

Occupational Self-Efficacy: A Systematic Literature Review and Future Research Agenda

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Abstract: *The significance of occupational self-efficacy (OSE) has received growing attention from researchers. However, there is a lack of comprehensive literature reviews on this subject. This study aims to synthesize existing research, focusing on the determinants and consequences of OSE. We used the well-known scientific database Web of Science to study current publications. Following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, we used Biblioshiny and R Studio for bibliometric analysis. Through bibliometric analysis, the study integrates the most influential articles, journals, countries, authors, and themes in the field. Content analysis identifies the two most widely used theories (Conservation of Resources Theory and Social Cognitive Theory) and reveals the determinants and consequences of OSE. Future research directions are proposed from the perspective of themes. The findings provide valuable guidance for real-world applications for academics, industry practitioners, and policymakers.*

Keywords: Occupational self-efficacy, Bibliometric analysis, Systematic review, Research agenda, Career development

1. Introduction

To foster enterprise development and address market challenges, businesses rely on quantifiable and tangible resources, such as capital, technology, equipment, and human resources. While these resources help organizations navigate challenges, intangible but influential resources like job satisfaction, work engagement, and job performance are crucial^{1,2}. A strong sense of self-efficacy as an intangible resource is a necessary condition for productivity and discovering "new knowledge"³. Self-efficacy reflects an individual's belief in their capabilities to complete their assigned tasks and achieve the expected outcomes⁴. It is an essential resource that enables individuals to express socially expected behaviors.

Despite its potential to open up new perspectives in self-efficacy research, the literature on OSE remains fragmented, with studies focusing on different aspects of the topic. Therefore, there is a need to organize the current knowledge on OSE, segment the issues, and lay the foundation for the development of an OSE framework.

This paper aims to address this gap by developing a framework that integrates various perspectives on OSE. Therefore, we aim to answer the following research questions:

RQ1. What are the connections between the literature on OSE? What are the main findings of the literature?

RQ2: What frameworks have been proposed for OSE, and how do they relate to each other?

RQ 3: What advice does this literature have for managing OSE?

We conducted a systematic literature review and collected and synthesized existing theoretical and empirical studies on

OSE. In particular, we conducted bibliometric and content analyses on a final sample of 61 articles on OSE. First, the bibliometric analysis included publication trends, citations, authors, journals, countries, and keywords. Second, the content analysis provided a basis for answering the research questions on determinants and consequences of OSE in the existing literature and in future research directions.

This paper contributes to the academic research in different aspects. First, it provides a comprehensive and organized view of different contributions to OSE. Second, this study synthesizes the fragmented literature on OSE and uses the results of the review exercise to provide a comprehensive framework for research to understand and promote the advancement of OSE. Finally, by reviewing the existing literature, we identified uninvestigated research areas and provided recommendations for future research.

This systematic literature review not only helps scholars and practitioners to understand this phenomenon better, but the identified gaps also stimulate future research agendas and set the stage for further development and advancement of this research construct.

This paper is organized as follows. It begins with a description of the methodology used in this study. Next, a bibliometric analysis illustrates the evolving landscape of OSE research, providing insights into the most influential articles, journals, countries, authors, and topics in the field. A comprehensive content analysis then presents the determinants and consequences of OSE in detail. Finally, the main conclusions are discussed, and ideas for future research are presented.

2. Methodology

In this research, we employed a systematic literature review (SLR) approach, as outlined by ⁵, in conjunction with a bibliometric analysis to thoroughly assess the factors influencing OSE. The primary goal of this study was to offer valuable insights into contemporary research while uncovering emerging themes within this field.

The article selection process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, as recommended for SLRs ⁶. PRISMA has extensions tailored for specific types of reviews, such as scoping reviews and individual participant data, broadening its applicability in various fields ⁷. The PRISMA guidelines serve the purpose of assisting systematic reviewers in transparently reporting the rationale for conducting the review, the methodologies used by the authors, and the results of their findings. Figure 1 explains the methodological process.

2.1 Search boundaries

Our initial search was limited to papers reported in the WOS Core Collection, as it is one of the most comprehensive databases of peer-reviewed journals in the field of social sciences ⁸. Scopus, on the other hand, lists and documents articles from many high-quality journals with low or no impact factor ⁹. While the database of Google Scholar is as exhaustive, it does not exclude articles from predatory journals as efficiently as WoS does ⁹. Therefore, the WoS database was selected to locate articles on this research.

2.2 Search string

The leading search characters of this article are concentrated on occupational self-efficacy and similar terms, and the final search string is determined as TS = ("occupational self-efficacy" OR "professional self-efficacy" OR "career self-efficacy" OR "job self-efficacy" OR "vocational self-efficacy").

2.3 Timeframe

The time span used was the period from 1985 to 2024 (including early access), i.e., all years available in the database at the time of the study. The application of the above inclusion criteria provided an initial sample of 859 studies.

2.4 Exclusion criteria

By filtering a Web of Science Research Areas such as Psychology, Education Educational Research, Business Economics, Operations Research Management Science, or Communication, 635 articles were obtained. Only English-language, peer-reviewed journal articles were included; 531 papers were obtained. After screening the documents that did not mention self-efficacy in the article title and a duplicate article, 256 papers were received.

2.5 Relevant article selection

A meticulous quality appraisal is essential in systematic reviews to ensure the reliability and validity of included studies. Iron Law of Evaluation¹⁰ emphasizes that neglecting quality assessment can lead to biased conclusions. The evaluation of study quality, often synonymous with "internal validity" ¹¹, is crucial for minimizing biases introduced by the research team. This process lacks a standardized approach, necessitating often tailored criteria based on the specific type of literature being reviewed ¹². The criteria for this appraisal were derived by formulating the following key questions.

- Q1: Does the research topic specifically examine OSE?
- Q2: Is the presentation of research content clear and comprehensible?
- Q3: Has the research methodology been executed thoroughly and with adequacy?
- Q4: Has the interpretation of the results been conducted effectively?
- Q5: Has the study appropriately addressed the overarching research questions?

Following ¹¹ guidance, the articles were categorized into three quality tiers: high, moderate, and low. The articles underwent a numerical rating system based on predefined quality criteria. A score of 1 indicated complete satisfaction of the criteria, 0.5 indicated partial satisfaction, and zero signified non-compliance. Articles scoring above 3.5 were designated as high quality, those with ratings between 2 and 3 were classified as medium quality, and those below 1.5 were labeled as low quality. Only articles within high and moderate-quality categories were retrieved for in-depth analysis. As a result, all the 47 remaining articles were eligible for evaluation, with 45 classified as high quality and two as moderate.

Inclusion Criteria

Search boundaries: WOS Core Collection

Search string: TS=("occupational self-efficacy" OR "professional self-efficacy" OR "career self-efficacy" OR "job self-efficacy" OR "vocational self-efficacy")

Timeframe: From 1985 to 2024 (including early access)

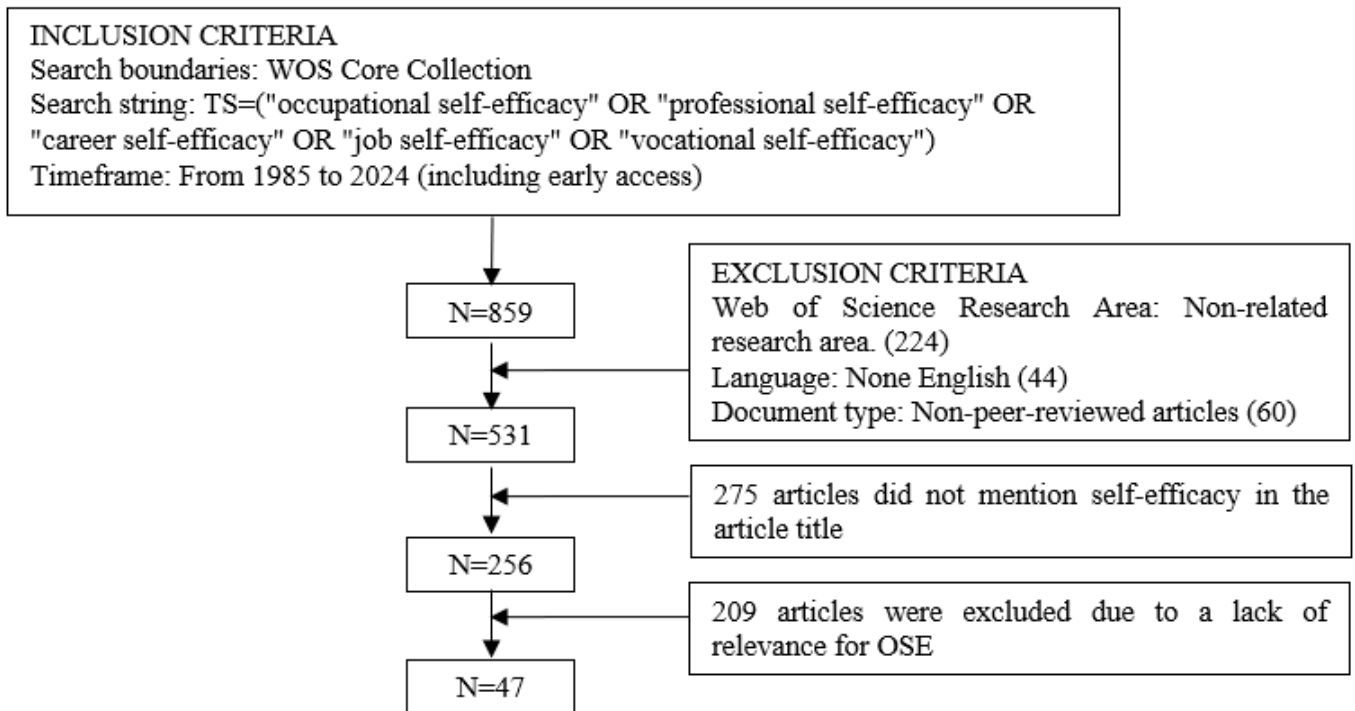


Figure 1. Applied selection process.

Source: Authors' compilation

2.6 Bibliographic data analysis

Bibliometric analysis, mainly through tools like Biblioshiny in R Studio, facilitates a detailed exploration of research trends and patterns across various fields¹³. This method allows researchers to analyze bibliographic components such as authorship, geographical origins, and keyword co-occurrences, effectively addressing pertinent research questions. The following sections elaborate on key aspects of bibliometric analysis.

3. Results

This section presents the results, organized into two key aspects: bibliometric and content analysis.

3.1 Bibliometric analysis

3.1.1 Trend of publication

As shown in Figure 2, the number of publications related to OSE in the literature shows an overall increasing trend. The

number of articles published yearly fluctuates but generally increases from 0 to 2 between 2004 and 2010. The number of papers, on the whole, gradually increases from 2011 to 2015. The number of publications from 2016 to 2020 is relatively stable, remaining at 2-3 articles per year, reflecting that the research in this field of academic attention is relatively stable. After 2021, the number of papers rises significantly, reaching five papers in 2021 and 2022, respectively, while six papers in both 2023 and 2024 are the highest level. It indicates a significant increase in research heat in this field, which may be driven by new theoretical frameworks, research methods, or real needs. The number of publications in OSE research has gone through a process of fluctuating growth to steady growth and finally entering a rapid rise stage. This surge may mean that the field is becoming an important research direction in occupational psychology or related disciplines.

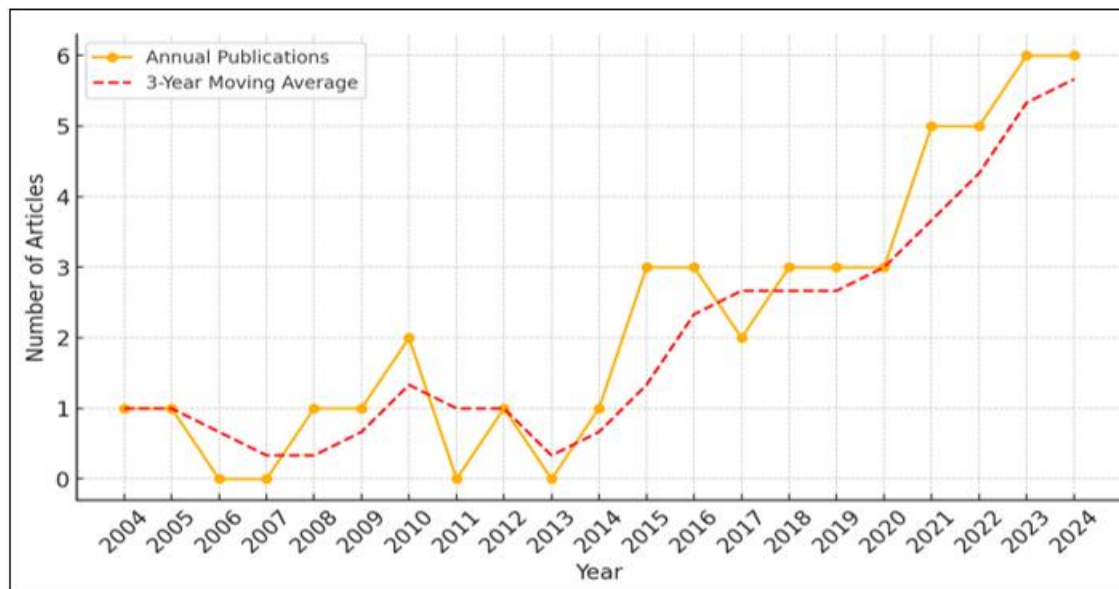


Figure 2: Trend of publication.

Source: Authors' compilation.

3.1.2 Most globally cited articles

Table 1 shows the most influential articles on the factors influencing OSE. These articles stand out due to their broad influence, evident through their significant number of citations, emphasizing their respected status in the academic field. The most cited paper focused on measuring OSE ¹⁴ and is among the most frequently referenced assessment tools.

Papers examining long-term effects ^{15,16} also received high citations, suggesting that academics are interested in trends in the dynamics of self-efficacy in career development. Research on teacher career efficacy ^{17,18} has received similar attention, suggesting that the concept has dramatically impacted pedagogy and work psychology.

Table 1: Top 10 most globally cited articles on OSE research.

Rank	Title	Authors (Year)	DOI	Source	Total Citations	Total Citations per Year
1	A short version of the occupational self-efficacy scale: Structural and construct validity across five countries	Rigotti et al. (2008)	10.1177/1069072707305763	Journal of Career Assessment	350	19.44
2	The longitudinal impact of self-efficacy and career goals on objective and subjective career success	Abele & Spurk (2009)	10.1016/j.jvb.2008.10.005	Journal of Vocational Behavior	290	17.06
3	The relationship between career motivation and self-efficacy with protege career success	Day & Allen (2004)	10.1016/S0001-8791(03)00036-8	Journal of Vocational Behavior	224	10.18
4	Stimulating teachers' reflection and feedback asking: An interplay of self-efficacy, learning goal orientation, and transformational leadership	Runhaar et al. (2010)	10.1016/j.tate.2010.02.011	Teaching And Teacher Education	146	9.13
5	Professional Self-Efficacy as a Predictor of Burnout and Engagement: The Role of Challenge and Hindrance Demands	Ventura et al. (2015)	10.1080/00223980.2013.876380	Journal of Psychology	141	12.82
6	Teachers' Innovative Behaviour: The Importance of Basic Psychological Need Satisfaction, Intrinsic Motivation, and Occupational Self-Efficacy	Klaeijssen et al. (2018)	10.1080/00313831.2017.1306803	Scandinavian Journal of Educational Research	76	9.50
7	Synchronous and time-lagged effects between occupational self-efficacy and objective and subjective career success: Findings from a four-wave and 9-year longitudinal study	Spurk & Abele (2014)	10.1016/j.jvb.2013.12.002	Journal of Vocational Behavior	68	5.67
8	South Korean Salespersons' Calling, Job Performance, and Organizational Citizenship Behavior: The Mediating Role of Occupational Self-Efficacy	Park et al. (2016)	10.1177/1069072715599354	Journal of Career Assessment	65	6.50
9	Empowering leadership and managers' career perceptions: Examining effects at both the individual and the team level	Biemann et al. (2015)	10.1016/j.leaqua.2015.03.003	Leadership Quarterly	55	5.00
10	Young workers' job self-efficacy and affect: Pathways to health and performance	Lubbers et al. (2005)	10.1016/j.jvb.2004.03.002	Journal of Vocational Behavior	54	2.57

Source: Authors' compilation.

3.1.3 Leading journals

The Journal of Vocational Behavior is the most cited journal (663 citations). The journal has a high impact on the field of career development and occupational psychology, indicating that research on OSE is receiving more attention in the field of vocational behavior. The journal also published the most research papers on OSE (5), mainly on research related to career development, which has a high impact and citation

count. In addition, Frontiers in Psychology and Current Psychology are journals that have grown progressively in recent years, which may be related to the rising interest in OSE research in psychology. Overall, the core journals for OSE research are concentrated in the fields of occupational psychology and educational psychology, and the field may expand further into a broader range of psychology and management journals in the future.

Table 2: Top 5 most globally cited journals.

Journals	Publisher	h_index	g_index	m_index	Total Citations	Number of Publication	PY_start
Journal of Vocational Behavior	Academic Press Inc Elsevier Science	5	5	0.227	663	5	2004
Current Psychology	Springer	2	3	0.25	58	3	2018
Frontiers In Psychology	Frontiers Media Sa	2	4	0.4	18	4	2021
Journal of Career Assessment	Sage Publications Inc	2	2	0.111	415	2	2008
Journal of Work and Organizational Psychology	Madrid	2	2	0.182	70	2	2015

Source: Authors' compilation.

3.1.4 Most productive countries

Table 3 presents the top ten countries contributing to this research area. It is worth noting that China tops the publications ranking with 28 articles, the highest output in the table. It shows that the field receives high attention in Chinese academia. Although the number of articles from Germany (16) is lower than that from China (28), the total number of citations far exceeds that from other countries, indicating that the research of German scholars has a far-reaching influence on the global academic community. Germany had the highest average article citation rate (103.5 citations/article), indicating that its research is of high quality and has a strong academic impact in the field. This may be related to its strong tradition of occupational psychology and work research. The United States, the Netherlands, and Spain also have high average citation rates in the field. Overall, research on OSE shows a high academic impact in European countries (Germany, the Netherlands, and Spain). In contrast, countries such as China lead in terms of the number of publications, but there is still room for improvement in terms of impact. With further development of the field, more cross-country collaborations may emerge to promote the depth and breadth of global research.

Table 3: Top 10 most productive countries.

Countries	Number of Articles	Total Citations	Average Article Citations
China	28	97	10.80
Germany	16	828	103.50
USA	10	295	59.00
Netherlands	7	249	83.00
Spain	6	194	64.70
Switzerland	5	58	29.00
Pakistan	4	22	11.00
France	3	50	50.00
South Korea	3	65	21.70
Italy	3	2	2.00

Source: Authors' compilation.

3.1.5 Most influential authors

Table 4 illustrates the prominent authors who have significantly contributed to studying OSE. Among them, Abele & Spurk's study¹⁵ had the most significant impact in the field of OSE, with a high number of citations (358 citations). Newer scholars Li and De Witte have higher m-index values (0.4 and 0.286), suggesting that their scholarly impact is growing faster, and they may play a greater role in the field in the future. Established scholars (e.g., Day, published in 2004) have a high number of citations for a single paper (224), indicating that their research has been in the spotlight for a long time.

Table 4: Top 10 most influential authors.

Authors	h_index	g_index	m_index	Total Citations	Number of Publications	PY_start
Abele Ae	2	2	0.118	358	2	2009
Spurk D	2	2	0.118	358	2	2009
Runhaar P	2	2	0.125	173	2	2010
Sanders K	2	2	0.125	173	2	2010
De Witte H	2	2	0.286	40	2	2019
Li Y	2	2	0.4	16	2	2021
Mohr G	1	1	0.056	350	1	2008
Rigotti T	1	1	0.056	350	1	2008
Schyns B	1	1	0.056	350	1	2008
Day R	1	1	0.045	224	1	2004

Source: Authors' compilation.

3.1.6 Author's keywords analysis

Table 5 illustrates a co-occurrence network that represents the interconnections between concepts within the research domain on OSE.

Table 5: Co-occurrence network of the author's keywords.

Node	Cluster	Betweenness	Closeness	PageRank
Occupational Self-Efficacy	1	9,674.967	0.005	0.132
Job Satisfaction	1	178.761	0.003	0.015
Teachers	1	75.677	0.002	0.012
Job Insecurity	1	11.489	0.002	0.008
Mediation Analysis	1	545.701	0.003	0.007
Self-Efficacy	2	1,015.640	0.003	0.019
Work Engagement	2	416.122	0.003	0.017
Longitudinal Study	3	22.5	0.002	0.013
Career Satisfaction	3	6	0.002	0.009
Career Success	4	6	0.002	0.009
Job Performance	5	429	0.003	0.009
Knowledge Sharing	6	853.419	0.003	0.009
Conservation of Resources Theory	7	899.948	0.003	0.009

Source: Authors' compilation.

The network uses nodes to symbolize these concepts, while edges represent instances where these concepts appear together in a shared context. These nodes are classified into different Clusters, while the Betweenness, Closeness, and PageRank values. The metrics are analyzed to provide a preliminary insight into the position and function of each concept in the knowledge structure or literature network.

Betweenness represents a "bridging" role in the network, connecting multiple related topics. Occupational self-efficacy, self-efficacy, conservation of resources theory, and knowledge sharing are the core concepts in this area of research.

Closeness indicates the shortest path distance to other concepts in the network and is at the center of information transfer. Cluster 1 for occupational self-efficacy, job satisfaction, and mediation analysis, and Cluster 2 for self-efficacy and work engagement have a closeness higher than 0.3. These nodes are also relatively accessible to other nodes in their respective sub-networks and belong to more central concepts.

Occupational self-efficacy, job satisfaction, teachers, self-efficacy, work engagement, and longitudinal studies, which have the highest PageRank, are considered to be the most

authoritative, indicating that their importance in the academic literature network far exceeds that of other concepts.

As can be seen from Table 5, the largest research topic cluster (Cluster 1) mainly involves the concepts of job satisfaction, teachers, job insecurity, and mediation analysis, indicating that OSE research is closely related to these contents. Occupational self-efficacy is at the intersection of several fields, including occupational psychology, work studies, and education studies, and may be further expanded in the future to include research on digital work environments and emerging occupations. Work-related variables (e.g., job satisfaction and job insecurity) are important in the research network, suggesting that OSE is closely related to job attitudes and job performance.

3.1.7 Thematic map analysis

In Figure 3, the thematic map serves as a vital tool for understanding the current research landscape and identifying future trends across various fields. By categorizing research themes based on centrality and density, it highlights the significance and evolution of these themes²⁴. Centrality reflects the importance of a theme within the research community, indicating how much attention it receives. Density measures the intensity of connections within a theme, showcasing its development over time.

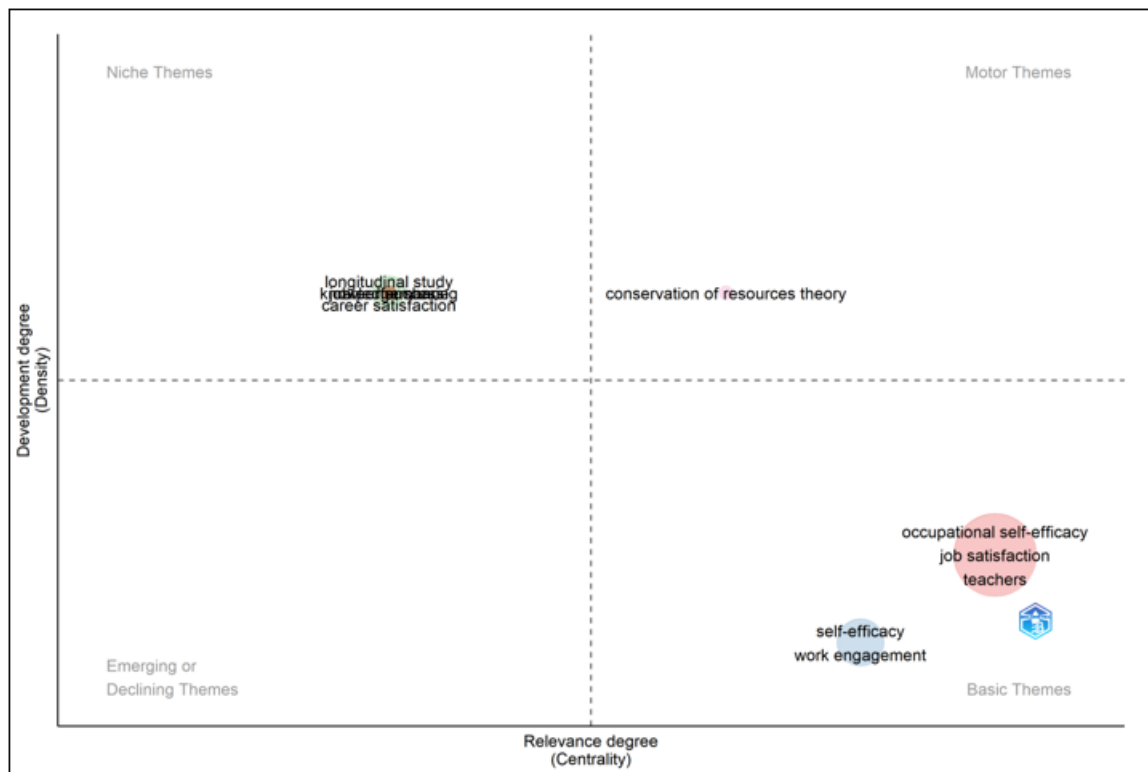


Figure 3. Thematic map of author's keywords.
Source: Authors' own creation using Biblioshiny

Motor Themes in the upper right quadrant are characterized by high research volume and significance. These themes represent established and central aspects of the research field. Important keywords in this quadrant include Conservation of Resources Theory (4 times)^{25–28}. Seven papers on Social Cognitive Theory draw on this theory to explain the relationship with OSE^{20,29–34}. These two theories have been incorporated into the research framework of OSE to explain how individuals maintain career confidence and motivation in the face of stress and challenges.

Niche Theme may not have received widespread attention, but they are still important. They are usually characterized by a specialized area of interest. Career success^{16,19}, job performance^{14,21,23}, and knowledge sharing^{33,35} are OSE-influenced outcomes, suggesting that OSE not only affects an individual's career development but may also have an impact on teamwork and organizational performance. The longitudinal studies^{15,16,23,36,37} have high levels of research density, suggesting that scholars are more concerned about the long-term effects and trends of OSE by 2021.

Basic Themes, located in the lower right quadrant, indicate significant themes but are still in a state of growth and require further attention and research. Keywords identified within this quadrant include career satisfaction^{15,22,25}, teachers^{17,33,38–41}, and work engagement^{20,26,42–44}. They represent areas where research interest is growing, and research on teachers, career satisfaction, and work engagement may become more prominent over time.

Emerging or Declining Themes in the lower left quadrant have low research activity and may be new, emerging, or losing relevance in the research field. Research on these areas is either beginning to gain momentum or is declining. It is

essential for researchers to pay close attention to emerging themes, as they may become more important in the future. Our analysis has determined that none of the keywords fall within this quadrant.

3.2 Content analysis: framework development

A thorough examination of the extensive literature retrieved from the WoS database was conducted to consolidate the most significant findings from the existing body of research. The main objective was to identify the key antecedents and outcomes of OSE.

The most recurring factors influencing OSE in the given list are job satisfaction (7 times), work engagement (5 times), job insecurity (4 times), transformational leadership (3 times), career satisfaction (3 times), career success (2 times), burnout (2 times), job performance (2 times), knowledge sharing (2 times), perceived overqualification (2 times), and social support (2 times). Career satisfaction, job engagement, and occupational insecurity are the core areas of OSE research, and the role of leadership styles (e.g., transformational leadership, authentic leadership, and empowerment leadership) in promoting OSE has received increasing attention. Psychology and personality factors (e.g., personality traits, social support, and emotion regulation) have become a hot research topic, indicating that scholars have begun to explore how intra-individual factors affect career self-confidence and development. Organizational behavior and teamwork (e.g., knowledge sharing, quality of decision-making, and role clarity) suggest that OSE research expands from individual to team and organizational levels.

The most outcomes of OSE are illustrated as job satisfaction (6 times), work engagement (5 times), career satisfaction (3

times), job insecurity (2 times), career success (2 times), burnout (2 times), job performance (2 times), and knowledge sharing (2 times). The core concerns include career satisfaction, job engagement, career success, and job performance, among which the organizational behavior-related variables, such as job insecurity, knowledge sharing, and burnout, are closely related to the topics of organizational management and teamwork, and the mental health-related variables, such as work-family conflict, burnout, and emotional exhaustion. The high frequency of these variables suggests that OSE not only affects individual career development but also has a wide range of applications in various disciplines, such as organizational behavior, mental health, and work motivation. Subsequently, Table 7 shows eight themes that have been identified as underlying antecedents and outcomes of OSE.

4. Discussion and future research directions

4.1 Discussion

The current study contributes to the existing knowledge of the antecedents and outcomes of OSE by providing a comprehensive overview of the topic. This study used bibliometric analysis to analyze 47 articles extracted from the WoS database. The analysis of the OSE data revealed a fluctuating increase in the number of publications related to education, management, and psychology since 2015. The significant increase in the number of published works, especially in 2023 and 2024, indicates a growing global interest in the factors that influence OSE. This surge highlights different managers' high levels of interest and reveals the scientific community's recognition of efforts to enhance OSE.

This study used bibliometric analysis to conduct an extensive survey of the most influential articles, journals, countries, and authors of research on OSE (RQ1). Notably, the Journal of Vocational Behavior emerged as the most widely cited journal globally, accumulating 663 citations. In addition, Rigotti et al.'s article¹⁴ "A short version of the occupational self-efficacy scale: Structural and construct validity across five countries" is the most cited globally. This study identifies Rigotti et al. as a distinguished and influential author in the field of OSE determinants research.

In our analysis, we employed geographic location as a factor to gain a deeper understanding of the field of study. The need to enhance OSE has become more apparent, stimulating academic exploration of OSE. Temporal analysis shows that China, Germany, and the USA have the most research on factors affecting OSE (Table 3). It also proves that OSE in developed and developing countries has received much attention.

Key themes on determinants and outcomes of OSE (RQ2) research were effectively identified through keywords in the bibliometric and content analyses. By analyzing the keywords in the bibliometric analysis, we revealed four prominent themes in the research on the determinants of OSE: leadership and management style, career development and support, work characteristics and environment, personal traits, and psychological states. Moreover, four prominent themes in the

research on the outcomes of OSE are examined: career development and job effectiveness, organizational adaptation and learning behavior, mental health and well-being, innovation, and creativity. These identified key themes support and reinforce the authors' keyword analysis results.

The first theme, leadership and management style, is supported by six studies highlighting the critical role of leadership and management in enhancing OSE. This includes transformational leadership, authentic leadership, empowering leadership, transactional leadership, and abusive supervision. Research has found that leadership style has a significant effect on OSE. Transformational leadership^{35,45,46} and empowering leadership²² are able to significantly enhance employees' self-efficacy by providing support and encouraging a sense of self-efficacy. On the contrary, Abusive Supervision diminishes employees' confidence and sense of efficacy³². This suggests that leaders' behaviors and management styles play a key role in shaping employees' OSE. Future research could further explore the impact of leadership styles on OSE in different cultural contexts.

The second theme, career development and support, has been explored in 7 studies, including psychosocial mentoring, career mentoring, mentoring functions, undergraduate education, internship experience, fondness of the profession, lecturers' attitudes, societal status of the profession, career calling, and job change, playing an important role in improving OSE. Mentoring positively affects OSE^{19,47}. Additionally, undergraduate education, internship experience, societal status, and perceptions of fondness toward the profession significantly enhanced OSE³⁹. Future research could focus on enhancing OSE through career development programs and support systems.

The third theme, work characteristics and environment, is contributed to by 14 related studies. The studies emphasized the key role of intrinsic job characteristics, job insecurity, perceived organizational support, role clarity, role autonomy, workload, perceived stress, job satisfaction, social cohesion, perceived inclusion, social support, interpersonal conflict, decent work, resource activation, job crafting, information intensity, decision-making quality, perceived opportunism, and perceived overqualification. Intrinsic job characteristics²³, role clarity²⁹, and social support^{29,31,48} had a significant positive effect on OSE. However, job insecurity^{26,28} and perceived stress³⁸ reduce employees' self-efficacy. Organizations can enhance employees' OSE by improving workplace conditions.

The fourth theme, interpersonal and social interaction, highlights that the study emphasized the key role of personality traits, self-confidence, dispositional resistance to change, dispositional goal orientation, future time orientation, perceived overqualification, sleep quality, pride, creative performance, knowledge creation, and online knowledge sharing. A total of 10 studies were included in this theme. It is noteworthy that individuals' personality traits (e.g., neuroticism, extraversion, and responsibility)⁴⁹ as well as self-confidence³⁹ and resistance to change⁵⁰ are psychological states that have a significant impact on OSE. Future research could explore how psychological interventions and individualized development plans can

enhance employees' self-efficacy, especially in the face of career challenges.

The fifth theme is career development and job effectiveness. OSE is significantly and positively associated with job performance^{14,21,23,45} and career satisfaction^{22,25,26,29,30,40,49}. However, most of the related studies have used self-efficacy as a mediator and have not examined the mechanism of its effect on outcomes.

The sixth theme is organizational adaptation and learning behavior. High-performance individuals are more inclined to actively engage in knowledge sharing^{33,35} and career networking⁵⁰, but may lead to knowledge-hiding behaviors due to competitive pressures³⁵.

The seventh theme is related to mental health and well-being. OSE affects job satisfaction^{14,15,22,29,40,51} and work engagement^{20,26,42,44}. It also mitigates burnout^{20,52} and emotional exhaustion³⁶, especially in high-pressure environments (e.g., work-family conflict)³⁶.

The eighth theme focused on innovation and creativity. Although the facilitating effect of efficacy on innovative behavior and employee creativity has been demonstrated, the number of related studies is limited and focused on the individual level. In the future, attention could be paid to the cross-level effects of team efficacy on creative performance. Individuals may be less creative due to cognitive biases caused by overconfidence (e.g., ignoring risks).

In summary, Tables 5 and 6 illustrate the distinctive clusters resulting from the two independent analyses. The bibliometric analysis produced seven clusters, while the systematic literature review produced eight distinctive clusters. An in-depth analysis revealed some shared thematic content that existed between them. These established themes highlight the major areas affecting OSE, demonstrating the multifaceted approaches that are critical to improving OSE. The implications of these findings are far-reaching.

4.2 Future research directions

Thematic maps have been used to identify fundamental gaps and potential directions for future OSE (RQ3) research. Based on Figure 3 and Table 7, we delve further into these findings, explaining their implications for future research avenues.

In the theme of Leadership and Management, future research could explore the differential impact of leadership styles (e.g., transformational vs. empowering) on OSE in different cultures, such as comparing the pathways of leadership behaviors in collectivist vs. individualist cultures and revealing how cultural values (e.g., power distance) moderate leadership efficacy. At the same time, attention can be paid to the chain effects of negative leadership behaviors (e.g., supervisory abuse) on employees' psychological well-being, e.g., through longitudinal tracking studies to analyze how they indirectly diminish self-efficacy through emotional exhaustion. In addition, we can focus on dynamic situations (e.g., organizational crisis management or technological change) to explore the immediate and lagged effects of adaptive leadership styles (e.g., shifting from directive to

supportive) on employees' sense of efficacy to provide contextualized strategies for leadership training.

In the theme of Career Development and Support, future research could focus on the structural barriers to resource acquisition for marginalized groups and propose intervention programs to reduce the negative impact of social status (e.g., anti-bias training and career resource redistribution). In addition, long-term tracking studies are needed to verify how early career support affects mid- and long-term career success by enhancing career adaptability and to provide a basis for optimizing the education system and the school-enterprise cooperation model.

In the theme of Personal Traits and Psychological States, future research could explore the interaction between job characteristics (e.g., role clarity and social support) and personality traits, for example, to verify whether individuals with high neuroticism can mitigate the decline of efficacy in high-stress environments through Role Autonomy. Meanwhile, the dynamic model of "resource activation-efficacy" can be combined with Job Crafting theory to analyze how employees can improve their self-efficacy by proactively adjusting task boundaries (e.g., optimizing workflows) and to identify breakthroughs in interventions for low-initiative employees. In addition, the virtualization path of social cohesion (e.g., online collaboration tools) can be examined in telecommuting environments to explore how it can compensate for the potential negative impact of physical isolation on efficacy.

In the theme of Interpersonal and Social Interaction, it is suggested to design a self-confidence and stress resistance training program based on cognitive-behavioral therapy to validate its effect on enhancing the sense of efficacy of highly challenging occupational groups (e.g., entrepreneurs and healthcare workers) and to identify the impact of intervention effects. Meanwhile, we need to explore how online knowledge-sharing platforms (e.g., internal wikis or industry communities) can indirectly improve efficacy by enhancing knowledge integration and professional identity, especially in knowledge-intensive industries (e.g., consulting, research, and development) by constructing a "sharing-learning-efficacy" cycle. In addition, the bi-directional relationship between future time orientation and OSE can be investigated, for example, by developing time management tools to enhance employees' sense of control over their long-term career goals.

In the theme of Career Development and Job Effectiveness, a cross-cultural comparative study is needed to reveal whether the impact of OSE on career success (e.g., rate of promotion and salary increase) is moderated by cultural contexts (e.g., achievement orientation vs. relationship orientation). Meanwhile, focusing on the period of digital transformation, we can analyze how high-performance employees adapt to job changes by rapidly learning new technologies (e.g., AI tools) and explore how organizational training systems can reinforce this path. In addition, it is recommended to incorporate OSE into the evaluation framework of human resource management practices, such as examining its predictive validity in recruitment and selection (e.g., situational simulation tests) and training design (e.g.,

competency modeling), to promote the integration of theory and practice.

In the theme of Organizational Adaptation and Learning Behavior, future research can construct a dynamic model of efficacy-change adaptation to track the impact of fluctuating employee efficacy on behavioral responses (e.g., resistance or support) to organizational changes (e.g., mergers and acquisitions). Future research could construct a dynamic model of “efficacy-change adaptation” to track the impact of fluctuations in employee efficacy on behavioral responses (e.g., resistance or support) to organizational change (e.g., M&A) and identify buffering factors (e.g., transparency in leadership communication). Meanwhile, the relationship between OSE and motivation for continuous learning must be explored in technology-driven industries (e.g., IT, smart manufacturing); for example, to analyze how efficacy promotes skill updating by reducing technology anxiety. In addition, the mediating role of resilience and career planning can be explored to explain how high-efficacy employees cope with career uncertainty.

In the theme of Mental Health and Well-being, it is suggested to test the protective effects of OSE on mental health (e.g., depressive symptoms and burnout) in high-pressure environments (e.g., medical emergencies and financial transactions) through multilevel modeling (e.g., HLM) and to identify the moderating effects of organizational support (e.g., counseling resources). At the same time, the bidirectional relationship between work-family conflict and a sense of efficacy needs to be revealed, e.g., to analyze whether high-efficacy individuals exacerbate the conflict by over-

committing to their work or mitigate it through time management strategies. In addition, we can compare the impact of efficacy on well-being between traditional industries (e.g., manufacturing) and emerging industries (e.g., digital economy) to provide a basis for industry-specific mental health policies.

In the theme of Innovation and Creativity, future research could break through the individual level and explore how the aggregation effect of team occupational self-efficacy (e.g., the shared mind model) affects innovation performance (e.g., patent applications). Additionally, it is necessary to verify the moderating effect of different work designs (e.g., agile development model and cross-functional teams) on the efficacy-creativity relationship and to propose a framework for innovation incentives that balances autonomy and collaboration. In addition, we can compare the role of efficacy in creative industries (e.g., advertising design) and technology industries (e.g., software development), for example, to analyze how technological uncertainty (e.g., the speed of technological iteration) changes the strength of efficacy on innovation risk-taking, to customize innovation management strategies for the industries.

The inclusion of Table 8 serves as a strategic tool for guiding future research directions across various fields. Presenting suggested areas for exploration under each sub-theme enhances the understanding of existing gaps and opportunities for further investigation. This structured approach not only aids researchers in identifying specific topics but also fosters interdisciplinary collaboration.

Table 8: Potential directions for future research.

Research gaps		Future Research Agendas
Determinants of OSE	Leadership and management	• Investigate the impact of different leadership styles (e.g., transformational leadership and empowering leadership) on OSE across diverse cultural contexts, analyzing how cultural differences influence leadership behaviors and their effectiveness.
		• Examine how different leadership styles (e.g., abusive supervision) affect employees' psychological well-being and, consequently, their occupational self-efficacy.
		• Explore how leadership style changes in different contexts (e.g., crisis management and team transformations) influence employees' self-efficacy.
	Career development and support	• Investigate how career support systems and intervention programs can mitigate social status's negative impact on specific groups' occupational self-efficacy.
		• Analyze the long-term effects of undergraduate education and internship experiences on OSE, particularly in the early stages of one's career.
	Personal traits and psychological states	• Examine how improving job characteristics (e.g., role clarity and social support) can enhance employees' occupational self-efficacy, especially in high-stress environments.
		• Investigate how job design (e.g., job crafting and resource activation) influences employees' occupational self-efficacy and propose optimization strategies.
		• Explore the impact of social cohesion and team support on OSE, particularly in remote work settings.
	Interpersonal and social interaction	• Study the effects of psychological interventions (e.g., confidence-building training and stress resilience training) on employees' occupational self-efficacy, especially in facing career challenges.
		• Examine how online knowledge-sharing platforms influence employees' occupational self-efficacy, particularly in knowledge-intensive industries.
Outcomes of OSE	Career development and job effectiveness	• Investigate how future time orientation affects employees' occupational self-efficacy and explore strategies to enhance future time orientation.
		• Analyze the influence of OSE on career development across different cultural contexts.
		• Examine how OSE affects employees' adaptability in rapidly changing work environments.
	Organizational adaptation and learning behavior	• Investigate the relationship between OSE and human resource management practices, particularly in recruitment and training.
		• Study how OSE influences employees' adaptability to organizational change.
		• Explore the relationship between OSE and employees' learning motivation, especially in industries experiencing rapid technological advancements.
		• Examine the impact of OSE on employees' psychological resilience and career planning.

	Mental health and well-being	• Investigate how OSE influences employees' mental health, particularly in high-pressure work environments.
		• Explore the relationship between OSE and work-family conflict.
		• Examine the impact of self-efficacy on employees' well-being across different occupational types.
	Innovation and creativity	• Study how OSE affects team innovation capacity and collective creativity.
		• Explore how different types of job design affect employees' self-efficacy and innovative behavior.
		• Investigate the role of OSE in various industries, particularly in the creative and technology sectors.

Source: Authors' compilation.

5. Implications

This study has important theoretical, methodological, and practical implications. Theoretically, our study makes an important contribution to the theoretical development of the field of OSE by examining multiple influences on OSE through a systematic literature review, identifying antecedents and consequences in the existing literature, and summarizing the different themes. Through the eight research themes presented, we enhance the theoretical framework of the field by providing new perspectives for understanding the complexity of OSE and laying the foundation for future research directions.

Methodologically, we employed a bibliometric and content analysis approach, which is widely recognized as an effective tool for systematically reviewing the literature across research areas. We demonstrate the systematic literature review process using quantitative methods such as PRISMA flowcharting, co-occurrence network analysis, and thematic mapping. This approach helps identify research trends and knowledge flows, improves the transparency and replicability of research results, and provides a reliable reference for subsequent studies.

In a practical sense, this study has important implications for various stakeholders, such as researchers, industry leaders, and policymakers. Researchers can utilize these findings to gain a deeper understanding of the factors influencing OSE and focus on unexplored themes, thereby providing new directions for future research. For industry leaders, this study provides valuable insights that can help them develop strategies and practices to enhance employees' OSE. On the other hand, organizational managers can use the findings to allocate resources more effectively and develop targeted strategies to enhance employees' OSE for career development. In addition, policymakers can benefit from our study by obtaining a comprehensive picture of research on enhancing OSE, which can provide a basis for formulating effective policies to promote career development and employee well-being in society as a whole.

6. Conclusion

The bibliometric and content analyses investigated the antecedents and outcomes of OSE, intending to identify key contributors, patterns emerging from past research, and potential future directions for knowledge growth (Table 8). The study evaluated a total of 47 scholarly publications between 2004 and 2024 (21 years). Notably, this study highlights China as the most productive country in the field, Germany as the most influential country, and Abele as the lead author. The Journal of Vocational Behavior is the most widely cited journal in terms of OSE. The most cited article globally is "A Short Version of the Occupational Self-

efficacy Scale: Structural and Construct Validity across Five Countries" by Rigotti et al. (2008)¹⁴. A systematic literature review by content analysis has identified eight key themes as antecedents and outcomes of OSE. In addition, the salient themes highlighted in the thematic map provide valuable insights for shaping future research directions. The Conservation of Resources Theory and Social Cognitive Theory have been included in the research framework of OSE most often, and they are the two theories that explain the most OSE correlations. These findings enhance the theoretical underpinnings of OSE research, have substantial implications for real-world applications, provide academics with guidance for valuable discovery-unexplored research, guide industry sectors in focusing on practices to enhance OSE, and provide policymakers with a basis for developing effective policies to enhance OSE.

Funding Statement

This research work is supported by the Project (Grant No: Q.J130000.3829.23H67) supported by Universiti Teknologi Malaysia.

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