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DETERMINANTS AND BARRIERS TO UNIVERSITY RESEARCH COMMERCIALISATION: A SCOPING REVIEW

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Abstract:

University research commercialisation (URC) plays a crucial role in converting scientific discoveries into socio-economic advantages, nurturing innovation, and boosting national competitiveness. Despite significant investments in research and development, the success rate of commercialising university research remains relatively low, especially in developing countries. While many studies have explored the factors and obstacles affecting URC, the evidence is scattered and lacks a thorough synthesis. This study aimed to systematically map and integrate the literature on the determinants and barriers impacting university research commercialisation. A scoping review was carried out using the frameworks of Arksey and O'Malley, Levac et al., and the PRISMA-ScR guidelines. Searches in the Scopus and Web of Science databases identified 657 records, with 178 empirical studies published between 2020 and 2026 meeting the inclusion criteria. The results revealed eight main themes influencing URC, with Commercialisation Process Factors being the most frequently noted determinant, followed by University-Industry Collaboration and Organisational Factors. Common barriers included insufficient funding, limited commercialisation skills, fragmented innovation ecosystems, weak

institutional support, and regulatory challenges. The review underscores the complex nature of URC and offers an evidence base for creating integrated strategies to improve commercialisation outcomes and enhance the socio-economic impact of university research.

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Keyword:

Determinants And Barriers; Scoping Review; Technology Transfer; University-Industry Collaboration; University Research Commercialisation.



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Introduction

University research commercialisation (URC) has become an important process in transferring academic knowledge into economic and social value. The roles that universities play in the innovation systems have become very visible, while teaching of students remains as the core function of universities, they are also expected to conduct research moreover inventions and new technologies that are developed by universities are transferred to industries and society (Perkmann et al., 2013; Siegel & Wright, 2015). These knowledge transfers occur through patenting, licensing, spin-offs as well as through university-industry collaboration (Grimaldi et al., 2011). For these commercialisation functions to be successful, it is not enough that researchers are good in their core function of generating new scientific knowledge instead they also need to acquire skills that are market-oriented, for instance skills of an entrepreneur, especially in opportunity recognition, intellectual property, industry interactions and product development (Bercovitz & Feldman, 2008).

The significance of URC has been recognised by government and policy makers as they have invested heavily in research and development (R&D), technology transfer as well as innovations whereby the universities are battling to convert their research findings into commercial output. The commercialisation gap is a major challenge for universities, and it has been discussed by many researchers (D'Este and Perkmann, 2011; Perkmann et al., 2013). In Malaysia, research commercialisation has been emphasized in the National Science, Technology and Innovation Policy as well as in the various Malaysia Plans. However, the commercialisation rate of research funded by public funds is low and ranges from 2.1% to 10% in contrast to developed countries where the commercialisation rate of research funded by public funds ranges from above 30% to as high as 60% ((Khademi and Ismail, 2013, Ministry of Economy Malaysia, 2021).

University research commercialisation (URC) has been studied across various fields and from different perspectives. However, individual studies examining the determinants and barriers to research commercialisation across different fields and geographical contexts have not yet been comprehensively analysed and synthesised. Therefore, the existing body of knowledge on URC needs to be systematically mapped to identify recurring patterns and highlight gaps in current research. A scoping review can provide a consolidated overview of the existing evidence and improve understanding of the factors shaping research commercialisation. Accordingly, this review addresses the following research question: What are the determinants and barriers of university research commercialisation as identified by existing research.

Methodology

This study is a scoping review which attempts to provide a comprehensive and systematic analysis of current studies of the determinants and the barriers to commercialise university research. Due to the complex nature of this topic and the broad and complex of evidence which currently exists regarding this theme, a scoping review is the most appropriate methodology to employ within this study. Therefore, this study reports its scoping review within the framework provided framework of Arksey and O'Malley (2005) that has been refined by others (Levac et al., 2010), and it adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018).

Step 1: Scoping Review Approach

This scoping review aims to identify, map and summarise the current state of knowledge on the determinants and barriers of university research commercialisation. Due to the wide scope of research on university commercialisation and the variety of topics which have been studied by researchers from many disciplines all over the world, a scoping review is the most appropriate method to provide a systematic overview of what has been written on this topic. The review was guided by the following research question: What are the determinants and barriers of university research commercialisation as identified by existing research?

In this section, the Population–Concept–Context (PCC) framework was used. The PCC framework is a framework recommended by the Joanna Briggs Institute (Peters et al., 2020) and consists of three components that are used to define a review question and to establish the scope of a review. For the current review, the Population, Concept and Context components are described in more detail below. The Population component consisted of universities, other higher education institutions, individuals (for example, academics, entrepreneurs) and organisations (for example, university spin-offs, technology transfer offices) in university settings. The Concept component concerned the commercialisation of university research and the determinants and barriers of this commercialisation process. The Context component concerned the higher education institution, the university–industry collaboration or partnership and the innovation system.

Step 2: Identifying Relevant Studies

A comprehensive literature search was conducted to identify studies related to university research commercialisation using two multidisciplinary databases which are Scopus and Web of Science (WoS), selected for their extensive coverage of peer-reviewed publications and

widespread use in review studies. To capture recent developments in the field, the search was restricted to articles published between 2020 and 2026. A combination of keywords and Boolean operators was employed to maximise the retrieval of relevant studies, including terms related to university research commercialisation, technology transfer, academic entrepreneurship, determinants, barriers, and influencing factors. The search strategy was developed iteratively and refined through preliminary searches to improve the relevance and sensitivity of the retrieved records, while the reference lists of selected articles were also examined to identify potentially relevant studies not captured through the database searches.

Step 3: Selection of Studies

Studies were selected through a three-stage process. In the first stage, all duplicate articles were removed from the search results to avoid counting the same articles twice in the screening process. In the second stage, all titles and abstracts were screened against the inclusion and exclusion criteria for selecting studies to read in full. All articles that met the criteria in this stage were read in full in the third stage of the screening process.

Studies were included in this review study if the following criteria were met.

- Published between 2020 and 2026;
- Published in peer-reviewed academic journals;
- Written in English;
- Focused on university research commercialisation, technology transfer, academic entrepreneurship, or related commercialisation activities;
- Discussed determinants, barriers, challenges, success factors, or influencing factors associated with research commercialisation.

Studies were excluded if they:

- Were conference proceedings, books, book chapters, dissertations, editorials, or review notes;
- Were systematic literature reviews, scoping reviews, conceptual papers, theoretical papers, or opinion papers.
- Focused exclusively on corporate research and development without a university context;
- Did not address commercialisation-related factors;
- Conceptual paper, literature review study design
- Were not available in English.

The study selection process was documented narratively by reporting the number of records identified, screened, excluded, and included at each stage of the review process. This approach provided a transparent account of the screening and selection procedures while maintaining a concise presentation of the findings.

Step 4: Charting the Data

The data were extracted from the studies using a data extraction form. This was a structured form that contained a number of questions that were used to extract the relevant data from each study. The information that was extracted and collated included study document number,

author(s), year of publication, country where the study took place, study design, study objectives, description of the commercialisation contexts described in the study, the factors that influenced university research commercialisation, the main barriers and enablers that were described in the studies and the themes that were extracted from the papers. The number of years in which the studies were published, the country in which the studies took place and the various descriptions of the commercialisation contexts were summarised and presented in the Results section. The remainder of the information extracted from the studies was used for coding and for the processes of thematic synthesis. The various descriptions of the commercialisation contexts were categorised into a number of predefined labels. These labels included technology transfer, knowledge transfer, licensing, patenting, creation of academic spin-offs, establishment of start-ups by academics, academic entrepreneurship, university-industry collaboration, knowledge exchange, research valorisation, innovation commercialisation and product development. The determinants and barriers that were identified in the studies were also coded into a number of factors that were considered to be standard and could be expected to feature in a number of studies. These included researcher expertise, government funding, university culture, industry partnerships, technology transfer office capabilities and the entrepreneurial ecosystem. The studies were then synthesised into eight primary subjects. These subjects included Individual Factors, Organisational Factors, Technology Transfer Office Factors, University-Industry Collaboration Factors, Institutional and Policy Factors, Ecosystem Factors, Resource Factors and Commercialisation Process Factors. These subjects were derived from an inductive and iterative process of reading and synthesising the studies and provided the framework for the thematic analysis.

Step 5: Collating, Summarising and Reporting the Results

The collating, summarising, and reporting stage involved both descriptive and thematic analyses to synthesise the evidence from the included studies. Consistent with the purpose of a scoping review, the analysis aimed to map the breadth and nature of the existing literature rather than assess the quality of evidence or establish causal relationships (Arksey & O'Malley, 2005; Levac et al., 2010). Descriptive analysis was undertaken to provide an overview of the characteristics of the included studies, with the extracted data summarised according to publication year, country of study, study design, and commercialisation context. Frequency counts and percentages were used to describe the distribution and trends of the literature on university research commercialisation. Subsequently, thematic analysis was conducted to identify, categorise, and synthesise the determinants and barriers influencing university research commercialisation. The extracted factors, barriers, and enabling mechanisms were iteratively reviewed and grouped into conceptually similar categories through an inductive coding process, resulting in eight primary subjects: Individual Factors, Organisational Factors, Technology Transfer Office Factors, University-Industry Collaboration Factors, Institutional and Policy Factors, Ecosystem Factors, Resource Factors, and Commercialisation Process Factors. To ensure consistency and comparability across studies, standardised coding labels were applied to commercialisation contexts and influencing factors. The frequency of each subject was subsequently calculated to identify the most frequently reported determinants and barriers in the literature. The findings are presented through a narrative synthesis supported by summary tables. Given the heterogeneous nature of the included studies and the objectives of a scoping review, no critical appraisal or meta-analysis was undertaken, as the primary aim was to provide a comprehensive evidence map of the determinants and barriers influencing

university research commercialisation and to identify areas requiring further empirical investigation. Overall review process of the methodology is summarised in Figure 1.

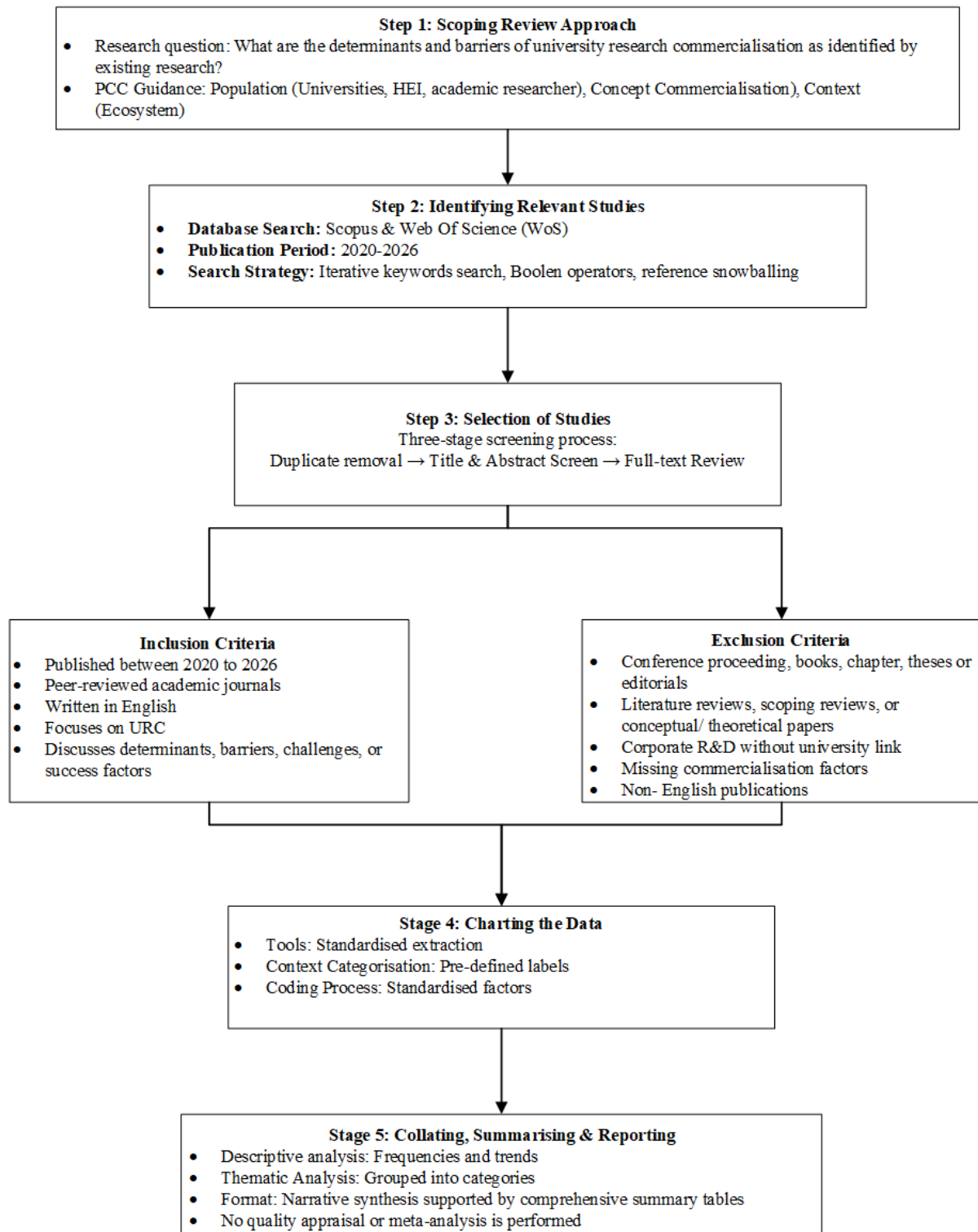


Figure 1: Overview of the Scoping Review Methodology

Results

Study Selection

The database search identified 657 records, comprising 278 records from Scopus and 379 records from Web of Science (WoS). After removing 183 duplicate records, 474 unique studies remained for title screening. Subsequently, 66 studies were excluded during title screening, resulting in 408 records being retained for abstract screening. During abstract and design screening, 167 studies were excluded because they did not meet the eligibility criteria or were identified as systematic literature reviews, scoping reviews, conceptual papers, theoretical papers, or opinion papers. Consequently, 241 studies were retained for full-text retrieval. However, 46 full-text articles could not be obtained and were therefore excluded. A total of 195 full-text articles were assessed for eligibility, of which 17 studies were excluded because they did not satisfy the inclusion criteria. Finally, 178 empirical studies were included in this scoping review.

Characteristics of Included Studies

In Table 1, the includes studies period from the 2020–2026 with the highest proportions were published in the years 2021 (18.5%) and 2024 (18.0%), indicates sustained research attention to university research commercialisation. In terms of geography, the studies were distributed mainly from China and Italy (10.1% each), followed by Brazil (6.2%), Spain (4.5%), and the United Kingdom (4.5%). By study design, the included studies were mainly quantitative studies (53.9%), followed by case studies (24.7%) and qualitative studies (10.7%). On the other hand, the remaining studies (6.2%) employed other designed specialised empirical or analytical approaches, including Delphi and Nominal Group Technique, QCA/fsQCA, efficiency analysis, innovation assessment approaches, and modelling-based empirical studies. By commercialisation context, the included studies mainly focused on Commercialisation Process Factors (99.4%), followed by Organisational Factors (56.7%) and Institutional and Policy Factors (55.1%). Thus, university research commercialisation is increasingly studied as a multidimensional and process-oriented phenomenon.

Table 1: Characteristics of Included Studies (n=178)

Characteristics	Frequency (n)	Percentage (%)
Publication Year		
2020	22	12.4
2021	33	18.5
2022	31	17.4
2023	21	11.8
2024	32	18.0
2025	29	16.3
2026	10	5.6
Country		
China	18	10.1
Italy	18	10.1
Brazil	11	6.2
Spain	8	4.5

Characteristics	Frequency (n)	Percentage (%)
United Kingdom	8	4.5
United States	7	3.9
South Africa	7	3.9
Malaysia	6	3.4
Germany	6	3.4
Australia	5	2.8
Others	84	47.2
Study Design		
Quantitative	96	53.9
Case Study	44	24.7
Qualitative	19	10.7
Other Designs	11	6.2
Mixed Methods	8	4.5
Commercialisation Context		
Commercialisation Process Factors (CPF)	177	99.4
Organisational Factors (OF)	101	56.7
Institutional and Policy Factors (IPF)	98	55.1
University-Industry Collaboration Factors (UIC)	51	28.7
Ecosystem Factors (EF)	33	18.5
Individual Factors (IF)	22	12.4
Resource Factors (RF)	10	5.6
Technology Transfer Office Factors (TF)	10	5.6

Thematic Synthesis of Determinants and Barriers Influencing University Research Commercialisation

The thematic analysis of the 178 included studies identified eight overarching themes influencing university research commercialisation: Individual Factors, Organisational Factors, Technology Transfer Office (TTO) Factors, University-Industry Collaboration Factors, Institutional and Policy Factors, Ecosystem Factors, Resource Factors, and Commercialisation Process Factors (Table 2). These themes encompassed a broad range of determinants, barriers, and enabling mechanisms reported across different geographical and institutional contexts.

The findings indicate that university research commercialisation is a multifaceted process influenced by factors operating at individual, organisational, institutional, and ecosystem levels. Across the literature, determinants such as researcher expertise, entrepreneurial orientation, effective technology transfer offices, collaborative partnerships, government support, resource availability, and structured commercialisation processes were repeatedly associated with successful commercialisation outcomes. Conversely, inadequate funding, weak institutional support, limited commercialisation capabilities, fragmented innovation ecosystems, and regulatory constraints emerged as recurring barriers that impeded the translation of research outputs into marketable products and services.

Table 2: Thematic Synthesis of Determinants and Barriers Influencing University Research Commercialisation

Theme	Determinants Factor	Main Barriers	Main Enablers
Individual Factors	Researcher expertise, entrepreneurial intention, self-efficacy	Lack of commercialisation competencies and entrepreneurial skills	Training, experience, entrepreneurial orientation
Organisational Factors	University culture, leadership support, incentives	Weak institutional support and incentive systems	Strategic commitment and organisational support
TTO Factors	TTO capability, IP management, commercialisation support	Limited expertise and resources	Professionalisation of TTO services and commercialisation support
University-Industry Collaboration Factors	Joint research, industry partnership, trust	Weak networks and misaligned objectives	Collaborative partnerships and knowledge exchange
Institutional and Policy Factors	Government funding, innovation policies, regulatory frameworks	Policy constraints and inadequate support mechanisms	Government grants and supportive policies
Ecosystem Factors	Incubators, science parks, innovation intermediaries	Fragmented innovation ecosystems	Entrepreneurial ecosystems and external networks
Resource Factors	Financial resources, infrastructure, human capital	Resource limitations and inadequate funding	Access to funding and infrastructure
Commercialisation Process Factors	Technology transfer, licensing, spin-offs, patenting	Complex commercialisation pathways and market uncertainty	Structured commercialisation mechanisms and market validation

Discussion

Individual Factors

Individual Factors (IF) were identified in 30 studies and primarily encompass researcher competencies, entrepreneurial orientation, commercialisation experience, self-efficacy, and cognitive capabilities. The findings indicate that researchers who possess entrepreneurial competencies, commercial awareness, and networking capabilities are more likely to engage in commercialisation activities and successfully translate research outputs into market applications (Høvig et al., 2023; Nsanzumuhire et al., 2021; Park et al., 2024; Sitenko et al., 2024). Several studies further emphasised that prior commercialisation experience and industry exposure improve researchers' ability to identify market opportunities and manage the uncertainty associated with commercialisation processes (Davey et al., 2025; Oppong et al., 2020; Tunalioglu et al., 2024).

However, many academics continue to experience difficulties in balancing scientific and entrepreneurial roles, resulting in limited engagement in commercialisation activities (Park et al., 2024 and Sitenko et al., 2024). These findings suggest that universities should strengthen entrepreneurial education, mentorship programmes, and commercialisation training initiatives to enhance researchers' capabilities and foster entrepreneurial mindsets.

Organisational Factors

Organisational Factors (OF) were identified in 45 studies and include university culture, leadership support, governance structures, organisational strategy, and incentive mechanisms. The literature consistently demonstrates that universities characterised by entrepreneurial cultures and supportive governance arrangements exhibit superior commercialisation performance (Ar et al., 2023; Biranvand & Seif, 2021; Knudsen et al., 2021; Marzougui et al., 2024; Yang & Chen, 2025). Leadership commitment and strategic alignment were frequently reported as facilitating factors that encourage researchers to pursue commercialisation opportunities (Biranvand & Seif, 2021; Lian et al., 2021; Roncancio-Marin & Guerrero, 2024; Tukoff-Guimarães et al., 2021).

Conversely, fragmented organisational structures, weak institutional support, and inadequate incentive systems were repeatedly identified as barriers to commercialisation activities (Knudsen et al., 2021; Marzougui et al., 2024; Roncancio-Marin & Guerrero, 2024). These findings imply that universities should adopt entrepreneurial governance models and establish institutional mechanisms that reward and support commercialisation activities.

Technology Transfer Office Factors

Technology Transfer Office (TTO) Factors (TF) were identified in 37 studies and remain critical intermediaries in the commercialisation ecosystem. Effective TTOs facilitate intellectual property management, opportunity assessment, licensing, networking, and commercialisation support services (Ar et al., 2023; Davey et al., 2025; Kruachottikul et al., 2024; Loyola & Selby, 2025; Maresova et al., 2020; Marzougui et al., 2024; Pronay et al., 2021; van Burg et al., 2021; Zhou & Baines, 2024).

Several studies highlighted that TTO capabilities significantly influence commercialisation outcomes because they provide specialised expertise and bridge the gap between scientific research and market applications (Chang et al., 2020; Modic & Suklan, 2023; Quero et al., 2022; Unger et al., 2020). Nevertheless, inadequate expertise, limited resources, and traditional patent-centred approaches continue to restrict the effectiveness of many TTOs (Ar et al., 2023; Kruachottikul et al., 2024; Unger et al., 2020). Consequently, the findings suggest that universities should strengthen the professionalisation and strategic transformation of TTOs to enhance commercialisation performance.

University-Industry Collaboration Factors

University-Industry Collaboration (UIC) Factors emerged in 53 studies and constitute one of the most influential determinants of university research commercialisation. The literature consistently demonstrates that collaborative relationships with industry provide access to market intelligence, complementary expertise, financial resources, and opportunities for technology validation (Biranvand & seif, 2021; Davey et al., 2025; Kanojia et al., 2021; Lian et al., 2021; Loyola & Selby, 2025; Nsanzumuhire et al., 2021; Shen et al., 2022; Tukoff-Guimarães et al., 2021; Wolszczak-Derlacz, 2025; Zhou & Baines, 2024).

Joint research projects, trust-based relationships, and knowledge exchange mechanisms were repeatedly identified as facilitating factors that improve commercialisation outcomes (Chang et al., 2020; Gebrekidan et al., 2025; Roncancio-Marin & Guerrero, 2024; Urban & Seely, 2023). However, several studies also reported barriers associated with divergent institutional objectives, communication challenges, and disagreements concerning intellectual property ownership and disclosure (Zhou & Baines, 2024 and Wolszczak-Derlacz, 2025). These findings indicate that long-term and mutually beneficial partnerships are essential for enhancing university commercialisation performance.

Institutional and Policy Factors

Institutional and Policy Factors (IPF) were identified in 34 studies and highlight the importance of external policy environments in shaping commercialisation outcomes. Government funding, innovation policies, regulatory frameworks, and intellectual property regulations were frequently reported as critical determinants of commercialisation success (Ar et al., 2023; Kanojia et al., 2021; Kruachottikul et al., 2024; Liu et al., 2026; López-Mendoza & Mauricio, 2021; Maresova et al., 2020; Marzougui et al., 2024; Nsanzumuhire et al., 2021; Tunalioglu et al., 2024; Yang & Chen, 2025).

Several studies demonstrated that supportive policies and public funding programmes can significantly improve commercialisation capacities and facilitate knowledge transfer activities (Biranvand & Seif, 2021 and Davey et al., 2025). Conversely, bureaucratic procedures, fragmented policy implementation, and regulatory constraints were repeatedly reported as major barriers to commercialisation activities (Kruachottikul et al., 2024 and Marzougui et al., 2024). These findings suggest that policymakers should adopt integrated and flexible policy approaches that reduce administrative burdens and strengthen university-industry partnerships.

Ecosystem Factors

Ecosystem Factors (EF) appeared in 43 studies and are external to the university. However, these external factors are part of a larger external innovation environment, which can support or hinder the process of commercialisation of university research. EF were grouped into five categories of entrepreneurial ecosystem, incubators, science parks, investors and other innovation intermediaries. All these factors have positive influence on the commercialisation outcomes of university research (Davey et al., 2025; Høvig et al., 2023; Knudsen et al., 2021; Kruachottikul et al., 2024; ; Loyola & Selby, 2025; Marzougui et al., 2024; Park et al., 2024; Tunalioglu et al., 2024).

The literature suggests that robust innovation ecosystems provide access to networks, specialised knowledge, venture financing, and entrepreneurial support services that facilitate commercialisation activities (Chang et al., 2020; Quero et al., 2022; Unger et al., 2020; Urban & Seely, 2023). However, fragmented ecosystems and weak innovation infrastructures continue to impede commercialisation efforts, particularly in developing economies (Chang et al., 2020 and Knudsen et al., 2021). Therefore, strengthening regional and national innovation ecosystems remains essential for improving university commercialisation performance.

Resource Factors

Resource Factors (RF) were identified in 28 studies and include financial resources, infrastructure, human capital, and access to specialised expertise. The literature consistently reports that insufficient funding and inadequate commercialisation infrastructure constitute major barriers to research translation (Ar et al., 2023; Høvig et al., 2023; Kanojia et al., 2021; Liu et al., 2026; López-Mendoza & Mauricio, 2021; Maresova et al., 2020; Pronay et al., 2021; Sitenko et al., 2024; Yang & Chen, 2025).

Several studies further indicated that access to translational funding, incubators, laboratories, and multidisciplinary expertise significantly enhances commercialisation capabilities (Davey et al., 2025; Roncancio-Marin & Guerrero, 2024; Urban & Seely, 2023). These findings demonstrate that resource mobilisation is a prerequisite for successful commercialisation and should be incorporated into university innovation strategies.

Commercialisation Process Factors

Commercialisation Process Factors (CPF) emerged as the most frequently reported theme within the body of literature addressing university research commercialisation with 76 studies referencing the subject. The studies collectively increasingly conceptualise commercialisation as an iterative and structured process that involves a number of steps including opportunity identification, technology maturation, market validation, intellectual property protection, licensing, spin-off development and market deployment (Høvig et al., 2023; Knudsen et al., 2021; Kruachottikul et al., 2024; Liu et al., 2026; Pronay et al., 2021; Park et al., 2024; Zhou & Baines, 2024).

Several of the commercialisation process factors have gained more attention in the last few years. Customer discovery has become increasingly important for the commercialisation of research outcomes (Chang et al., 2020; Davey et al., 2025; Quero et al., 2022; Unger et al., 2020). Conversely, the absence of clear commercialisation pathways and market-oriented

mechanisms frequently resulted in technologies remaining within academic environments without progressing towards commercial applications (Hsu & Kuhn, 2022 and Liu et al., 2026). These findings indicate that universities should adopt systematic and market-oriented commercialisation frameworks that integrate technological development with entrepreneurial and validation activities.

Strengths and Limitations

This review provides a comprehensive summary evidence map of the determinants and barriers influencing university research commercialisation by synthesising findings from 178 empirical studies across diverse geographical and institutional contexts. However, several limitations should be acknowledged. The review was restricted to English-language studies published between 2020 and 2026 and sourced solely from Scopus and Web of Science. In addition, only peer-reviewed journal articles were included, while conference proceedings, books, dissertations, review papers, conceptual papers, theoretical papers, and other forms of grey literature were excluded. Furthermore, 46 full-text articles could not be retrieved, and no formal quality appraisal was undertaken, consistent with the objectives of a scoping review and the PRISMA-ScR guidelines. Consequently, the findings should be interpreted as a broad mapping of the existing evidence rather than an assessment of the methodological quality of the included studies.

Conclusion

This scoping review provides an integrated and comprehensive evidence map of the determinants and barriers of university research commercialisation. By including 178 studies from 2020 to 2026 from Scopus and Web of Science databases, this review offers an overview of the current state of research regarding university research commercialisation. Eight major categories of determinants and barriers for university research commercialisation have been identified and integrated in this review. These categories are Individual Factors, Organisational Factors, Technology Transfer Office Factors, University-Industry Collaboration Factors, Institutional and Policy Factors, Ecosystem Factors, Resource Factors, and Commercialisation Process Factors. In order to enhance university research commercialisation, an integrated approach is required that improves the capabilities of researchers and supporting organizations, strengthens industry collaborations and policies, and increases resources and commercialisation processes.

Although a large number of papers have been written to analyse university research commercialisation, important knowledge gaps remain to be filled by future research. In particular, there is a lack of studies that analyse the interactions between the different determinants of university research commercialisation. So far, only a few studies have investigated the relationship between some of the determinants. Most studies available to date have been carried out in developed countries and only a few of them have analysed the specificities of university research commercialisation in developing countries. Therefore, future studies should pay more attention to these countries. In addition, an increasing attention is being given to the issue of regulatory readiness and how it affects university research commercialisation. Future research should analyse how different determinants interact to favour or impede university research commercialisation and how universities can be enabled to improve their commercialisation performance.

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