

# Gen Z Entrepreneurship: Scientific Mapping and Research Trends 2000–2025

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## ABSTRACT

This study maps the scientific development of Gen Z entrepreneurship research from 2000 to 2025 using a bibliometric approach based on Scopus-indexed publications. By applying VOSviewer for keyword co-occurrence, density analysis, author collaboration, affiliation networks, and country partnerships, the study identifies the intellectual structure and thematic evolution within the field. The findings reveal that “entrepreneurship” and “Generation Z” are the dominant conceptual hubs, supported by emerging themes such as education, financial literacy, attitude, and entrepreneurial intention. Density maps highlight strong research concentration in psychological and behavioral aspects, while overlay visualizations indicate a recent shift toward capability-building through education and digital learning. Author and institution networks show dispersed collaboration patterns, reflecting the field’s growth stage, whereas country networks demonstrate strong engagement among Malaysia, the United States, Indonesia, and Bangladesh. Citation analysis indicates that highly influential works focus on grit, generational comparison, entrepreneurial intention, and learning ecosystems. Overall, the study provides a consolidated understanding of research trajectories and identifies gaps for future interdisciplinary and cross-country collaborations in Gen Z entrepreneurship studies.

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## 1. INTRODUCTION

Entrepreneurship has undergone a profound transformation over the past two decades, driven by rapid digitalization, socio-economic shifts, and the emergence of new generational cohorts entering the global workforce. Among these cohorts, Generation Z—individuals born between 1997 and 2012—has attracted significant scholarly attention due to their distinctive values, digital fluency, and evolving attitudes toward business

creation [1], [2]. Unlike previous generations, Gen Z is characterized by early exposure to technology, heightened awareness of global challenges, and a strong orientation toward autonomy and creativity [3], [4]. These unique traits have positioned Gen Z as an influential force in shaping the future landscape of innovation, digital ventures, and entrepreneurial ecosystems worldwide.

The academic discourse on Gen Z entrepreneurship has expanded considerably, covering themes such as entrepreneurial

intention, digital learning, organizational culture, sustainability concerns, and intergenerational differences in entrepreneurial behavior. Studies like [5], [6] highlight the psychological and behavioral components—such as grit, loyalty, and work orientation—that influence Gen Z's entrepreneurial potential. Meanwhile, [6], [7] deepen the conversation by exploring constraints and contextual factors affecting entrepreneurial intentions in developing countries. Across diverse contexts, existing research consistently underscores that Gen Z's entrepreneurial motivations are intertwined with the evolving digital economy, socio-cultural dynamics, and changing labor market expectations.

Simultaneously, global challenges such as technological disruption, climate change, and volatile economic conditions have shaped the way Gen Z perceives entrepreneurship—not merely as a pursuit of financial gain but as a platform for innovation, sustainability, and social impact. For instance, studies on adaptive performance, digital learning processes, and entrepreneurial work-integrated learning [6], [7] imply that Gen Z's entrepreneurial journey is strongly influenced by their learning ecosystems and workplace adaptability. These developments reflect a broader trend in which entrepreneurship education, digital capabilities, and organizational learning environments play critical roles in shaping the entrepreneurial mindset of the younger generation.

Over the last 25 years, scholarly interest in this domain has grown significantly, as evidenced by the increasing volume of publications indexed in Scopus. The thematic diversity includes discussions on e-waste entrepreneurship, intergenerational comparisons, creativity development, tourism entrepreneurship, and emerging-economy dynamics. However, despite the rich and growing body of knowledge, there remains a lack of comprehensive scientific mapping that synthesizes how Gen Z entrepreneurship research has evolved, which themes dominate the literature, which scholars and countries lead the field, and what gaps remain for future

inquiry. Without such mapping, it becomes difficult for researchers, educators, policymakers, and practitioners to understand the intellectual structure and developmental trajectory of this literature.

Bibliometric analysis offers a systematic and quantitative method to address this gap by examining patterns of citations, keyword co-occurrences, authorship networks, institutional collaborations, and thematic clusters. Through these analytical dimensions, bibliometric mapping provides a clear visualization of how research on Gen Z entrepreneurship has evolved over time, revealing its thematic maturity, emerging scholarly frontiers, and shifting centers of academic attention. This approach also enables researchers to identify topics that are becoming central, areas that are experiencing a decline in interest, and potential domains that hold promise for future breakthrough contributions.

Therefore, this study conducts a scientific mapping and bibliometric analysis of Gen Z entrepreneurship research published between 2000 and 2025 using Scopus-indexed publications as the primary data source. The analysis encompasses keyword networks, density visualization, author collaborations, and country-level partnerships to illuminate the intellectual landscape of the field. It also highlights the most influential studies—such as those addressing entrepreneurial intention, intergenerational comparisons, digital learning processes, and organizational culture—as summarized in Table 1. Through this comprehensive approach, the study aims to map research developments, identify existing gaps, and propose strategic directions for future inquiry. The findings are expected to contribute meaningfully to academic scholarship, entrepreneurship education, and policymaking by offering evidence-based insights into how Generation Z shapes and is shaped by the contemporary entrepreneurial environment.

## 2. METHODS

### 2.1 Research Design

This study employs a bibliometric analysis approach, which is widely used to map the intellectual structure and evolution of scientific fields by quantitatively examining publication patterns, citation structures, keyword relationships, authorship networks, and country collaborations. By integrating performance analysis and science-mapping techniques, the study provides a comprehensive overview of research trends related to Gen Z entrepreneurship from 2000 to 2025, following established procedures commonly applied in social sciences, business, and management research. The analysis identifies influential publications, thematic concentrations, emerging domains, and collaborative patterns among authors and institutions, while network visualizations and citation metrics facilitate systematic interpretation of how the field has evolved, which themes dominate scholarly attention, and which areas remain underexplored.

## 2.2 Data Source and Search Strategy

All bibliographic data for this study were retrieved from the Scopus database, one of the largest and most authoritative abstract and citation indexing platforms for peer-reviewed literature. Scopus was selected due to its extensive coverage of journals, conference proceedings, and book chapters, as well as its strong compatibility with bibliometric tools. The data extraction process began with the identification of keywords, using combinations such as “Generation Z” or “Gen Z” and “entrepreneurship,” “entrepreneurial intention,” or “entrepreneurial behavior.” These terms were selected to capture studies explicitly discussing Gen Z’s entrepreneurial characteristics, behaviors, intentions, constraints, or developmental contexts. The search query was applied to titles, abstracts, and keywords, with the time span restricted to 2000–2025 to reflect the period when Gen Z began entering formal education, social structures, and the labor market.

Following initial retrieval, several inclusion and exclusion criteria were applied. The dataset included peer-reviewed journal

articles, conference papers, reviews, and book chapters directly related to Gen Z entrepreneurship, while excluding publications unrelated to entrepreneurship, studies focusing solely on Millennials or Gen Y, and documents lacking complete bibliographic information. To ensure accuracy and consistency, the dataset underwent a cleaning process that involved removing duplicates, correcting variations in author names, standardizing keywords, and normalizing institutional affiliations. These steps were essential for preventing fragmentation in authorship networks and ensuring reliability in keyword co-occurrence analysis. The final dataset was then exported in formats compatible with VOSviewer for subsequent mapping and visualization.

## 2.3 Data Analysis Techniques

The analysis integrates descriptive bibliometric techniques with science-mapping visualization to systematically identify patterns within the literature. Keyword co-occurrence mapping was first conducted to reveal conceptual themes and research hotspots, using VOSviewer to cluster frequently co-appearing keywords into dominant thematic areas. Three types of visual outputs were produced—network visualization to illustrate thematic clusters, overlay visualization to capture chronological development of topics, and density visualization to highlight areas of concentrated research activity. These visualizations correspond to Figures 1–3 in the manuscript. To further examine the structure of scholarly collaboration, co-authorship networks were analyzed at the levels of individual authors, institutional affiliations, and contributing countries. These mappings, presented in Figures 4–6, help identify leading scholars, institutional partnerships, and cross-national research linkages that shape the landscape of Gen Z entrepreneurship studies.

Additionally, citation and impact analysis was conducted to identify the most influential contributions to the field, with Table 1 summarizing the top-cited research based on Scopus citation counts. This

performance-based assessment provides insights into high-impact studies, prevailing theoretical frameworks, emerging research domains, and key contributions that structure the intellectual development of Gen Z entrepreneurship literature. All visualizations were generated using VOSviewer (version 1.6.x), while Microsoft Excel and Scopus analytical tools supported data organization, trend examination, and descriptive statistical analysis. The combined use of these tools ensures methodological rigor and enhances

the clarity, validity, and interpretability of the bibliometric findings.

## 2.4 Ethical Considerations

This study uses publicly available secondary data from Scopus, without involving human subjects, interviews, or personal identifiers. Therefore, ethical approval is not required. All data were analyzed in accordance with academic standards for responsible research and citation.

## 3. RESULTS AND DISCUSSION

### 3.1 Keyword Co-Occurrence Network Analysis

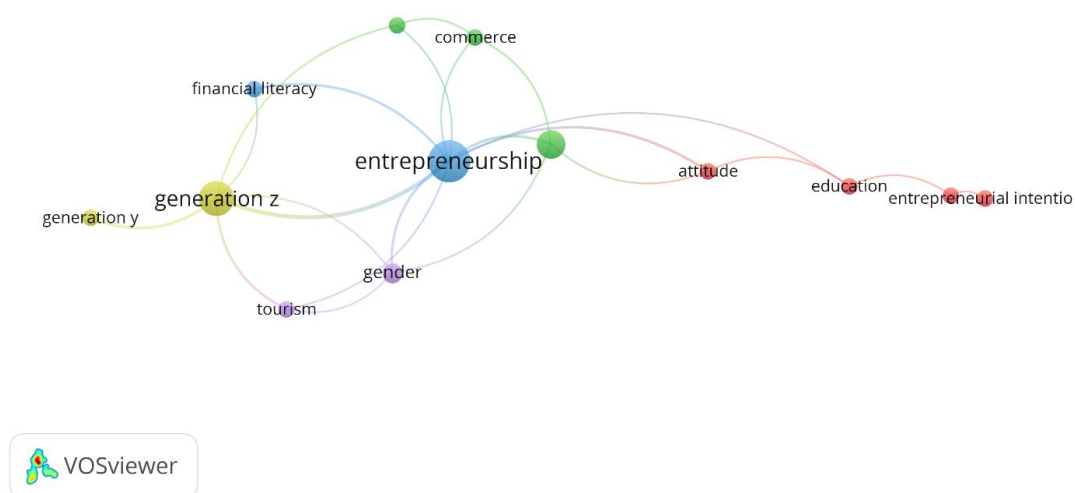


Figure 1. Network Visualization

Source: Data Analysis Result, 2025

Figure 1 presents the keyword co-occurrence network that maps the conceptual structure of Gen Z entrepreneurship research. The visualization shows that “entrepreneurship” emerges as the strongest and most central node, underscoring its position as the core theme connecting various subtopics within the literature. Its large node size and dense linkages indicate that entrepreneurship serves as the primary lens through which scholars analyze the characteristics, motivations, and behaviors of Generation Z. Surrounding this core node are

clusters that represent major thematic domains, such as the grouping of “Generation Z” with financial literacy, tourism, gender, and Generation Y. These linkages highlight a strong research emphasis on generational attributes, capability building, and sector-specific entrepreneurial contexts. Notably, the strong connection between Generation Z and financial literacy points to a rising scholarly interest in how financial education and economic preparedness shape entrepreneurial tendencies among younger cohorts, while the presence of Generation Y

reflects comparative studies on intergenerational differences.

In addition to these clusters, another prominent linkage connects entrepreneurship with commerce, reflecting the increasing importance of digital commerce, online ventures, and technology-driven entrepreneurial activities among Gen Z. On the right side of the network, the nodes for attitude, education, and entrepreneurial intention form a coherent progression that emphasizes the psychological and pedagogical determinants of entrepreneurial behavior. This pattern suggests a growing scholarly focus on how education, training, and exposure to entrepreneurial ecosystems

cultivate positive attitudes and intentions toward entrepreneurship. Overall, the structure of the network illustrates that Gen Z entrepreneurship is a multidimensional research domain integrating behavioral, educational, demographic, and industry-related perspectives. The interconnectedness of the nodes reflects the interdisciplinary character of the field, while the varying link strengths highlight areas of concentrated research activity and emerging academic interest. Thus, Figure 1 effectively captures how diverse themes collectively shape the evolving landscape of Gen Z entrepreneurship studies.

### 3.2 Density Visualization: Hotspots of Research

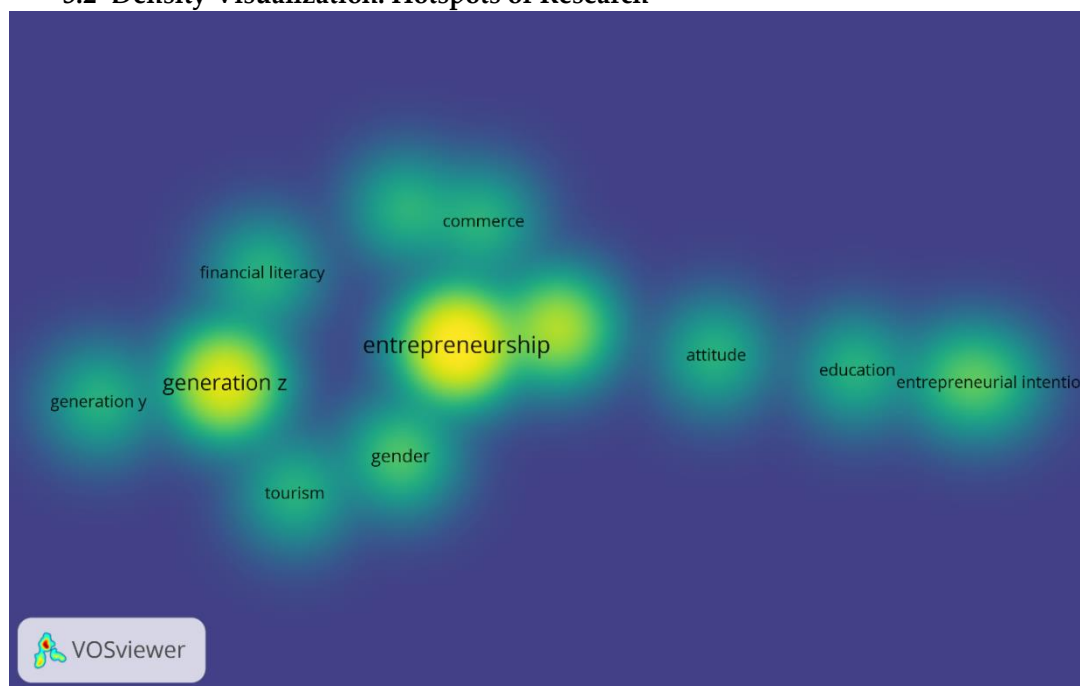


Figure 2. Density Visualization

Source: Data Analysis, 2025

The density map (Figure 2) reinforces the prominence of entrepreneurship and Generation Z as the most heavily researched topics, indicated by bright yellow areas that reflect high keyword frequency and strong co-occurrence patterns. Keywords such as financial literacy, education, attitude, and entrepreneurial intention appear in moderately dense regions, suggesting that these themes receive considerable but comparatively less attention. Meanwhile,

lower-density green patches surrounding terms like tourism, gender, commerce, and Generation Y reveal that these topics, while present, function as emerging or more specialized research niches rather than core thematic streams. Overall, the density visualization highlights the intellectual focus of the field on psychological dimensions of entrepreneurship, generational characteristics, and capability-building

factors such as learning and financial knowledge.

### 3.3 Overlay Visualization: Thematic Evolution Over Time

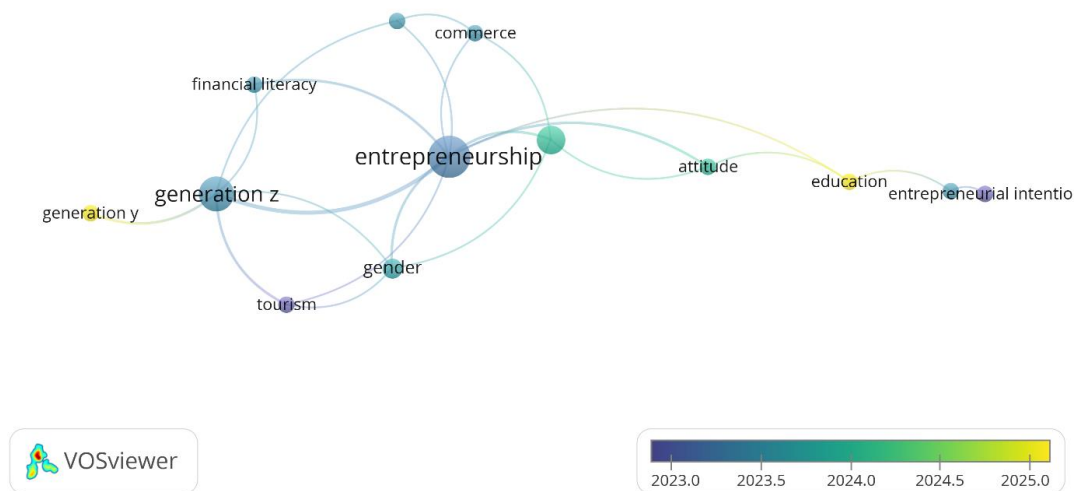


Figure 3. Overlay Visualization

Source: Data Analysis, 2025

The overlay visualization (Figure 3) shows the temporal development of research themes from 2023 to 2025, where earlier studies—represented in darker colors—focused primarily on general entrepreneurship, Generation Z, gender, tourism, and financial literacy. As the field progressed toward 2024–2025, the map shifts to lighter yellow tones, signaling the emergence of newer themes such as education, attitude, and entrepreneurial

intention. This progression indicates a growing scholarly interest in examining the drivers and mediating factors that influence entrepreneurial behavior among Gen Z. The rise of education-related keywords further highlights the increasing importance of entrepreneurship education, digital learning environments, and broader capability-building efforts in shaping the entrepreneurial mindset of younger generations.

### 3.4 Author Collaboration Network

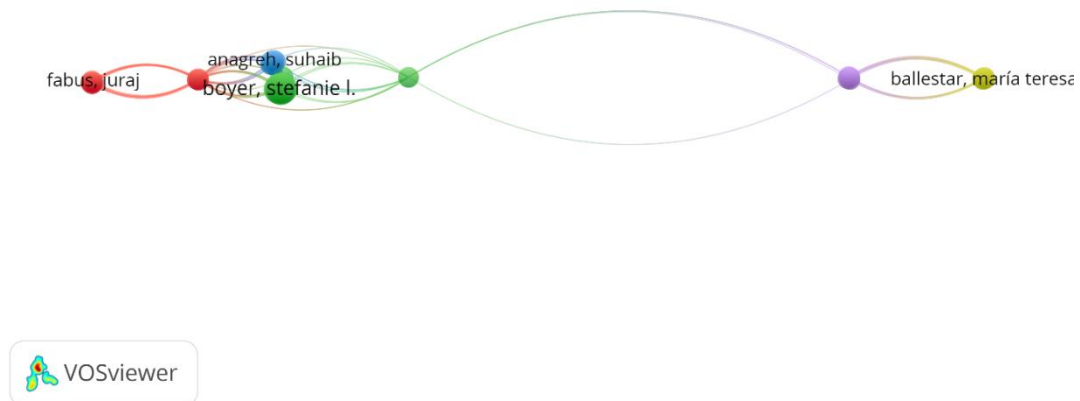


Figure 4. Author Collaboration Visualization

*Source: Data Analysis Result, 2025*

Figure 4 illustrates the author collaboration network, which reveals a moderately connected research landscape. Figure 4 illustrates a relatively dispersed author collaboration network, characterized by several small yet cohesive clusters rather than a single dominant research group. Notable contributors include Stefanie L. Boyer, who is linked to multiple co-authorship pathways and exerts strong influence in behavioral and sales-oriented entrepreneurship research; Suhaib Anagreh, whose collaborations focus on

entrepreneurial intention and generational characteristics; Juraj Fabus, who contributes to cross-generational and human resource development themes; and María Teresa Ballestar, who is connected through educational and behavioral research perspectives. Despite the presence of these clusters, the overall structure remains fragmented, indicating that Gen Z entrepreneurship research is still in a formative stage with limited integration among research teams and relatively few large-scale collaborative networks.

### 3.5 Affiliation Collaboration Network

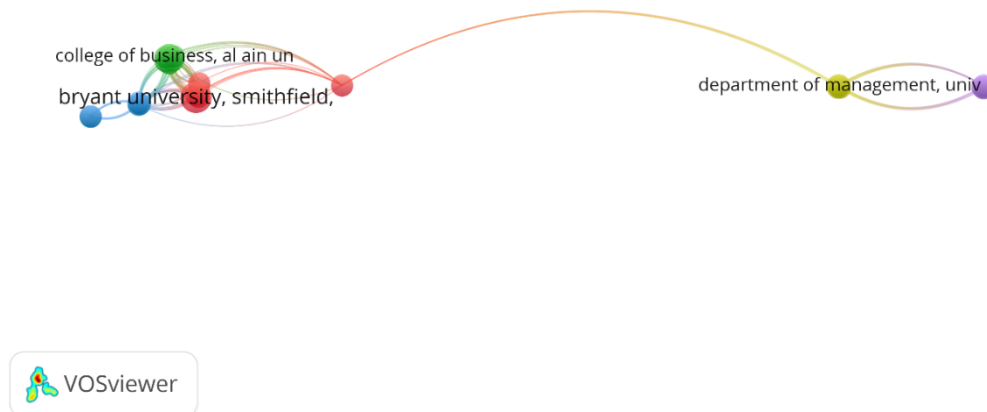


Figure 5. Affiliation Collaboration Visualization

*Source: Data Analysis, 2025*

Figure 5 displays the affiliation collaboration network, which shows a distributed pattern similar to the author-level visualization, with stronger clusters emerging from institutions such as Bryant University in Smithfield and the College of Business at Al Ain University, both of which demonstrate high levels of collaborative activity and connections to multiple smaller nodes. Another visible component is the Department of Management, University of..., which

appears as a separate node linked through intermediary or bridging authors, indicating more limited integration. The noticeable distance between institutional clusters suggests that while research collaboration on Gen Z entrepreneurship is international in scope, it remains loosely connected and not yet deeply consolidated, reflecting the relatively early developmental stage of this research domain.

### 3.6 Country Collaboration Network

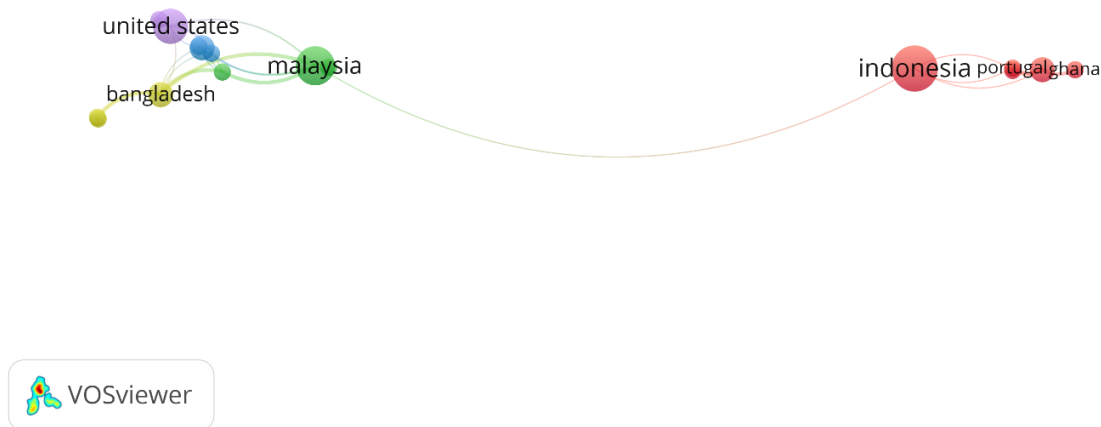


Figure 6. Country Collaboration Visualization

Source: Data Analysis Result, 2025

Figure 6 illustrates the country collaboration network, revealing several notable patterns in the global distribution of Gen Z entrepreneurship research. Malaysia emerges as a central hub with strong collaborative ties to the United States, Bangladesh, and other Asian countries, indicating its active role in cross-national research efforts. Indonesia also appears as an important node, though with more limited collaboration, linking primarily with Portugal and Ghana. Meanwhile, the United States

shows robust partnerships with multiple Asian countries, reflecting the international scope of entrepreneurship education and the growing interest in cross-cultural generational studies. Overall, the network suggests that collaborations in Gen Z entrepreneurship research are predominantly shaped by Asia–North America linkages, driven by demographic shifts and the increasing emphasis on entrepreneurship development within educational systems across these regions.

### 3.7 Citation Analysis

Table 1. Top Cited Research

Citations	Authors & Year	Title
74	Rodriguez, M., Boyer, S., Fleming, D., Cohen, S. (2019)	Managing the Next Generation of Sales, Gen Z/Millennial Cusp: An Exploration of Grit, Entrepreneurship, and Loyalty
52	Hossain, M.I., Tabash, M.I., Siow, M.L., Ong, T.S., Anagreh, (2023)	Entrepreneurial intentions of Gen Z university students and entrepreneurial constraints in Bangladesh
43	Bagwan, W.A. (2024)	Electronic waste (E-waste) generation and management scenario of India, and ARIMA forecasting of E-waste processing capacity of Maharashtra state till 2030
11	Hamdi, M., Indarti, N., Manik, H.F.G.G., Lukito-Budi, A.S. (2023)	Monkey see, monkey do? Examining the effect of entrepreneurial orientation and knowledge sharing on new venture creation for Gen Y and Gen Z

8	Arkorful, H., Hilton, S.K., Awaah, F. (2025)	Generational cohorts and their predisposition toward entrepreneurship in an emerging economy
7	Viterouli, M., Belias, D., Koustelios, A., Tsigilis, N. (2024)	Optimizing Adaptive Performance: Exploring Organizational Learning Culture across Generations
6	Pranić, L. (2023)	What Happens to the Entrepreneurial Intentions of Gen Z in a Crony Capitalist Economy Amidst the COVID-19 Pandemic?
6	Manurung, E.M., Purwadi, Y.S., Sugiharto, I.B. (2022)	Digital Learning Process: Challenges for Specific Creativity
6	Eisenstein, A., Raz, N. (2021)	Entrepreneurial work- integrated learning
4	Yazici, S., Ayazlar, R.A. (2021)	Generation Z and tourism entrepreneurship: Generation Z's career path in the tourism industry

Source: Scopus, 2025

The most influential works in the field, as presented in Table 1, highlight several cornerstone studies that shape the current understanding of Gen Z entrepreneurship. The most cited publication is Rodriguez et al. (2019), with 74 citations, which examines grit, loyalty, and entrepreneurial behavior among individuals situated at the Gen Z/Millennial boundary. Its prominence underscores the central role of psychological traits and behavioral factors in generational entrepreneurship research. This is followed by Hossain et al. (2023), cited 52 times, which focuses on entrepreneurial intention and structural constraints in Bangladesh—reflecting a growing scholarly emphasis on emerging economy contexts and the unique barriers faced by younger generations. Interestingly, Bagwan (2024) appears with 43 citations despite its focus on e-waste management rather than traditional entrepreneurship, signaling the expanding intersection between Gen Z scholarship, sustainability concerns, and environmental entrepreneurship.

Beyond these leading works, the citation landscape includes a diverse range of influential topics such as entrepreneurial orientation and knowledge sharing (Hamdi et al., 2023), generational predispositions toward entrepreneurship (Arkorful et al., 2025), and organizational learning culture tied to adaptive performance (Viterouli et al., 2024). Studies addressing entrepreneurial resilience during the COVID-19 pandemic (Pranić, 2023), digital learning and creativity development (Manurung et al., 2022), work-integrated learning environments (Eisenstein

& Raz, 2021), and tourism-based entrepreneurship pathways (Yazici & Ayazlar, 2021) further enrich the intellectual diversity of the field. Overall, the citation patterns demonstrate a wide thematic spectrum encompassing behavioral, contextual, educational, environmental, and sectoral dimensions—reinforcing earlier keyword findings that position Gen Z entrepreneurship as a multidimensional and evolving research domain.

### Discussion

Taken together, the bibliometric results portray Gen Z entrepreneurship as a growing yet still-consolidating research field, characterized by several prominent themes. First, behavioral foundations remain central, as reflected in the dominance of keywords such as attitude, entrepreneurial intention, and entrepreneurship, supported by highly cited studies focusing on grit, orientation, and generational predisposition. Second, education and capability building are emerging as major research priorities, with overlay maps showing increasing emphasis on education, financial literacy, and digital learning as key determinants of entrepreneurial action among Gen Z. Third, cross-generational dynamics and demographic factors continue to attract scholarly attention, with themes involving Generation Y, gender, and multi-cohort comparisons demonstrating efforts to differentiate Gen Z's entrepreneurial identity from adjacent generations.

Additionally, sectoral and contextual diversity is expanding, as studies on

environmental entrepreneurship—such as e-waste initiatives—tourism entrepreneurship, and emerging-market conditions indicate that the scope of Gen Z entrepreneurship research now spans a wider array of industries and global regions. Despite this thematic growth, collaboration networks remain fragmented; author and affiliation mappings reveal limited cross-cluster integration, underscoring opportunities for more interdisciplinary, multi-country research partnerships. Finally, Asia plays a leading role in shaping the field, with Malaysia, Indonesia, Bangladesh, and the United States forming strong collaborative nodes, reflecting demographic realities and substantial investments in entrepreneurship education within these regions.

#### 4. CONCLUSION

This bibliometric study provides a comprehensive overview of research trends, thematic patterns, and scholarly influence in Gen Z entrepreneurship literature from 2000 to 2025. The findings show that the field is largely shaped by themes related to entrepreneurial behavior, intention formation, and generational identity. Visualizations generated through VOSviewer indicate that topics such as education, financial literacy, attitude, and digital learning have become increasingly prominent, highlighting a shift toward examining capability-building processes that

support entrepreneurial readiness among Generation Z. The clustering of keywords further demonstrates the multidimensional nature of this research area, incorporating psychological, educational, socio-economic, and sector-specific perspectives.

Authorship, institutional, and country collaboration maps reveal that although global scholarly engagement is expanding, collaboration networks remain relatively fragmented, pointing to opportunities for more integrated and cross-disciplinary research efforts. Countries such as Malaysia, the United States, Indonesia, and Bangladesh play significant roles, reflecting strong regional interest in youth entrepreneurship development. Citation analysis reinforces the field's emphasis on entrepreneurial traits, knowledge sharing, and learning environments, underscoring the importance of behavioral and educational frameworks. Collectively, the results indicate that Gen Z entrepreneurship is an evolving domain with substantial theoretical and practical potential. Future studies may benefit from interdisciplinary approaches, longitudinal analyses, cross-cultural comparisons, and the integration of digital transformation, sustainability, and socio-emotional skill development. These insights provide valuable guidance for policymakers, educators, and researchers in designing entrepreneurship ecosystems aligned with the unique characteristics and aspirations of Generation Z.

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