2020 edition, 44 of which reappeared in the 2021 edition. The remaining 30 start-ups, despite attempts to make contact, did not participate in the next edition. This situation may suggest that some of them have gone out of business, which is due to the fact that start-ups operating in the medical industry rarely achieve market success. More than half of the start-ups surveyed, as many as 55%, indicate telemedicine as their main area of activity. According to the predictions of the Polish Agency for Enterprise Development, the global telemedicine market is expected to grow at a rate of nearly 20% per year for the next five years, reaching a value of USD 175 billion (Mańkowska, 2022). In contrast, 45% of respondents report that their business is focused on solutions related to artificial intelligence and machine learning. A quarter of the start-ups surveyed (25%) fund their activities from their own resources. At the expansion stage, this percentage rises to 37%. This may suggest that start-ups at this stage of development are sufficiently advanced to do without external funding, or that Poland lacks adequate sources of financial support. At the MVP stage, some start-ups have raised funding in excess of PLN 10 million, which shows that ambitious medical projects are able to attract investors, even if the company does not yet have its first paying customers. On the other hand, start-ups at the Proof of Concept stage receive the lowest funding, which indicates the reluctance of medical investors to commit capital to projects without a prototype, although there are exceptions. Financing with own funds shows, on the one hand, the founders' strong belief in their venture and, on the other hand, can mean difficulties in raising external capital. Grants are another important source of funding, used by 34% of start-ups (EU grants) and 31% (national grants). Incubation programmes support 13% of start-ups and acceleration programmes support 9%. This is significant support, especially given the high costs and barriers to entry in the medical sector. Despite this, only 9% of start-ups have received funding from foreign investors, showing little international interest in this market. Funds from private investors, so-called business angels, support 21% of start-ups, while 23% use VC funds. This is a relatively high percentage, indicating the willingness of private investors to take risks in the area of medical start-ups, which may be due to their high social utility. In contrast, crowdfunding was not used by any of the respondents, which may indicate its low popularity in this industry in Poland. Most of the start-ups included in the Report operate in the form of a limited liability company, which is the most preferred solution. On the other hand, other legal forms, such as general or limited partnership, which are commonly used in Poland due to tax advantages, are not very applicable in the start-up environment. As many as 90% of the start-ups surveyed have a product with a market value of at least Minimum Viable Product (MVP), i.e. a version of the product with enough features to meet the needs of initial customers and get the feedback needed for further development. More than half (53%) are already offering their products commercially, gaining their first paying customers. Around 30% of the start-ups surveyed are at the Growth stage, focusing on acquiring new customers and developing their products, while only 10% are at the Proof of Concept stage, where the product demonstrates its feasibility but does not yet meet key user requirements. The vast majority of the start-ups

surveyed already have a business model in place and only 8% (9 start-ups) indicate a lack in this area. The survey shows that 44% of the start-ups surveyed (50 entities) indicate that CE certification is not required for their products. At the same time, 30% (34 start-ups) already have this certificate and 27% (31 start-ups) are only planning to obtain it. At the Proof of Concept stage, no start-up has a CE certificate, while 29% of start-ups at the MVP stage, 38% at the commercialisation stage and 46% at the expansion stage have this certificate. These figures indicate that almost half of medical start-ups need CE certification to successfully scale their business and succeed in the market. The research shows that 56% of start-ups are not yet active in foreign markets, although the majority have plans to internationalise. The largest number of start-ups that intend to expand internationally are currently at the Minimum Value Product stage, which applies to 28 entities.

The above findings are a good basis for assessing the effectiveness of support arising from the start-up ecosystem and for formulating recommendations on the expected forms of support necessary to scale business, including internationally.

Although health technology startups are increasingly filling gaps in affordability, accessibility and quality of health care through innovative solutions, only a few are sustaining and successful. Knowledge of the critical success factors is limited and should be helpful to stakeholders of health technology startups. A similar conclusion is also found in other studies (Chakraborty, 2023b). The research suggests that the classic startup architecture consisting of value proposition, co-creation, transfer and capture is not fully practiced in the Polish market. Exploration of this thread is in the research plans of the study's author.

The surveyed players are focusing their activity on telemedicine and artificial intelligence. This finding confirms that they fit into major global trends but unnoticed trends such as Wearables and health monitoring devices, fintech in health care or biotechnology and personalized medicine.

Another group of findings relates to the sources and structure of start-up financing. Developing a start-up in the healthcare sector can require significant investment in research, development, product testing and meeting regulatory requirements. Start-ups often have to raise capital from venture capital funds, with the risk of losing control of the company and requirements for a quick return on investment. Insufficient funding can lead to difficulties in maintaining liquidity and delays in growth. The findings point to the inadequacies of the innovation ecosystem in providing adequate venture funding.

The results of the survey also confirmed that start-ups have defined MVPs and business models, indicating the right level of support in this area.

A disturbing finding is that most start-ups do not operate in foreign markets. This is a significant problem. While many startups in Poland are off to a great start, they often face difficulties in scaling their business, especially in international markets. There is a lack of experience in managing rapid growth, entering new markets and building sustainable business

models on a large scale. The weakness of the innovation ecosystem in this regard is evident here.

A valuable direction for further research seems to be to consider the determinants of the healthcare sector. These can certainly include: clinical risk, efficiency of medical procedures, regulatory aspects, social and ethical responsibility, cooperation with corporate partners and healthcare providers.

7. Conclusions

Undoubtedly, the start-up support system in Poland has been undergoing a significant change in recent years. More and more institutions operating in the start-up environment are being established. Currently, innovative enterprises can take advantage of a wide range of business incubators, technology parks, accelerators and university-related institutions. This is related to the growth of foreign capital in Poland, but also to the increased interference of government and EU institutions in innovation activities. The development of innovation is noticeable, but there are many elements that require significant changes to improve the functioning of the system. One of the main elements that should be improved is the availability of adequate sources of financing for development. The situation in this area is quite complex. Most start-ups, especially at the beginning, rely on their own funds. This makes it very difficult to enter the market with an innovative product or service. This can be seen in the Start-up Poland and Deloitte reports, which show the actual scale of the problem. On the other hand, there is an upward trend showing that start-ups in Poland are increasingly financed by Venture Capital funds. Nevertheless, the results of the research show that money to finance innovative projects is waiting for start-ups, but there are not enough interesting ideas that they are willing to invest in. This shows that another important element in increasing the effectiveness of the start-up ecosystem is to increase support for the invention stage, i.e. the creation of innovative ideas. The supply of resources for the development of innovation is significant and there is often a lack of projects and teams that offer the expected market appeal. Therefore, it is important to support the ecosystem in involving more people in the creation and implementation of innovative ideas. In Poland, there is a big problem with the financing of innovative companies by banking institutions. There is no specific bank that provides larger loans for future revenues. Compared to Western countries, there is much room for improvement in this area. An equally important challenge facing innovative companies is the ability to successfully raise both public and private funds. This ability is critical to the process of scaling the business.

Human capital was identified as the main factor responsible for the success of a start-up by the institutions and start-ups surveyed. Startups, especially in the healthcare industry, need experts who understand both technology and regulation in the medical sector. The combination

of technical knowledge with market experience, contacts with other companies, sales skills and knowledge of social behaviour is key to the start-up's ultimate success. The support of the ecosystem in this respect is improving, but still needs perfection. Promotional and networking activities are also needed as many professionals are not very keen to get involved in the start-up development process

According to the start-ups, the ecosystem in Poland is not yet mature enough. This assessment is influenced by the fact that there are still too few tools on the market in Poland that would help start-ups to develop properly. The more mature it is, the more likely it is that a start-up will be able to achieve success. The maturity of the ecosystem can be indicated by the level of support from which innovative enterprises benefit. In Western countries, where the ecosystem is mature, the number of start-ups benefiting from VC funds, business angel support, technology parks or accelerators is much higher. Moreover, a mature ecosystem is characterised by the fact that it not only supports the activities of existing start-ups, but also drives entrepreneurs to take the initiative by giving them tools to support the invention and testing stage from the beginning. It should also be noted that the ecosystem of support for Healthcare start-ups in Poland takes into account to a modest extent the specific requirements of this process resulting from the marketisation of medical technologies or biomaterials. However, little has been published on their role in the evolving digital healthcare ecosystem. (Chakraborty, 2023a). This aspect also requires the attention of the players in the start-up support ecosystem.

The issue of the support system for start-ups in the health sector is an important gap. It is evident in both European and Polish dimensions. Despite the potential for feasibility, research on health technology startups for the provision of healthcare services is emerging, but only just beginning (Chakraborty, 2021). The review indicates that research on startups is insufficient, especially with regard to entrepreneurship, business frameworks and regulations. The research deficit in this area in Poland is even greater. The article's findings only show the main problems and future research should examine these issues in depth. Despite the limitations of the results, they provide clear confirmation of the need for exploration of the topic and can serve as a source of recommendations. The result can be used by startup developers, regional and national authorities creating support policies and other stakeholders in the innovation ecosystem. The condition of the startup support ecosystem and the forms of support needed are particularly relevant in view of the new challenge. In the spring of 2024, the European Parliament and the Council reached political agreement on the Commission's EHDS proposal. The European Health Data Space (EHDS) will be a key pillar of a strong European Health Union and is the first common EU data space in a specific area to emerge from a European data strategy. This regulation is a challenge but also a huge opportunity for innovative start-ups delivering value to increase health care accessibility. Research results can support this European competition.

In conclusion, Poland has great potential for startup development, but this requires further work to remove barriers related to funding, regulation, access to talent, and building the right structures to support innovation. Collaboration between the public, private and academic sectors is crucial to create a more favorable ecosystem for startups, especially in such a challenging sector as health.

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