Crowdfunding for University Research Commercialization: A Scoping Review

Olga Bogdanova
LAB University of Applied Sciences, Lappeenranta, Finland

olga.bogdanova@lab.fi

Abstract: As universities take on a broader role beyond education and research, crowdfunding is emerging as a creative way to fund research commercialization and academic entrepreneurship. Crowdfunding not only provides financial support but also serves as a validation tool, demonstrating public demand for university-led innovations. It serves as a potential alternative to traditional funding avenues, especially for early-stage projects with commercial promise. This scoping review examines key themes in the growing body of literature on research crowdfunding, focusing on its role in academia, motivations and success factors, public engagement, and associated challenges. The extent to which universities actively support, regulate, or discourage crowdfunding varies widely, shaping its effectiveness as a commercialization pathway. Crowdfunding success depends significantly on entrepreneurial communication skills and public engagement. Researchers who craft compelling narratives, leverage social media, and highlight the broader impact of their work are more likely to attract funding. Studies indicate that campaigns tied to practical applications, industry relevance, or endorsements from credible institutions often outperform those relying solely on scientific merit. Another critical aspect is how crowdfunding democratizes access to research funding, offering the public a say in which projects receive financial backing. However, current evidence suggests that it tends to attract an audience already interested in science and innovation, rather than drawing in broader investor networks. Crowdfunding does not fully replace more established pathways such as venture capital, government grants, or university-led incubators. Despite its promise, crowdfunding presents distinct challenges in academic commercialization. Researchers must navigate concerns over intellectual property, project credibility, and the significant time commitment required for campaign success.

Keywords: Crowdfunding, University Research Commercialization, Knowledge Transfer, Academic Entrepreneurship

1. Introduction

Universities are under growing pressure to translate research into commercial and societal benefits, even as traditional research funding becomes harder to secure. In response, many institutions are investing in research commercialization—the process of turning academic discoveries into marketable innovations, typically through mechanisms such as technology transfer, licensing, spin-off creation, and industry partnerships, often managed by Technology Transfer Offices (Siegel et al., 2003; Wright et al., 2007; Perkmann et al., 2013). While the linear commercialization model remains dominant, it is capital-intensive, time-consuming, and often inaccessible to early-stage researchers and smaller institutions, particularly those outside established entrepreneurial ecosystems (Etzkowitz and Leydesdorff, 2000). As public funding for science stagnates and competition increases, alternative funding mechanisms are being explored. Among these, crowdfunding has emerged as a novel avenue to raise small-scale funds while also enhancing public engagement.

Crowdfunding refers to the process of raising small amounts of capital from a large number of individuals via online platforms to fund a project, product, or venture (Belleflamme et al., 2014). Originally developed in creative and entrepreneurial contexts, crowdfunding has expanded across sectors. It is commonly categorized into four models: donation-based (contributions without expectation of return), reward-based (contributors receive a product or service), lending-based (peer-to-peer loans), and equity-based (contributors receive ownership stakes). Crowdfunding also has gained attention as a novel source of research funding and early-stage commercialization capital in academia (Siva, 2014). Over the past decade, a growing body of literature has explored these issues in various contexts; yet, no comprehensive review has synthesized these findings.

This scoping review aims to map the state of knowledge on crowdfunding for university research commercialization. Arksey and O'Malley's (2005) scoping review framework was followed to identify and summarize relevant studies. The following three key research questions were addressed:

1. How are universities adopting crowdfunding in their research and commercialization strategies?
2. What factors influence the success or failure of research crowdfunding campaigns?
3. What barriers and challenges to research crowdfunding are identified in the literature?

In addition, the trends over time in this literature, the geographic distribution of studies, the types of crowdfunding models (donation, reward, equity) discussed, and the reported outcomes or impacts of crowdfunding in the academic context were examined. The goal of this scoping review is to inform researchers

and university stakeholders of the opportunities and limitations of crowdfunding as a tool for research commercialization, and to highlight areas requiring further investigation.

2. Methodology

This scoping review was conducted following the scoping study methodology by Arksey and O'Malley (2005). This process involved five stages: (1) identifying clear research questions (as stated above); (2) identifying relevant studies through comprehensive literature searches; (3) selecting studies based on inclusion criteria; (4) charting the data; and (5) collating, summarizing, and reporting the results.

2.1 Search Strategy and Selection

Academic databases Scopus and Web of Science as well as the AI tool Research Rabbit were used for searching the relevant publications from 2010 to the present moment that discussed crowdfunding in a university or academic research context. The search key string used was TITLE-ABS-KEY ("crowdfunding" AND ("research" OR "academic research") AND ("commercialization" OR "technology transfer" OR "academic entrepreneurship" OR "university spin-offs")). To be included, sources had to explicitly address crowdfunding as it relates to universities (e.g., use by university researchers or for university projects) and provide empirical findings or substantial analysis pertinent to the research questions. The peer-reviewed articles, conference papers, book chapters, and SSRI papers in English were included. After screening titles and abstracts and removing duplicates, 30 sources were deemed eligible and were fully reviewed.

2.2 Data Extraction and Synthesis

The key information from each paper was extracted on the excel sheet, including publication year, study context (region), type of crowdfunding model examined (donation, reward, equity), methodology, and the main findings relevant to university adoption, success factors, and challenges. A qualitative thematic analysis was performed to identify common themes and patterns across the studies. The results are organized into a descriptive overview of the literature and thematic sections corresponding to the research questions. The summary tables (Tables 1 and 2) were also compiled to highlight recurring success factors and challenges reported in the literature.

3. Results

A total of 30 publications were included in this review, spanning the years 2013 to 2023. Early discussion of academic crowdfunding began around 2013-2014 (Wheat et al. 2013; Siva 2014), and the number of studies has grown over time, with notable increases in the late 2010s (see Figure 1 below for details). Geographically, research on this topic has been led by authors in North America and Europe, with some contributions from Australia and Asia, and limited representation from Africa (see Figure 2 below for geographical distribution). Methodologically, the literature comprises case studies (often detailing single university crowdfunding initiatives), surveys of academics or backers, analyses of crowdfunding campaign datasets, and commentary pieces.

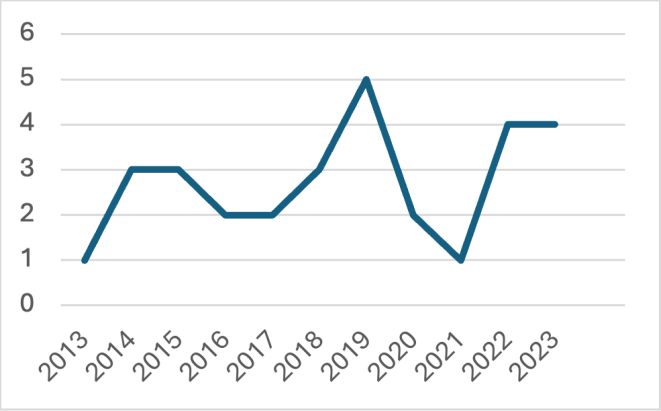

Figure 1: Number of papers by year

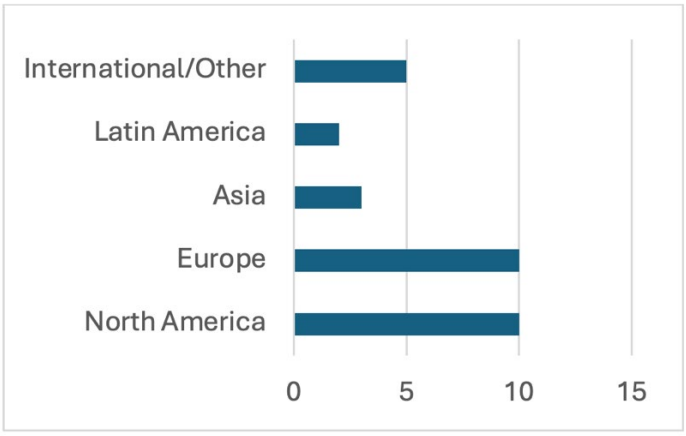

Figure 2: Number of papers by region

3.1 Crowdfunding Adoption by Universities

Universities have generally been cautious in adopting crowdfunding as part of their commercialization strategies. In many cases, initiatives have been driven bottom-up by individual researchers or small teams rather than through university-wide programs (Verhoeven and Palmer 2015; O'Donnell 2021). Some universities have experimented with pilot crowdfunding programs (Verhoeven and Palmer 2015) or set up their own crowdfunding portals though Horta et al. (2021) found that less prestigious universities were more likely to use crowdfunding than top-tier universities.

In general, donation-based or reward-based crowdfunding are the primary models used in academia. These models align with the nature of research funding, which cannot typically offer financial returns. There are emerging instances of equity crowdfunding for university spin-off companies, but this remains rare (Troise and Bresciani, 2023).

Universities use crowdfunding for a range of purposes. Most prominently, it serves to support early-stage research, pilot studies, and proof-of-concept projects that are often too small or experimental to attract conventional grants (Verhoeven and Palmer, 2015). Crowdfunding is also increasingly employed to enhance student learning experiences, fund teaching-related initiatives, and support extracurricular activities, such as sports or creative arts (Madeo, 2021). In some cases, it is used to provide scholarships or subsidize student participation in fieldwork and international programs, especially in underfunded institutions (Horta et al., 2021). One Italian university used crowdfunding to upgrade facilities (Colasanti et al. 2018). For universities, it also functions as a strategic tool to increase visibility, promote institutional branding, and build relationships with alumni and external stakeholders (O'Donnell, 2021).

The amount of funding universities are typically seeking is relatively modest rather than fully fledged commercialization of products. These campaigns, however, can serve as a bridge to later commercialization by providing data or prototypes that help attract traditional grants or investors. Universities that do support crowdfunding tend to position it as a complement to, not replacement for, traditional funding.

3.2 Crowdfunding Platforms Used by Universities

Universities exploring crowdfunding for research commercialization rely on a variety of platforms, ranging from general-purpose to science-specific, and in some cases, institutional in-house solutions. The choice of platform often depends on the type of research, target audience, geographic context, and the level of institutional support available.

One of the earliest academic crowdfunding initiatives was the #SciFund Challenge, which ran from 2011 to 2012 and used a dedicated section of the RocketHub platform. The campaign hosted over 150 researcher-led projects, with funds directed to researchers' home institutions or associated non-profit organizations (Byrnes et al., 2014). RocketHub allowed flexible funding models and enabled researchers to benefit from science communication training alongside their campaign activities.

The most prominent science-specific platform is Experiment.com, which has since become a preferred choice for individual researchers seeking to crowdfund scientific studies. It focuses exclusively on scientific projects and

offers transparency, credibility checks, and structured templates tailored for academic needs. The platform facilitates donation-based crowdfunding, often targeting early-stage or exploratory research that may not yet qualify for traditional grants.

In Australia, the platform Pozible has played a central role in academic crowdfunding. Deakin University partnered with Pozible to launch Research My World, a university-branded campaign inviting the public to support specific research projects (Verhoeven and Palmer, 2015).

Additional niche platforms such as Consano, Crowd.Science, and Techmoola have emerged to support donation-based crowdfunding for health, science, and innovation-oriented projects. These platforms are designed to connect researchers with donor communities passionate about specific causes, such as medical research or technological advancement (Liu et al., 2022).

Equity crowdfunding platforms such as CrowdFundMe, Opstart, Mamacrowd, StartsUp, and BacktoWork24 have been used specifically by university spin-offs in Italy to raise capital. These platforms provide a digital infrastructure for academic entrepreneurs to access a broad investor base and bypass traditional funding channels, and also validate their business models, engage new stakeholders, and enhance the legitimacy of their ventures (Troise et al. 2023).

Finally, some universities have taken a step further by establishing institutional crowdfunding portals, usually focused on student-driven innovation, alumni engagement, or philanthropic donations. These platforms, often hosted under university development offices or foundations, support small-scale projects and pilot studies while reinforcing the university brand and oversight. However, such platforms are still relatively rare and vary greatly in terms of functionality, transparency, and support provided to researchers (Horta et al., 2021).

3.3 Success Factors in Academic Crowdfunding

Across the literature, there is a strong consensus that the success of academic crowdfunding campaigns hinges more on campaign design and outreach than on scientific merit. Key factors include audience engagement, storytelling, credibility signals, campaign pragmatism, and platform choice.

A large pre-existing network via social media, mailing lists, or public outreach has consistently emerged as a predictor of success (Siva, 2014; Verhoeven and Palmer, 2015; Byrnes et al., 2014). In addition, effective communication, particularly a clear, relatable, and emotionally resonant narrative is widely cited as essential. Campaigns that highlight societal relevance and convey researcher enthusiasm tend to resonate with backers, regardless of the topic's inherent "flashiness" (Wheat et al., 2013; Schäfer et al., 2018; Parrick and Chapman, 2020). Visual design, including the use of compelling images and short videos, enhances accessibility and builds emotional connection (Schäfer et al., 2018; Liu et al., 2022).

Maintaining momentum through regular campaign updates is another success driver, signaling credibility and transparency (Liu et al., 2022; Hase et al., 2022). Active engagement during the campaign, including frequent updates, targeted emails, and press outreach, also boosts funding outcomes (Hesselbein, 2023; O'Donnell, 2017). Setting a modest, realistic funding goal, often under $5,000 is linked with higher success rates, especially on all-or-nothing platforms (Sauermann et al., 2019; Byrnes et al., 2014). Campaigns that break down larger projects into fundable components are more likely to be successful.

While many academic campaigns rely on donations, those offering additional creative non-monetary rewards, such as lab tours or written acknowledgments, tend to perform better (Wheat et al., 2013; Schäfer et al., 2018). Besides, endorsements from credible third parties serve as trust signals that positively influence funding outcomes (Liu et al., 2022; Ikkatai et al., 2018).

Attributes of the campaign leader also play a role. Studies show that projects led by early-career researchers and women have higher success rates, possibly reflecting backer preferences for approachability and perceived need (Sauermann et al., 2019; Hesselbein, 2023). Larger teams also benefit from access to broader networks and complementary skills (Lenart-Gansiniec, 2024).

Finally, the choice of platform significantly impacts outcomes. Science-specific platforms like Experiment.com tend to yield higher success rates but smaller funding totals, whereas general platforms like Kickstarter may reach broader audiences with higher targets if campaigns are broadly appealing (Wheat et al., 2013; Ikkatai et al., 2018; Madeo, 2021). Platform mechanics, such as all-or-nothing vs. flexible funding, shape strategy and urgency, underscoring the importance of aligning campaign design with platform norms (O'Donnell, 2020; Alma'amun et al., 2021). The Table 1 below synthesizes the success factors in academic crowdfunding.

Table 1: Success Factors in Academic Crowdfunding

Factor	Examples	Supporting studies
Audience reach and engagement	Social media presence, network size, public engagement, outreach efforts, donor communication, press/media reach	Siva (2014); Verhoeven and Palmer (2015); Hui and Gerber (2015); Wheat et al. (2013); Byrnes et al. (2014); Hesselbein (2023); O'Donnell (2017); Liu et al. (2022)
Storytelling and content quality	Narrative clarity, emotional storytelling, accessible language, humour, public relevance	Siva (2014); Verhoeven and Palmer (2015); Wheat et al. (2013); Parrick and Chapman (2020); Schäfer et al. (2018); Hase et al. (2022); Troise and Bresciani (2023); Vachelard et al. (2016); Baskerville and Cordery (2014)
Campaign design	Use of visuals (video/images), interactivity, campaign clarity, minimal donor friction, donation mechanics	Verhoeven and Palmer (2015); Liu et al. (2022); Schäfer et al. (2018); Vachelard et al. (2016); Madeo (2021); O'Donnell (2017)
Trust	Institutional support, endorsements, researcher characteristics, transparency, peer recognition	Lenart-Gansiniec and Chen (2023); Sauermann et al. (2019); Liu et al. (2022); Mruk-Tomczak and Jerzyk (2023); O'Donnell (2021); Hui and Gerber (2015); Ikkatai et al. (2018)
Platform setup	Platform selection (general vs. science-specific), user interface, payment systems, campaign hosting	Ikkatai et al. (2018); Wheat et al. (2013); Madeo (2021); O'Donnell (2020); Alma'amun et al. (2021); Sauermann et al. (2019)
Campaign setup	Realistic funding targets, tailored backer rewards, donation tiers, goal setting, segmentation	Sauermann et al. (2019); Liu et al. (2022); Vachelard et al. (2016); Colasanti et al. (2018); Schäfer et al. (2018)
Community	Alumni connection, stakeholder belonging, peer-to-peer trust, internal community spirit, institutional branding	Fortezza et al. (2023); Colasanti et al. (2018); Son-Turan (2016); Cho et al. (2019); Alma'amun et al. (2021); Baskerville and Cordery (2014)

3.4 Barriers and Challenges

The studies highlight significant barriers that limit the adoption and effectiveness of crowdfunding for academic research and commercialization (see Table 2). A fundamental challenge is simply lack of awareness or acceptance of this funding model within academia. Many researchers either do not know about crowdfunding or do not view it as a viable or appropriate way to fund research (Ekpe et al. 2017).

Many universities lack institutional frameworks or support policies for crowdfunding, making it difficult for researchers to integrate campaigns into official research workflows (O'Donnell, 2020; O'Donnell, 2017). Bureaucracy, and unclear financial processes further complicate administration, often forcing academics to devise ad hoc solutions for collecting and managing funds (Troise et al., 2023; Madeo, 2021). Even when crowdfunding is allowed, researchers frequently report limited institutional training or mentorship in campaign design and outreach, which discourages uptake (O'Donnell, 2021; Ekpe et al., 2017).

Legal and regulatory uncertainty is a recurring concern, particularly around donation processing, tax implications, and intellectual property rights (Paseri, 2019; Lenart-Gansiniec, 2024). Posting project ideas online can constitute public disclosure, jeopardizing patent eligibility and raising compliance issues, especially in universities where crowdfunded funds may be treated as gifts (Verhoeven and Palmer, 2015). Furthermore, the absence of peer review or accountability mechanisms on many platforms contributes to skepticism about scientific integrity (Ikkatai et al., 2018; Siva, 2014). Concerns over fraud or transparency, exacerbated by media reports of failed or dubious campaigns, can deter both institutions and potential backers (Wheat et al., 2013; Liu et al., 2022).

Crowdfunding often faces cultural resistance within academia, where it may be perceived as less legitimate than traditional grant funding. Some academics fear that seeking public support could be seen as "begging" or a sign that their work could not succeed through conventional peer review (Lenart-Gansiniec and Chen, 2023; Hesselbein, 2023). Public engagement remains undervalued in academic career assessments, limiting incentives to invest in crowdfunding, even when it aligns with broader impact goals (Byrnes et al., 2014). This misalignment with traditional research norms contributes to a perception that crowdfunding is a peripheral or "last resort" activity (Schäfer et al., 2018).

Resource demands are another major barrier. Campaigns are highly time- and labor-intensive, often requiring researchers to devote 10-20 hours per week to video production, social media, and backer communication on

top of existing academic responsibilities (Vachelard et al., 2016; Hui and Gerber, 2015). Many lack the necessary skills in science communication, digital marketing, and fundraising to run a successful campaign (Lenart-Gansiniec, 2024; Hase et al., 2022). Moreover, most science campaigns yield small sums, limiting their utility for large-scale research (Wheat et al., 2013). These constraints are particularly burdensome for early-career researchers, who may lack institutional support or peer recognition (Sauermann et al., 2019; Horta et al., 2021).

A final set of barriers pertains to communication and platform challenges. Scientific merit alone does not predict success; instead, campaigns that prioritize entertainment value or emotional appeal tend to perform better, leading to concerns that rigorous or complex research may be overlooked (Schäfer et al., 2018; Siva, 2014). Donor motivations are not always well understood, and backers often come from the researcher's immediate network rather than the general public (Hase et al., 2022; Parrick and Chapman, 2020). Furthermore, platform features may not align with the structure of academic research: general platforms like Kickstarter may require tangible rewards and tight timelines that are poorly suited for long-term or intangible outcomes (Baskerville and Cordery, 2014; Liu et al., 2022).

Table 2: Barriers and Challenges in Academic Crowdfunding Adoption

Barrier	Examples	Supporting Studies
Institutional	Lack of institutional support or policy	Ekpe et al. (2017); Lenart-Gansiniec and Chen (2023); Wheat et al. (2013); Ikkatai et al. (2018); Alma'amun et al. (2021); O'Donnell (2020); Madeo (2021)
	Bureaucracy and fragmentation	O'Donnell (2021); Troise et al. (2023); Mruk-Tomczak and Jerzyk (2023)
	Lack of internal processes/training	O'Donnell (2017); Byrnes et al. (2014); Colasanti et al. (2018)
Legal	Regulatory/legal uncertainty	Paseri (2019); Verhoeven and Palmer (2015); Lenart-Gansiniec and Chen (2023); O'Donnell (2020); Baskerville and Cordery (2014)
	Lack of peer review or accountability	Siva (2014); Ikkatai et al. (2018); Wheat et al. (2013); Schäfer et al. (2018); Lenart-Gansiniec (2024); Sauermann et al. (2019)
	Transparency and fraud concerns	Alma'amun et al. (2021); Liu et al. (2022); O'Donnell (2020)
Cultural	Cultural resistance and stigma	Verhoeven and Palmer (2015); Byrnes et al. (2014); Hesselbein (2023); Lenart-Gansiniec and Chen (2023)
	Academic undervaluation of public engagement	Byrnes et al. (2014); Parrick and Chapman (2020); Schäfer et al. (2018)
	Misalignment with traditional models (e.g., peer review, merit-based funding)	Lenart-Gansiniec and Chen (2023); Ikkatai et al. (2018); Wheat et al. (2013); Baskerville and Cordery (2014)
Resource	Time- and labour-intensive nature	Siva (2014); Verhoeven and Palmer (2015); Wheat et al. (2013); Lenart-Gansiniec (2024); Hesselbein (2023); Byrnes et al. (2014)
	Lack of digital, outreach, or fundraising skills	Ekpe et al. (2017); Mruk-Tomczak and Jerzyk (2023); Parrick and Chapman (2020); O'Donnell (2017); Lenart-Gansiniec (2024)
	Small-scale returns and limited funding scope	O'Donnell (2017); Madeo (2021); Baskerville and Cordery (2014)
	Burden on early-career researchers	Horta et al. (2021); Sauermann et al. (2019); Hesselbein (2023)
Communication	Scientific merit does not predict success	Schäfer et al. (2018); Hase et al. (2022); Sauermann et al. (2019)
	Lack of awareness or donor motivation insight	Cho et al. (2019); Fortezza et al. (n.d.); Son-Turan (2016); Parrick and Chapman (2020)
	Platform mismatch or technical limitations	Ikkatai et al. (2018); Troise et al. (2023); Alma'amun et al. (2021); Verhoeven and Palmer (2015); Mruk-Tomczak and Jerzyk (2023)

3.5 Outcomes and Impact

Several studies report positive outcomes from crowdfunded research projects, albeit on a modest scale. A successful campaign can enable a project that might otherwise not occur due to lack of funding. For example, researchers have used crowdfunding to gather preliminary data that later helped secure larger grants, or to develop prototypes of an invention to attract investors (Siva 2014). In this way, crowdfunding can act as a bridge in the research-to-commercialization pipeline. Some crowdfunded projects have led to tangible outputs such as publications, pilot experimental results, or the launch of small spin-off efforts.

Beyond the dollars raised, a frequently cited benefit is public engagement. Researchers often gain a network of supporters and increased visibility for their work (Hui and Gerber 2015). Donors, in turn, report feeling more connected to the scientific process (Hase et al. 2022). This engagement has intangible impacts: it can enhance science literacy and build trust between universities and the public.

4. Discussion and Conclusion

This scoping review shows that crowdfunding is being used in academic research funding in limited but growing ways. It is not a replacement for traditional funding, but rather a complementary tool best suited for specific purposes, such as seeding early-stage projects, engaging the public, and supporting niche research that might not find support elsewhere. When strategically applied, crowdfunding can integrate into a university's research commercialization ecosystem by providing initial momentum for projects (both in funding and in public interest) that can lead to downstream opportunities.

For universities, a key implication is the need to provide support and guidance if they want to leverage crowdfunding. This includes training researchers in effective science communication and campaign management, establishing clear policies on handling crowdfunded money, and addressing legal and ethical concerns (O'Donnell 2020). In turn, this might encourage more academics to consider crowdfunding as part of their project funding strategy.

At the same time, stakeholders must be mindful of the challenges. Ensuring that quality science is funded requires some oversight, for instance, a light-touch review of proposed crowdfunded projects could help maintain standards and protect the university's reputation. There is also a need to monitor whether crowdfunding introduces any biases or inequities in whose work gets funded and to develop strategies to mitigate this.

Given the evolving nature of crowdfunding, further studies could examine the following topics:

1. Long-term outcomes of crowdfunded projects: do they lead to successful commercialization or career advancement for the researchers?
2. Comparative effectiveness of different crowdfunding models (e.g., donation vs equity) in the academic setting;
3. The perceptions of donors who fund research, what motivates them, and how do they evaluate their impact?
4. How crowdfunding might differ across disciplines, and why?

In conclusion, crowdfunding offers universities and researchers an innovative but challenging avenue for supporting research and commercialization. As the practice matures, with better institutional frameworks and greater understanding among academics, crowdfunding could become a more routine element of the university research funding landscape. The continued documentation and analysis of its uses will be important for guiding policy and practice in this domain.

Ethics Declaration

Ethical clearance was not required for this study, as it involved a scoping review of publicly available literature and did not include personal or organizational data.

AI Declaration

In addition to academic databases, the AI-based tool ResearchRabbit was used to identify supplementary literature and assist with data organization for the extraction sheet. As English is not the author's first language, Grammarly was employed to ensure grammatical accuracy and improve stylistic consistency.

References

Alma'amun, S., Kamarudin, M.K., Rozali, N.S., Mohd Nor, S., Sabarudin, N.A. and Rosli, F.A. (2021) 'From Government Funding to Crowdfunding: Identifying Approaches and Models for Universities', *Journal of Research in Business, Economics and Management*, Vol. 17, No. 2, pp. 21-28.

Arksey, H. and O'Malley, L. (2005) "Scoping studies: Towards a methodological framework", *International Journal of Social Research Methodology*, Vol. 8, No. 1, pp. 19-32.

Baskerville, R.F. and Cordery, C.J. (2014) Crowdfunding: A Threat or Opportunity for University Research Funding?, *SSRN*.

Belleflamme, P., Omrani, N. and Peitz, M. (2014) "The economics of crowdfunding platforms", *Information Economics and Policy*, Vol. 33, pp. 11-28.

Byrnes, J.E.K., Ranganathan, J., Walker, B.L.E. and Faulkes, Z. (2014) "To crowdfund research, scientists must build an audience for their work", *PLOS ONE*, Vol. 9, No. 12, e110329.

Colasanti, N., Frondizi, R. and Meneguzzo, M. (2018) *Higher education and stakeholders' donations: successful civic crowdfunding in an Italian university*, Public Money & Management, 38(6), pp. 443-450.

Ekpe, I., Mat, N. and Ahmad, A. (2017) 'Effect of crowd-funding on entrepreneurial intentions among academic staff of Nigerian universities', *International Journal of Management in Education*, Vol. 11, No. 3, pp. 211-230.

Etzkowitz, H. and Leydesdorff, L. (2000) "The dynamics of innovation: From National Systems and 'Mode 2' to a Triple Helix of university-industry-government relations", *Research Policy*, Vol. 29, No. 2, pp. 109-123.

Fortezza, F., Checchinato, F. and Slanzi, D. (2023) *The relationship between brand constructs and motivational patterns in crowdfunding decisions. Evidence from university crowdfunding*, Management Research Review.

Hase, V., Schäfer, M.S., Metag, J., Bischofberger, M. and Henry, L. (2022) 'Engaging the public or asking your friends? Analysing science-related crowdfunding using behavioural and survey data', *Public Understanding of Science*, Vol. 31, No. 2, pp. 235-251.

Hesselbein, C. (2023) 'Kickstarting science? Crowdfunded research, public engagement, and the participatory condition', *Science as Culture*, Vol. 32, No. 1, pp. 105-128.

Horta, H., Meoli, M. and Vismara, S. (2021) "Crowdfunding in higher education: Evidence from UK universities", *Higher Education*, Vol. 82, No. 6, pp. 1205-1227.

Hui, J.S. and Gerber, E.M. (2015) "Crowdfunding science: Sharing research with an extended audience", *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing (CSCW '15)*, Vancouver, Canada, 14-18 March, pp. 31-43.

Ikkatai, Y., McKay, E. and Yokoyama, H.M. (2018) "Science created by crowds: A case study of science crowdfunding in Japan", *Journal of Science Communication*, Vol. 17, No. 2, A04.

Lenart-Gansiniec, R. (2024) 'Using crowdfunding as a source of research funding: challenges and required competences', *Higher Education Research & Development*, Vol. 43, No. 1, pp. 81-95.

Lenart-Gansiniec, R. and Chen, J. (2023) 'When will scientists say yes? Antecedents, consequences and limitations of crowdfunding in research', *Studies in Higher Education*, Vol. 48, No. 1, pp. 144-159.

Liu, H., Zhao, Y., Song, S., Ba, Z. and Zhu, Q. (2022) "Exploring the endorsement effect on scientific crowdfunding performance: Evidence from Experiment.com", *Telematics and Informatics*, Vol. 72, 101844.

Madeo, E. (2021) "The role of crowdfunding for new funding challenges in public universities: An Italian case study", *Journal of Education for Sustainable Development*, Vol. 15, No. 1, pp. 46-64.

Mruk-Tomczak, D. and Jerzyk, E. (2023) 'Crowdfunding for University Projects Based on GOuep.pl', *Marketing Instytucji Naukowych i Badawczych*, Vol. 49, No. 3, pp. 71-90.

O'Donnell, J. (2017) Crowdfunding projects involving Australian university staff, Melbourne: RMIT University.

O'Donnell, J. (2020) "A framework for ameliorating risk in Australian university crowdfunding", in Mesquita, A. and Peres, P. (eds) *Legal Regulations, Implications, and Issues Surrounding Digital Data*, Hershey, PA: IGI Global, pp. 52-69.

O'Donnell, J. (2021) "Administration of crowdfunding at Australian universities", *Business Horizons*, Vol. 64, No. 1, pp. 57-66.

Parrick, R. and Chapman, B. (2020) 'Working the crowd for forensic research: A review of contributor motivation and recruitment strategies used in crowdsourcing and crowdfunding for scientific research', *Forensic Science International: Synergy*, Vol. 2, pp. 224-233.

Paseri, L. (2019) 'Crowdfunding of Science and Open Data: Opportunities, Challenges, and Policies', *Electronic Government and the Information Systems Perspective*, Vol. 11701, pp. 275-286.

Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'Este, P., Fini, R., Geuna, A., Grimaldi, R., Hughes, A., Krabel, S., Kitson, M., Llerena, P., Lissoni, F., Salter, A. and Sobrero, M. (2013) "Academic engagement and commercialisation: A review of the literature on university-industry relations", *Research Policy*, Vol. 42, No. 2, pp. 423-442.

Sauermann, H., Franzoni, C. and Shafi, K. (2019) 'Crowdfunding scientific research: Descriptive insights and correlates of funding success', *PLOS ONE*, Vol. 14, No. 1, pp. 1-21.

Schäfer, M.S., Metag, J., Feustle, J. and Herzog, L. (2018) 'Selling science 2.0: What scientific projects receive crowdfunding online?', *Public Understanding of Science*, Vol. 27, No. 5, pp. 496-514.

Siegel, D.S., Waldman, D.A. and Link, A.N. (2003) "Assessing the impact of organizational practices on the relative productivity of university technology transfer offices: An exploratory study", *Research Policy*, Vol. 32, No. 1, pp. 27-48.

Siva, N. (2014) “Crowdfunding for medical research picks up pace”, *The Lancet*, Vol. 384, No. 9948, pp. 1085-1086.
Son-Turan, S. (2016) *Reforming higher education finance in Turkey: the alumni-crowdfunded student debt fund "A-CSDF" model*, Education and Science, 41(185), pp. 123-137.
Troise, C., Bresciani, S., Ferraris, A. and Santoro, G. (2023) “Equity crowdfunding for university spin-offs: Unveiling the motivations, benefits, and risks related to its adoption”, *Journal of Small Business Management*, Vol. 61, No. 1, pp. 256-283.
Vachelard, J., Gambarra-Soares, T., Augustini, G., Riul, P. and Maracaja-Coutinho, V. (2016) ‘A Guide to Scientific Crowdfunding’, *PLOS Biology*, Vol. 14, No. 2, pp. 1-5.
Verhoeven, D. and Palmer, S. (2015) “Because it takes a village to fund the answers: Crowdfunding university research”, in Bennett, L. and Chin, B. (eds) *Crowdfunding the Future: Media Industries, Ethics, and Digital Society*, New York: Peter Lang, pp. 133-156.
Wheat, R.E., Wang, Y., Byrnes, J.E.K. and Ranganathan, J. (2013) “Raising money for scientific research through crowdfunding”, *Trends in Ecology & Evolution*, Vol. 28, No. 2, pp. 71-72.
Wright, M., Clarysse, B., Lockett, A. and Knockaert, M. (2007) “University spin-out companies and venture capital”, *Research Policy*, Vol. 36, No. 1, pp. 110-127.