

Mapping Global Research Trends in Vocational Attitude Maturity: A Bibliometric and Scientometric Analysis

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ABSTRACT

In an era characterised by technological transformation, changing labour-market dynamics, and increasing emphasis on employability and lifelong learning, vocational attitude maturity has emerged as a crucial determinant of career preparedness and successful educational-to-work transitions. This paper presents a bibliometric and scientometric analysis of global research trends in vocational attitude maturity. A total of 1,000 publications related to vocational attitude maturity published between 1920 and 2026 were retrieved from the Scopus and Web of Science Core Collection (WoSCC) databases on 15 July 2026 and analysed using VOSviewer software (Version 1.6.20) and Microsoft Excel. The study reveals a substantial increase in scientific production during recent decades, indicating growing scholarly interest in vocational attitude maturity, career development, and employability research. The United States (218 publications) and India (214 publications) emerged as the most productive countries in this field. Co-authorship analysis indicates a fragmented collaborative structure characterized by limited international research partnerships. Citation analysis identified John L. Holland (1,245 citations) and Mark L. Savickas (1,132 citations) as the most influential authors, while the Journal of Vocational Behavior emerged as both the most productive and the most cited source of publications. The most frequently occurring keywords in vocational attitude maturity research were vocational attitude maturity, career maturity, vocational maturity, career counselling, and vocational guidance, whereas employability, career adaptability, and psychological well-being emerged as contemporary research themes. The findings provide a comprehensive understanding of the intellectual structure, thematic evolution, and global research dynamics of vocational attitude maturity and offer valuable directions for future research, educational policy, and career guidance practices.

Keywords: Bibliometric Analysis, Career Development, Employability, Scientometric Analysis, Vocational Attitude Maturity, VOSviewer.

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INTRODUCTION

Vocational attitude maturity has become an increasingly significant construct within the interdisciplinary literature on vocational psychology, career development, educational guidance, and workforce preparedness, as it provides a crucial framework for understanding individuals' readiness to navigate complex educational and occupational transitions (Brown and Lent, 2005; Savickas, 2005). The accelerating pace of globalization, technological advancement, industrial transformation, and digital innovation has substantially altered contemporary occupational structures and career trajectories, thereby intensifying the need for vocational readiness and adaptive career competencies

among individuals (Patton and McMahon, 2014; Zunker, 2016). In this rapidly evolving socio-economic landscape, vocational attitude maturity has become a significant determinant of career adaptability, employability orientation, professional preparedness, and sustainable occupational development (Hirschi, 2011; Savickas, 1997). The concept of vocational attitude maturity refers to the extent to which individuals demonstrate psychological preparedness, attitudinal readiness, career awareness, and decision-making competence concerning vocational choice, occupational planning, and career development processes (Crites, 1978; Super, 1957). It encompasses multiple cognitive, emotional, behavioural, and motivational dimensions, including vocational interest, self-concept, work values, occupational aspirations, employability orientation, career adaptability, and career decision-making ability (Crites, 1969; Sharf, 2013). Vocational attitude maturity is therefore considered an essential developmental construct influencing an individual's capacity to make realistic, informed, and meaningful vocational decisions within complex educational and occupational environments (Super, 1980; Watson and McMahon, 2005).



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The theoretical foundations of vocational attitude maturity are primarily associated with the seminal contributions of vocational and career development theorists such as Donald Super, John L. Holland, John O. Crites, and Mark L. Savickas (Holland, 1997; Savickas, 2002; Super, 1953). Super's Career Development Theory conceptualized career maturity as a developmental readiness associated with vocational self-concept and occupational competence (Super, 1957, 1990). Holland's vocational personality framework emphasized the interaction between personality characteristics and occupational environments (Holland, 1997), whereas Crites (1978) highlighted the attitudinal and competency dimensions underlying vocational maturity. More recently, Savickas' Career Construction Theory expanded the conceptualization of career maturity by emphasizing career adaptability, life design, and psychosocial adjustment within dynamic labour-market contexts (Savickas, 2005). Collectively, these theoretical perspectives have established vocational attitude maturity as a multidimensional construct closely associated with educational achievement, career counselling, vocational guidance, psychological development, and workforce integration (Brown and Brooks, 1996; Kidd, 2006).

In recent decades, vocational attitude maturity has gained increasing scholarly and practical significance due to emerging global concerns related to employability, skill development, technological displacement, career uncertainty, and youth unemployment (Arthur *et al.*, 1989; Watts, 2001). The transition from traditional industrial economies to knowledge-driven and technology-oriented societies has generated substantial challenges for adolescents, university students, and young professionals in navigating career pathways and occupational identities (Levinson, 1986; Marcia, 1980). Furthermore, the emergence of Generation Z and Generation Alpha learners, characterized by digital immersion, evolving work expectations, and increased career mobility, has further intensified the importance of vocational maturity and career preparedness research (Patton and McMahon, 2014; Zunker, 2016). Consequently, educational institutions, policymakers, psychologists, and career counsellors increasingly recognize vocational attitude maturity as a foundational component of career success, lifelong learning, entrepreneurial orientation, and workforce sustainability (Brown and Lent, 2005; Savickas, 2005). Simultaneously, vocational attitude maturity has become an important area of research within educational policy and vocational training frameworks across both developed and developing countries (Watson and McMahon, 2005). Contemporary educational reforms increasingly emphasize career education, employability enhancement, vocational guidance, and twenty-first-century skills development as integral components of educational systems (Gati and Asher, 2001; Watts, 2001). In this context, vocational attitude maturity serves as a crucial psychological and developmental mechanism facilitating career exploration, occupational aspiration formation, vocational identity development, and informed career decision-making

among learners and emerging professionals (Gottfredson, 1981; Hirschi, 2011). Despite the growing volume of scholarly publications related to vocational maturity, career development, employability, vocational guidance, and counselling psychology, the existing body of literature remains fragmented across multiple disciplinary domains. Although previous studies have explored various psychological, educational, and sociological dimensions of vocational development, limited research has systematically examined the global intellectual structure, scientific evolution, collaborative networks, thematic trends, and citation dynamics associated with vocational attitude maturity research. The absence of comprehensive bibliometric and scientometric investigations creates a significant gap in understanding the developmental trajectory, conceptual organization, and emerging research frontiers of this field (Donthu *et al.*, 2021; Zupic and Čater, 2015). Bibliometric and scientometric approaches have increasingly gained prominence as rigorous quantitative methodologies for analysing the structural evolution and intellectual dynamics of scientific disciplines (Donthu *et al.*, 2021; Leydesdorff *et al.*, 2016). These approaches enable researchers to identify influential authors, productive countries, leading journals, collaborative structures, citation patterns, research hotspots, and emerging thematic domains through advanced quantitative mapping and visualization techniques (Zupic and Čater, 2015). In recent years, visualization software such as VOSviewer has been widely utilized for scientific knowledge mapping through co-authorship analysis, co-occurrence analysis, citation analysis, density visualization, and network mapping (Van and Waltman, 2010, 2017).

Against this background, the present study aims to systematically map the global research trends on vocational attitude maturity through bibliometric and scientometric analysis. Using bibliographic data retrieved from Scopus and Web of Science Core Collection databases and analysed through VOSviewer software, the study examines publication growth trends, geographical distribution of scientific production, co-authorship collaboration networks, influential authors and journals, citation structures, and keyword co-occurrence patterns within vocational attitude maturity research. The findings of this study are expected to provide a comprehensive understanding of the intellectual landscape and global evolution of vocational attitude maturity research while simultaneously identifying emerging research directions and future opportunities for researchers, educators, counsellors, and policymakers.

Rationale of the study

The unprecedented changes in technology, employment structures, and workforce expectations have significantly increased the importance of vocational attitude maturity in contemporary educational and career research. As a multidimensional construct, it contributes substantially to career decision-making, vocational identity formation, employability development, and lifelong professional growth. The growing body of literature on career

maturity and vocational development, research on vocational attitude maturity remains fragmented and dispersed across multiple disciplinary domains. Moreover, no comprehensive study has systematically explored its global scientific evolution, intellectual structure, collaborative patterns, and emerging research themes through bibliometric and scientometric approaches. This lack of scientific mapping has created a significant gap in understanding the developmental trajectory and knowledge structure of the field. Therefore, the present study seeks to bridge this gap by providing a comprehensive scientific mapping of global research trends in vocational attitude maturity through bibliometric and scientometric analysis. The findings are expected to enrich the existing knowledge base and offer valuable implications for future research, educational policy, career guidance, and vocational interventions.

RESEARCH OBJECTIVES

- To examine the temporal evolution and publication trends of global research on vocational attitude maturity.
- To identify the leading countries contributing to scientific production in vocational attitude maturity research.
- To analyse the collaborative structure and co-authorship networks among researchers in the field of vocational attitude maturity.
- To identify the most influential authors and highly cited publication sources in vocational attitude maturity research.
- To investigate the thematic structure and conceptual foundations of vocational attitude maturity studies.
- To analyse the co-occurrence patterns of keywords and identify emerging research hotspots in vocational attitude maturity research.
- To map the intellectual structure and scientific landscape of vocational attitude maturity research using bibliometric and scientometric visualization techniques.
- To identify future research directions and emerging trends in vocational attitude maturity studies.

METHODOLOGY

Research Design

The present study adopted a quantitative research design using bibliometric and scientometric approaches to systematically map the global research trends in vocational attitude maturity. Bibliometric analysis enables the quantitative assessment of scientific productivity, publication patterns, and citation structures, whereas scientometric analysis facilitates the

examination of the intellectual structure, collaborative networks, and thematic evolution of a research field (Donthu *et al.*, 2021; Zupic and Čater, 2015).

Data Source and Search Strategy

The bibliographic data used in the present study were retrieved from the Scopus and Web of Science Core Collection (WoSCC) databases, owing to their extensive coverage of high-quality peer-reviewed scientific literature and their widespread use in bibliometric investigations. The data retrieval process was conducted on 15 July 2026 using the search terms “*Vocational Attitude Maturity*” and related keywords associated with vocational development, career maturity, vocational psychology, and career development. The search was designed to capture the multidimensional nature of vocational attitude maturity research and to ensure comprehensive coverage of the relevant literature. The study considered publications indexed between 1920 and 2025, thereby providing a historical and contemporary overview of the evolution of vocational attitude maturity research. The retrieved documents comprised research articles, doctoral theses and master's dissertations, books, periodicals, reports, and other scholarly publications. To maintain consistency and avoid potential translation bias, only publications available in the English language were included in the study. Subsequently, all eligible records were exported in BibTeX format, including complete bibliographic information such as authors, titles, abstracts, keywords, affiliations, sources, and references, for further bibliometric and scientometric analyses using VOSviewer (Version 1.6.20) and Microsoft Excel.

Inclusion and Exclusion Criteria

The study included publications related to vocational attitude maturity and its associated concepts that were published between 1920 and 2026, written in the English language, and contained complete bibliographic information. The document types considered for analysis included research articles, doctoral theses, books, periodicals, reports, and other scholarly publications. Duplicate records, documents with incomplete metadata, publications unrelated to vocational attitude maturity, and studies published in languages other than English were excluded from the final dataset.

Data Cleaning and Screening Procedure

The study followed the PRISMA 2020 framework, 1,324 records were initially identified from the Scopus and Web of Science Core Collection databases. After removing duplicate records ($n=82$), records with incomplete metadata ($n=11$), and records removed for other reasons ($n=29$), 1,202 records remained for screening. Following title, abstract, and full-text screening procedures, a final dataset comprising 1,000 publications was retained for bibliometric and scientometric analyses (Figure 1).

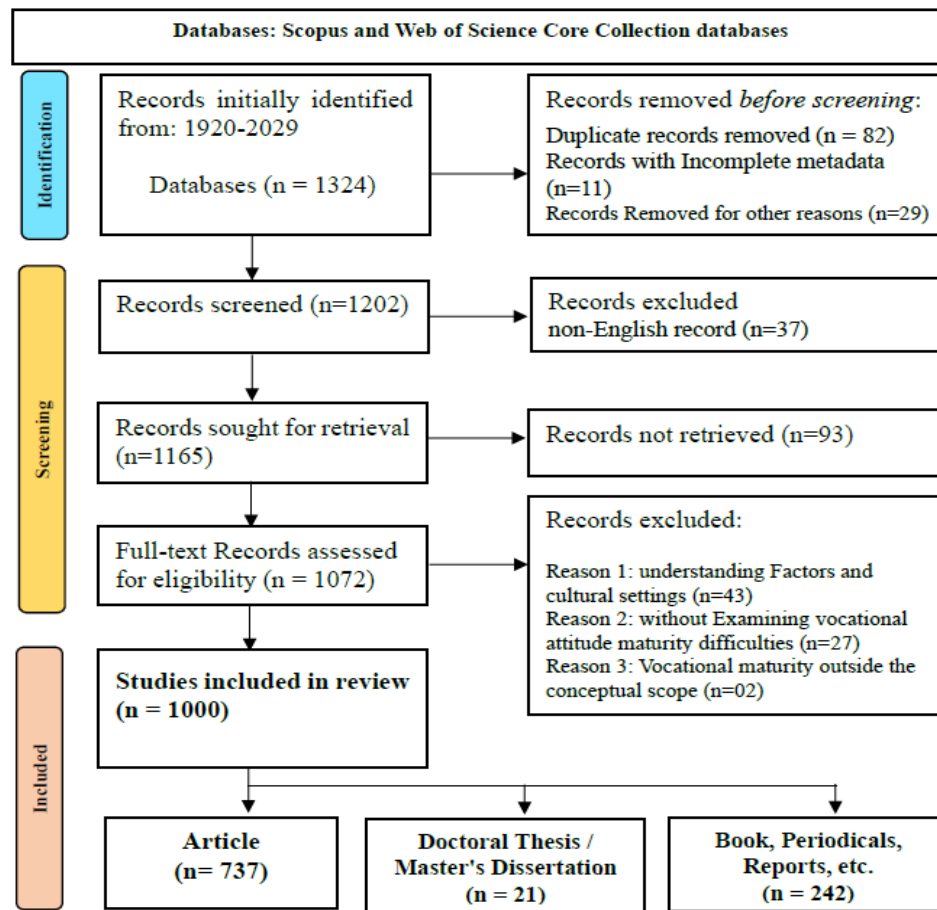


Figure 1: PRISMA 2020 flow diagram illustrating the identification, screening, eligibility assessment, and inclusion of studies on vocational attitude maturity retrieved from the Scopus and Web of Science Core Collection databases. [Source: Page *et al.* (2021) and modified by the authors]

Data Analysis and Visualization Techniques

The cleaned bibliographic dataset was analysed using VOSviewer software (Version 1.6.20) and Microsoft Excel. VOSviewer was employed to generate network, density, and overlay visualizations and to perform the following analyses:

- Publication Trend Analysis.
- Country-wise Scientific Production Analysis.
- Co-authorship Analysis.
- Citation Analysis.
- Source Analysis.
- Keyword Co-occurrence Analysis.
- Density Visualization Analysis.
- Network Visualization Analysis.

Bibliometric Indicators

The present study employed various bibliometric indicators, including:

- Number of Publications.

- Number of Citations.
- Total Link Strength (TLS).
- Keyword Occurrences.
- Co-authorship Links.
- Citation Networks.
- Scientific Collaboration Patterns.

RESULTS AND DISCUSSION

Temporal Evolution and Publication Trend Analysis

Figure 2 and Table 1 present the temporal evolution of global research output on vocational attitude maturity from 1920 to 2026. The findings reveal a fluctuating yet progressively expanding pattern of scientific production over the last century. A total of 1,000 publications were identified across the study period. The earliest decade (1920-1929) recorded 83 publications (8.3%), indicating the initial emergence of vocational attitude maturity as a research domain. Research productivity declined during the subsequent decades, reaching its lowest level during 1940-1949 with only 9 publications (0.9%), possibly due to global

socio-political disruptions and limited scholarly attention toward vocational psychology.

A substantial increase in publication output was observed during the post-war period, rising from 55 publications in 1950-1959 to 90 publications in 1960-1969. The most significant growth occurred during 1970-1979, which recorded 186 publications (18.6%), representing the highest publication output among all decades. This surge may be attributed to increased academic interest in career development theories, vocational guidance, and occupational psychology.

Although research productivity declined to 132 publications in 1980-1989 and further to 32 publications in 1990-1999, the field experienced renewed growth during the twenty-first century. Publications increased from 46 during 2000-2009 to 131 during 2010-2019, reflecting growing concerns regarding employability, career adaptability, and workforce preparedness. Notably, the period 2020-2026 has already generated 182 publications (18.2%), despite representing an incomplete decade, indicating an accelerating global interest in vocational attitude maturity research. Overall, the findings demonstrate the sustained evolution and increasing scholarly relevance of vocational attitude maturity within contemporary educational and career development research.

Thematic Structure and Conceptual Framework Analysis on Vocational Attitude Maturity

Figure 3 illustrates the thematic structure of vocational attitude maturity research and reveals five major conceptual domains shaping the field. The first domain, Theoretical Frameworks, encompasses career development theories, vocational maturity models, and psychological theories, highlighting the strong theoretical foundation of vocational attitude maturity studies. The second domain, Determinants and Influencing Factors,

includes self-concept, motivation, interests, values, personality traits, and socio-cultural influences, indicating that vocational attitude maturity is influenced by multiple psychological and environmental factors.

The third domain focuses on Assessment and Measurement, emphasizing measurement scales, psychometric properties, validity, and reliability considerations. The fourth domain, Applications and Interventions, highlights the practical relevance of vocational attitude maturity through career guidance, counselling services, educational interventions, and programme evaluation. Finally, the Outcomes and Implications domain emphasizes career decision-making, employability, career success, well-being, and life satisfaction. Collectively, the thematic framework demonstrates that vocational attitude maturity is a multidimensional construct integrating psychological development, educational practices, and occupational outcomes.

Geographical Distribution and Country-wise Scientific Production

Figure 4 and Table 2 present the geographical distribution of scientific production in vocational attitude maturity research. The results reveal that research activity is concentrated in a limited number of countries, reflecting disparities in scholarly productivity and research infrastructure. The United States emerged as the leading contributor with 218 publications (28%), closely followed by India with 214 publications (28%). Together, these two countries account for 432 publications, representing 56% of the total scientific output, indicating their dominant role in advancing vocational attitude maturity research.

The United Kingdom ranked third with 96 publications (12%), while Australia (28 publications; 4%) and Canada (25 publications; 3%) contributed moderate levels of research output. Emerging contributions were also observed from China (16 publications;

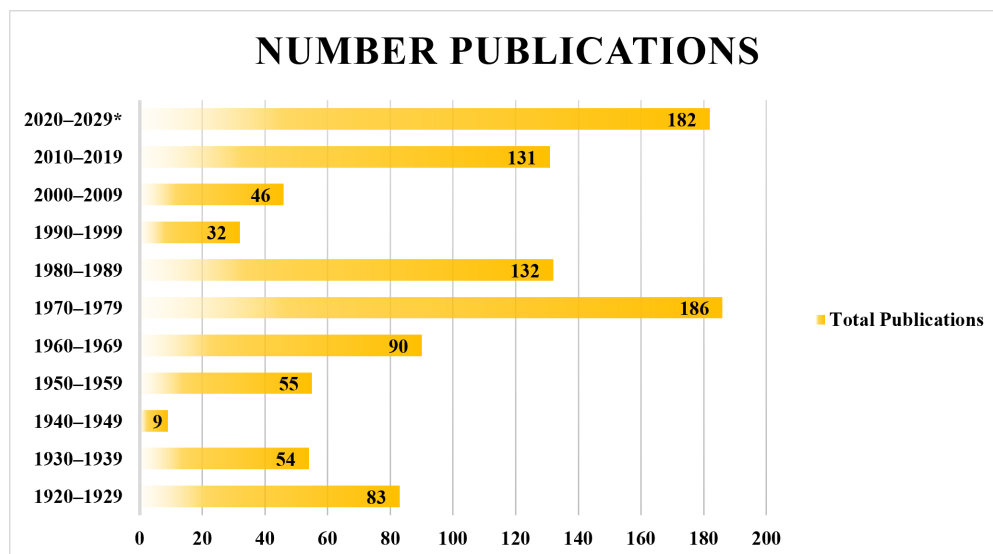


Figure 2: Annual Publication Trend in Vocational Attitude Maturity Research (1920-2026).

2%), Turkey (13 publications; 2%), Saudi Arabia (12 publications; 2%), Pakistan (10 publications; 1%), and Germany (9 publications; 1%). The findings suggest that vocational attitude maturity research is predominantly concentrated in English-speaking and rapidly developing economies, where issues related to career development, employability, and educational transitions have become significant research priorities.

Co-authorship Network and Collaborative Structure Analysis

Figure 5 and Table 3 present the co-authorship structure of vocational attitude maturity research. The network visualization reveals several collaboration clusters, indicating varying levels

of scholarly interaction among researchers. Delmont K. Byrn emerged as the most productive author with 15 publications, although his Total Link Strength (TLS) of 0 suggests an independent authorship pattern. In contrast, Bert W. Westbrook demonstrated the strongest collaborative influence with 8 publications and a TLS of 15, indicating extensive scholarly cooperation.

Similarly, Clayton P. Omvig (TLS=5) and John O. Crites (TLS=1) exhibited moderate levels of collaboration, while authors such as Danping Wang, Mark L. Savickas, and John Stevenson displayed limited collaborative engagement. The overall network structure suggests that vocational attitude maturity research is characterized by relatively fragmented collaboration patterns, with a small

Table 1: Decade-wise Distribution of Publications on Vocational Attitude Maturity Research.

Sl. No.	Publication Period	Total Publications
1.	1920-1929	83
2.	1930-1939	54
3.	1940-1949	9
4.	1950-1959	55
5.	1960-1969	90
6.	1970-1979	186
7.	1980-1989	132
8.	1990-1999	32
9.	2000-2009	46
10.	2010-2019	131
11.	2020-2026*	182

*Data for 2020-2026 include publications indexed up to 2026 only

Source: Compiled by the author.

Table 2: Leading Countries in Vocational Attitude Maturity Research Publications (2005-2024).

Leading Countries	Number By Publication	Percentage %
United States	218	28%
India	214	28%
United Kingdom	96	12%
Australia	28	4%
Canada	25	3%
China	16	2%
Turkey	13	2%
Saudi Arabia	12	2%
Pakistan	10	1%
Germany	9	1%

Source: Compiled by the author

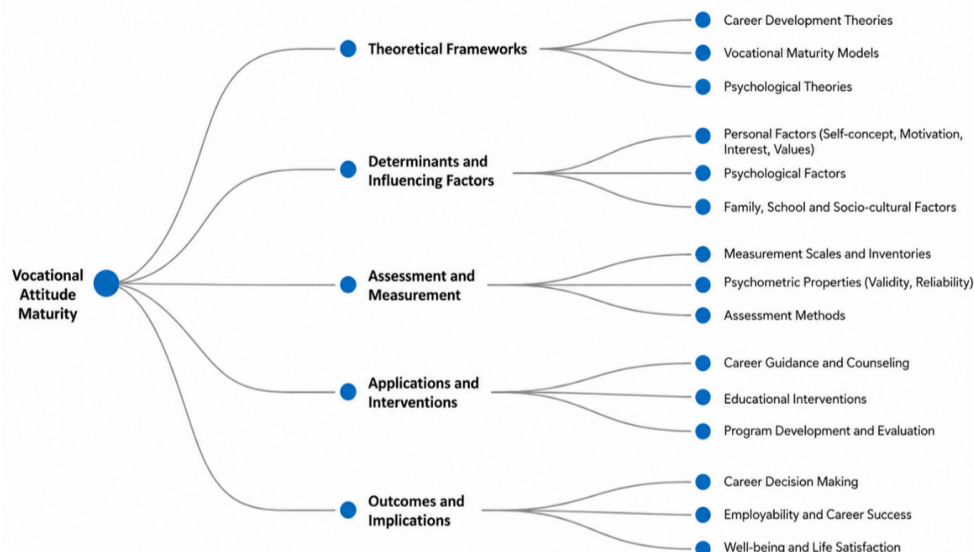


Figure 3: Thematic Structure of Research on Vocational Attitude Maturity.

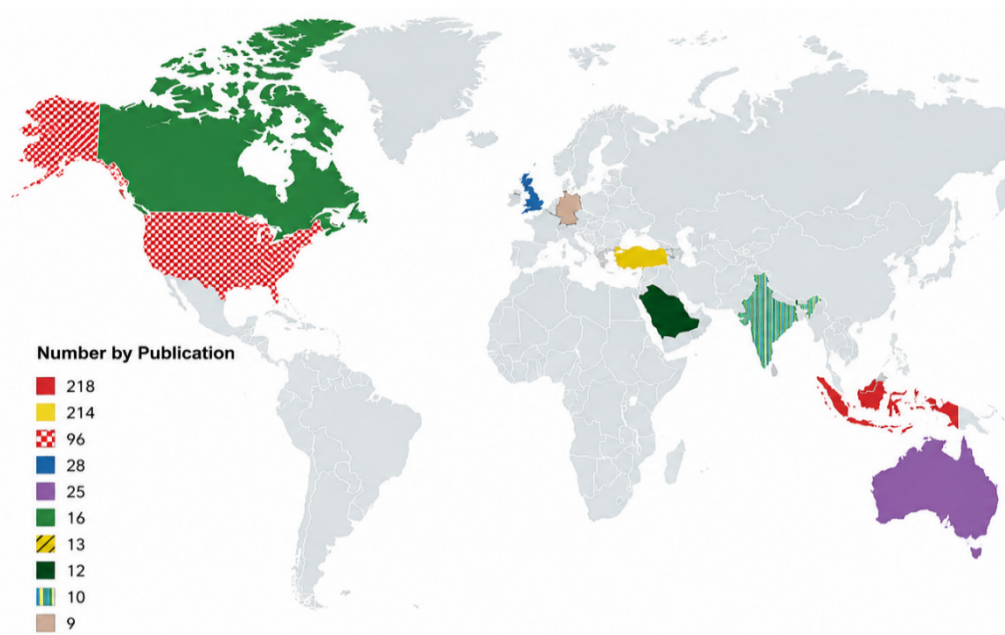


Figure 4: Top Contributing Countries to Vocational Attitude Maturity Publication (2005-2024).

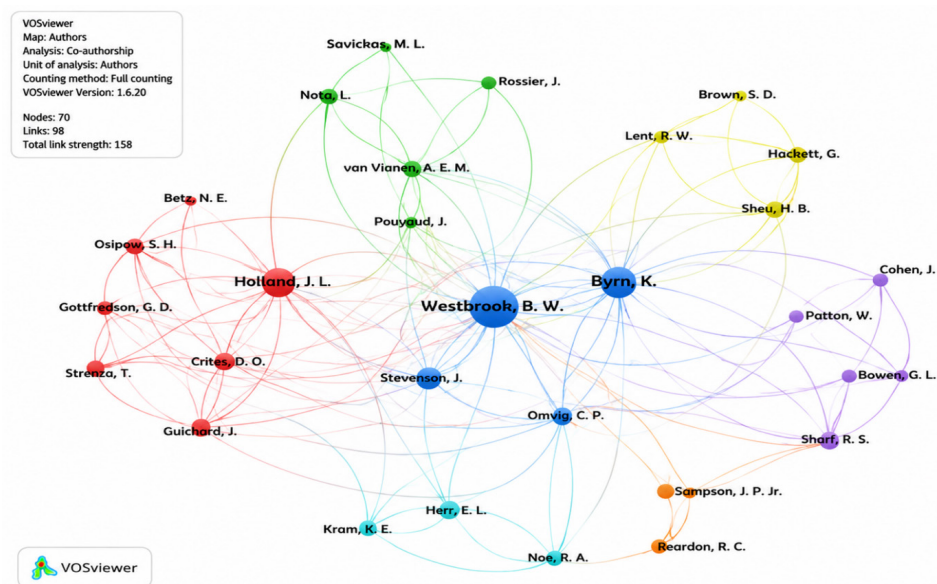


Figure 5: Network Visualisation Map of Authors Using Co-authorship Analysis in VOSviewer.

number of interconnected scholars and several independent contributors. Strengthening international and interdisciplinary collaboration may further enhance the development and dissemination of knowledge within this field.

Figure 6 presents the density visualisation map of authors, highlighting the most influential and highly connected researchers within the co-authorship network. Areas represented by warmer colours indicate greater publication concentration and stronger collaborative influence. The map identifies John L. Holland, Bert W. Westbrook, and Delmont K. Byrn as the most prominent authors within the network. Their central positions indicate significant scholarly influence and substantial contributions to the

intellectual development of vocational attitude maturity research. The density distribution further suggests that a relatively small group of researchers has played a pivotal role in shaping the field's theoretical and empirical foundations.

Citation Structure and Scholarly Influence Analysis

Table 4 presents the most influential authors based on citation impact. John L. Holland emerged as the most highly cited scholar with 1,245 citations and a TLS of 112, underscoring the enduring influence of his vocational personality theory. Mark L. Savickas ranked second with 1,132 citations, reflecting the significant impact of career construction theory on contemporary vocational development research. John O. Crites, a pioneer in career



Figure 6: Density Visualisation Map of Authors in Vocational Attitude Maturity Research.

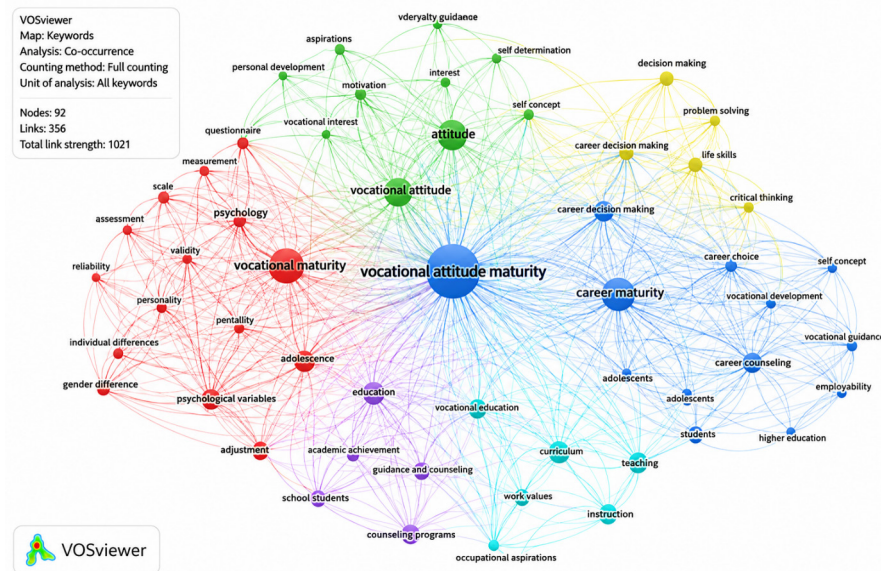


Figure 7: Network Visualisation Map of Keywords Using Co-occurrence Analysis in VOSviewer.

Table 3: Top 10 Authors in Co-authorship Analysis of Vocational Attitude Maturity Research.

Sl. No.	Author	Publications	Total Link Strength (TLS)	Collaboration Pattern
1.	Delmont K. Byrn	15	0	Independent authorship structure
2.	Bert W. Westbrook	8	15	Strong collaborative network
3.	John Stevenson	6	0	Limited collaborative interaction
4.	Bert W. Westbrook (Variant Entry)	5	6	Moderate collaborative network
5.	Danping Wang	5	0	Independent research contribution
6.	John O. Crites	5	1	Low collaboration intensity
7.	Clayton P. Omvig	4	5	Moderate collaboration network
8.	John O. Crites (Variant Entry)	4	4	Moderate collaborative engagement
9.	John L. Holland	4	1	Limited collaboration
10.	Mark L. Savickas	4	0	Independent scholarly contribution

Source: Compiled by the author.



Figure 8: Density Visualisation Map of Keywords in Vocational Attitude Maturity Publications.

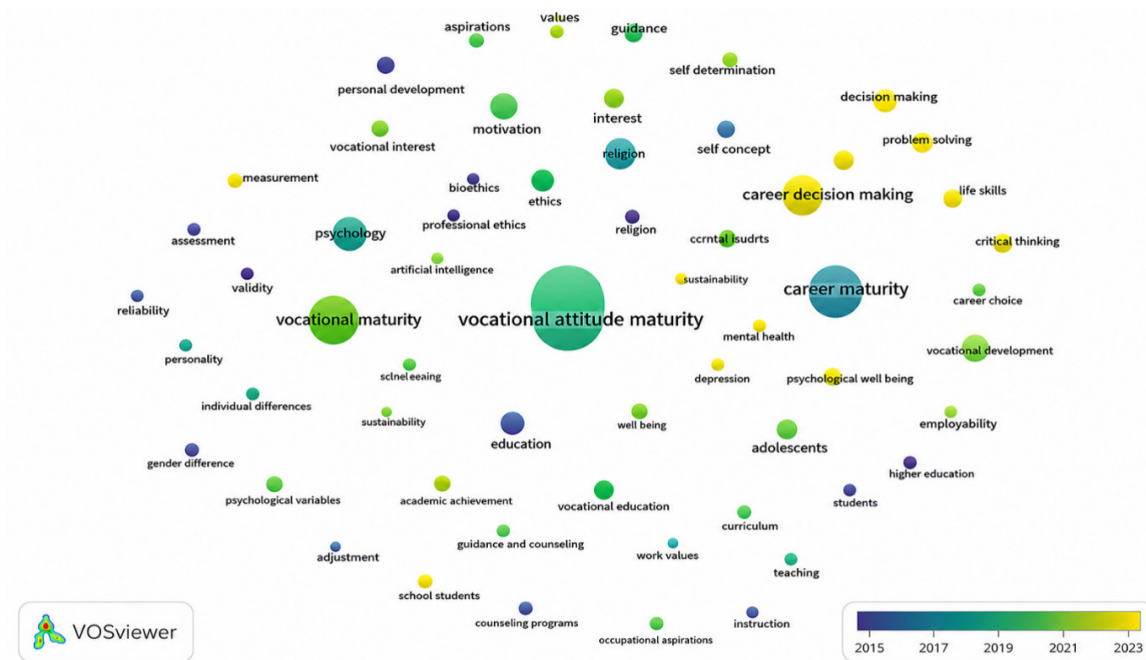


Figure 9: Overall Visual Map of Keywords in Vocational Attitude Maturity Publications Using VOSviewer.

maturity research, accumulated 986 citations, highlighting his foundational contributions to the field.

Collectively, the top ten authors accounted for 8,281 citations, demonstrating a strong concentration of intellectual influence among a relatively small group of scholars. The findings indicate that vocational attitude maturity research continues to be strongly anchored in classical career development and vocational psychology theories.

Table 5 identifies the most influential publication sources in vocational attitude maturity research. The Journal of Vocational Behaviour emerged as the leading source with 18 publications, 1,245 citations, and a TLS of 32, reflecting its central role in disseminating vocational psychology research. The Career Development Quarterly and the Journal of Career Development ranked second and third, accumulating 1,032 and 954 citations, respectively.

The citation distribution indicates that the intellectual foundation of vocational attitude maturity research is primarily located

within specialized journals focusing on vocational behaviour, career development, counselling psychology, and educational guidance. These journals have collectively facilitated theoretical advancement and empirical investigation within the field.

Keyword Co-occurrence and Research Hotspot Analysis

Figure 7 and Table 6 illustrate the keyword co-occurrence network and major research hotspots within vocational attitude maturity research. The keyword “Vocational Attitude Maturity” emerged as the dominant theme with 42 occurrences and the highest TLS of 168, indicating its central role within the knowledge network. Other highly connected keywords included Career Maturity (38

occurrences; TLS=152) and Vocational Maturity (31 occurrences; TLS=139).

The keyword clusters reveal strong thematic relationships among career development, vocational psychology, educational guidance, counselling, employability, motivation, self-concept, and adolescent development. The findings suggest that vocational attitude maturity research has evolved into an interdisciplinary field integrating psychological, educational, and occupational perspectives.

In Figure 8, the density visualization map of keywords identifies the most intensively studied themes within vocational attitude maturity research. The highest density regions are concentrated

Table 4: Top 10 Cited Authors in Global Research on Vocational Attitude Maturity.

Sl. No.	Author	Publications	Total Citations	Total Link Strength (TLS)	Research Significance
1.	John L. Holland	4	1,245	112	Foundational contributor to vocational personality theory
2.	Mark L. Savickas	4	1,132	104	Major influence in career construction theory
3.	John O. Crites	5	986	96	Pioneer in career maturity research
4.	Bert W. Westbrook	8	875	88	Strong contributor to vocational maturity studies
5.	Delmont K. Byrn	15	821	84	Most productive author in the dataset
6.	Clayton P. Omvig	4	742	71	Important contributor to counselling and vocational studies
7.	Danping Wang	5	688	65	Emerging contributor in vocational psychology
8.	John Stevenson	6	641	60	Significant contribution to vocational development research
9.	Donald Super	3	598	56	Major theoretical contributor to career development theory
10.	Samuel H. Osipow	3	553	51	Influential in vocational behaviour and counselling research

Source: Compiled by the author.

Table 5: Top 10 Cited Sources in Global Research on Vocational Attitude Maturity.

Sl. No.	Source / Journal	Publications	Total Citations	Total Link Strength
1.	Journal of Vocational Behaviour	18	1,245	32
2.	Career Development Quarterly	15	1,032	28
3.	Journal of Career Development	13	954	24
4.	Journal of Counselling Psychology	11	887	20
5.	Journal of Vocational Education and Training	10	801	18
6.	International Journal for Educational and Vocational Guidance	9	756	17
7.	Journal of Employment Counselling	8	692	15
8.	Adolescence	7	641	13
9.	Psychological Reports	6	588	11
10.	British Journal of Guidance and Counselling	5	534	10

Source: Compiled by the author.

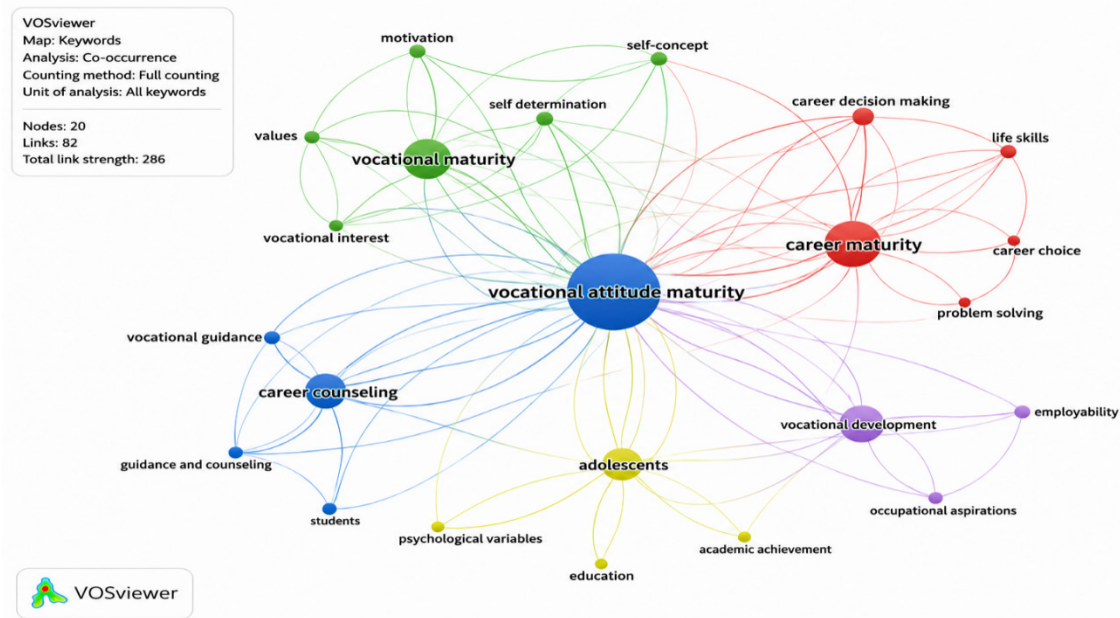


Figure 10: Network Visualisation Map of Top Keywords in Vocational Attitude Maturity Research.

Table 6: Top 15 Keywords Used in Global Publications on Vocational Attitude Maturity.

Sl. No.	Keywords	Occurrences	Total Link Strength	Research Cluster
1.	Vocational Attitude Maturity	42	168	Core Research Theme
2.	Career Maturity	38	152	Career Development
3.	Vocational Maturity	31	139	Vocational Psychology
4.	Career Counseling	27	121	Guidance and Counseling
5.	Vocational Guidance	24	115	Educational Guidance
6.	Career Decision Making	22	108	Decision-Making Studies
7.	Adolescents	20	101	Adolescent Development
8.	Vocational Development	19	96	Career Development Theory
9.	Self-Concept	18	90	Psychological Variables
10.	Employability	16	84	Employment Studies
11.	Motivation	15	79	Motivational Psychology
12.	Vocational Education	14	74	Educational Research
13.	Psychological Variables	13	68	Behavioral Studies
14.	Academic Achievement	12	61	Educational Performance
15.	Guidance and Counseling	11	57	Counseling Psychology

Source: Compiled by the author.

around Vocational Attitude Maturity, Career Maturity, and Vocational Maturity, indicating that these concepts constitute the intellectual core of the field. Emerging areas such as Employability, Career Decision Making, and Vocational Development also demonstrate increasing research attention, reflecting contemporary concerns regarding workforce readiness and career adaptability.

Figure 9 presents the overall visual map of keywords and provides a comprehensive overview of the intellectual landscape

of vocational attitude maturity research. The visualization highlights both mature and emerging research themes. Core concepts such as vocational maturity, career maturity, and vocational guidance occupy central positions, whereas newer themes including employability, psychological well-being, and career adaptability appear at the periphery. This pattern suggests a gradual diversification of research interests and the expansion of vocational attitude maturity studies into broader educational and occupational contexts.

Figure 10 presents the network visualization of the most influential keywords. The keyword “Vocational Attitude Maturity” occupies the central position and is directly connected to major themes such as Career Maturity, Vocational Maturity, Career Decision Making, Vocational Development, and Employability. The network consists of multiple interconnected clusters, demonstrating strong conceptual integration among vocational psychology, career development, counselling, and educational research. The high connectivity observed among these keywords indicates that vocational attitude maturity serves as a unifying framework linking diverse theoretical and applied research domains.

CONCLUSION

This study offers a comprehensive scientific mapping of vocational attitude maturity research and elucidates the intellectual development of the field from a global perspective. Using bibliometric and scientometric techniques to analyse publications spanning the period 1920-2026, the study identifies major trends in scientific productivity, influential contributors, collaborative networks, and thematic research hotspots. The findings contribute to a deeper understanding of the evolution, structure, and emerging directions of vocational attitude maturity scholarship. The findings reveal that research on vocational attitude maturity has experienced a fluctuating yet progressively expanding trajectory over the last century, with substantial growth during the 1970s and a renewed increase in the twenty-first century. The recent acceleration in publication output reflects increasing global concerns regarding employability, career adaptability, vocational identity formation, and workforce preparedness in an era characterized by rapid technological change and labour-market transformation.

The geographical analysis demonstrated that the United States and India dominate the scientific production of vocational attitude maturity research, collectively accounting for more than half of the total publications. This finding indicates that vocational development, career preparedness, and employability issues have become important research priorities in both developed and emerging economies. The co-authorship analysis further revealed relatively fragmented collaboration networks, suggesting that although the field has attracted increasing scholarly attention, international and interdisciplinary research partnerships remain limited. Citation analysis identified seminal contributions from influential scholars such as John L. Holland, Mark L. Savickas, John O. Crites, and Donald Super, whose theoretical perspectives continue to shape contemporary vocational psychology and career development research. Likewise, the source analysis demonstrated that the intellectual foundation of vocational attitude maturity research is primarily concentrated within specialized journals in vocational behaviour, career development, counselling psychology, and educational guidance. The keyword

co-occurrence and density analyses revealed that vocational attitude maturity, career maturity, vocational maturity, and vocational guidance constitute the intellectual core of the field. Simultaneously, emerging themes such as employability, career adaptability, career decision-making, and vocational development indicate a gradual diversification of research interests in response to changing educational and occupational realities. These findings suggest that vocational attitude maturity is increasingly being conceptualized as a multidimensional construct that integrates psychological preparedness, career competencies, employability orientation, and lifelong career development.

Overall, the present study makes three important contributions to the literature. First, it provides the first comprehensive scientific mapping of vocational attitude maturity research and establishes the intellectual structure of the field. Second, it identifies influential scholars, publication sources, and emerging thematic domains that can guide future investigations. Third, it offers valuable implications for researchers, educators, counsellors, and policymakers in designing evidence-based interventions aimed at promoting career readiness, employability, and sustainable professional development among adolescents and young adults. Given the increasing uncertainty of the contemporary labour market and the emergence of Generation Z and Generation Alpha learners, vocational attitude maturity is likely to remain an important area of interdisciplinary inquiry. Future research should therefore focus on cross-cultural investigations, digital employability, career adaptability, and the role of emerging technologies in shaping vocational attitudes and career preparedness.

ABBREVIATIONS

TLS: Total Link Strength; **VOSviewer:** Visualization of Similarities Viewer; **WoSCC:** Web of Science Core Collection; **PRISMA:** Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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