

Delving into Entrepreneurial Intentions: A Quindecennial Bibliometric Perspective on the Influence of Personality Traits

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ABSTRACT

This study conducts a comprehensive fifteen-year investigation into the interaction between personality traits and entrepreneurial intentions, utilizing a bibliometric approach to provide an insightful overview of the evolution, trends, and contributions in this area. The primary goal is to identify significant keywords, authors, and research clusters while illuminating the development of understanding regarding the relationship between personality traits and entrepreneurial intentions over time. A bibliometric literature review was performed using data from the Web of Science (WoS) database, covering the period from 2009 to 2023, and employing various techniques, such as citation analysis, co-citation analysis, co-authorship analysis, co-occurrence analysis, and bibliographic coupling, to map and analyze the research landscape. The findings reveal key premises and focus areas explored by scholars in this field, highlighting crucial research directions and emphasizing the importance of further exploration. This manuscript offers a unique and comprehensive analysis of research on entrepreneurial intentions and personality traits, spanning a fifteen-year period that has not been previously examined in the literature. By utilizing a range of bibliometric techniques, this study provides a multifaceted examination of the field's growth, knowledge structure, and emerging trends, contributing to a deeper understanding of the factors influencing entrepreneurial intentions and offering valuable insights for future research, policy formulation, and the enhancement of entrepreneurship education and support initiatives.

Keywords: Bibliometric analysis, entrepreneurial intention, personality traits, Science mapping, VoS Viewer

1. Introduction:

Entrepreneurship is acknowledged as a vital catalyst for fiscal growth, innovation, and job creation (Utami *et al.*, 2023). Consequently, comprehending the determinants of entrepreneurial intentions has become a focal point for researchers and policymakers. Of particular interest is examining how personality traits influence a person's propensity toward entrepreneurship (Batool *et al.*, 2022; Liñán *et al.*, 2011). By exploring this relationship, researchers aim to gain valuable insights that can promote entrepreneurship and foster an entrepreneurial mindset (Li *et al.*, 2022). Over the years, entrepreneurial intention and personality traits research has evolved, with scholars now incorporating various perspectives and considering multiple factors in their investigations. Longitudinal studies have examined the stability and changes in entrepreneurial intention over time. Notable works, such as Rauch and Frese's meta-analysis (2007) and Obschonka *et al.*'s study (2010), have crystalized the significance of personality traits and the developmental nature of entrepreneurial intention.

This study utilizes a sequential explanatory mixed-method research design, integrating both quantitative and qualitative approaches to examine contemporary research concerning entrepreneurial intention and personality traits. The research aims to identify trends, gaps, and emerging themes using bibliometric analysis and content analysis. Through the utilization of diverse bibliometric techniques like citation analysis, co-citation analysis, co-occurrence analysis, co-authorship analysis, and bibliographic coupling, the study offers a thorough insight into the research landscape, identifying significant contributions and potential areas for further investigation. This research study makes the following contributions to the field of study. It offers an up-to-date and transparent quantitative review of the field, addressing the evolving nature of entrepreneurial intention and personality traits scholarship. Next, as one of the initial bibliometric studies in this area, it can be a yardstick for research in the future. And it allows us to comprehend the connections between various study subjects in literature.

The fundamental goal of this research is to map out the sway of personality traits on entrepreneurial intentions by

analyzing a wide range of scholarly articles. The research aims to identify influential studies, prominent authors, and research clusters. Additionally, the study explores the evolution of research trends over time, providing insights into how the interpretation of the connection between personality traits and entrepreneurial intentions has evolved.

By adopting a bibliometrics perspective, this study aims to fulfill knowledge gaps, assess the impact of previous studies, and provide valuable insights for future research directions. It contributes to the existing literature on entrepreneurship and personality traits by offering a comprehensive analysis and synthesis of the current state of knowledge. Moreover, it investigates the evolution of the knowledge structure of research on entrepreneurial intention and personality traits, as well as the patterns of association among authors and study areas. In the subsequent sections, the article will present the methodology used in the bibliometric analysis, followed by the results and discussion of the findings. The study will highlight fundamental studies and authors, explore thematic clusters, and discuss implications for theory, practice, and policy. Finally, the article outlines the study's limitations and suggests avenues for future research.

This study aims to excavate our understanding of the influence of personality traits on entrepreneurial intentions using a bibliometrics perspective. By providing an overview of the research landscape, it seeks to facilitate further advancements in the field of entrepreneurship and inform stakeholders about the factors that shape entrepreneurial intentions, ultimately contributing to the promotion and support of entrepreneurial endeavors.

2. Background of the study of entrepreneurial intention and personality traits: Entrepreneurial intention denotes an individual's mindful and thoughtful decision to pursue entrepreneurial activities, such as starting and managing a business venture (Al-Mamary &

Alraja, 2022). It is a fundamental construct in entrepreneurship research as it is a crucial precursor to actual entrepreneurial behavior (Kim *et al.*, 2023). Understanding the factors that shape entrepreneurial intention is vital for various stakeholders, including policymakers, educators, and aspiring entrepreneurs (Naz *et al.*, 2023; Norris *et al.*, 2000). Identifying the determinants of entrepreneurial intention can help develop effective strategies to promote entrepreneurship, support entrepreneurial education programs, and create an environment conducive to entrepreneurial activity (Al-Mamary *et al.*, 2020).

Numerous researchers have discovered the antecedents of entrepreneurial intention and identified various factors influencing an individual's inclination toward entrepreneurship (Nsahlai *et al.*, 2020; Lee *et al.*, 2011). One prominent area of investigation is the role of personality traits (Vodă & Florea, 2019). Personality traits are enduring patterns of thoughts, emotions, and behaviors that characterize an individual and significantly impact their entrepreneurial decision-making. Researchers have examined various personality traits and their influence on entrepreneurial intention. Personalities such as risk-taking propensity, achievement needs, locus of control, self-efficacy, innovativeness, and proactiveness have been studied extensively (Karabulut, 2016). These traits can shape an individual's perception of opportunities, willingness to take risks, confidence in their abilities, and propensity to act entrepreneurially (Karimi *et al.*, 2017).

While significant progress has been made in examining the affiliation between personality traits and entrepreneurial intention, there is still much to learn. Gaps in the literature exist, such as the need for further investigation into the complex interplay between multiple personality traits, the examination of cultural influences on the relationship, and the exploration of potential moderating or mediating variables. Through gaining a more profound comprehension of the historical context and present status of research on entrepreneurial intention and personality traits, scholars can further progress in the field and add to the

reservoir of knowledge that informs entrepreneurial education, policymaking, and the advocacy for entrepreneurship as a crucial catalyst for economic growth and innovation.

3. Evolution and history of entrepreneurial intention and personality traits:

Exploring entrepreneurial intention and personality traits has a long and dynamic past within entrepreneurship research. Researchers have delved into the connection between individual characteristics and entrepreneurial conduct for many decades. In the 1970s and 1980s, initial investigations were concentrated on identifying the personality traits most linked to entrepreneurship (Wennekers and Thurik, 1999; Schneider and Teske, 1992). These early studies revealed that entrepreneurs tended to possess traits such as achievement needs, the propensity to engage in risk-taking behavior, an internal locus of control, and an ability to tolerate ambiguity (Mueller and Thomas, 2001; Koh, 1996).

During the 1990s, the exploration of entrepreneurial intention shifted its emphasis to cognitive factors, explicitly investigating the influence of self-efficacy and perceived opportunities in forecasting entrepreneurial behavior (Sreejith and Sreejith, 2023). Research conducted during this period revealed that individuals with elevated levels of self-efficacy and a positive perception of opportunities were more inclined to exhibit entrepreneurial intentions (Nwankwo *et al.*, 2012).

In recent years, research on entrepreneurial intention has become more complex, considering a more comprehensive range of factors predicting entrepreneurial behavior, such as the social and environmental context (Meoli *et al.*, 2020; Moraes *et al.*, 2018). These studies and other researchers have found that various factors, including personality traits (Fragoso *et al.*, 2020), cognitive (Li & Wu, 2019), social (Kasuma *et al.*, 2019), and environmental (Jiang *et al.*, 2022) factors, influence entrepreneurial intention.

Here is a quick summary of the critical milestones and pivotal research in this area:

3.1 McClelland's Need for Achievement Theory (1961)

Need for achievement (nAch) describes the desire to succeed in challenging situations. People with high nAch are motivated by setting challenging goals, overcoming obstacles, and achieving mastery (Quirin *et al.*, 2022). Entrepreneurial intention is the person's aspiration to begin a business (Jing, 2022; Krueger and Carsrud, 1993). It is a precursor to actual entrepreneurial behavior. According to McClelland's theory, the need for achievement (nAch) is a crucial determinant of entrepreneurial intention. People with high nAch are more likely to have entrepreneurial intentions because they are motivated by the challenge of starting and running a business (Al-Qadasi *et al.*, 2023). McClelland suggested that individuals with a strong desire for achievement are more inclined to participate in entrepreneurial endeavors (Krueger and Carsrud, 1993). A meta-analysis by Rauch and Frese (2007) found that nAch was one of the strongest predictors of entrepreneurial intention. And it has also been stated by researchers that entrepreneurs were more likely to have an internal locus of control (Rotter, 1966).

3.2 Personality Trait Approach (1980s-1990s)

The personality trait approach gained prominence, focusing on identifying specific traits associated with entrepreneurship. The research examined traits such as locus of control, risk-taking propensity, need for achievement, self-efficacy, and innovativeness (Karabulut, 2016). Presumably, entrepreneurs would have had previous experience in business, either as an employee or an entrepreneur. They are also more likely to have role models who are entrepreneurs. Personal characteristics like age, education, and location are also associated with entrepreneurship.

Some influential studies during this period include:

Brockhaus & Horwitz (1986), in their chapter on "The Psychology of the Entrepreneur," provides valuable insights into the psychological dimensions of entrepreneurship. It sheds

light on the traits, cognitive processes, motivations, and coping strategies prevalent among entrepreneurs. The chapter's analysis contributes to a deeper understanding of the entrepreneurial mindset and has implications for entrepreneurship education, training, and support initiatives. Aladejebi (2018), many of the students enjoyed entrepreneurship education. Galvão *et al.* (2018) training and entrepreneurship education plays a significant role as strategic tools for regional development. Ukil and Jenkins (2022) suggest that resilience enhances entrepreneurial intentions while also reducing the negative effects of fear of failure on entrepreneurial intentions. Busenitz and Barney (1997) discovered that entrepreneurs rely more on biases and heuristics than managers in larger organizations. Two common biases observed among entrepreneurs are overconfidence and representativeness. However, these biases can lead to suboptimal strategic decisions. Managers in larger organizations can take cues from how entrepreneurs use biases and heuristics to improve their strategic decision-making processes.

Shane & Venkataraman (2000) called for a more holistic approach to understanding entrepreneurship, considering a more comprehensive range of factors, such as the social and environmental context. It states that entrepreneurship is a distinct field of research that focuses on the *vinculum* of individual opportunities and the process of opportunity discovery, evaluation, and exploitation. The area of entrepreneurship can render significant contributions to our understanding of economic growth, innovation, and social change. The field of entrepreneurship faces several challenges, including the need to develop better measures of entrepreneurial activity and integrate entrepreneurship research with other disciplines.

Collins *et al.* (2004) conducted a meta-analysis that examined numerous studies exploring the impact of achievement motivation on entrepreneurial behaviors. Their analysis delved into how individuals with higher achievement motivation tend to be more inclined to participate in entrepreneurial activities, take risks, and actively pursue opportunities for success. By aggregating the results from multiple studies, the meta-analysis provides a robust and

quantitative evaluation of the connection between achievement motivation and entrepreneurial behavior.

According to the findings of Zhao *et al.* (2005), the relationship between entrepreneurial self-efficacy and entrepreneurial intentions is fully mediated by the effect of perceived learning from entrepreneurship-related courses, past entrepreneurial experience, and risk inclination. This research aims to identify the particular components that contribute to the development of self-efficacy in relation to entrepreneurial goals. These factors

may include prior entrepreneurial experiences, exposure to entrepreneurial role models, and personal mastery experiences in entrepreneurial activities. They also highlighted the significance of entrepreneurial outcome expectations in shaping self-efficacy. Positive beliefs about entrepreneurship's potential outcomes and rewards can enhance an individual's confidence in their ability to flourish as an entrepreneur.

3.3 Cognitive Approach (2000s)

The cognitive approach emphasizes the role of mental processes, beliefs, and intentions in entrepreneurial behavior. Researchers explored the influence of entrepreneurial intention as a precursor to actual entrepreneurial action. Notable studies during this period include:

Krueger *et al.* (2000) found that enhancing public perceptions of feasibility and desirability can foster entrepreneurial intentions, making it a viable and worthwhile strategy. Liñán & Chen's (2009) study advances the understanding of entrepreneurial intentions from a cognitive perspective by introducing the EIQ instrument and highlighting the role of perceived desirability, perceived feasibility, and entrepreneurial self-identity as crucial factors in shaping individuals' cognitive intentions towards entrepreneurship. The study's cross-cultural application further underscores the relevance of considering cultural variations when exploring the cognitive determinants of entrepreneurial intentions.

Rauch, Frese, and Baron's (2009) meta-analysis contribute valuable insights to the cognitive perspective of entrepreneurial behavior by confirming the influential roles of human capital, motivation, and opportunity in shaping individuals' engagement in entrepreneurial activities. By consolidating findings from various studies, the meta-analysis offers a comprehensive understanding of these cognitive determinants' impact and their significance in entrepreneurship.

3.4 Integrated Approaches and Longitudinal Studies (2010s-2020s)

Researchers have increasingly adopted an integrative approach, considering multiple perspectives and factors in their entrepreneurial intention and personality traits investigations. Longitudinal studies have been carried out to explore the stability and changes in entrepreneurial intention over time. Some notable recent works in this area include:

Rauch and Frese's (2007) meta-analysis highlights the importance of considering personality traits in entrepreneurship research. It demonstrates that specific personality traits can influence an individual's decision to venture into entrepreneurship and subsequently impact their success as an entrepreneur.

Obschonka *et al.*'s (2010) study offers valuable insights into entrepreneurial intention's developmental aspects. Through a life course perspective and longitudinal analysis, the study emphasizes the significance of considering an individual's life experiences, educational trajectory, and evolving circumstances in interpreting the formation and development of entrepreneurial intention. This exploration enhances our understanding of the factors shaping entrepreneurial intention and highlights its role as a significant developmental outcome throughout an entrepreneur's journey.

Liñán & Fayolle's (2015) systematic literature review on entrepreneurial intentions provides a comprehensive and structured overview of the existing research in the field. By analyzing citations, themes, and research gaps, the review offers valuable insights into the current state

of knowledge in studying entrepreneurial intentions. It also guides future research directions, helping researchers, practitioners, and policymakers identify areas of importance and potential in entrepreneurial intentions.

4. Methodology

The current study utilized a sequential explanatory mixed-method research design, incorporating quantitative and qualitative approaches (Hajizadeh *et al.*, 2020; Carr, 2009; Creswell *et al.*, 2003). It employed a two-phase process, conducting both a bibliometric analysis and a summative content analysis to examine contemporary research on entrepreneurial intention and personality traits identified through bibliographic coupling.

A bibliometric literature review comprises four primary stages: conducting a comprehensive search of relevant literature, establishing criteria for selecting papers to be included, analyzing initial descriptive data, and creating a visual representation of the scientific landscape via science mapping. Bibliometric methodologies are extensively employed to conduct quantitative analyses of written publications, yielding valuable insights into diverse facets of publishing patterns, including institutional or geographical characteristics. Moreover, these approaches provide a comprehensive overview of the area's evolution happened eventually, subject domains, literary performance genres, and authorships (Antwi *et al.*, 2022; Ellegaard and Wallin, 2015). These methodologies are crucial in measuring the research carried out on the respective subject and revealing the interconnectedness among various factions within the scientific community (Zupic & Čater, 2015; Barth *et al.*,

2014).

Followed by the bibliometric analysis, a summative content analysis was carried out to gain deeper insights into the lines of research and focus areas prevalent in extant entrepreneurial intention and personality traits literature. This qualitative content analysis approach involved searching for occurrences of specific words or phrases and interpreting the context in which they were used (Downe-Wamboldt, 1992; Hsieh and Shannon, 2005; Wiese et al., 2012). The

combination of quantitative and qualitative analyses allowed for a comprehensive understanding of recent entrepreneurial intention and personality traits scholarship.

4.1 Literature search

The researchers retrieved scholarly articles on entrepreneurial intentions and personality traits from the WoS database. Journal articles were chosen as the main focus of analysis because of their recognized significance in contributing to knowledge within specific fields. The researchers identified pertinent papers by employing different keywords as search queries in the bibliometric database. These keywords were selected based on the investigation and advancement of research on entrepreneurial intentions and personality traits. The search terms "entrepreneurial intention" and "personality trait" were used to search the subject, title, and keyword fields. The authors included relevant keywords that comprehensively covered the breadth of research on entrepreneurial intentions and personality traits. This query was executed within the WoS database to retrieve articles relevant to the specific topic under this study.

4.2 Paper inclusion criteria

The bibliometric data for this study were obtained from the Web of Science (WOS), a highly reliable indexing and abstracting database widely recognized in academia (Farooq *et al.*, 2021). The aim was to analyze the publishing trends and patterns concerning the topic of "entrepreneurial intention and personality traits." A specific search query was performed within the WoS core collection, focusing on the title and author keyword fields.

The search query used was as follows:

(T1= "entrepreneurial intention" AND T2= "Personality Traits")

The initial search yielded a total of 86 documents related to the subject. Given the relatively small number of articles (less than 100), the decision was not to apply further filters to the query. If additional filtering had been implemented, the resulting number of documents might

have been insufficient to produce robust and meaningful results in the subsequent bibliometric analysis.

In essence, the study utilized bibliometric data from the reputable Web of Science database to explore the publishing trends on entrepreneurial intention and personality traits. The search query was formulated, and the analysis was conducted based on the 86 retrieved documents without additional filtering, ensuring a sufficient dataset for meaningful insights.

4.3 Analytical tool

Several software options are available for conducting a bibliometric review, including CiteSpace, BibExcel, and R, having their pros and cons (Li et al., 2021; Moral-Muñoz et al., 2020; Župic and Cater, 2015). VOS Viewer was selected as the preferred software for the present bibliometric analysis. VOS Viewer is a non-commercial software package that has gained popularity among scholars due to its pragmatic approach to analyzing bibliometric data from databases like WoS or Scopus (Donthu *et al.*, 2021a).

One of the critical strengths of VOS Viewer lies in its versatility, as it offers built-in analysis toolboxes and can handle various data formats (Van Eck and Waltman, 2010). These features make it a user-friendly and efficient tool for conducting bibliometric analyses. Researchers find VOS Viewer particularly useful for visualizing and exploring the interconnections within bibliographic data, making it a valuable resource for bibliometric studies in entrepreneurial intention and personality traits.

4.4 Analyzing the number of publications year-wise

Analyzing the number of publications year-wise helps track research progress in the field over time (Piryani et al., 2017). It provides insights into how the interest in studying entrepreneurial intention and personality traits has evolved and whether there has been an increasing or decreasing trend in research activity. This can help the researchers to assess the

level of research activity in the field. It indicates how active the research community is in studying entrepreneurial

intention and personality traits and can reflect the overall interest and investment in this area of research. Tracking the number of publications year-wise allows for evaluating the impact of research in the field. High numbers of publications in specific years might indicate the popularity and influence of the topic during that period. Figure 1 illustrates the publication trend of papers on Entrepreneurial Intention and Personality Traits in the Web of Science database from 2009 to 2023.

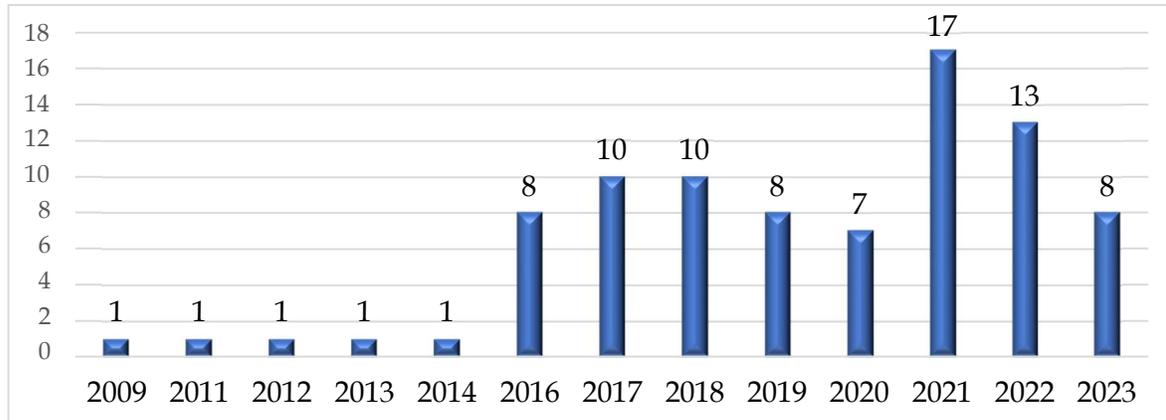


Figure 1: Number of publications on Entrepreneurial Intention and Personality Traits from 2009 to 2023

In the year 2021, there was a notable increase in the volume of publications within this field, with 17 papers. The increase in the number of publications on entrepreneurial intention and personality traits is likely due to several factors, including the growing interest in entrepreneurship as an area of research, the increasing availability of data on entrepreneurial intention and personality traits, the development of new methods for studying entrepreneurial intention and personality traits. The increase in publications suggests a growing understanding of the factors influencing entrepreneurial intention and personality traits. This understanding can be used to develop interventions that can help to increase entrepreneurial intention and promote entrepreneurship (Goyal & Kumar, 2021).

4.5 Analyzing leading journals in the area of entrepreneurial intention and personality traits

Researchers can identify the most prolific and influential authors in the field by analyzing the publication trends in leading journals. This helps to recognize the key contributors shaping the research landscape and driving advancements in understanding entrepreneurial intention and its relationship with personality traits. Analyzing leading journals enables researchers to discern prevailing themes, topics, and emerging trends in the field. By identifying the prevalent research areas and issues that gain prominence in these journals, scholars can comprehend the current areas of interest and potential future directions in studying entrepreneurial intention and personality traits. Analyzing leading journals helps establish the relevance and maturity of the field. Substantial research output in reputable journals indicates that entrepreneurial intention and personality traits have gained recognition as essential areas of study within the broader entrepreneurship domain.

Table I provides insight into the leading journals in this field. Sustainability is the most prolific publisher (n > 10) of articles on entrepreneurial intention and personality traits in the Web of Science database. Notably, Sustainability has also garnered the maximum number of citations, followed by Cogent Business & Management and Administrative Sciences. These journals have been actively contributing to entrepreneurial research for an extended period. Additionally, prominent journals in the business and management domain have lately begun paying attention to this subject and publishing works on entrepreneurial intention and personality traits.

Table I. Leading Journal in the Field of entrepreneurial intention and personality traits

Journal name	Documents	Citations	Total link strength
Sustainability	6	188	15

Cogent Business & Management	4	45	8
Administrative Sciences	3	16	7
Asia Pacific Journal of Innovation and Entrepreneurship	2	116	9
5th International Conference on Leadership, Technology, Innovation and	2	97	16
Journal Of Entrepreneurship In Emerging Economies	2	76	4
Journal of Asian Finance Economics and Business	2	47	5

4.6 Analyzing articles categorized by research methodologies

Categorizing articles by research methodology allows for assessing the quality and rigor of the research on entrepreneurial intention and personality traits. Different research methodologies have varying levels of rigor and validity, and understanding the distribution of articles across these categories helps identify the strength of the evidence presented in the literature. Different research methodologies have unique approaches to studying entrepreneurial intention and personality traits. For example, qualitative studies may provide rich insights into individual experiences and motivations, while quantitative studies can offer generalizable findings based on large datasets. Categorizing articles by research methodology helps researchers and readers understand the diverse approaches used in the field (Goyal & Kumar, 2021).

Table II. Articles categorized by research methodologies

Conceptual	3
Case study	1
Empirical	78
Review	4

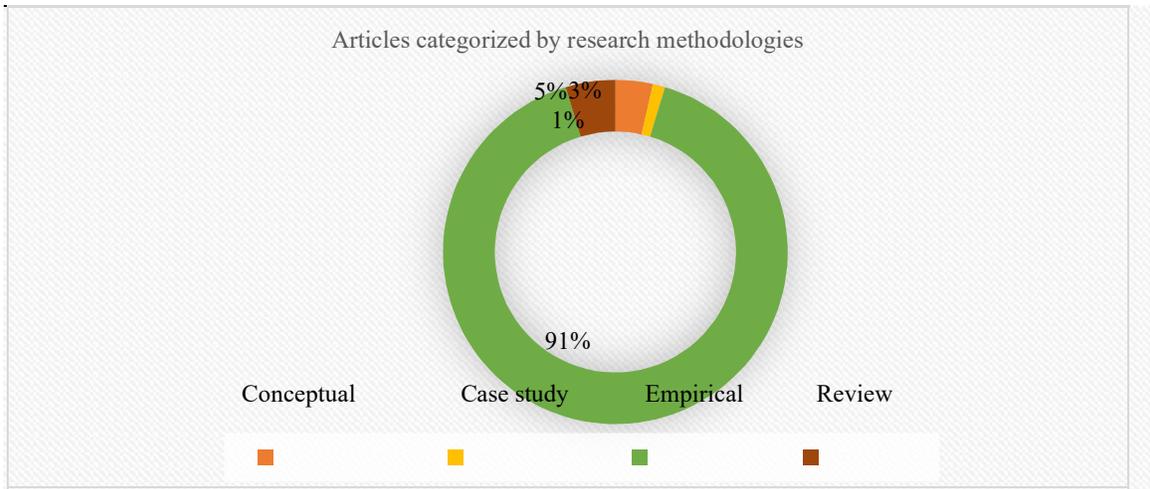


Figure 2: Articles categorized by research methodologies

Table II explains the article categories by research methodologies used. Conceptual [n=3], case study [n=1], empirical [n=78], and review [n=4]. Various study approaches have been used to investigate entrepreneurial intentions and personality traits. Manually divided the 86 publications into four separate study approaches: conceptual, case study, empirical, and review, to explore the different research modalities employed in the topic. Conceptual studies aim to create a conceptual framework based on a theory or concept. In this context, empirical studies use surveys to assess entrepreneurial intentions and personality traits, explore the variables, and measure the impact of entrepreneurial intention through experimentation. Review studies look back at previous research. Figure 2 depicts the percentage of study techniques utilized in entrepreneurial intention and personality traits studies. 78 percent of the 86 articles are empirical, 5% are conceptual, 3% are case studies, and only 1% is reviews. Few studies, it can be deduced, provide a proper conceptualization of entrepreneurial intention backed by grounded

Theories—the question "What" has been answered quite well. However, there remains a gap in addressing "Why" using concepts and interpretations of current theories. Review studies are also scarce that provide up-to-date entrepreneurial intentions knowledge.

Table III. Citation analysis of documents. The minimum citation threshold for each document is 05.

Sl. No.	Document title	Author	Year	Documents	Citations	Total link strength
1	A conceptual model of social entrepreneurial intention based on the social cognitive career theory	Tran, Anh T. P.	2016	1	102	17
2	A conceptual model of social entrepreneurial intention based on the social cognitive career theory	Von Korflesch, Harald	2016	1	102	17

3	Impact of Personality Traits and Entrepreneurship Education on Entrepreneurial Intentions of Business and Engineering Students	Florea, Nelu	2019	1	88	13
4	Impact of Personality Traits and Entrepreneurship Education on Entrepreneurial Intentions of Business and Engineering Students	Voda, AnaIolanda	2019	1	88	13
5	Personality Traits on Entrepreneurial Intention	Karabulut, Ahu Tugba	2016	1	77	20
6	Entrepreneurial intentions of university students in an emerging economy The influence of university support and proactive personality on students' entrepreneurial intention	Chee, Lai Kei	2016	1	74	12
7	Entrepreneurial intentions of university students in an emerging economy The influence of university support and proactive personality on students' entrepreneurial intention	Hernandez, Ernesto	2016	1	74	12
8	Entrepreneurial intentions of university students in an emerging economy The influence of university support and proactive personality on students' entrepreneurial intention	Mahon, Christopher	2016	1	74	12
9	Entrepreneurial intentions of university students in an emerging economy The influence of university support and proactive personality on students' entrepreneurial intention	Mustafa, Michael James	2016	1	74	12
10	The Role of Internship and Business Incubation Programs in Forming Entrepreneurial Intentions:an Empirical Analysis from Pakistan	Farrukh, Muhammad	2019	2	63	10

11	The influence of the dark triad on the relationship between entrepreneurial attitude orientation and entrepreneurial intention: A study among students in Taiwan University	Dadvvari, Alaleh	2017	1	57	4
12	The influence of the dark triad on the relationship between entrepreneurial attitude orientation and entrepreneurial intention: A study among students in Taiwan University	Do, Ben-Roy	2017	1	57	4
13	Entrepreneurial intention: a study of individual, situational, and gender differences	Yukongdi, Vimolwan	2017	2	52	9
14	Entrepreneurial intentions: the role of family factors, personality traits and self-efficacy	Khan, Azeem Ahmad	2017	1	48	6
15	Entrepreneurial intentions: the role of family factors, personality traits and self-efficacy	Khan, Muhammad Shahid	2017	1	48	6
16	Entrepreneurial intentions: the role of family factors, personality traits and self-efficacy	Ramzani, Sara Ravan	2017	1	48	6
17	Entrepreneurial intentions: the role of family factors, personality traits and self-efficacy	Soladoye, Bakare Soladoye Akeem	2017	1	48	6
18	Entrepreneurial intention: a study of individual, situational and gender differences	Lopa, Nusrat Zahan	2017	1	46	3
19	The relationships between Big-Five personality traits and social entrepreneurship intention	Phan Tan Luc	2022	2	44	12
20	The mediating effects of social entrepreneurial antecedents on the relationship between prior experience and social entrepreneurial intent: The case of Filipino and Indonesian university students	Lacap, Jean PaoloG.	2018	1	41	8

21	The mediating effects of social entrepreneurial antecedents on the relationship between prior experience and social entrepreneurial intent: The case of Filipino and Indonesian university students	Mulyaningsih, Hendrati Dwi	2018	1	41	8
22	The mediating effects of social entrepreneurial antecedents on the relationship between prior experience and social entrepreneurial intent: The case of Filipino and Indonesian university students	Ramadani, Veland	2018	1	41	8
23	Determinants of Entrepreneurial Intention Among Millennial Generation	Ismail, Kamariah	2012	1	40	5
24	Determinants of Entrepreneurial Intention Among Millennial Generation	Koe, Wei-Loon	2012	1	40	5
25	Determinants of Entrepreneurial Intention Among Millennial Generation	Majid, Izaidin Abdul	2012	1	40	5
26	Determinants of Entrepreneurial Intention Among Millennial Generation	Sa'ari, Juan Rizal	2012	1	40	5

4.7 Science mapping techniques

The mapping process reveals the interconnected relationships among research components (Donthu *et al.*, 2021a; Baker *et al.*, 2021). The application of bibliometric approaches in science mapping serves two key objectives: firstly, it assists researchers who are new to a specific field in quickly grasping its underlying structure, and secondly, it brings quantitative precision to conventional literature reviews (Župic and Cater, 2015, p. 459). Science mapping techniques offer valuable insights into the interconnections and relationships among various scholarly works, enabling a comprehensive understanding of the research landscape. Researchers can understand the network structure using science mapping by analyzing bibliographic elements. In the present study, various analyses have been employed to map the research on entrepreneurial intention and personality traits, including citation analysis, co-citation analysis, co-occurrence analysis, co-authorship analysis, and bibliographic coupling.

4.7.1 Citation analysis

Citation analysis is invaluable for pinpointing the extremely effective publications within a given field (Donthu *et al.*, 2021a). In the present research, a descriptive citation analysis was meticulously executed on 86 articles from the WoS database to offer a comprehensive panorama of the prevailing scholarly work on entrepreneurial intention and personality traits. Of these articles, 41.8% (n = 36) have accrued more than five citations, signifying their substantial influence and significance in the field. Table 3 showcases the top highly cited articles on this topic, with Tran *et al.* (2006) [n = 102], Vodā *et al.* (2019) [n = 88], Karabulut

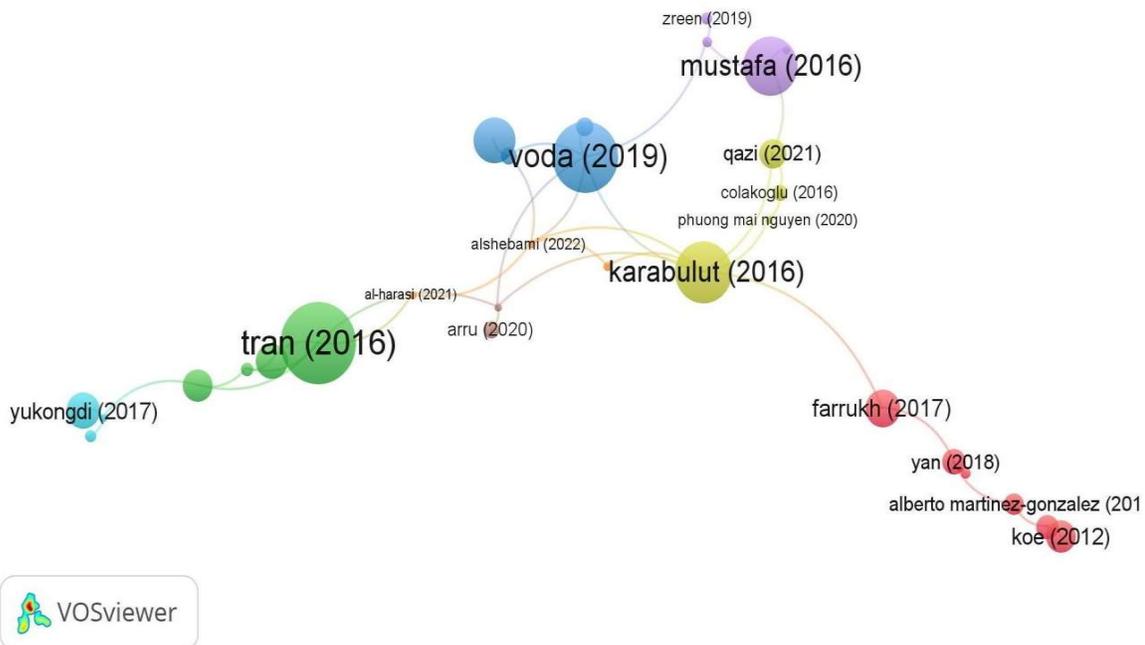
et al. (2016) [n = 77], Mustafa *et al.* (2016) [n = 74], Farrukh, Muhammad, *et al.* (2017) [n = 63], Do et al. (2017) [n = 57], Yukongdi (2017) [n = 52], Qazi et al. (2021) [n = 48], Lopa *et al.* (2017) [n = 46], and Luc (2022) [n = 44] leading the citation count.

Table 3 further reveals that the most cited publication falls within the 2016–2022 timeframe. The works of Tran and Von Korflesch (2016), Voda *et al.* (2019), and Karabulut and Ahu Tugba (2016) stand out with the highest link strength in the citation network analysis. This citation analysis offers valuable insights into the impact of publications on entrepreneurial intention and personality traits, helping researchers identify the most influential works within this domain.

Figure 3: Visualization of the citation network for documents with a minimum threshold of 5 citations for each document.

Figure 3 presents a visualization of the citation network, displaying documents with a minimum citation threshold of 5 for each document. In this visualization, nodes represent documents, while edges depict citations between documents. The node's size is proportional

to the number of citations received by that document, and the thickness of an edge corresponds to the frequency



of co-citations between two documents.

The visualization reveals distinct clusters that group notable works. Karabulut and Ahu Tugba's (2016) work, along with Tran *et al.* (2006) and Voda *et al.* (2019), display the highest link strength, indicating their influential role in the network. Additionally, several other documents cite a select group of core documents, including Zreen (2019), Mustafa (2016), Qazi (2021), and Colakoglu (2016). These core documents likely serve as crucial sources of information for researchers within this field.

Furthermore, smaller clusters of documents are observable in the visualization, representing groups of closely related works. These clusters may correspond to various research topics or methodological approaches. Overall, the visualization provides a valuable overview of the citation network in this field, enabling researchers to identify key documents and explore other works relevant to their research interests.

4.7.2 Co-citation analysis

A comprehensive collection of 4187 cited references was compiled by conducting a co-citation analysis. The table 4 showcases the most influential publications, each cited at least 15 times. Additionally, Figure 4 illustrates the structure of the co-citation network at the minimum citation threshold value of 10.

Table IV. Co-citation analysis

Authors	Cited frequency	total link strength
Ajzen I. (1991)	53	482
Krueger N F. (2000)	45	445
Linan F. (2009)	35	363
Rauch A. (2007)	23	247
Zhao H. (2010)	23	221
Shapero A. (1982)	22	256
Linan F. (2011)	19	180
Luthje C. (2003)	19	206
Zhao H. (2005)	19	175
Zhao H. (2006)	19	164
Bird B. (1988)	18	190
Brandstatter H. (2011)	17	166
Fornell C. (1981)	17	137
Thompson E. (2009)	17	167
Nga J. (2010)	16	187
Peterman N. (2003)	16	193
Hair J.F. (2006)	15	142

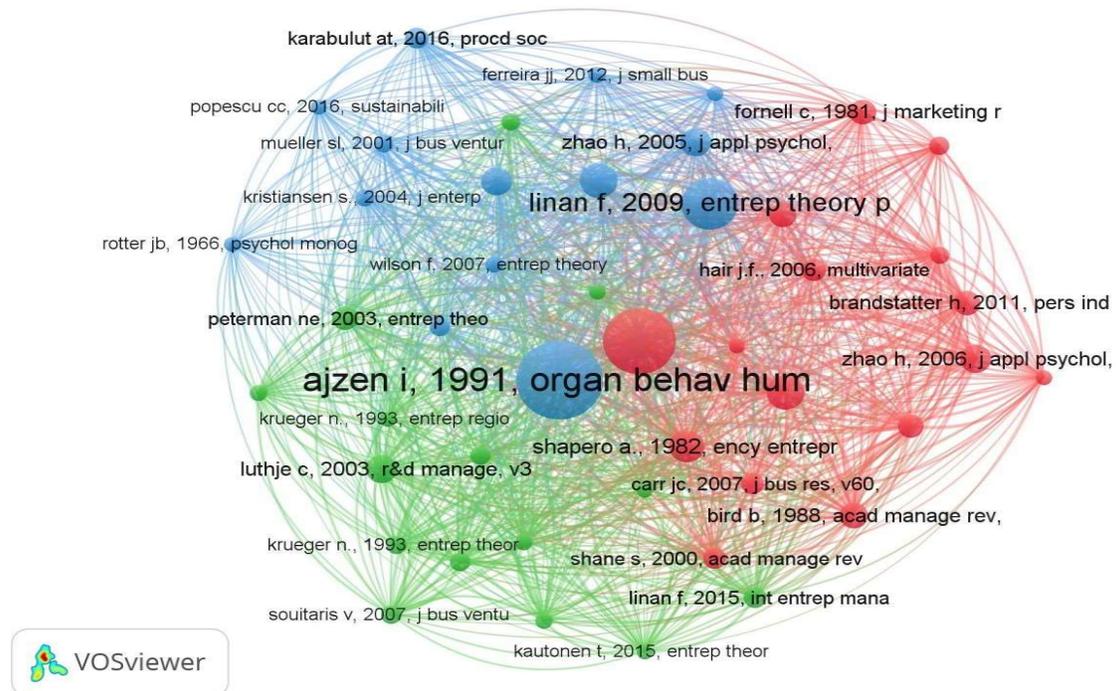


Figure 4. Co-citation network analysis of cited references with a minimum threshold value of 10.

From Figure 4, three clusters were observed, aiding in identifying research areas and collaboration patterns within the entrepreneurial intention and personality traits (Rossetto *et al.*, 2018). These encompass the leading works conducted in this field. Notably, the foundational publication in this area is the work of Ajzen (1991), which has been cited most frequently by other researchers, as reflected in Table 4. This work and other top influential publications are the theoretical underpinnings for developing entrepreneurial intention and personality traits scholarship. For instance, Karabulut's (2016) research offers intriguing evidence of the association between personality traits and entrepreneurial intentions.

Tran *et al.* (2016) have significantly contributed to this domain, shedding light on the profound significance of entrepreneurial intention in academic research and practical entrepreneurial endeavors. Their work put forth a well-structured model of social entrepreneurial intention, effectively addressing gaps in the broader entrepreneurship literature, particularly within the realm of social entrepreneurship. In a separate study, Kruger *et al.* (2000) made noteworthy findings, uncovering the positive association between attitudes and self-efficacy regarding intentions to initiate new ventures. The study further revealed that attitudes mediated the relationship between self-efficacy and intentions, with attitudes exhibiting a stronger correlation. Building upon Ajzen's Theory of Planned Behaviour, Linan and Chen (2009) developed an entrepreneurial intention questionnaire, forming the foundation for their comprehensive research in this area. Their study supported the validity and robustness of the Entrepreneurial Intention Questionnaire, offering strong support for the theoretical model. Rauch (2007) conducted empirical research highlighting that personality traits matched to the business's requirements substantially impacted business creation more than traits not aligned with entrepreneurial tasks.

Moreover, traits matched to entrepreneurship demonstrated a significant correlation with entrepreneurial behavior. Zhao *et al.* (2010) delved into the distinct dimension of risk propensity within an individual's personality, examining its link to entrepreneurial intentions. The study unearthed a positive association between risk propensity and entrepreneurial intentions but did not establish a direct relationship with entrepreneurial performance. This suggests that while personality traits influence the emergence of entrepreneurs, their impact on entrepreneurial success may vary. Shapero (1982) introduced the entrepreneurial event model, highlighting essential factors influencing entrepreneurial intentions. The model pinpointed desirability, feasibility, and a propensity to act as crucial determinants affecting an individual's intention to initiate a new business venture. Linan's (2011) empirical study validated the significant impact of perceived feasibility and perceived desirability on entrepreneurial intention. These factors were found to be the foremost determinants influencing an individual's inclination toward entrepreneurship. The research in entrepreneurial intention and personality traits has been significantly enriched by numerous influential works, each contributing valuable insights to understanding the factors influencing

entrepreneurial intentions and the role of personality traits in the entrepreneurial process. These seminal studies and the cluster analysis from Figure 4 form the foundation for this research area and guide future investigations

correlation with many citations. One standout is Cluster 8, depicted in

orange, which consists of 16 authors actively publishing recent works (since 2020) on entrepreneurial intention and personality traits. Prominent researchers within this cluster include Al-harasi et al. (2021), Ngo et al. (2022), Lacap et al. (2018), Tuan et al. (2022), and Lee et al. (2021). These scholars' clustering suggests that their recent research shares common focal areas and themes within entrepreneurial intention, as shared citations indicate. Interestingly, the analysis also suggests that specific recent articles are distributed across different clusters, possibly reflecting their diverse and multidisciplinary nature. These clusters are organized based on the similarity in research focus among the works within each group.

In the following part of the research, a comprehensive content analysis is conducted to examine the clusters identified through bibliographic coupling in greater detail. This content analysis delves into the recent study of entrepreneurial intention and personality traits, exploring the themes, trends, and emerging areas of interest within each cluster. By utilizing bibliographic coupling and content analysis, this research offers valuable insights into the current research landscape in entrepreneurial intention and personality traits. The identified clusters shed light on the shared themes and collaborative patterns among researchers in the field. At the same time, the content analysis allows for a deeper understanding of the recent advancements and emerging research directions within each cluster. These findings promote a comprehensive understanding of the research trends and developments in this dynamic and rapidly evolving domain.

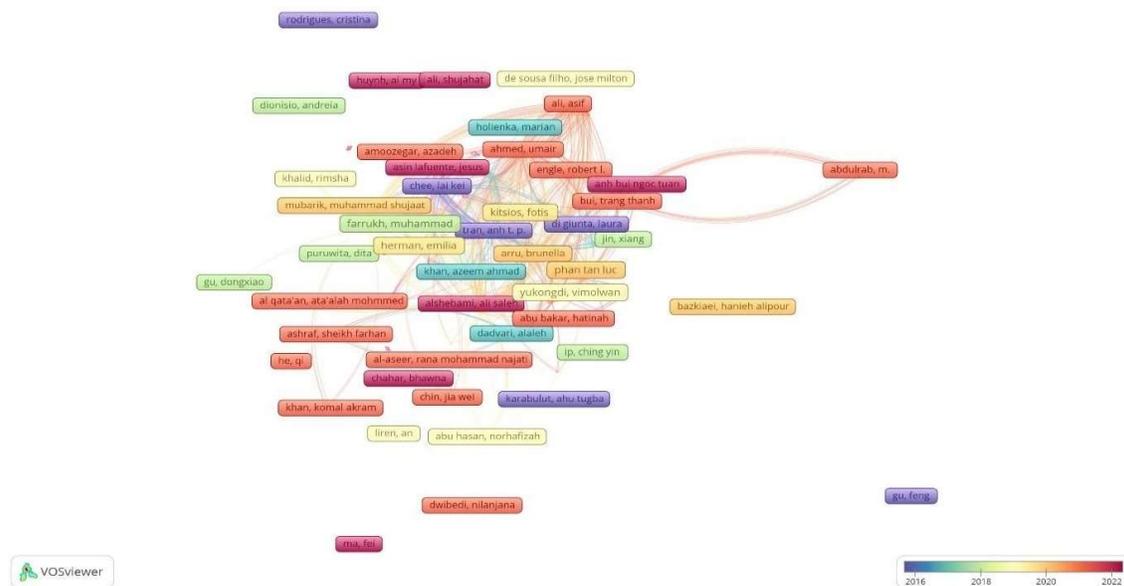


Figure 7. Content analysis

4.8. Content analysis

Content analysis systematically categorizes textual data and derives meaningful insights and interpretations (Hsieh and Shannon, 2005). In this analysis, a total of 38 research articles were subjected to bibliographic coupling, identifying four distinct clusters. Among these clusters, the first had the highest count of articles ($n = 19$). Through the use of overlay visualization in the study of co-occurrence, the researchers could discern an increasing level of attention towards certain keywords, including creativity, social entrepreneurial intention, big 5, and model, within the realm of research on entrepreneurial intention and personality traits. This trend was further supported by recent research articles grouped in Cluster 3 of bibliographic coupling, which also revolved around these trending keywords.

To delve deeper into the current trends, areas of focus, and research themes in entrepreneurial intention and personality traits, the authors conducted content analysis as part of this study. This analysis aimed to reveal valuable opportunities for future research within this domain. The study aimed to demonstrate the influence and importance of the research by integrating content analysis with bibliometric approaches (McLaughlin et al., 2014). The field of

entrepreneurial intentions is characterized by its diverse and multifaceted nature, making it challenging to draw definitive conclusions. Existing literature often presents inconclusive evidence concerning the relationships

between certain variables. There is a need for further research to comprehensively understand effective strategies for promoting entrepreneurial intention and achieving success in personality traits' development. The present study employs content analysis and bibliometric techniques to explore the current landscape of entrepreneurial intention and personality traits research. The research identifies emerging keywords and themes, shedding light on the evolving trends within the field. However, the complexity and diversity of the literature underscore the need for further research to unravel the intricate relationships between variables and to identify strategies that can effectively foster entrepreneurial intention and success in personality traits.

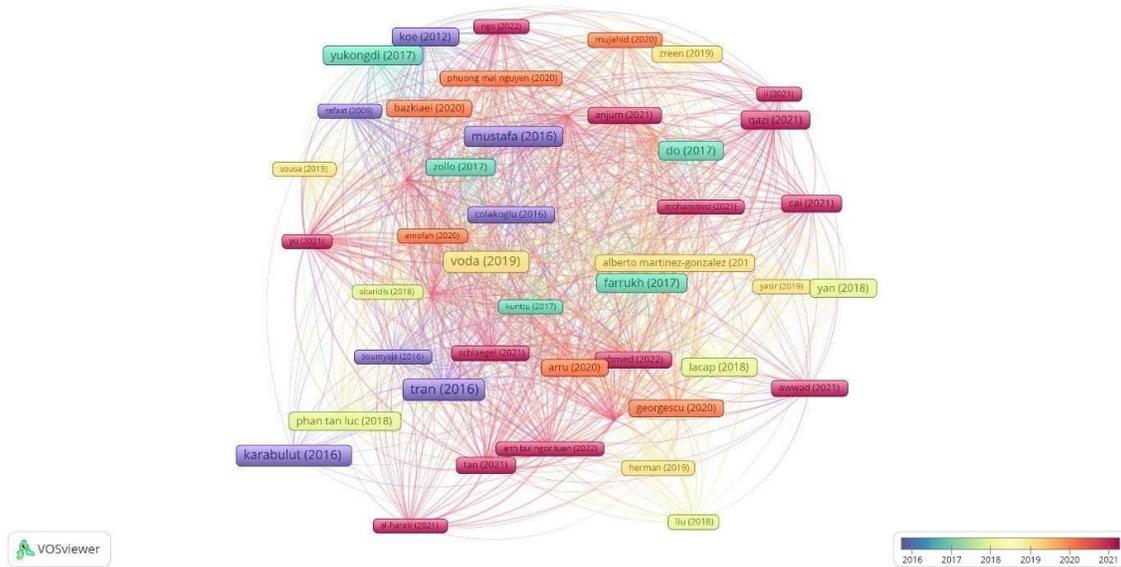


Figure 8. Content analysis based on bibliometric coupling

The articles identified through bibliographic coupling underwent a comprehensive review and were categorized based on specific keywords. Both authors independently conducted the coding process to ensure its reliability; it is common practice in academic research to involve a second researcher in coding identical transcripts. Subsequently, the two researchers participated in comprehensive talks to discern any commonalities or disparities among the

resultant sets of codes (Sutton & Austin, 2015). As Weber (1990, p.12) noted, the classification technique must demonstrate reliability and consistency to draw meaningful conclusions from the text. This implies that different individuals should code the same text consistently. The authors addressed any inconsistencies in the coding process through discussions. The recently published materials on entrepreneurial intention and personality traits were categorized into two distinct focal areas, which will be further explored in the subsequent discussion.

a) *Entrepreneurial intention and proactive personality:*

Individuals with a proactive disposition possess a proactive personality, which drives them to act intentionally and shape their environment, future, and destiny (Benson and Diekmann, 2021). They don't rely on others to make decisions but actively create their own path. Kumar and Sukhla (2022) state that a proactive personality significantly influences entrepreneurial intentions. Luo et al. (2022) conducted a comprehensive investigation of the environment and found that individuals with a proactive personality are significantly more inclined towards entrepreneurial pursuits. The research also revealed that social capital and human capital partially influence the link between proactive personality and entrepreneurial intention. This indicates that social and human capital are intermediaries, mediating the impact of proactive personality on entrepreneurial intentions. Moreover, social and human capital influence occurs through a chain mediation effect, underscoring their significance in understanding the relationship between proactive personality and entrepreneurial intentions.

b) *Entrepreneurial intention and university students:*

It is a significant area of research as universities play a crucial role in shaping young individuals' mindsets and career aspirations. Studies on entrepreneurial intention and

university students typically explore factors influencing their desire to become entrepreneurs. These factors may include individual characteristics, such as personality traits (Mamat *et al.*, 2021), self-efficacy (Lim, 2018), and risk-taking propensity (Ilevbare *et al.*, 2022). The influence of educational experiences, entrepreneurship courses, support programs, and role models within the university environment is also investigated (Boldureanu *et al.*, 2020). By identifying the determinants of entrepreneurial intentions among students, universities, and policymakers can design targeted programs to nurture and develop the entrepreneurial potential of young individuals, thereby contributing to the growth of a vibrant and innovative entrepreneurial ecosystem.

5. Limitations and Future Direction

This study exclusively focused on publications indexed in the Web of Science (WOS) database within entrepreneurial intention and personality traits from 2009 to 2023. The primary objective was to conduct a bibliometric analysis, so the researchers did not verify whether the included research was conducted in specific countries. Comparing results with other databases, such as Scopus, PubMed, or Google Scholar, was not within the scope of this investigation. Furthermore, it is essential to recognize that while bibliometric analysis can reveal associations and trends, it cannot establish causal relationships. Understanding the causality between personality traits and entrepreneurial intentions requires further empirical studies.

It is essential to acknowledge potential limitations in the database used for bibliometric analysis, as it may not have included non-academic sources like industry reports, conference papers, or unpublished research, which could have impacted the breadth of the study. Additionally, publication bias may have influenced the results, leading to overrepresenting certain types of research or articles in the database due to publication preferences.

For future research, a more comprehensive analysis could involve considering multiple databases, such as Scopus, PubMed, and Google Scholar, to gain a more holistic perspective.

Embracing interdisciplinary approaches that combine insights from psychology, sociology, and economics could provide a deeper interpretation of the complex dynamics between personality traits and entrepreneurial intentions. Furthermore, exploring the policy implications of understanding how personality traits influence entrepreneurial intentions can help policymakers design targeted initiatives to foster an entrepreneurial culture and support aspiring entrepreneurs. Evaluating the effectiveness of education and training interventions to develop entrepreneurial intentions and their interaction with individual personality traits could also enhance entrepreneurial education programs. However, it is essential to be cautious about external validity limitations, as the generalizability of findings to specific regions, cultural contexts, or different entrepreneurial ecosystems may be constrained by the potential homogeneity of the dataset.

6. Conclusion

The present review holds particular significance and timeliness, driven by a rising interest from scholars and practitioners in entrepreneurial intention and personality traits. Organizations increasingly recognize the crucial role of these factors in shaping business strategies, presenting a significant opportunity for researchers to explore and contribute to this burgeoning field. While seminal work by Kruger in 2000 laid the foundation, subsequent researchers have made noteworthy contributions to developing entrepreneurial intention and personality traits as a vital research discipline. However, a thorough knowledge of the current state and evolution of the knowledge structure within this domain remains relatively limited. To bridge this gap, the current study conducted a comprehensive bibliometric literature review, encompassing existing entrepreneurial intention scholarship up to 2023. Employing robust bibliometric analysis techniques, the study investigates publication trends, author collaborations, influential foundational works, primary research areas, and critical themes in entrepreneurial intention and personality traits. The analysis section presents detailed

findings, shedding light on the research landscape. Moreover, the study ventures into forecasting the future trajectory of research in this domain, highlighting potential areas for further exploration and advancement.

This review significantly contributes to advancing knowledge in this critical area by systematically examining the current status and growth of research on entrepreneurial intention and personality traits. The study lays the groundwork for future investigations and scholarly pursuits by uncovering key trends and knowledge structures, thereby enriching our understanding of this essential field of study.

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This research has not received any funding for the conduction of the research.

1.2 Conflicts of interest:

The authors know no conflicts of interest related to the study.

2. Reference List

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