SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2025
ORGANIZATION AND MANAGEMENT SERIES NO. 226

CROWDFUNDING AS AN ALTERNATIVE SOURCE OF STARTUP FINANCING

Dariusz FIRSZT

Cracow University of Economics, Department of Process Management; firsztd@uek.krakow.pl,
ORCID: 0000-0003-3156-1452

Purpose: The aim of this article is to assess the suitability of crowdfunding – as an alternative source of business financing – for addressing the specific needs of startup ventures.
Design/methodology/approach: The study is based on expert evaluation using the Best-Worst Method (BWM), which allows for a structured assessment of crowdfunding's usefulness in raising capital for startup development. The analysis is supplemented by desk research focusing on the dynamics of the crowdfunding market in Poland.
Findings: The results indicate a high level of alignment between crowdfunding and the needs of startups. Crowdfunding performs significantly better than traditional bank loans and also shows an advantage over other funding sources such as technology loans or public funds. Although interest in this form of financing has been growing in Poland over the past decade, the overall volume of capital raised through crowdfunding remains relatively modest.
Research limitations/implications: The analysis is exploratory in nature and is based on a limited number of academic experts. Future research should incorporate the perspectives of practitioners – startup founders, investors, and crowdfunding platform representatives.
Practical implications: The findings may serve as a useful guide for startup creators in identifying and selecting funding sources during early development stages.
Social implications: The broader adoption of crowdfunding – particularly in investment and lending models – requires increased public awareness and financial education. This applies to both entrepreneurs seeking funding and citizens who could act as small-scale investors supporting innovative projects in their communities.
Originality/value: The article offers an original contribution in the form of a matching matrix concept, enabling a systematic assessment of selected financing sources – including various crowdfunding models – against key characteristics of startups. The comparative analysis also applies the relatively new and increasingly recognized Best-Worst Method (BWM).
Keywords: crowdfunding, startup, innovation financing.
Category of the paper: Research paper, conceptual paper.

1. Introduction

Innovation is a key driver of competitive advantage for enterprises, as well as economic and social development. In addition to generating above-average profits, it provides implementing entities with marketing benefits, reinforcing their image as technological leaders. Nevertheless, obtaining capital to implement innovative solutions often proves challenging. Paradoxically, it is frequently easier to secure funding for traditional projects than for pioneering initiatives. In response to these difficulties, innovative businesses increasingly turn to alternative financing methods, such as crowdfunding. This community-based funding model, enabled by online platforms, relies on small contributions from a broad group of supporters. In recent years, it has gained significant global popularity, including in Poland.

The aim of this article is to assess the suitability of crowdfunding – as an alternative source of business financing – for the specific needs of startup ventures. The analysis focuses on the main barriers to financing innovative entities and explores how crowdfunding mechanisms may help overcome them. The article also discusses the nature of crowdfunding, its main models, and the procedures involved in raising funds. The study is complemented by a concise overview of quantitative and qualitative developments that have taken place on the Polish crowdfunding market in recent years.

The literature reveals a tendency to generalize and idealize the role of crowdfunding in the development of startups, often without sufficient differentiation between its various models and their suitability for the actual conditions and limitations faced by early-stage ventures. This article seeks to provide a more nuanced and methodical assessment of the usefulness of different crowdfunding models in the context of the typical challenges encountered by startups in their early stages of development.

2. Challenges in raising capital for innovative ventures

Financing innovative activities remains a major challenge for businesses. Despite the growing importance of innovation, access to capital remains limited. This is due both to the nature of innovative projects themselves and to the mechanisms by which financial markets operate (Grossman, Stiglitz, 1980; Egger, Keuschnigg, 2015).

Among the many barriers to innovation financing, four are of particular importance. First, innovative projects involve a high level of risk – technological risk (whether the product will meet expectations), market risk (whether it will find buyers), and managerial risk (especially in the case of new business models). This uncertainty often leads traditional financial institutions, including banks, to avoid financing innovation (Nanda, Rhodes-Kropf,

2017; Łopaciński, 2018). Second, assessing the risk of innovative ventures is complex and costly. The lack of comparable projects hinders credit evaluation, and expert analysis may increase the cost of capital to levels unacceptable to entrepreneurs (Deptuła, Knosala, 2015). Third, long return-on-investment periods discourage capital involvement. The pre-commercial phase – comprising research, testing, and product refinement – significantly extends the waiting time for profits. Fourth, securing liabilities is often problematic. Capital is typically allocated to R&D services or hard-to-liquidate assets (e.g., specialized equipment), which do not create valuable collateral (Głodek, Pietras, 2011). These barriers result in a so-called capital gap – the difference between the declared demand for funding and the actual capital obtained – which is significantly greater in innovative firms than in traditional enterprises (Bernat, 2015).

Importantly, the severity of capital access constraints depends on the type of enterprise. Large, well-established firms with a market track record and financial history are better positioned in the credit market, have access to capital markets, and may also partially offset external financing barriers with internal funds allocated to innovation projects. Startups, on the other hand, are in a completely different situation. These are newly established enterprises operating under conditions of high uncertainty, often without a clearly defined business model, but with the potential for rapid scaling. By their nature, startups are innovative entities focused on the commercialization of new technologies, business models, value creation and delivery methods, and process organization (Ries, 2011). Their typical characteristics include a lack of operational and financial history, limited human resources, and difficulties in providing financial collateral. In startups, the aforementioned financing barriers tend to accumulate, making access to capital particularly challenging.

The literature distinguishes several phases of startup development – from idea and concept development, through product creation and commercialization, to scaling and maturity. In each of these phases, access to specific sources of funding may vary. In the early stages, funding typically comes from founders' own savings (bootstrapping), support from family and friends (known as the "FFF" segment – friends, family, and fools), and public grants or subsidies. At later stages, business angels – private investors who provide capital and often share their know-how – become involved in exchange for equity stakes. In the growth phase, when scaling opportunities emerge, venture capital funds – specialized institutions investing in high-risk, high-return projects – gain importance. Only in the maturity phase do startups typically gain real access to bank financing and capital markets. A potential opportunity for technology-oriented startups is the technology credit instrument – a hybrid of a traditional bank loan with partial debt forgiveness, usually supported by public funding (Zawadzka et al., 2018; Lerner, Nanda, 2020).

Given the limited availability of many of the aforementioned sources to the youngest and riskiest ventures, alternative financing mechanisms are gaining increasing importance. The following section of the article focuses on one such mechanism – crowdfunding – and offers an assessment of its suitability for addressing the specific needs of startups.

3. Crowdfunding – concept, types, and fundraising procedures

Crowdfunding is a method of raising funds for a specific purpose through small contributions from a large number of individuals via online platforms, without the involvement of traditional financial intermediaries (Mollick, 2014; Jemielniak, 2019; Majewski, 2020). Three key features define crowdfunding.

The first is a clearly stated purpose declared by the entity seeking funding. Funds are not collected for general operational needs, such as working capital or liquidity buffers, but rather for a precisely defined goal communicated to potential backers at the beginning of the crowdfunding campaign. This approach not only builds trust among supporters but also serves a marketing function – a well-defined and attractive project increases the likelihood of successfully attracting capital (Tchoualak et al., 2020).

The second defining feature is the appeal for support directed toward a broad audience of potential backers, which enables large-scale fundraising. Individual contributions are typically small, but their number allows for the accumulation of significant total amounts. The term "significant" is relative and refers to the modest scale of most crowdfunded projects – crowdfunding is a form of microfinancing and is not intended to raise multimillion-dollar funds for large entities (Attuel-Mendes, 2016). One consequence of this mechanism is that it allows for the financing of high-risk projects – because individual contributions are small, campaign participants tend to exhibit lower risk aversion (Damodaran, 2009; Piktus, Czerwonka, 2018). While funding usually comes from ordinary individuals, there are exceptions. In some cases, professional investors also participate in campaigns, allocating larger sums that are diversified across multiple projects – thus preserving the principle of low individual exposure (Majewski, 2020).

A characteristic feature of crowdfunding is the essential role of the internet in the fundraising process. It serves as both the space for announcing campaigns and the channel for communication and information exchange between parties. Transactions are initiated and completed entirely through digital technologies, ensuring speed, transparency, and automation. Moreover, the intermediaries in crowdfunding are online-based companies – specialized crowdfunding platforms that facilitate campaign organization, payment processing, and interaction between project creators and potential investors (Wiścicka-Fernando, 2021; Mora-Cruz, Palos-Sanchez, 2023). Notably, the Polish term for crowdfunding - „finansowanie społecznościowe" (community-based financing) – directly refers to the importance of online communities and social media in promoting campaigns and building engagement around projects (Majewski, 2020).

The purpose for which funds are raised remains an imprecise element in defining crowdfunding. In its broadest sense, it includes any economic or social goals, including educational or cultural initiatives and charitable campaigns (Mollick, 2014; Trzebiński, 2022).

In a narrower view, crowdfunding refers strictly to business ventures, and in its narrowest sense – to financing startups and innovative projects (Arieli et al., 2017). The narrower approach appears to be gaining ground in the literature and is reflected in market regulations, where business-related campaigns are subject to specific legal frameworks (Bagińska, 2018).

Four crowdfunding models are most commonly distinguished (Majewski, 2020; Shneor, 2020):

- Equity crowdfunding involves the issuance of shares or equity to investors.
- Lending crowdfunding is based on the granting of loans that are repaid with interest.
- Reward-based crowdfunding offers backers non-financial rewards, typically of lesser value than the contribution (e.g., a product sample).
- Donation-based crowdfunding is charitable in nature and does not involve any return or compensation.

The first two are referred to as investment crowdfunding, associated with business and innovation, while the latter two are categorized as social crowdfunding, typically used in philanthropic, cultural, and social projects. However, this division is not always clear-cut – innovative projects, especially those with a social dimension, can also be successfully financed through reward-based or donation-based models (Kraus et al., 2016).

The fundraising process varies depending on the platform, type of crowdfunding, and applicable legal regulations. Typically, the initiative is taken by the entrepreneur, who selects a platform and adjusts the campaign to its requirements. Some platforms actively seek out firms, offering promotional and advisory support (Kędzierska-Szczepaniak, Szopik-Depczyńska, 2017). Once a project is submitted, it undergoes a verification process – similar to a creditworthiness assessment in lending or equity crowdfunding, or focused on marketing potential in reward-based models (Moysidou, Hausberg, 2020).

After project approval, the organizer prepares promotional materials and sets the fundraising parameters, including the target amount, campaign duration, and potential rewards for supporters. A particular challenge for innovative projects is the need to present an attractive offer to investors while limiting the disclosure of sensitive technological information. Information asymmetry is an inherent feature of crowdfunding and requires a degree of trust from investors (Majewski, 2020; Jiang et al., 2024).

Once the campaign is launched, the organizer engages in marketing activities – such as promotion through social media – to increase the chances of success. The "all-or-nothing" rule is a common standard: if the financial goal is not reached, all contributions are returned to investors. If the campaign is successful, the platform transfers the collected funds to the organizer and deducts a commission. Finally, depending on the crowdfunding model, the organizer fulfills obligations to investors – repaying loans, issuing equity, or delivering rewards (Schnaider, 2020).

4. Research methodology

To support the analysis, a matching matrix was developed to provide a systematic assessment of the extent to which crowdfunding – compared to alternative sources of financing – addresses the key needs of startups. The starting point was the identification of ten characteristics of startups that are particularly relevant in the context of fundraising. In addition to the features previously discussed as typical barriers to financing innovative ventures, several additional characteristics were considered, including:

- limited organizational and human resources (making it difficult to prepare documentation and maintain communication with investors),
- the need to raise funds quickly (driven by pressure to launch a solution before competitors enter the market),
- a relatively small scale of projects and capital needs (resulting in high transaction costs relative to investment size),
- the need for market validation and community building (testing the product and engaging early users or customers),
- the risk of losing control over the project or company (due to takeover or disproportionate influence of investors on strategic decisions),
- the risk of disclosing know-how (resulting from the need to publicly present key elements of the project to attract funding).

In the next step, opinions were collected from five academic experts specializing in innovation and startups. The consultation was conducted remotely using electronic communication tools. Experts were asked to evaluate crowdfunding and other selected financing sources in terms of their fit with the listed characteristics, using a scale from 0 (no fit) to 5 (full fit), based on their research experience and practical observations.

Additionally, each expert assigned a weight to each characteristic, reflecting its significance in the financing process. These weights were determined using the Best-Worst Method (BWM), which involves selecting the most and least important criterion and comparing them with the others. This method allows for an efficient and consistent identification of preferences even when the number of respondents is limited (Rezaei, 2015). The average ratings and weights were then used to calculate the aggregated results, which are presented in tabular form.

The analysis is complemented by a concise diagnosis of the development of the crowdfunding market in Poland, aimed at highlighting the practical relevance of this form of financing in the national context. Due to the lack of comprehensive market statistics and the dispersed nature of available information, this part of the study was conducted using a desk research approach, based on a review of industry reports, data published by crowdfunding platforms, and academic literature.

5. Analysis of crowdfunding fit with startup characteristics

The aggregated results of the assessment of how selected sources of financing align with the characteristic features of startups are presented in Table 1. The analysis includes three categories of crowdfunding: equity, lending, and reward- and donation-based (combined), due to differences in the behavior and expectations of contributors in each model. For comparison, the table also includes other capital sources relevant at the early stages of startup development. However, capital market instruments (such as public share or bond issuance) were excluded from the analysis due to their practical inaccessibility for young companies in the initial growth phase.

Tables 1.
Crowdfunding compared to other financing sources – ranking of fit with startup needs

	Equity crowdfunding	**Lending crowdfunding**	**Reward- or donation-based crowdfunding**	**Business angels**	**Venture capital**	**Technology loan (with guarantees)**	**Public funds (EU, PARP, etc.)**	**Traditional bank loan**
Startup characteristic (average weight)	**Score on a 0–5 scale for fit (average expert ratings)**							
No operational or financial history (0.17)	4.7	4.3	4.9	4.7	4.0	3.3	3.0	1.0
Lack of assets for securing financing (0.14)	4.7	4.5	4.9	4.7	4.0	3.3	3.0	1.0
High level of risk (0.14)	3.7	3.3	4.9	4.7	4.7	3.0	3.0	1.3
Difficulty in risk assessment by financiers (0.13)	3.3	3.3	4.8	4.5	4.7	3.0	3.0	1.3
Limited organizational and human resources (0.08)	2.7	3.0	3.0	3.7	4.0	3.0	3.0	2.0
Need for rapid fundraising (0.09)	4.3	4.0	4.0	3.7	3.0	2.3	2.3	2.0
Small-scale projects and capital needs (0.07)	5.0	4.3	4.7	3.0	3.0	3.0	2.0	3.0
Need for market validation and community building (0.07)	4.3	2.0	4.4	3,0	2.7	2.0	1.3	1.0
Risk of losing control over project/company (0.06)	1.7	3.7	5.0	2.0	2.0	4.3	4.7	5.0
Risk of disclosing know-how during fundraising (0.05)	2.5	2.7	3.0	2.0	2.0	4.3	4.3	5.0
Overall score	**3.9**	**3.7**	**4.5**	**4,0**	**3.7**	**3.1**	**2.9**	**1.8**

Source: Own elaboration based on expert assessments.

The weights assigned to individual startup characteristics, determined using the Best-Worst Method (BWM), were averaged across respondents, as were the scores assigned to each financing source. The overall score for each source of capital was calculated as the weighted average of partial scores, which allows for direct comparison of the financing options in terms of their overall fit with the startup profile.

The results of the analysis indicate that, despite certain limitations, crowdfunding is relatively well aligned with the profile of startups. Among all the evaluated sources of financing, the highest overall score was obtained by reward- and donation-based crowdfunding (4.5), outperforming both equity-based (3.9) and lending-based models (3.7). Such a high score

may suggest a particularly strong fit between this form of financing and the typical challenges faced by startups, especially in their earliest stages of development. However, it should be noted that reward- and donation-based crowdfunding remain niche instruments, most often used for consumer-focused or lifestyle-oriented projects, and less frequently in strictly technological or B2B ventures. Their high score in the analysis is primarily due to the lack of formal barriers and the speed of implementation, rather than a dominant role in the market.

A closer look at individual startup characteristics reveals notable differences between equity and lending models. In general, equity crowdfunding was assessed as more risk-tolerant, scoring a perfect 5.0 for compatibility with small-scale projects, but it performed less favorably in terms of the risk of losing control – both over the company and over the ideas being developed. This risk is naturally lower in the lending model. Both variants were rated low in compatibility with limited organizational and human resources, which may reflect the perception that selecting a platform and managing a campaign is a time- and labor-intensive process.

In comparison with other sources of financing, business angels also received high scores (4.0), confirming their important role in funding startups. Venture capital was rated slightly lower (3.7), which may reflect the selective nature of these funds and their high expectations regarding project scalability. Public funds (2.9) and technology loans (3.1) received moderate scores – their relatively good availability is often offset by bureaucratic procedures and time-consuming application processes. Traditional bank loans, with a score of 1.8, were found to be the least compatible with the needs of startups, which is consistent with real-world challenges faced by SMEs in financing innovation.

In summary, although crowdfunding is not a uniform solution and has its limitations, it stands out as a flexible, relatively accessible, and fast-acting financing tool for startups, particularly in the early stages of development. Its importance is not always reflected in its current level of adoption, yet the results of the analysis confirm its potential to complement or even replace traditional forms of capital in high-risk environments characterized by limited resources and the need for rapid execution.

6. The development of crowdfunding in Poland – quantitative and qualitative aspects

Crowdfunding, understood as the financing of projects through online platforms, began to develop in the early 21st century, initially within the artistic sector. In Poland, it appeared in 2007 with the launch of MegaTotal.pl, a platform focused on funding music productions (Kędzierska-Szczepaniak, 2018). A key milestone came in 2012 with the launch of Beesfund, the first Polish equity crowdfunding platform, enabling capital acquisition through equity

issuance (Jóźwiak, 2025). This marked the beginning of a dynamic – though not always coordinated – development of this market segment.

The most important qualitative changes concerned legal regulations. Notably, the emergence of crowdfunding in Poland was driven by bottom-up initiatives from private actors, and for the first few years, there were no dedicated legal frameworks for this form of financing. As a result, general legal principles applied, such as freedom of economic activity (regarding the operation of platforms) and freedom of contract (governing relationships between investors and project creators). At the same time, specific existing regulations were used, including those concerning electronic services, personal data protection, and consumer rights. The absence of clear legal guidelines did not halt the expansion of crowdfunding but did lead to risks and challenges, particularly in relation to investor protection. Moreover, the scope of services offered by crowdfunding platforms effectively made them financial intermediaries, even though they did not formally hold such status or operate under financial supervision procedures (Bagińska, 2018). Special difficulties arose in equity crowdfunding, where the public offering of shares to a broad group of investors could resemble a public offer as defined in capital market regulations. The lack of appropriate legal provisions meant that many projects operated in a gray area of legality, prompting later legislative efforts to regulate the sector (Gemra, 2019).

In response to legal uncertainties and the risks associated with the spontaneous growth of crowdfunding, many countries (e.g., the USA, UK, and Italy) introduced dedicated regulations tailored to the specific nature of this financial market segment (Bagińska, 2018). The European Union also recognized the need to harmonize rules across member states, resulting in the adoption of Regulation (EU) 2020/1503 of the European Parliament and Council, which established uniform rules for crowdfunding service providers in the context of business projects. The regulation defines, among other things, issuance limits, investor information obligations, and licensing requirements for crowdfunding platforms. In Poland, adaptation to the EU framework was achieved through the Act of July 7, 2022 on Crowdfunding for Business Ventures, along with implementing regulations. Notably, the act introduced supervision by the Polish Financial Supervision Authority (KNF) over platform operations, licensing requirements, and a fundraising limit of EUR 5 million for equity crowdfunding. The new rules improved investor protection by enhancing transparency in crowdfunding campaigns but also increased formal requirements for platforms, which reduced the number of active players in the market (Kopeć, 2020; Trzebiński, 2024).

The development of crowdfunding has been closely linked with technological progress. Initially, social media played a key role, significantly expanding campaign outreach. Over time, platforms introduced automated fundraising management systems, personalized investor recommendations, and analytics tools to evaluate campaign performance. In subsequent years, the focus shifted to transparency and transaction security – blockchain technology and smart contracts were implemented to automate fund returns in the event of campaign failure.

The latest trend involves the use of artificial intelligence to optimize campaign management, forecast outcomes, and detect risks or fraud, thereby enhancing investor security (Krupa, 2017; Dziuba, 2018; Ye et al., 2024).

Quantitative analysis of the Polish crowdfunding market remains challenging due to the lack of standardized reporting. Available data come mainly from crowdfunding platforms and industry reports, which are not always comparable. Nevertheless, existing data indicate a dynamic growth trajectory. For example, during the period of most intense growth (2014-2021), equity crowdfunding in Poland increased at an average annual rate of 140%. Companies and potential investors had access to an increasingly diverse platform offering – the number of platforms grew from 6 in 2012 to 32 a decade later (Kozioł-Nadolna, 2024).

The dominant segment in Poland remains social crowdfunding (donation- and reward-based). It is estimated that between the launch of the first platforms and 2022, approximately PLN 3.5 billion was raised in this model, mainly through donation-based campaigns. Equity crowdfunding has developed more slowly – by 2022, equity platforms had raised approximately PLN 300 million (Trzebiński, 2022). The value of lending crowdfunding is the hardest to estimate. The leading platform in this segment, Finansowo.pl, reports that it has organized loans totaling PLN 150 million, suggesting that the market value of lending and equity crowdfunding may be comparable. Based on this assumption, the share of equity crowdfunding in the entire Polish crowdfunding market does not exceed a dozen percent.

Although social crowdfunding is largely aimed at charitable causes, a significant portion of campaigns—estimated at nearly PLN 1 billion – has supported creative projects, organized on platforms such as croowdfund.pl, odpalprojekt.pl, and polakpotrafi.pl. For startups and innovative ventures, the reward-based model is a particularly useful tool for financing early-stage ideas (Trzebiński, 2022).

For more advanced business projects, equity crowdfunding offers broader opportunities. Since 2012, this segment has developed steadily, reaching a peak in 2021, when PLN 125 million was raised across 79 campaigns. In 2020, the number of investors surpassed 30,000, marking a record year. The following years saw a decline, largely due to market instability and new regulations, which required platforms to adapt to KNF requirements. In the long term, however, the formalization of the market may support further development (Kozioł-Nadolna, 2024; Trzebiński, 2024).

Interestingly, the majority of entities using equity crowdfunding were joint-stock companies, and the average campaign amount in 2021 was approximately PLN 1.6 million. This indicates the existence of a funding gap between seed-stage financing and large-scale equity offerings. It is possible that this gap is partially filled by lending crowdfunding, but the lack of detailed data makes it difficult to verify this assumption conclusively.

7. Conclusions

The analysis conducted in this article indicates that crowdfunding has the potential to play a significant role in financing business ventures. Its importance is particularly evident in the context of capital access barriers encountered by startups implementing innovative projects. Traditional sources of financing, such as bank loans or capital market instruments, are often inaccessible to such entities or require conditions that are difficult to meet at early development stages. Other alternatives, such as business angels, while relatively well suited to the needs of startups, do not yet form a widely available or mature support system in Poland. As a result, crowdfunding may offer a valuable alternative, especially during the seed and early stages of business activity.

It should be emphasized, however, that the assessment of crowdfunding's alignment with startup characteristics presented in this article is preliminary in nature and is based on subjective yet structured expert opinions from researchers specializing in innovation and startup ecosystems. What stands out is that the results are relatively moderate and cautious, contrasting with some of the literature, where crowdfunding is often portrayed in an overly enthusiastic and idealized manner. From the perspective of the credibility and practical utility of the findings, a logical next step in future research would be to increase the number of respondents and expand the pool of experts to include startup founders and managers, capital market practitioners, investment advisors, and representatives of crowdfunding platforms. This would enable not only a more in-depth evaluation of the suitability of crowdfunding but also the identification of factors that determine its actual application in business practice – such as project readiness, team competencies, marketing resources, or industry specifics. An interesting direction for further research could also be the segmentation of startups by sector, business model, or development stage. The present analysis assumed a relatively homogeneous set of needs, while in practice, reality may be far more diverse.

The growth dynamics of the crowdfunding market in Poland are impressive, though largely attributable to the low base effect. The total value of funds raised remains relatively small. For example, the total amount raised via equity crowdfunding from its inception in Poland to 2022 was approximately PLN 300 million, while annual R&D expenditures of leading international corporations can exceed USD 20 billion. Nevertheless, the pace of market growth suggests increasing acceptance of this form of financing among both entrepreneurs and individual investors. It is also worth noting that interpretation of crowdfunding data in the context of startup financing should be approached with caution. There is a lack of detailed and systematic statistics to clearly determine what share of crowdfunded capital is directed toward startups as opposed to other types of projects (e.g., consumer, local, or community-based initiatives).

One of the key factors supporting the further development of investment crowdfunding in Poland is the expanding infrastructure (i.e., the growing number of platforms) and the introduction of legal regulations following the implementation of EU Regulation 2020/1503. Although in the short term, these new regulations may have slowed market growth – mainly due to the KNF licensing requirements and increased administrative burdens for platforms – their long-term impact is expected to be positive, improving investor protection and fostering greater professionalism within the crowdfunding sector.

A major challenge for the continued expansion of the market is the relatively low public awareness of investment crowdfunding. While charitable campaigns and reward-based crowdfunding are well known, equity and lending-based models still require greater promotion and education – among both potential investors and entrepreneurs. Another important direction for further development is increasing the liquidity of ownership rights acquired through equity crowdfunding. The introduction of secondary market mechanisms (such as bulletin boards for share trading) and the development of systems enabling equity transfer could significantly enhance the appeal of this form of financing. Similar solutions already operate in more developed international markets and could serve as a strong stimulus for the further growth of crowdfunding in Poland.

Acknowledgements

The publication/article presents the result of the Project no 073/ZJP/2024/POT financed from the subsidy granted to the Krakow University of Economics.

References

1. Attuel-Mendes, L. (2016). Crowdfunding and Crowdmicrofinance, an Evolution of Models for Entrepreneurship of the Poor. *Open Access Library Journal, 3(12),* 1-7.
2. Bagińska, E. (2018). Crowdfunding (finansowanie społecznościowe) – aspekty cywilnoprawne. *Gdańskie Studia Prawnicze, XXXIX,* 109-121.
3. Bernat, A.K. (2015). *Luka finansowa w sektorze mikro, małych i średnich przedsiębiorstw na przykładzie województwa świętokrzyskiego*. Warszawa: CeDeWu.
4. Deptuła, A.M., Knosala, R. (2015). Risk assessment of the innovative projects implementation. *Management and Production Engineering Review, 6*.

5. Dziuba, D.T. (2018). Technologia blockchain crowdfunding: zastosowania, korzyści i oczekiwania. *Annales Universitatis Mariae Curie-Skłodowska, Sectio H Oeconomia, 52(2)*, 61-69.
6. Egger, P., Keuschnigg, C. (2015). Innovation, trade, and finance. *American Economic Journal: Microeconomics, 7(2)*, 121-157.
7. Głodek, P., Pietras, P. (2011). *Finansowanie komercjalizacji technologii i przedsięwzięć innowacyjnych opartych na wiedzy*. Warszawa: PARP.
8. Grossman, S.J., Stiglitz, J.E. (1980). On the impossibility of informationally efficient markets. *The American Economic Review, 70(3),* 393-408.
9. Jiang, H., Zhang, Y., Jiao, J. (2024). A Recombinant Framework of Technological Information Disclosure and Reward-Based Crowdfunding Performance of Technology Projects. *Entrepreneurship Theory and Practice, 48(2),* 581-612.
10. Jóźwiak, A. *Beesfund – polska platforma equity crowdfundingowa.* https://crowdzone.pl/beesfund-polska-platforma-equity-crowdfundingowa/, 20.01.2025.
11. Kędzierska-Szczepaniak, A. (2018). Rozwój crowdfundingu opartego na nagrodach w Polsce na przykładzie wspieram.to. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 533*, 119-131.
12. Kędzierska-Szczepaniak, A., Szopik-Depczyńska, K. (2017). Polskie platformy crowdfundingowe na przykładzie Polakpotrafi.pl. *Finanse, Rynki Finansowe, Ubezpieczenia, 89*, 45-55.
13. Kopeć, A. (2020). Crowdfunding w świetle nowych regulacji unijnych. Co zmienia Rozporządzenie ECSP. *Biuletyn Euro Info, 7*.
14. Kozioł-Nadolna, K. (2024). Rola crowdfundingu udziałowego w finansowaniu przedsiębiorstw w Polsce. *Ruch Prawniczy, Ekonomiczny i Socjologiczny, 86(2),* 259-278.
15. Krupa, M. (2017). Crowdfunding jako innowacyjny instrument zarządzania ryzykiem utraty płynności finansowej w sektorze MŚP. *Współczesne Finanse: Teoria i Praktyka, 2,* 25-33.
16. Lerner, J., Nanda, R. (2020). Venture capital's role in financing innovation: What we know and how much we still need to learn. *Journal of Economic Perspectives, 34(3),* 237-261.
17. Łopaciński, T. (2018). Ryzyko w zarządzaniu projektem innowacyjnym. *Kwartalnik Nauk o Przedsiębiorstwie, 47(2),* 72-81.
18. Majewski, P. (2020). Crowdfunding – cechy i typologia. Gospodarka Narodowa. *The Polish Journal of Economics, 301(1)*, 139-152.
19. Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing, 29(1)*, 1-16.
20. Mora-Cruz, A., Palos-Sanchez, P.R. (2023). Crowdfunding platforms: a systematic literature review and a bibliometric analysis. *International Entrepreneurship and Management Journal, 19(3),* 1257-1288.

21. Moysidou, K., Hausberg, J.P. (2020). In crowdfunding we trust: A trust-building model in lending crowdfunding. *Journal of Small Business Management, 58(3),* 511-543.
22. Nanda, R., Rhodes-Kropf, M. (2017). Financing risk and innovation. *Management Science, 63(4)*, 901-918.
23. Rezaei, J. (2015). Best-worst multi-criteria decision-making method. *Omega, 53*, 49-57.
24. Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Crown Currency.
25. Schnaider, P. (2020). Crowdfunding jako cyfrowa, alternatywna forma finansowania projektów mniejszych i ryzykownych w wybranych krajach na podstawie badań ankietowych. *Studia Ekonomiczne, 393*, 42-57.
26. Shneor, R. (2020). Crowdfunding Models, Strategies, and Choices Between Them. In: R., Shneor, L. Zhao, B.T. Flaten (eds.), *Advances in Crowdfunding*. Palgrave Macmillan.
27. Trzebiński, A.A. (2022). *Crowdfunding donacyjny i sponsorski w Polsce*. Gdańsk: Związek Przedsiębiorstw Finansowych w Polsce.
28. Trzebiński, A.A. (2024). *Crowdfunding udziałowy 3.0.* Gdańsk: Związek Przedsiębiorstw Finansowych w Polsce.
29. Wiścicka-Fernando, M. (2021). Crowdfunding as an Internet Tool Used for Establishing Relationships With the Customer – A Concept Paper. *Problemy Zarządzania, 19(1(91)),* 165-176.
30. Ye, T., Zheng, J., Jin, J., Qiu, J., Ai, W., Mei, Q. (2024). Using Artificial Intelligence to Unlock Crowdfunding Success for Small Businesses. *arXiv preprint arXiv:2407.09480*.
31. Zawadzka, D.S., Cegielska, E., Kurdyś-Kujawska, A.B. (2018). Aktywność inwestycyjna funduszy venture capital w finansowaniu startupów w Polsce. *Ekonomiczne Problemy Usług, 3(132)*.