A Systematic Literature Review of Individual Predictors on Internet Entrepreneurial Ventures among Academics
(Tinjauan Literatur Sistematik Peramal Individu dalam Usaha Keusahawanan Internet di kalangan Ahli Akademik)

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ABSTRACT

The influence of university lecturers who teach, but do not practice, entrepreneurship is an important question facing academic entrepreneurship. Current literature lacks discussions regarding important predictors for becoming an entrepreneur, especially among lecturers. Because technological developments make it possible for a lecturer to become an internet entrepreneur, this study conducted a systematic literature review of articles related to identifying individual predictors that can affect internet entrepreneurial ventures among academics. Thirty-five articles published between 2012 and 2022 and sourced from the Clarivate Web of Science are summarized, reviewed, and synthesized. The findings show that human capital, social capital, and internet competence are important individual predictors that influence internet entrepreneurial ventures among lecturers. This study also proposes the use of a new fourth variable, academic internet entrepreneurial self-efficacy, to explain the phenomenon of academic internet entrepreneurship among lecturers. This study contributes to the understanding of individual predictors that influence internet entrepreneurial ventures among academics and whether lecturers can act as educators and entrepreneurs at the same time. Therefore, it is important for lecturers to develop their entrepreneurial skills both in theory and practice.

Keywords: Academics; academic entrepreneurship; individual predictors; internet entrepreneurship; lecturer

ABSTRAK

Pengaruh pensyarah universiti yang mengajar, tetapi tidak mengamalkan, keusahawanan merupakan persoalan penting yang dihadapi keusahawanan akademik. Literatur semasa kurang berbincang mengenai peramal penting untuk menjadi seorang usahawan, terutamanya dalam kalangan pensyarah. Oleh kerana perkembangan teknologi membolehkan seseorang pensyarah menjadi usahawan internet, kajian ini menjalankan kajian literatur sistematik terhadap artikel berkaitan dengan peramal individu yang boleh menjejaskan usahawan internet dalam kalangan ahli akademik. Tiga puluh lima artikel yang diterbitkan di antara tahun 2012 dan 2022 diperoleh daripada Clarivate Web of Science diringkas, disemak, dan disintesis. Dapatan kajian menunjukkan bahawa modal insan, modal sosial, dan kecekapan internet merupakan peramal individu penting yang mempengaruhi usaha keusahawanan internet dalam kalangan pensyarah. Kajian ini juga mencadangkan penggunaan pembolehubah keempat baharu iaitu efikasi keusahawanan internet akademik untuk menjelaskan fenomena keusahawanan internet akademik dalam kalangan pensyarah. Kajian ini menyumbang kepada pemahaman peramal individu yang mempengaruhi usahawan internet dalam kalangan ahli akademik iaitu pensyarah boleh bertindak sebagai pendidik dan menjadi usahawan pada masa yang sama. Oleh itu, adalah penting bagi pensyarah untuk mengembangkan kemahiran keusahawanan mereka sama ada secara teori mahupun amali.

Kata kunci: Akademik; keusahawanan akademik; peramal individu; keusahawanan internet; pensyarah

INTRODUCTION

Higher education plays an important part in introducing and encouraging student interest in entrepreneurship. As a result, entrepreneurship education has experienced rapid development around the world (Adelowo & Surujlal 2020; Cunningham & Menter 2020). Entrepreneurship education can facilitate the transfer of knowledge, skills, and attitudes needed to create new sustainable businesses (Cadenas et al. 2020). The positive impact on sustainable economic growth and job creation in a country contributes to this increased interest.

Universities have a significant role in creating a knowledge-based economy during the Industry 4.0 era (Klofsten et al. 2019) and generating knowledge and promoting innovation in the field of entrepreneurship (Schaeffer & Matt 2016; Xia et al. 2018). Many universities have developed policies, systems, and procedures to identify scientific discoveries made by their faculty and turn them into real technology that can be commercialized through licensing or through the formation of companies, such as technology transfer offices and startup incubators (Cunningham & Menter 2020; Urban & Gamata 2020).

Although universities are the best institutions for teaching and researching the field of entrepreneurship, there is criticism regarding the fact that lecturers who teach entrepreneurship do not have experience as entrepreneurs (Abreu & Grinevich 2017; Adelowo & Surujlal 2020; Blair & Shaver 2020; Davey & Galan-Muros 2020; Shiet et al. 2020; Hayter et al. 2021). Research on academic entrepreneurship is still in its infancy, and understanding of the factors that may influence entrepreneurial behavior among academics remains limited (Goethner et al. 2012; Abreu & Grinevich 2013).

With advances in technology, lecturers have greater options for entering online platform businesses without having to leave their jobs, making them attractive candidates as e-entrepreneurs. E-entrepreneurship is similar to internet entrepreneurship, where the use of information technology is used to start a business and carry out business transactions exclusively via the internet (Wang et al. 2020). The growth of internet entrepreneurship is driven by developments in communication technology, computers, and smart devices (Garcez et al. 2022; Paul et al. 2023). Entrepreneurs today are more likely to turn to online businesses than traditional businesses due to lower start-up costs, wider reach, and the ability to interact directly with consumers via the internet (Chang et al. 2020).

Understanding internet entrepreneurship has great significance in the field of information systems/information technology (Wang et al. 2020). However, the literature on entrepreneurship is dominated by research on traditional entrepreneurial intentions, while research on internet entrepreneurship and internet entrepreneurial intentions is still very limited (Garcez et al. 2022; Paul et al. 2023). The development of online entrepreneurship frameworks that focus on specific internet-related skills has not received sufficient attention. To close this gap in the literature, a systematic literature review (SLR) study is needed for specific topics such as internet entrepreneurial ventures among academics or academic internet entrepreneurship. Moreover, a systematic review offers details about the reviewing procedure, including keywords, gathering of articles, and validation of the results (Shaffril et al. 2021). The use of SLR in this study will contribute to the body of knowledge regarding individual predictors on internet entrepreneurial ventures among lecturers.

This SLR aims to answer the following two research questions. First, what are the main themes and study contexts commonly used in research on individual predictors of internet entrepreneurial ventures among academics? Second, what are the predictors that have a significant influence on internet entrepreneurial ventures among academics? This study provides two academic implications. First, this study contributes to the literature on academic internet entrepreneurship among lecturers by providing a comprehensive literature synthesis on the engagement of lecturers in internet entrepreneurship. Second, this study formulates a framework for how lecturers can effectively manage their academic and business responsibilities and investigates whether they can simultaneously fulfill the roles of educators and entrepreneurs. For practical implications, this study introduces significant topics and discussions that lecturers can employ in the real-world application of entrepreneurship in their field.

This study is divided into five parts. The methodology section will describe our research methods, including PRISMA, search strategies, and quality extraction. The data extraction and analysis section follows. The results section will discuss the results and findings of the selected articles reviewed. We end with a discussion and suggestions for further research followed by the academic and practical implications of this research.

METHODOLOGY

This section discusses the sub-sections of the methodology in writing SLR used in this study, namely PRISMA, inclusion and exclusion criteria, and quality assessment.

PRISMA

In this study, PRISMA from Moher et al. (2015) was adopted as a method for selecting literature. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method is a guide or framework designed to conduct systematic reviews and meta-analyses and provides clear and standardized guidelines, ensuring transparency and reproducibility in all stages of research, from research question formulation to data analysis (Moher et al. 2015). PRISMA presents a coherent method for identification, selection, and assessing articles while performing a literature review (Shaffril et al. 2021). This helps in producing high-quality and reliable systematic reviews in clinical or policy decision-making.

SYSTEMATIC SEARCHING STRATEGIES

There are three steps that must be carried out in selecting relevant articles: identification, screening, and eligibility (Shaffril et al. 2021). Identification utilizes keywords. Screening is conducted to establish the criteria for inclusion. Eligibility affirms the appropriateness of chosen articles for the purpose of the review. By implementing these steps, the authors can thoroughly analyze and synthesize the research findings, resulting in a well-structured and transparent systematic literature review (Shaffril et al. 2021).

IDENTIFICATION

The aim of this identification phase is to increase the possibility of identifying more literature in the selected database that is related to the study. We used the Clarivate Web of Science to identify peer-reviewed articles because of the high degree of credibility and quality of the journal articles it contains. The terms included: "individual predictors of internet entrepreneurship," "academic internet entrepreneurship," and "entrepreneurship among lecturer," "internet entrepreneurial ventures" or a combination of the terms in the titles, keywords, or abstracts of articles.

Additionally, to find more advanced articles about academic entrepreneurship and internet entrepreneurship that may not include the above mentioned terms in the title, abstract, or keywords, this research also performed a backward and forward citation search of previously identified articles. To ensure the quality of the articles used in the systematic literature review, this research only included articles that met the following two criteria: (a) the article is available in the Clarivate Web of Science database, and (b) the article focuses on academic internet entrepreneurship. After an extensive search, this research obtained a total of 234 articles from the Clarivate Web of Science. The 234 articles were then screened to determine whether they met the inclusion criteria.

SCREENING

Screening is carried out to enter or exclude articles according to the criteria by identifying articles that do not meet the research requirements. The specified criteria can be seen in Table 1. Three articles were discarded because the writing was not in English. The remaining 231 articles were screened using the study's inclusion and exclusion criteria. The types of articles included were papers with empirical data, systematic reviews, and article reviews. Article search was limited to those published between 2012 and 2022, given that the study by Goethner et al. (2012) is one of the important studies regarding entrepreneurial intentions among academics. Finally, to ensure the relevance of the article, the subject areas used were Internet Entrepreneurship, Academic Entrepreneurship, Business, and Management. Based on strict screening, 143 articles were excluded, leaving eighty-eight articles for the next phase.

TABLE 1. The inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Document Type	Empirical, Systematic Review, Review Article	Chapter in a book, book, conference proceeding, unpublished papers
Timeline	2012-2022	2011 and earlier
Language	English	Non-English
Subject Area	Internet Entrepreneurship, Academic Entrepreneurship Business, Management	Other than Internet Entrepreneurship, Academic Entrepreneurship Business, Management

ELIGIBILITY

During the eligibility phase, the title, abstract, and main content of the remaining 88 articles were reviewed to confirm that they meet the criteria. Book chapters, unpublished papers, and dissertations were not included in this stage because it is difficult to verify the quality of such research due to the lack of peer-review. As a result, sixty-one articles were excluded because they were not relevant to the topic of individual predictors of internet entrepreneurial ventures.

QUALITY ASSESSMENT

The final thirty-five studies included in our review were of various types, including quantitative, qualitative, literature review, systematic literature review, and conceptual studies. This study examines the theoretical basis of academic internet entrepreneurship, explains how academic internet entrepreneurship has been measured in previous studies, reviews previous research on the determinants and outcomes of academic internet entrepreneurship, and explores studies that use academic internet entrepreneurship as a variable in his research.

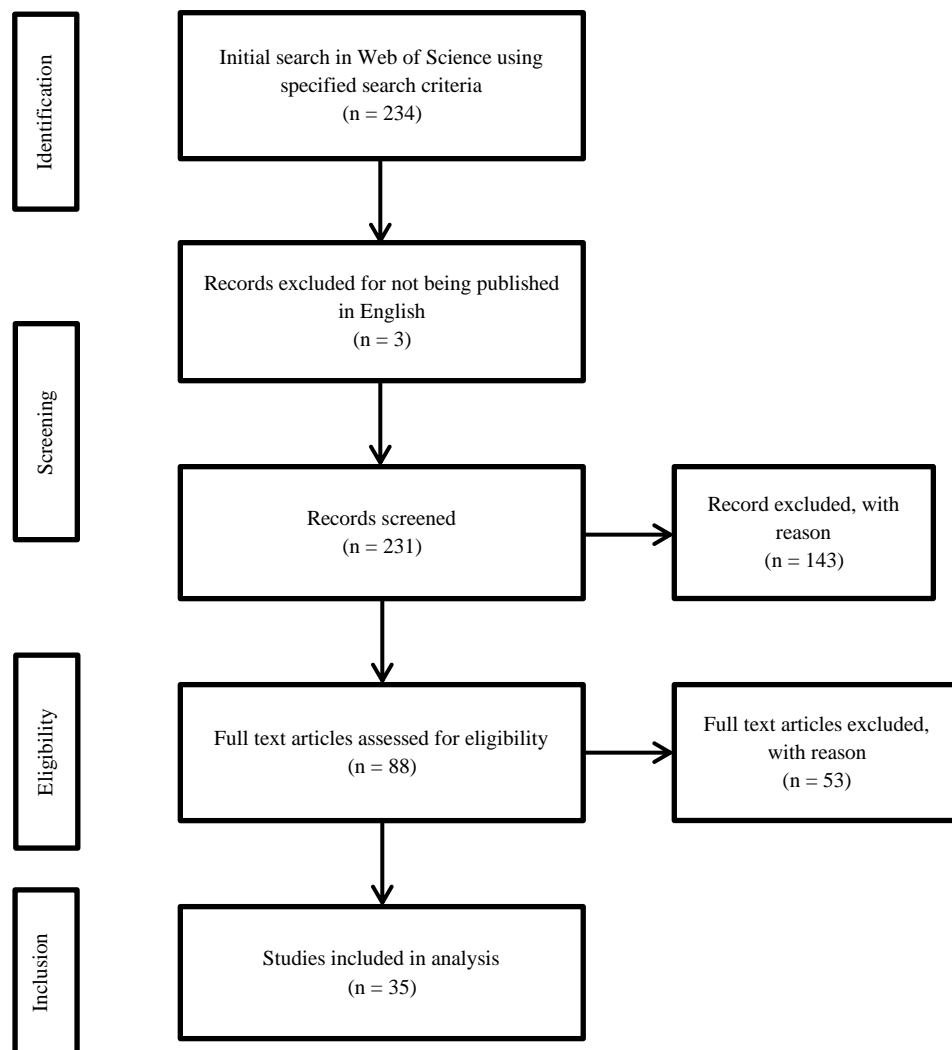Figure 1. shows the results of selecting and refining the articles of the study:

FIGURE 1. Research flow diagram

To check the quality of the thirty-five articles, the Mixed Method Appraisal Tool (MMAT) was applied. The MMAT is used in the Systematic Literature Review to assess the quality and validity of studies that use a mixed

approach or mixed methods in their research (Hong et al. 2018). It helps researchers identify potential biases, uncertainties, or weaknesses in their design and execution. It also describes the level of confidence and validity of the conclusions from the combined mixed study results in the SLR. Using the Mixed Method Appraisal Tool ensures that the research included in the mixed-based SLR is of high quality, resulting in stronger and more relevant conclusions in understanding the research phenomenon as a whole.

Thirty-five articles were examined using the MMAT to determine entry into low, moderate, or high quality. The authors then assessed the methodology and analysis of each article. Each article was read carefully with a focus on the methodology and analysis. The authors agreed that articles of moderate quality are acceptable for review in this project. All thirty-five articles examined were considered suitable for the current study, with twenty-eight articles rated high and seven rated moderate.

DATA EXTRACTION AND ANALYSIS

Because the articles had various research designs that needed to be integrated and synthesized, they were analyzed thematically. The theme determination technique is based on thematic analysis, which involves grouping the dimensions found through a review of the thirty-five selected articles. We used thematic analysis because the method seeks to identify and inform existing study patterns by detecting similarities or relationships that may exist in the available data. The data collection stage is the first step in the theme collection process. The articles were analyzed in depth at this initial step to extract statements or data that could solve the first research question.

The next step involves generating the initial code. Raw data is turned into usable data by explaining trends, concepts, or ideas. At this stage, the researcher arranged data in a detailed and specific level. They read through the selected articles and extracted information relevant to the research question. The third step involved the theme creation process. The researchers applied an inductive coding framework to record interests, similarities, and relationships between data that had been extracted based on the code that had been generated. The identified themes are related to the original data and reflect the entire existing data set. During this process, three main themes were developed: individual predictors, academic entrepreneurship, and internet entrepreneurship.

From the three main themes, the process is repeated to identify possible emerging themes. This process revealed a new theme: entrepreneurial self-efficacy. Furthermore, individual predictors related to this theme are many and varied. This entrepreneurial self-efficacy theme can be applied in academic entrepreneurship among lecturers (Cadenas et al. 2020; Bachmann et al. 2021). Therefore, thesefour themes are maintained throughout the process.

RESULT

BACKGROUND OF THE SELECTED ARTICLES

Of the thirty-five articles, six studies were conducted in China (Guo et al. 2019; Li et al. 2020; Shi et al. 2020; Wang et al. 2020; Wang et al. 2020; Wang et al. 2021), four in Europe (Goethner et al. 2012; Schaeffer & Matt 2016, Davey & Galan-Muros 2020, Blaese et al. 2021), 3 studies in Africa (Adelowo & Surujlal 2020; Eniola 2020; Urban & Gamata 2020), two in the UK (Abreu & Grinevich 2013; Abreu & Grinevich 2017), two in the US (Blair & Shaver 2020; Cadenas et al. 2020), Iraq (Halbusi et al. 2022), and Taiwan (Chang et al. 2020). Meanwhile as many as sixteen studies (Kasouf et al. 2015; Wadhwani et al. 2017; Balven et al. 2018; Hayter et al. 2018; Hmieleski & Powell 2018; Miller et al. 2018; Qian et al. 2018; Xia et al. 2018; Newman et al. 2019; Cunningham & Menter 2020; Neves & Brito 2020; Oppong et al. 2020; Secundo et al. 2020; Hayter et al. 2021; Bachmann et al. 2021; Garcez et al. 2022) did not state the country.
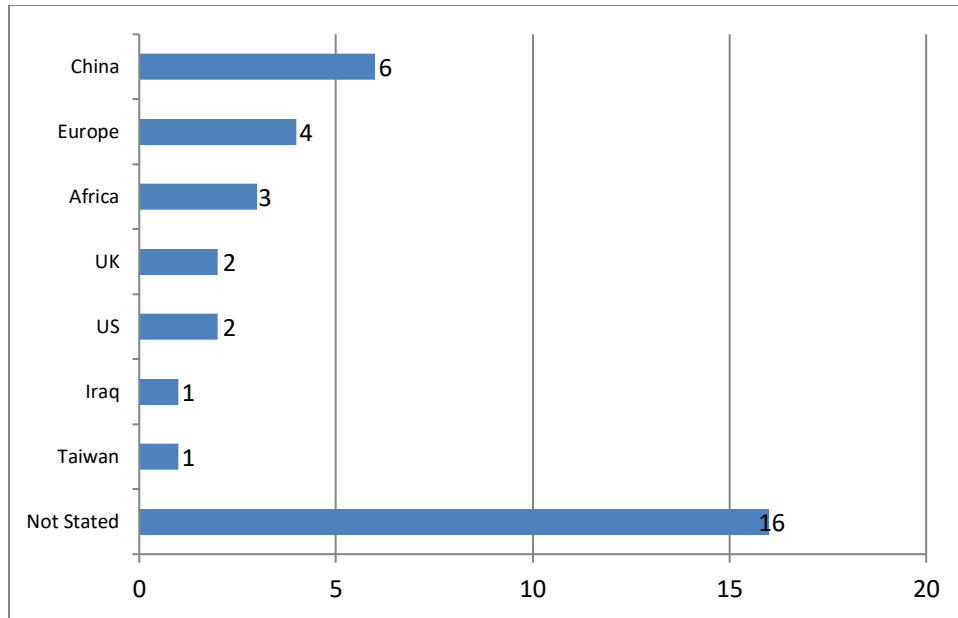
FIGURE 2. Country location where the study was conducted

A total of twenty studies focused on quantitative analysis (Goethner et al. 2012; Abreu & Grinevich 2013; Schaeffer & Matt 2016; Abreu & Grinevich 2017; Guo et al. 2019; Adelowo & Surujlal 2020; Blair & Shaver 2020; Cadenas et al. 2020; Chang et al. 2020; Davey & Galan-Muros 2020; Eniola 2020; Li et al. 2020; Shi et al. 2020; Wang et al. 2020; Wang et al. 2020; Urban & Gamata 2020; Bachmann et al. 2021; Blaese et al. 2021; Wang et al. 2021; Halbusi et al. 2022), six studies are literature reviews (Kasouf et al.2015; Wadhwani et al. 2017; Hayter et al. 2018; Hmieleski & Powell 2018; Cunningham & Menter 2020; Hayter et al. 2021), 5 studies conducted a systematic literature review (Miller et al. 2018; Newman et al. 2019; Neves & Brito 2020; Secundo et al. 2020; Garcez et al. 2022), two studies are empirical studies (Balven et al. 2018; Qian et al. 2018), 1 study is a conceptual paper (Xia et al. 2018), and 1 study focused on qualitative analysis (Oppong et al. 2020).
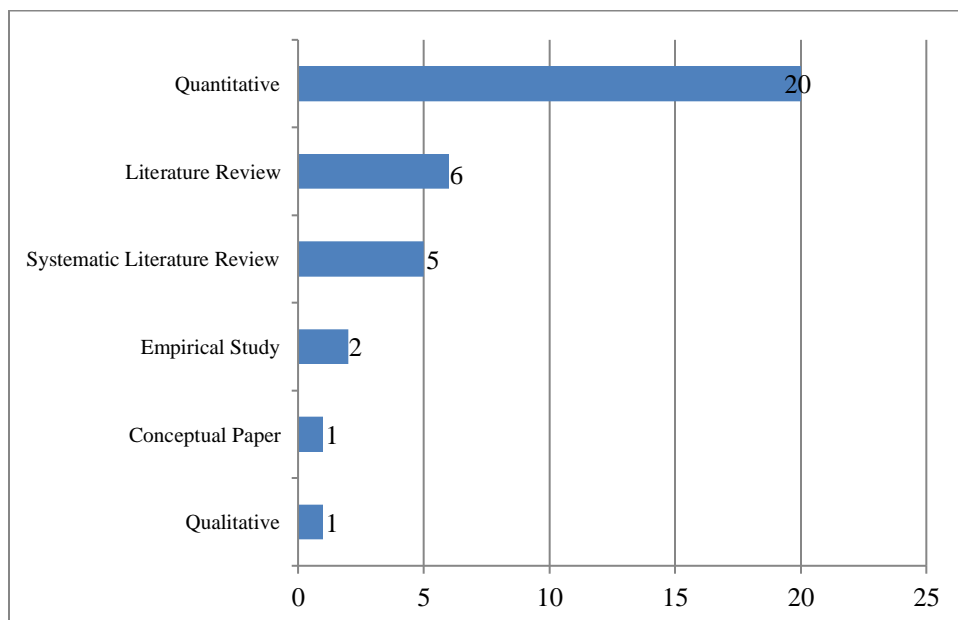

FIGURE 3. The research design of the selected studies

When grouped by publication range 2012-2022, one article was published in 2012 (Goethner et al. 2012), 1 article in 2013 (Abreu & Grinevich 2013), no articles in 2014, one article in 2015 (Kasouf et al. 2015), 1 article in 2016 (Schaeffer & Matt 2016), two articles in 2017 (Abreu & Grinevich 2017; Wadhwani et al. 2017), 6 articles in 2018 (Balven et al. 2018; Hayter et al. 2018; Hmieleski & Powell 2018; Miller et al. 2018; Qian et al. 2018, Xia et al. 2018), 2 articles published in 2019 (Guo et al. 2019; Newman et al. 2019), fifteen articles in 2020 (Adelowo & Surujlal 2020; Blair & Shaver 2020; Cadenas et al. 2020; Chang et al. 2020; Cunningham & Menter 2020; Davey & Galan-Muros 2020; Eniola 2020; Li et al. 2020; Neves & Brito 2020; Oppong et al. 2020; Secundo et al. 2020; Shi et al. 2020; Wang et al. 2020; Wang et al. 2020; Urban & Gamata 2020), four articles in 2021 (Bachmann et al. 2021; Blaese et al. 2021; Hayter et al. 2021; Wang et al. 2021), and two articles published in 2022 (Garcez et al. 2022; Halbusi et al. 2022).
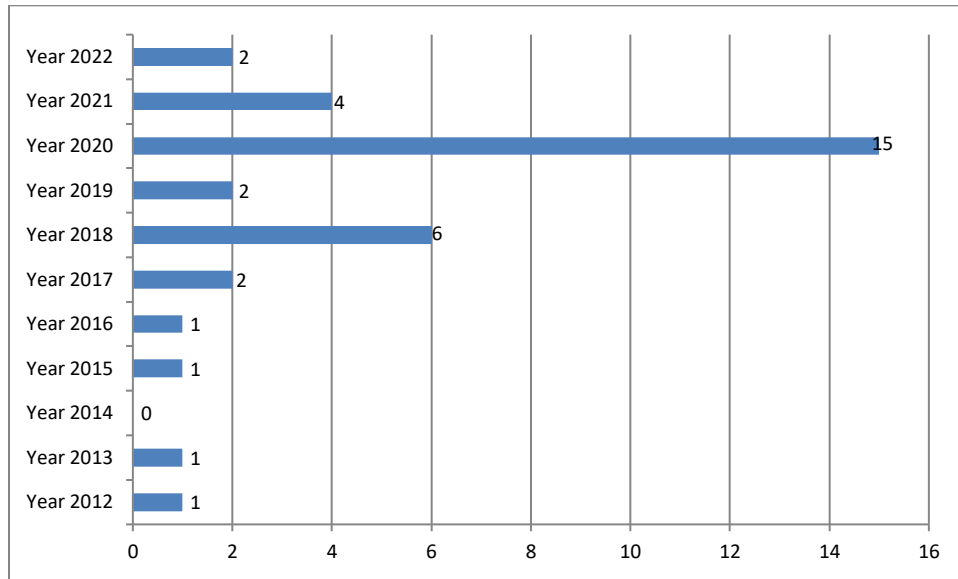

FIGURE 4. Year of publication of the selected studies

Journal titles are ranked as follows: four journals are published in International Entrepreneurship and Management Journal (Kasouf et al. 2015; Guo et al. 2019; Li et al. 2020; Blaese et al. 2021), 3 journals published in The Journal of Technology Transfer (Abreu & Grinevich 2017, Hayter et al. 2018; Wang et al. 2021), 3 journals published in Journal of Management Development (Cunningham & Menter 2020; Davey & Galan-Muros 2020; Neves & Brito 2020), 2 journals published in Academy of Management Perspectives (Balven et al. 2018, Hmieleski & Powell 2018), two journals published in Journal of Vocational Behavior (Newman et al. 2019; Cadenas et al. 2020), two journals published in Review of Managerial Science (Shi et al. 2020; Bachmann et al. 2021), two journals published in Sustainability (Qian et al. 2018, Xia et al. 2018), Asia Pacific Journal of Management (Halbusi et al. 2022), Computers in Human Behavior (Chang et al. 2020), Education and Information Technologies (Garcez et al. 2022), Entrepreneurship and Regional Development (Schaeffer & Matt 2016), Entrepreneurship Research Journal (Blair & Shaver 2020), European Journal of Innovation Management (Wang et al. 2020), International Journal of Entrepreneurial Behavior & Research (Oppong et al. 2020), International Journal of Technology Management (Miller et al. 2018), Internet Research (Wang et al. 2020), Journal of Economic Psychology (Goethner et al. 2012), Management & Organizational History (Wadhwani et al. 2017), Polish Journal of Management Studies (Adelowo & Surujlal 2020), Research Policy (Abreu & Grinevich 2013), Small Business Economics (Hayter et al. 2021), Small Enterprise Research (Eniola 2020), South African Journal of Higher Education (Urban & Gamata 2020), Technological Forecasting & Social Change (Secundo et al. 2020).

EXTRACTED THEMES AND NEW THEMES

Theme extraction begins with a thorough examination of the thirty-five selected articles. Any dimensions mentioned therein are extracted and set accordingly. The next step identified if there are potential new themes from the extracted themes. A new theme is determined from the suitability of the dimensions possessed by the entrepreneurial

phenomenon of lecturers and is expected to answer the main research questions. There are three themes and one new theme identified from 35 selected articles. The next section describes those four themes.

Individual Predictors to Internet Entrepreneurial Ventures among Academics   The phenomenon of academic internet entrepreneurship is still a subject of debate among lecturers (Blair & Shaver 2020; Shi et al. 2020). While academic university lecturers teach entrepreneurship, a big question arises when those lecturers are not entrepreneurs in practice. Therefore, this study formulates individual predictors that have a significant influence in shaping internet entrepreneurial ventures among lecturers.

The individual is the engine of entrepreneurship. Research on individuals has addressed the personal characteristics of academics (Goethner et al. 2012; Li et al. 2020), their motivations and preferences (Blaese et al. 2021; Halbusi et al. 2022), and their entrepreneurial orientation and human capital (Adelowo & Surujlal 2020) as the main driver in the entrepreneurial process. This study focuses on identifying individual predictors that can influence internet entrepreneurial ventures among academics. By using a filtered literature review, this study found that human and social capital is very important in developing academic decisions to engage in internet entrepreneurial ventures. Additionally, an individual internet skill, such as internet competence, is an important predictor of internet entrepreneurial ventures among lecturers.

Human Capital   Human capital is the most commonly mentioned and discussed individual predictor in the studies that have been reviewed (Goethner et al. 2012; Abreu & Grinevich 2013; Kasouf et al. 2015; Abreu & Grinevich 2017; Hmieleski & Powell 2018; Guo et al. 2019; Wang et al. 2020; Hayter et al. 2021; Wang et al. 2021). Human capital refers to the collection of personal knowledge, skills, and abilities that individuals acquire through investments in education, training, and various experiences (Kasouf et al. 2015). It encompasses an individual's knowledge and skills obtained through formal education, on-the-job training, and other types of experiences that enhance their productivity in the workplace (Goethner et al. 2012).

In the context of entrepreneurship, human capital is believed to provide aspiring entrepreneurs with cognitive abilities that enable them to engage in demanding activities, such as starting their own businesses (Wang et al. 2020). There are two forms of human capital that can affect academic entrepreneurship: general human capital, such as educational attainment, and specific human capital, including industry experience and entrepreneurial experience (Kasouf et al. 2015). The findings from Hmieleski & Powell (2018) show that human capital encompasses an individual's knowledge, skills, abilities, and experiences that contribute to knowledge acquisition and business expertise and can be enhanced through education, training, and various experiences (Hmieleski & Powell 2018). Research has demonstrated that higher levels of initial human capital increase the likelihood of new business survival (Abreu & Grinevich 2013; Wang et al. 2021). Additionally, human capital plays a critical role in establishing the credibility and legitimacy of a new business that leads to significantly enhanced academic entrepreneurship ability (Wang et al. 2020; Hayter et al. 2021).

The establishment of new businesses necessitates the application of knowledge, highlighting the significance of human capital (Wang et al. 2020). Consequently, experiences that foster the development of skills, resources, and capabilities and contribute to the accumulation of human capital are highly valuable in the context of business creation and performance among academics (Goethner et al. 2012). Consistent with previous research, Wang et al. (2021) emphasized that the formation of human capital including formal education and informal education facilitates academics in setting up new businesses.

Social Capital   Social capital is another individual predictor which has emerged from the reviewed studies (Goethner et al. 2012; Kasouf et al. 2015; Hmieleski & Powell 2018; Guo et al. 2019; Shi et al. 2020; Urban & Gamata 2020; Wang et al. 2020; Hayter et al. 2021). Social capital encompasses the advantages derived from individuals' networks, social structures, and affiliations, which can be leveraged to create social and economic value (Hayter et al. 2021). Through social capital, ventures can more easily access and mobilize resources (Kasouf et al. 2015). Moreover, Guo et al. (2019) find that social capital facilitates the acquisition of resources, and a network that offers referrals can enhance legitimacy. Goethner et al. (2012) argue that social capital assists aspiring entrepreneurs by exposing them to new ideas and alternative perspectives, providing a broader frame of reference that is supportive and nurturing to novel concepts or ventures.

Kasouf et al. (2015) discuss social networks, such as professional affiliations, and the relational capital formed through the knowledge they generate. Interactions and connections, including collaborations with industry partners, are seen as avenues for knowledge transfer and demonstration effects, providing insights and information about academics' involvement in entrepreneurship. These social capital sources originating from such connections have

been found to significantly influence the early stages of the academic entrepreneurial process, such as the initial decision to embark on academic entrepreneurship (Guo et al. 2019; Shi et al. 2020).

Internet Competence   The predictive theme of internet skills appears in several articles (Oppong et al. 2020; Secundo et al. 2020; Wang et al. 2020; Garcez et al. 2022; Halbusi et al. 2022) and is one of the critical factors in determining internet entrepreneurial ventures. However, the term "internet skill" in these studies is not clearly described. This study uses the term internet competence to highlight internet skills as one of the individual predictors. Research related to individual skills in the internet field is increasingly attracting the attention of researchers (Conde-Jiménez 2018; Oppong et al. 2020). There are several terms employed to describe the diverse human characteristics related to the use of Information Communication Technology (ICT). The frequently used terms in recent global reports and evaluations encompass ICT competencies, skills, and literacy. Conde-Jiménez (2018) conducted research related to digital competence. He found that the validation of the theoretical model is the first step for the attention and creation of digital competencies as an indicator of the impact of ICT education policies. In particular, internet competence is recognized as a vital competency for lifelong learning and is incorporated within various international education systems. It is considered a cross-cutting competence as it enables the acquisition of other competencies (Conde-Jiménez 2018).

At present, it is essential to evaluate the influence of ICT competence in educational institutions, especially among academics. Proficiency in internet usage can facilitate the transition of academic entrepreneurship from traditional to internet-based entrepreneurship (Oppong et al. 2020; Garcez et al. 2022). In addition to serving as a valuable business asset, internet competencies play a pivotal role in fostering cognitive entrepreneurial traits at the individual level (Secundo et al. 2020; Halbusi et al. 2022), thereby promoting entrepreneurship and necessitating a deeper comprehension of how internet competencies enhance these characteristics (Wang et al. 2020).

Academic Entrepreneurship   Internet entrepreneurial ventures among academics fall under the theme of academic entrepreneurship, and have become a topic of increasing interest in academic literature, and among practitioners and policy makers. Based on the definition adapted from Abreu & Grinevich (2013), academic entrepreneurship includes entrepreneurial activities that occur outside of traditional academic tasks, such as teaching and research. They also characterize academic entrepreneurs as academic faculty members who undertake technology commercialization, using formal modes of engagement that capitalize on specific market opportunities. Academic entrepreneurship is innovative, risky, and potentially lucrative for both academic individuals and their institutions. One aspect of academic entrepreneurship that has received great attention is the development of a technology-based economy in universities, which encourages technology entrepreneurship through patents, licensing, startup formation, and partnerships between universities and industry Schaeffer & Matt (2016). In this context, academic entrepreneurship also includes the creation of new businesses based on university-developed knowledge, known as academic startups or spin-offs.

Simply, academic entrepreneurship is where lecturers are involved in commercialization activities and transfer their research to industry, combining scientific concepts on campus with entrepreneurial practices.

Internet Entrepreneurship   The theme of internet entrepreneurship stands out in the context of today's massive technological developments. Internet entrepreneurship is an increasingly popular form of entrepreneurship (Secundo et al. 2020). Technological advances have changed the business environment, including how businesses are organized, which in turn is driving the emergence of internet entrepreneurship. Developments in technology and tools have significantly facilitated the creative processes needed in internet entrepreneurial activities by increasing human collaboration without the need for a physical presence.

Internet entrepreneurship refers to the use of information technology to initiate and conduct business transactions through the internet (Wang et al. 2020). The proposed internet business creation framework supports internet entrepreneurship as it is better suited to the online business environment, with a focus on transactions and business models that occur exclusively on the internet. The terms internet entrepreneurship and internet entrepreneur broadly refer to individuals who build their business by leveraging activities and market opportunities available online (Garcez et al. 2022; Paul et al. 2023). As such, an internet entrepreneur is someone who develops a business based on the internet connectivity model and strategically manages new business models and technologies by implementing innovations in products, services, processes, and/or knowledge to achieve rapid growth (Chang et al. 2020).

Entrepreneurial Self-Efficacy among Lecturers   Some   academic   entrepreneurship   literature   discusses entrepreneurial self-efficacy among lecturers (Blair & Shaver 2020; Newman et al. 2019; Cadenas et al. 2020;

Chang et al. 2020; Eniola 2020; Wang et al. 2020; Bachmann et al. 2021). Entrepreneurial self-efficacy is an individual's perceptions of his or her ability to fulfill the duties and roles of an entrepreneur, as well as his or her expectations of the results of establishing a new business (Kasouf et al. 2015). Previous studies have shown that entrepreneurial self-efficacy has a significant impact on an individual's intention and competence to become an entrepreneur, the level of effort they put into starting a new business, their persistence in overcoming the challenges and adjustments associated with the process of creating a new business, and their success in carrying out entrepreneurial roles and tasks (Newman et al. 2019; Bachmann et al. 2021). Therefore, entrepreneurial self-efficacy not only influences individual career decisions, but also has an impact on their future performance in managing and developing new businesses (Cadenas et al. 2020).

Not all lecturers who teach entrepreneurship have the desire to become entrepreneurs at the same time. However, their work in teaching entrepreneurship raises questions about their level of entrepreneurial expertise if they are not practicing entrepreneurs. Therefore, a term or measurement is needed to describe entrepreneurship in the context of lecturers. One relevant personal attribute is entrepreneurial self-efficacy (ESE), which is believed to be an important factor in the intention to start a business (Newman et al. 2019; Eniola 2020; Bachmann et al. 2021).

Entrepreneurial self-efficacy does not refer to certain personality characteristics. Confidence in one's entrepreneurial skills is based on evaluation and self-assessment that considers a variety of integrated information. In a business context, individuals who have high entrepreneurial self-efficacy are believed to be able to do more challenging tasks well because they understand that these tasks cannot be avoided but must be mastered without considering escape as an alternative (Cadenas et al. 2020). It is important to understand the development of entrepreneurial self-efficacy because many studies show that individuals who believe in their entrepreneurial abilities tend to have a higher intention to engage in business creation activities (Kasouf et al. 2015; Bachmann et al. 2021). Entrepreneurial self-efficacy is the main element that can trigger lecturers to engage in entrepreneurial activities.

PROPOSED UNDERPINNING THEORY

It is necessary to establish a foundational theory to effectively visualize and explain the variables within the model. The Social Cognitive Theory (SCT) presents a suitable theoretical framework. Within SCT, self-efficacy emerges as a fundamental component that motivates individuals to fulfill their responsibilities and attain their expectations (Blaese et al. 2021) and is regarded as a trait with specific contextual relevance, thereby yielding a higher degree of predictive power when applied within a general activity context (Bandura 1982). According to SCT, an individual's actions, thoughts, and behavior are influenced by a combination of cognitive, behavioral, personal, and environmental factors. Within SCT, self-efficacy is a key construct defined as an individual's self-assessment of their ability to overcome challenges within a specific domain (Bandura 1982).

Social cognitive theory emphasizes that previous accomplishments and the presence of role models who provide assistance are crucial factors in shaping an individual's beliefs about personal control. These beliefs determine whether a person perceives themselves as capable of successfully performing a particular behavior (Bandura 1982). From this perspective, economic factors encompassing human and social capital may have an indirect relationship on entrepreneurial career intentions. Specifically, human capital and social capital benefit entrepreneurial behavior for academics by supporting previous successful entrepreneurial experiences (Li et al. 2020) and facilitating access to favorable business-related information, resources, and recommendations (Goethner et al. 2012; Kasouf et al. 2015). In this way, both human capital and social capital contribute to making entrepreneurship a more viable path for individuals in academic settings.

DISCUSSION

This study investigated the available literature regarding individual predictors on internet entrepreneurial ventures among academics. The phenomenon of lecturers who teach entrepreneurship butnare not entrepreneurs themselves raises big questions regarding the entrepreneurial skills that are taught to students (Balven et al. 2018; Neves & Brito 2020; Hayter et al. 2021). The rapid development of technology, especially the use of the internet, opens up opportunities for lecturers to become internet entrepreneurs without leaving their main career (Oppong et al. 2020; Secundo et al. 2020). In order to reveal a theme related to individual predictorsof internet entrepreneurial ventures among academics, we conducted this SLR study, identifying a total of four themes. In addition, this research also found individual predictors that have an influence on internet entrepreneurial ventures among academics: human capital, social capital, and internet competence.

Human capital plays a significant role as a strong predictor in internet entrepreneurial ventures among lecturers. Findings from Goethner et al. (2012) indicate that prior experience is crucial for individuals to become academic entrepreneurs. Additionally, social capital is also a predictor that can influence internet entrepreneurial ventures among lecturers. Goethner et al. (2012) also find that social capital is vital for academics as it not only involves substantial academic networks but also connections with industry partners and governmental institutions, which can enhance entrepreneurial intentions among academics. Both forms of capital are important in shaping internet entrepreneurial ventures among lecturers.

Individual abilities related to the internet, such as internet competence, are very important in becoming an internet entrepreneur. In the 21st century, people need to have information and communication technology (ICT) skills to adapt to economic, social, and educational changes (Secundo et al. 2020). In this context, this study uses the term "internet competence" as a required skill for those academics who wish to engage in internet entrepreneurship activities. This expertise will make it easier for lecturers to become academic internet entrepreneurs.

Internet entrepreneurial self-efficacy refers to a person's belief in their ability to successfully run an entrepreneurial business online (Wang et al. 2020). This concept consists of five dimensions: business operations, leadership, utilization of technology, online customer service, and internet marketing. These dimensions are used to describe specific aspects that affect self-efficacy in the context of internet entrepreneurship. When compared with traditional entrepreneurship, internet entrepreneurship has distinctive characteristics; internet entrepreneurs need to design and use e-commerce systems, such as websites, online platforms, and social media, to interact with customers and run their business (Secundo et al. 2020).

From the discussion above, our research created a variable that combines academic self-efficacy in the field of entrepreneurship and self-efficacy in internet entrepreneurship: academic internet entrepreneurial self-efficacy. Previous research has shown that some academics also have an interest in becoming entrepreneurs (Guo et al. 2019; Adelowo & Surujlal 2020; Davey & Galan-Muros 2020; Blaese et al. 2021), while others have no interest in getting involved in business. Therefore, the internet entrepreneurship self-efficacy variable is a relevant variable in explaining academic entrepreneurship in such situations. The following is an overview of the combination of several variables that make up academic internet entrepreneurial self-efficacy:
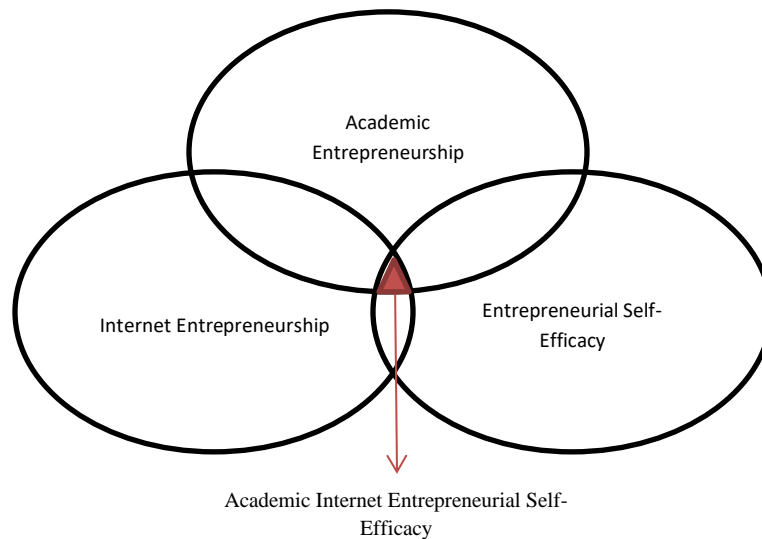

FIGURE 5. Proposed concept of academic internet entrepreneurial self-efficacy

Our review found deficiencies in the research on internet entrepreneurial ventures among lecturers. Another limitation is the lack of empirical research investigating whether and how the mechanism of academic internet entrepreneurship is implemented by lecturers. Our examination also notes that most of the research focuses more on academic entrepreneurship in general. Our results also reveal that researchers have not developed a measurement that can distinguish between lecturers who have an interest in entrepreneurship and those who do not. Based on these findings and the identified literature gaps, this study formulated a future research agenda.

AGENDA FOR FUTURE RESEARCH

The development of human and social capital continues to increase along with advances in technology and knowledge. For an academic, improving human and social capital is necessary for his or her profession. The study of human and social capital can make a significant contribution to the understanding of engagement in academic entrepreneurship. Human resources and social networks are recognized as two important components that support a lecturer's ability to contribute new knowledge to society (Goethner et al. 2012; Kasouf et al. 2015). Throughout their careers, lecturers strive to continuously improve these two aspects. Based on our literature review, it is important to include human capital and social capital as main individual predictors of internet entrepreneurial ventures lecturers.

Individual mastery of the internet is a requirement today. According to Conde-Jiménez (2018), internet competence is one of the key skills for lifelong learning that is included in any international education system, and is considered a skill that can be applied across fields because it allows mastery in various subjects. Digital competence is defined as the ability to use the internet confidently with an important role in work, entertainment, and communication (Conde-Jiménez 2018). There are various terms used to describe human attributes associated with the use of Information and Communication Technology (ICT). This study proposes the use "internet competence" to describe an individual's ability to master the internet as an individual predictor of internet entrepreneurial ventures among academics.

This study proposes the use of a new variable, academic internet entrepreneurial self-efficacy (AIESE), to explain the phenomenon of academic internet entrepreneurship among lecturers. Academic internet entrepreneurial self-efficacy is a combination of three variables: academic entrepreneurship, internet entrepreneurship, and entrepreneurial self-efficacy. This AIESE variable can serve as the dependent variable in the research model. The use of this variable will undoubtedly facilitate researchers in measuring internet entrepreneurship among lecturers and enable easier data collection as all lecturers can be included as samples.

ACADEMIC IMPLICATION

This paper provides two academic contributions. First, this study contributes to the literature on academic internet entrepreneurship among lecturers by providing literature synthesis about how a lecturer is involved in internet entrepreneurship, whether they focus on commercialization or not, have a high or low level of academic internet entrepreneurship, and to what extent they apply academic internet entrepreneurship behavior. Previous studies have examined various predictive factors that can influence the development of academic internet entrepreneurship in lecturers. This study provides a dynamic conceptualization of the predictive factors of academic internet entrepreneurship, which academics can use to build a framework and study various scenarios of developing internet entrepreneurial ventures among academics.

Second, this study develops a scheme about how lecturers balance their academic and commercial roles and whether or not they can act as educators and entrepreneurs at the same time. By expanding the discussion on the importance of measuring academic internet entrepreneurship among lecturers, this study also explains how individual predictors can influence internet entrepreneurial ventures among academics. Thus, the contribution focuses on scientific understanding of the application of academic internet entrepreneurship among university lecturers. This study tries to understand the origins, the enabling environment, and the predictive factors that play a role in the formation of academic internet entrepreneurship as a measure of the success of academic internet entrepreneurship for university lecturers.

PRACTICAL IMPLICATION

This study highlights that individual predictors, such as capital and internet skill, contribute to entrepreneurship among academics. Academics need to develop resources for human and social capital in order to increase their ability to venture online business. More importantly, they need to sharpen their digital capabilities to embrace the new technological era. Universities are expected to become centers of entrepreneurship and produce many graduates who have careers as entrepreneurs. Therefore, it is very important for university lecturers to continually develop their entrepreneurial skills both in theory and practice. This study presents important themes and discussions that can be used by academics in applying entrepreneurship in their profession.

CONCLUSION

This study contributes to the literature on academic internet entrepreneurship by presenting a dynamic conceptualization of the construction and integration of academic entrepreneurship, entrepreneurial self-efficacy, and internet entrepreneurship, as well as complementing the literature on academic internet entrepreneurship by explaining the individual factors that are predictors of internet entrepreneurial ventures among lecturers. Human capital, social capital, and internet competence are important individual predictors in influencing internet entrepreneurial ventures among lecturers. The three main themes that emerge in this study are individual predictors to internet entrepreneurial ventures among lecturers, academic entrepreneurship, and internet entrepreneurship. This study also found one new theme, entrepreneurial self-efficacy. Social Cognitive Theory can be used as an underpinning theory that explains individual predictors to internet entrepreneurial ventures among lecturers.

This study has two limitations. First, this study only describes predictors at the individual level that have an impact on internet entrepreneurial ventures among academics. Apart from the individual level, there are many predictors at the organizational level that can influence academic decisions to get involved in internet entrepreneurial ventures (Balven et al. 2018; Hayter et al. 2018; Xia et al. 2018). Future research can incorporate predictors other than the individual level to explain a variety of other predictors. Second, this study uses only one database, the Clarivate Web of Science. In future studies, we recommend incorporative additional databases such as Scopus, Science Direct, Taylor & Francis, Sage, and Springer to ensure more extensive and comprehensive outcomes. Subsequent research can also sharpen the analysis of themes related to academic entrepreneurial self-efficacy in the internet context.

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