

REVIEW



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A half-century perspective of entrepreneur's well-being: comparing academic and global entrepreneurship monitor trends

Rodrigo Barbosa^{1,2✉}, Mayara Barbosa³, Amalia Raquel Pérez-Nebra⁴,
Esther Villajos⁵ & Fernando González-Ladrón-de-Guevara⁶

While entrepreneurs drive global economic growth and innovation, their well-being faces significant challenges from stress, uncertainty, and demanding working conditions. This systematic review maps the research landscape on entrepreneurial well-being over five decades through a bibliometric analysis of 961 articles, examining collaboration networks, citation patterns, and thematic evolution using the Global Entrepreneurship Monitor framework. Our findings reveal a critical mismatch between research concentration and entrepreneurial activity. While more than 80% of entrepreneurs operate in developing economies, most research originates from developed nations, potentially limiting the practical utility of findings for global entrepreneurship. Furthermore, the analysis identifies significant gaps in understanding of how societal values and cultural contexts influence entrepreneurial well-being, particularly in emerging economies. These findings highlight the need for a paradigm shift in research on entrepreneurial well-being, advocating for more inclusive frameworks that address diverse global contexts and cultural dimensions.

Introduction

Entrepreneurship is a vital component of society, and it has been actively encouraged by numerous governments and organizations due to its capacity to generate employment, stimulate economic growth, and facilitate the development of cutting-edge innovations (Saeedikiya et al., 2022; Van Praag and Versloot, 2007). However, it is also known that entrepreneurship is a very stressful and demanding journey characterized by uncertainty, risk-taking, and long hours (Cardon and Patel, 2015; Stephan, 2018), with many entrepreneurs suffering from a lack of social protection against accidents and diseases, decent work deficits, and financial insecurity (Ciešlik and van Stel, 2024; Maçtu-Zaharia et al., 2024; Navajas-Romero et al., 2019), which is detrimental to the well-being of entrepreneurs, their families, and, ultimately, society. Poor well-being, in turn, may lead entrepreneurs to withdraw from their ventures in order to preserve their resources, given the high demands associated with entrepreneurial activities (Stephan, 2018).

¹ Universitat Politècnica de València, Valencia, Spain. ² University of Brasília, Brasília, Brazil. ³ Instituto Federal de Brasília, Brasília, Brazil. ⁴ University of Zaragoza, Zaragoza, Spain. ⁵ IDOCAL - Universitat de València, Valencia, Spain. ⁶ Instituto Universitario Mixto de Tecnología de Informática, Universitat Politècnica de València, Valencia, Spain. ✉email: rbararo@doctor.upv.es

There is also evidence of a relationship between entrepreneurial well-being and performance, mostly in one direction - well-being increases performance - which aligns with the happy-productive worker thesis (e.g., Zelenski et al., 2008). High well-being facilitates nascent entrepreneurs' persistence in their efforts to launch ventures and predicts subjective financial and personal entrepreneurial success (Dijkhuizen et al., 2018; Marshall et al., 2020). Researching entrepreneurial well-being allows us to understand how their mental and emotional states influence their decision-making, creativity, problem-solving abilities, and overall performance (Cardon et al., 2012). Therefore, by identifying strategies that promote well-being, we can support the sustainability of entrepreneurs (Uy et al., 2013). Finally, it is also simply ethical to take care of entrepreneurs.

The dynamic between high well-being and entrepreneurial outcomes can serve as a catalyst for positive societal change, enhancing both individual and societal well-being. Thus, identifying factors that contribute to both negative aspects of well-being among entrepreneurs (such as stress, burnout, anxiety, and depression) and positive ones (such as purpose, satisfaction, and meaningfulness) can help them protect, maintain, and improve their well-being to achieve positive long-term business outcomes. After all, while this may be a reductionist perspective, entrepreneurs need to survive and often start a business to support themselves in the real world.

Research on entrepreneurial well-being can inform policymakers, organizations, and support networks in creating policies and interventions that cater to the unique needs of entrepreneurs (Stephan and Roesler, 2010). By understanding the factors that contribute to well-being, such as access to financial resources, social support, individual attributes, and work environments, policymakers can design programs that prevent dignity violation, promote entrepreneurship respect, improve the well-being of entrepreneurs, and contribute to a healthier and thriving entrepreneurial ecosystem (Shepherd and Patzelt, 2017; Stephan, 2018; Wiklund et al., 2019).

Given its relevance and broad societal impact, research on entrepreneurial well-being has gained increasing attention, including special issues in entrepreneurship journals (e.g., Wiklund et al., 2019). However, the exponential increase in research and publications does not necessarily translate into immediate practical applications (Lawlor et al., 2019), partly due to uncoordinated and uneven growth in the field. Thus, it is essential to examine the evolution of research themes related to entrepreneurs' well-being, to identify researchers with enduring lines of investigation, and to analyze collaboration and co-citation networks. These networks provide insights into research groups and themes of interest.

Previous literature reviews on entrepreneurial well-being have limitations in their keyword coverage, consideration of social contexts, and thematic categorization approaches. Although our proposal has similarities with previous publications, the present study makes important contributions to the field related to the keywords used, the specific objectives of the study, and the analyses performed. In the next section, we will discuss the new contributions of this study in comparison to previous ones in more detail.

This systematic literature review aims to describe the current state of the field by examining: (1) leading researchers, (2) collaboration, co-citation, and historiographical networks, and (3) basic, niche, emerging, and motor themes in the area. The first two elements address the social context of existing research, while the third explores thematic developments and future directions.

This study also addresses two specific objectives that distinguish it from previous literature reviews. Recent studies have identified research bias across multiple fields, revealing a

concentration of publications, key researchers, and collaboration networks in developed countries (Amarante et al., 2022; Barros and Alcadipani, 2023; Lund, 2022). However, GEM research indicates that most entrepreneurs are concentrated in developing countries (Hill et al., 2023). If entrepreneurial well-being research follows the typical pattern of academic publication - concentrated in developed countries with socio-economic and cultural biases - it may limit both the field's heterogeneity and the practical utility of the findings for entrepreneurs and policymakers worldwide. Therefore, this study examines if there is a disproportionate distribution of publications, key researchers, and collaborative networks in favor of developed countries.

The second specific aim examines the influence of the Global Entrepreneurship Monitor (GEM) conceptual framework on the field. GEM provides comprehensive entrepreneurship data collected directly from individual entrepreneurs (Hill et al., 2023), serving as the most extensive source of entrepreneurship information, with widespread use in the field. Although GEM does not specifically focus on entrepreneurial well-being, it contributes valuable insights to discussions on sustainable human well-being (Singer et al., 2023). Given GEM's widespread use, we examine whether its four basic components - context, social values toward entrepreneurship, individual attributes, and entrepreneurial activity - emerge as main themes within this domain.

Main concepts and previous literature reviews

Main concepts. Entrepreneurs are individuals who choose to work for themselves on their own terms and at their own risk (Hébert and Link, 1982). This broad definition, which includes the self-employed, is commonly used in research on entrepreneurial well-being (Gorgievski and Stephan, 2016).

Another important concept for the present research is well-being, a broad term that can be challenging to define. This construct serves as an umbrella term that reflects multiple dimensions and encompasses the intersection of subjective and objective influences in the human experience of a fully functioning life (Wiklund et al., 2019). Diener et al. (2018) define well-being as a comprehensive term encompassing how well an individual is doing in various life domains, comprising the social, health, material, and subjective dimensions of well-being. It is also important to highlight that the umbrella term includes the positive (well-being) and negative valence (ill-being), as well as its intensities (e.g., depression vs negative emotions), with particular characteristics and different predictors (Colombetti, 2005; Diener and Emmons, 1984).

Entrepreneurial well-being specifically involves "the experience of satisfaction, positive affect, infrequent negative affect, and psychological functioning in relation to developing, starting, growing, and running an entrepreneurial venture" (Wiklund et al., 2019, p. 34). This definition draws from two main psychological theoretical perspectives on well-being. The hedonic approach, which suggests that a person's well-being is derived from pleasure and diminished by pain and could encompass physical pleasures, pleasures of the mind, and emotions, and the eudaimonic approach, which refers to desirable psychological characteristics, such as meaning and purpose, positive social relationships, mastery, autonomy, and virtues (Diener et al., 2018). However, it is also important to include a biomedical perspective of well-being, which is feeling healthy.

To address our specific objectives, we employed the GEM conceptual framework. Therefore, it is important to describe the GEM in more detail. GEM data provide comprehensive insights into various aspects of entrepreneurship, including levels of entrepreneurial activity, motivations for venture creation, impacts on employment and innovation, and entrepreneur characteristics

Table 1 String of words used in WoS.

Areas	String of words used
Entrepreneurship related	self-employ* OR selfemploy* OR "self employ*" OR "business owner*" OR entrepreneur* OR "sole proprietor*" OR "free lance*" OR freelance OR "independ* worker*" OR "organizational employer"
Well-being related	"mental health" OR well-being OR wellbeing OR "mental disorder" OR "psychiatric disorder" OR "life satisfaction" OR "job satisfaction" OR "work satisfaction" OR "domain satisfaction" OR "family satisfaction" OR "satisfaction with family" OR "health satisfaction" OR "satisfaction with health" OR "income satisfaction" OR "satisfaction with income" OR "satisfaction with financial situation" OR "satisfaction with finances" OR "satisfaction with social relationships" OR "satisfaction with social life" OR "satisfaction with leisure" OR "leisure satisfaction" OR "satisfaction with self" OR "satisfaction with yourself" OR "quality of life" OR thriving OR flourishing OR Eudaimonia OR "eudaimonic well-being" OR "eudaimonic wellbeing" OR "hedonic well-being" OR "hedonic wellbeing" OR happiness OR meaningfulness OR "positive affect" OR "negative affect" OR dissatisfaction OR distress OR anxiety OR phobia OR "obsessive compulsive disorder" OR OCD OR depression OR "affective disorder" OR mania OR bipolar OR ADHD OR "attention deficit hyperactivity disorder" OR "attention-deficit/hyperactivity disorder" OR "somatoform disorder" OR "personality disorder" OR "sleep disorder" OR "sleep-wake disorders" OR suicide OR "substance dependence" OR "substance abuse" OR "alcohol abuse" OR alcoholism OR "alcohol dependence" OR "substance use disorder" OR addiction OR schizophrenia OR "posttraumatic stress disorder" OR PTSD OR "positive emotions" OR "affective well-being" OR mood OR pleasure OR happy OR "psychological well-being" OR engagement OR flourishing OR flow OR unhappy OR purpose OR meaning OR enthusiasm OR worthwhileness OR hedonic OR eudaimonic OR exhaustion OR "full life" OR "empty life"

(Hill et al., 2023). In essence, GEM offers information about both performance outcomes and their predictive variables.

The GEM model comprises four basic components (Global Entrepreneurship Monitor, 2023): (1) Social, Cultural, Political, and Economic Context, encompassing macro variables; (2) Social Values Towards Entrepreneurship, incorporating meso variables, such as societal perceptions of entrepreneurship as a career choice; (3) Individual Attributes, encompassing demographic, psychological, and motivational factors at the micro level; and (4) Entrepreneurial Activity, defined by venture life cycle phases, activity types, and sectors, serving as outcome variables. These components form the foundation for the thematic categorical analysis conducted in this research.

Previous literature reviews. Several literature reviews on entrepreneurial well-being exist in the field. Stephan (2018) examined empirical studies to identify key research questions, antecedents, and consequences of entrepreneurs' well-being while proposing future research directions. Sánchez-García et al. (2018) conducted a bibliometric literature review, analyzing the frequency of publications by year, the main authors and journals, and the main theoretical perspectives used. Contreras-Barraza et al. (2021) expanded upon this work in terms of database coverage and search methodology. Stephan et al. (2023) conducted a meta-analysis comparing the well-being of entrepreneurs with that of employees. Pradana et al. (2023) conducted a bibliometric analysis of 37 articles found in Scopus. Barbosa et al. (2024) published a scoping review mapping the main theories. Two more specific reviews analyzed the incidence of mental health risks and diseases among the self-employed (Willeke et al., 2021) and depression among entrepreneurs (Cubbon et al., 2021).

While acknowledging similarities with previous publications, this study makes four distinct contributions to the field. First, it employs an expanded keyword set derived from existing literature reviews on well-being and entrepreneurship. This comprehensive keyword set yielded 961 articles spanning from 1970 to early 2023, significantly exceeding previous reviews' coverage. While Barbosa et al. (2024) employed a comparable set of descriptors for their theoretical analysis, other reviews, such as Sierra-Casanova et al. (2024), used more limited search criteria, retrieving 525 articles (1992–2021) using three keywords and their variations. Our larger set of studies allows us to analyze papers that examine different facets of entrepreneurial well-being.

Second, this study provides the first comparative analysis between research concentration and entrepreneur concentration

across countries, moving beyond the traditional focus on publication volume alone. Third, our study is also the first to analyze the influence of GEM research on entrepreneurial well-being research, comparing the four basic components of GEM research with the main themes in the area.

Finally, this study introduces novel bibliometric analyses to the field, including temporal author productivity patterns, three-field plots, and collaboration and historiographical networks, complemented by thematic mapping analysis. The thematic mapping approach visualizes research themes through a strategic diagram based on density and centrality dimensions, revealing development levels of individual themes (García-Fernández et al., 2024). While Sierra-Casanova et al. (2024) also employed thematic mapping, this study's broader scope - encompassing more articles across a longer timeframe and utilizing three distinct periods aligned with positive psychology milestones - provides more comprehensive thematic insights.

Methodology

Research characterization and sample delimitation. This study constitutes a systematic literature review as it examines an existing corpus of literature through a transparent and replicable methodology, objectively evaluates its quality, and provides an organized synthesis (Kraus et al., 2020, 2024). This systematic literature review applied descriptive-exploratory research with a mixed approach (Creswell and Creswell, 2018). Bibliometric analysis was performed using the Web of Science (WoS) database metadata. Although WoS has geographical limitations, it offers comprehensive coverage and internationally recognized journal evaluation standards, being also the main data source used to obtain bibliographic indicators (Birkle et al., 2020; Rafols and Robinson-Garcia, 2016; Testa, 2009).

Following Fisch and Block (2018) and Sánchez-García et al. (2018), the search strategy employed commonly cited descriptors of entrepreneurship and well-being from the literature (Eid and Larsen, 2008; Peiró et al., 2021; Peterson et al. 2005; Stephan, 2018). A string combining these words was used to search the articles by their title and keywords in WoS (Table 1). We sought to cover hedonic, eudaimonic, and health well-being in their positive and negative valence and different intensities.

The initial search yielded 1635 documents (July 11, 2023). The sample was then limited to articles, review articles, and early access publications, excluding proceedings and book chapters, to expand the scope of the previous research. Document type filtering reduced the sample to 1418 articles. Initial screening of

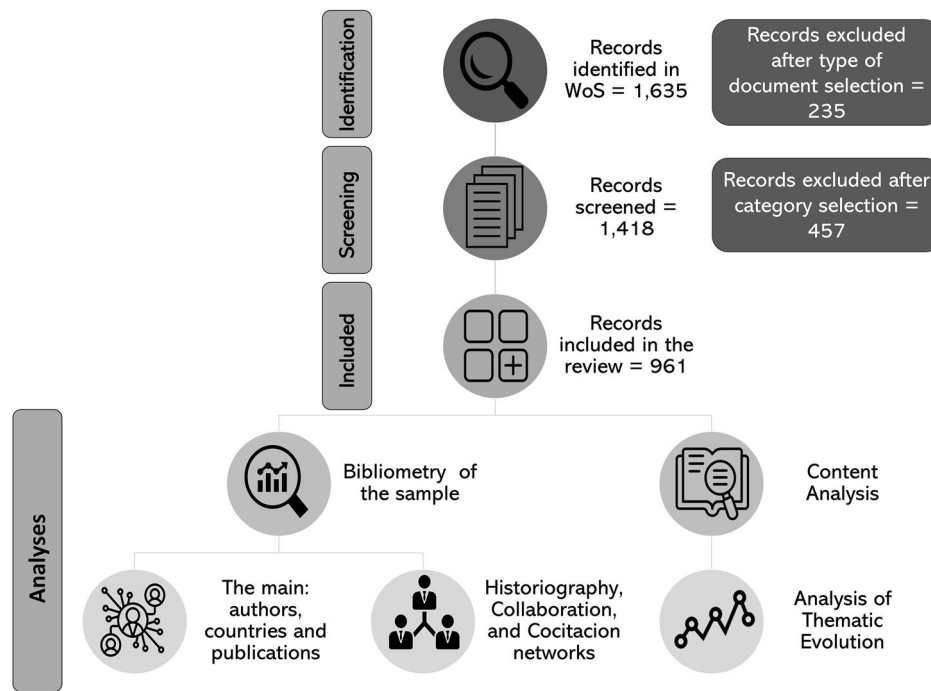


Fig. 1 Summary of the methodological steps.

titles and abstracts identified unrelated studies (e.g., software engineering), which led to further refinement. A further inclusion criterion was applied, restricting the selection to the categories of business, management, economics, and psychology, resulting in a total of 961 publications. A second analysis of the results confirmed the higher accuracy of the sample (Fig. 1).

Data analysis. Data analysis was conducted using RStudio software version 2023.03.0.0 (R Core Team, 2021) with the Bibliometrix package (version 4.0.0), which provides data manipulation capabilities and access to Biblioshiny, an R-based comprehensive science mapping tool (Aria and Cuccurullo, 2017). Biblioshiny facilitated the testing of the study’s main and specific objectives.

Collaboration network analysis enabled visualization of both formal and emergent research groups throughout the study period. These networks identify researchers with high cooperation rates and significant research group formations (Dias et al., 2019) and can provide guidance for researchers pursuing international collaborations. Additionally, co-citation network analysis simultaneously examines cited references within articles (Benatti et al., 2023). Such networks are an essential bibliometric indicator that allows the identification of authors, documents, or possible lines of research that impact and form the basis of an area of knowledge through the historiographical networks (Batistić and van der Laken, 2019; Castanha et al., 2020). This analysis helps to make sense of the co-citation networks and the thematic mapping.

The geographical concentration of publications, key researchers, and collaborative networks was assessed by combining data from the latest GEM report, World Bank statistics, and the WoS sample. The GEM 2022/2023 report categorizes 49 countries by income groups based on the World Bank GDP per capita data (Hill et al., 2023). The classification system comprises three levels based on GDP per capita (Table 2): Level A (>\$40,000), with 21 countries; Level B (\$20,000–\$40,000), with 15 countries; and Level C (<\$20,000), with 13 countries. Level C countries show the

highest percentage of adults (aged 18–64) engaged in entrepreneurial activities, including both early-stage ventures and established businesses operating for more than 42 months with regular owner payments (Table 2).

Despite modest percentage differences between levels, the absolute number of entrepreneurs varies significantly across categories (Table 2). Entrepreneurial population estimates were derived from World Bank data (World Bank, 2023)¹. Level C countries concentrate 81.6% of the entrepreneurs in GEM, more than 5 times the number of entrepreneurs in Level A countries, even though Level A has more countries.

To determine research concentration in developed countries (Level A), the analysis included temporal patterns of highly productive authors and their collaborative networks. This approach distinguished between established researchers with consistent publication records and more recent contributors to the field. A three-field plot analysis was also conducted. This analysis indicates the relationship among the countries with the greatest number of authors, the most productive authors, and the main keywords.

The second objective, examining alignment between entrepreneurial well-being themes and GEM variables, employed Biblioshiny’s thematic mapping analysis following methodological approaches established by Cobo et al. (2011) applied by Ortiz-Rojo and Lacruz (2023). Thematic mapping uses a two-dimensional graph with four quadrants (Niche, Emerging/Declining, Motor, and Basic), where the abscissa represents Callon’s centrality, which is the degree of network interaction, and the ordinate shows Callon’s density, the internal network strength of keyword clusters (Callon et al., 1991; Cobo et al., 2011; Ortiz-Rojo and Lacruz, 2023). Centrality indicates the relevance of a theme across a research domain, while density indicates its development. These measures describe a theme’s role in organizing the domain’s conceptual structure (Aria et al., 2022).

Niche themes (upper left quadrant) represent specialized, well-developed topics that remain peripheral to the main research area (Ortiz-Rojo and Lacruz, 2023). These themes exhibit high density but weak centrality, indicating strong internal development but

Table 2 GEM and World Bank data about the three country's levels.

	Average of total early-stage entrepreneurial activity	Average of established business ownership	Sum of averages	Population aged 15-64	Number of entrepreneurs (sum of averages x population)
Level A (GDP per capita more than \$40,000)	11.12%	6.89%	18.01%	586.987.220	105.713.603
Level B (GDP per capita \$20,000 - \$40,000)	13.65%	6.91%	20.55%	123.232.055	25.852.325
Level C (GDP per capita less than \$20,000)	15.06%	7.30%	22.36%	2.606.489.103	582.851.063

Level A countries: Austria, Canada, Cyprus, France, Germany, Israel, Japan, Lithuania, Luxembourg, Netherlands, Norway, Qatar, Republic of Korea, Saudi Arabia, Slovenia, Spain, Sweden, Switzerland, United Arab Emirates, United Kingdom, United States.
 Level B countries: Chile, Croatia, Greece, Hungary, Latvia, Mexico, Oman, Panama, Poland, Puerto Rico, Romania, Serbia, Slovak Republic, Uruguay.
 Level C countries: Brazil, China, Colombia, Egypt, Guatemala, India, Indonesia, Iran, Morocco, South Africa, Togo, Tunisia, Venezuela.

limited external connections. Motor themes (upper right quadrant), characterized by high centrality and density, function as central drivers of research activity with significant field impact. These themes shape the field's advancement and inform future research agendas (Esfahani et al., 2019).

Basic themes (lower right quadrant) serve as crucial transfer points between interconnected networks, demonstrated by their high centrality (Callon et al., 1991). Despite low density indicating ongoing development, these themes maintain field significance through their high centrality status. The bottom left quadrant contains emerging or declining themes, characterized by low centrality and density. Such themes either gain prominence in the field or diminish in importance over time (Ortiz-Rojo and Lacruz, 2023).

Thematic mapping analysis revealed the interconnections between research themes that distinguish this field's disciplinary identity. The analysis spans three distinct periods, determined by patterns of scholarly production and significant field developments. We will discuss the time periods further in the results section. The analysis concludes by mapping the themes from each quadrant against the four basic GEM components and their constituent variables. Themes are classified according to their alignment with GEM components; for instance, gender-related themes correspond to the Individual Attributes component of demographic factors.

Figure 1 summarizes the methodological framework, with three interconnected circles at the bottom representing the study's primary objectives.

Results

The results are organized into two main axes: (1) the social context of published research and (2) the broad categories of the themes based on the Global Entrepreneurship Monitor (GEM) framework.

Social context: leading researchers, collaboration, co-citation, and historiographical networks. The social context analysis revealed 961 papers published in 338 sources over a 53-year period (1970-2023). The field showed an annual growth rate of 9.1%, with 85.0% of papers published in the last decade. Publication numbers peaked in 2022 with 183 articles. The field's growth pattern showed two notable increases: an initial surge in mid-2008 and a significant acceleration in 2016. At the data collection date in 2023, 101 articles had already been published.

The analysis also identified 2298 authors, averaging 2.9 co-authors per document. Single-authored papers represented only 13% (n = 131) of the publications. International collaboration was present in 37% of the documents, with authors from multiple countries. Figure 2 presents the ten most productive researchers in the field.

Dean A. Shepherd (United States) emerges as the researcher with the most consistent research trajectory in the field. Beyond having the highest number of publications, Shepherd has maintained a continuous research activity since 2003 and authored the field's most cited article (Shepherd, 2003). Similarly noteworthy is Ute Stephan (United Kingdom), who ranks sixth in total publications but leads citation metrics among the top 10 authors for the 2020-2023 period (Stephan et al., 2023).

The United States leads author contribution with 687 researchers, followed by China (n = 323), the United Kingdom (n = 290), and the Netherlands (n = 201). However, analysis of the most influential authors reveals a concentration in just two countries: the Netherlands and the United States (Fig. 3).

Authors' Production over Time

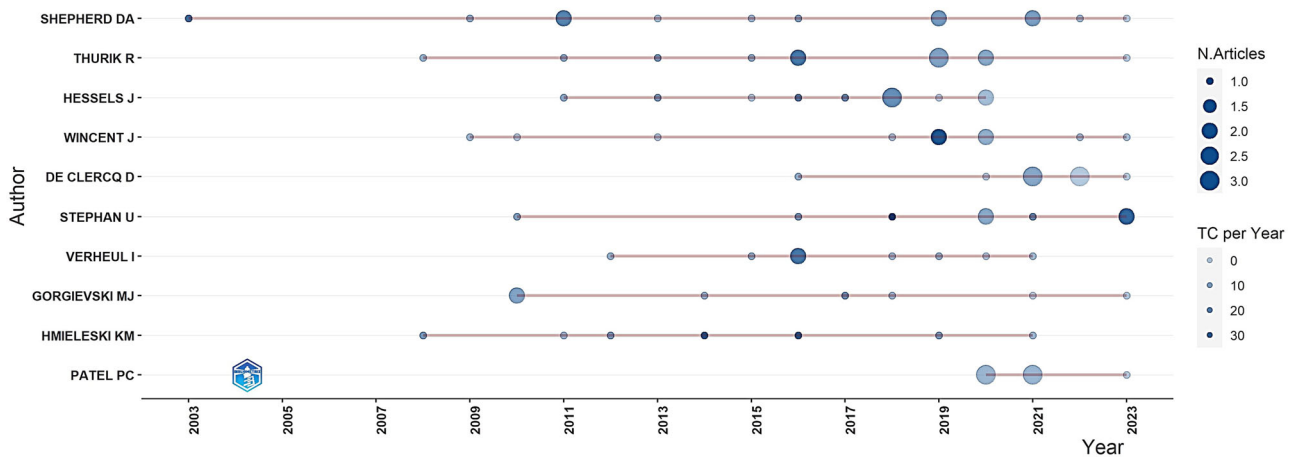


Fig. 2 Production of the authors who published the most in the area during the period analyzed.

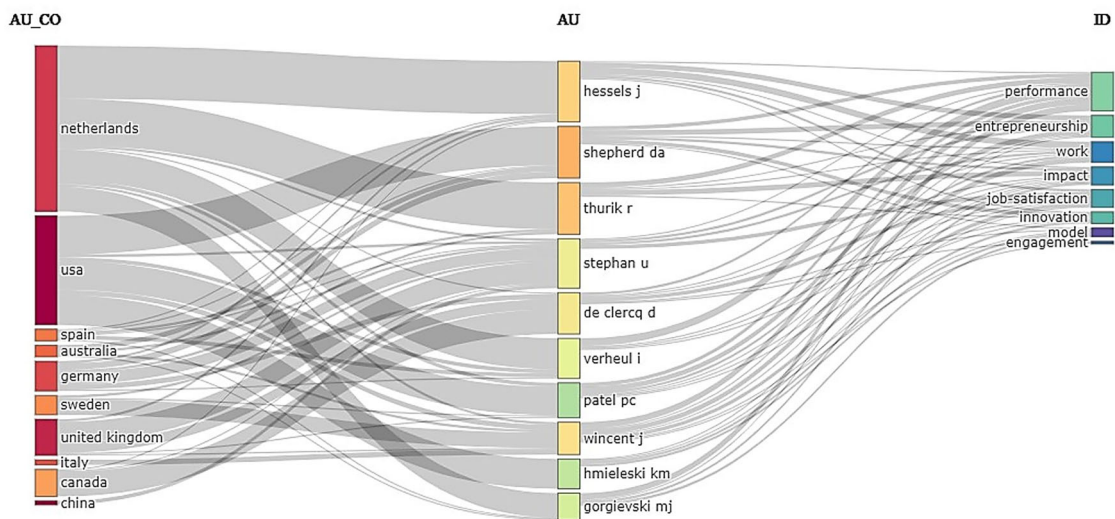


Fig. 3 Three-field plot indicating the relationship among the countries with the greatest number of authors, the most productive authors, and the main keywords.

The keyword analysis in Fig. 3 reveals a focused research scope among influential authors. ‘Performance’ emerges as their most frequently used keyword, while ‘engagement’ appears the least frequently. Notably, while ‘entrepreneurship’ features prominently among keywords, ‘well-being’ is absent from the main keyword set.

Figure 4 illustrates the collaborative research networks, comprising 43 authors selected from the top 50 most productive researchers, with the inclusion criterion of at least two collaborative papers. These authors form 13 distinct clusters, each potentially representing a formal or informal research group. Notably, 90% ($n = 18$) of the top 20 most productive authors participate in these collaborative networks.

Intra-group publications dominate within clusters, with authors typically sharing geographical proximity, supporting the findings of Lin et al. (2023) on the effectiveness of local collaboration. While the four major clusters show interconnections, suggesting international collaboration, this collaboration remains primarily limited to European and US institutions.

Figure 5 shows the analysis of the co-citation networks, with two networks clearly distinguished by the blue and red colors.

They represent different paths to well-being, with the blue cluster representing the most central and most cited works. The works in this cluster are aligned with hedonic and eudaimonic well-being as outcomes (e.g., job satisfaction and entrepreneurial identity). The red cluster is aligned with the repercussions of well-being (e.g., how feelings, states of mind, and passion play a role in entrepreneurship).

The historiographical network analysis (Fig. 6) identified 20 key publications forming three distinct clusters (red, blue, and green). The red cluster emerges as the most influential, with recent contributions from Nikolaev et al. (2020) and Lerman et al. (2021) representing the latest developments in this stream of research. Within the red cluster, the most connected publication (Benz and Frey, 2008) demonstrates higher work satisfaction among self-employed individuals compared to employees.

The publications in the blue cluster (Parslow et al., 2004; Rietveld et al., 2015) offer contrasting results compared to the red cluster, suggesting the limited mental health benefits or even negative health effects of self-employment. Rietveld et al. (2015) attribute this apparent contradiction to a selection effect: healthier

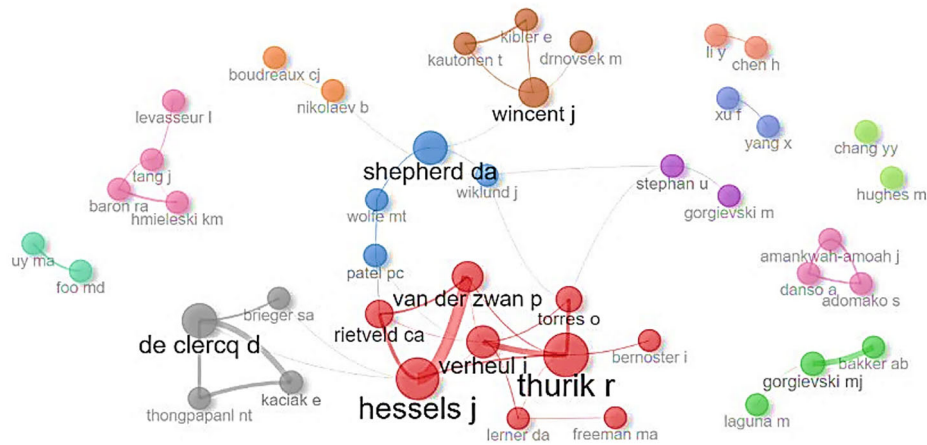


Fig. 4 Collaboration networks among the main authors. *This is a footnote to Fig. 4: The size of the circles indicates the number of documents published in collaboration, and the lines indicate the connection between the authors. The thicker the line, the greater the number of collaborations.

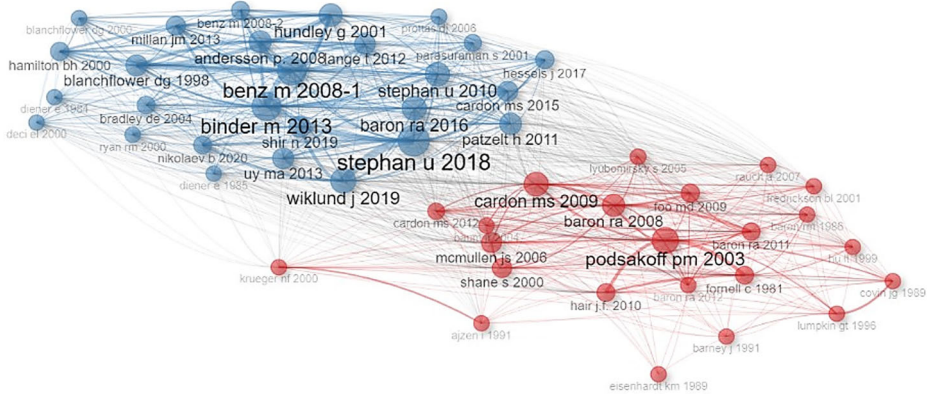


Fig. 5 Co-citation networks of the primary cited references. *This is a footnote to Fig. 5: The size of the circle indicates the number of citations, and the lines represent the connection between the works.

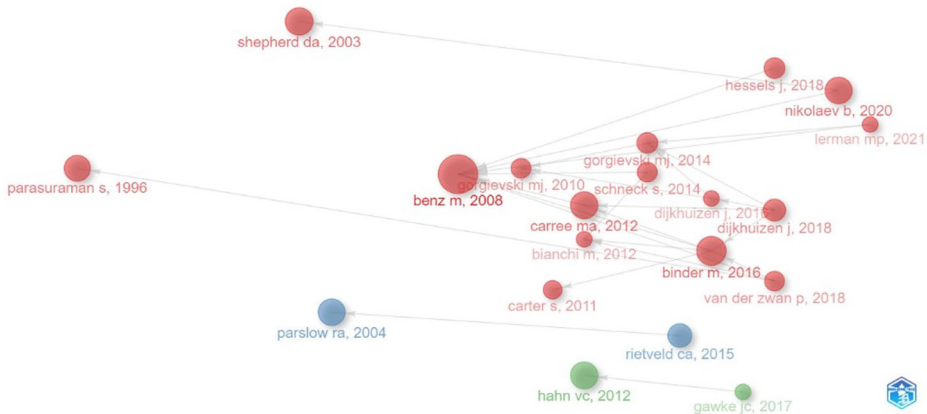


Fig. 6 Historiographical networks. *This is a footnote to Fig. 6: This figure indicates the most influential studies that are likely to have inspired a more significant number of new publications.

individuals may be more likely to pursue self-employment. The green cluster examines different aspects of entrepreneurial well-being: the impact of intrapreneurship on motivation, performance, and well-being (Gawke et al., 2017), and the impact of well-being on individual initiative (Hahn et al., 2012).

Thematic developments: content and thematic mapping analyses. The thematic analysis was structured around three

chronological periods, aligned with the major developments in positive psychology (Scorsolini-Comin et al., 2013):

1. Pre-positive psychology period (1970–2001);
2. Authentic happiness period (2002–2010); and
3. Well-being period (2011–2022).

These periods reflect the evolution from traditional psychology to the emergence of positive psychology and its subsequent

focus on well-being. The analysis extends from 1970, the year of the first article in our sample, to 2022, the last full year in our data set.

The first period (1970–2001) spans three decades and reflects psychology’s predominant focus on negative valence and mental illness, particularly in the post-World War II United States (Seligman et al., 2004). The shift towards positive valence, emphasizing mental health and well-being rather than illness, did not emerge until the late 1990s with the development of positive psychology (Scorsolini-Comin et al., 2013). During this transitional period, research on entrepreneurial well-being was limited, consistent with the nascent state of the field and psychology’s prevailing focus on pathology.

The second period (2002–2010) marked significant growth in entrepreneurial well-being research, peaking in 2010. This expansion was catalyzed by several key developments in positive psychology: Seligman’s 1998 American Psychological Association presidential address advocating for a greater focus on human potential (American Psychological Association, 1999); the influential millennium issue of the *American Psychologist* featuring positive psychology (Seligman and Csikszentmihalyi, 2000); and the publication of Seligman’s ‘Authentic Happiness’, establishing the theoretical foundations for positive psychology (Scorsolini-Comin et al., 2013).

The field’s rapid growth is evidenced by nearly 1000 positive psychology articles published between 2000 and 2010, covering well-being, resilience, and happiness (Azar, 2011). This period also saw increased institutional support through handbooks, conferences, and funding (Gable and Haidt, 2005). This momentum encouraged both psychologists and entrepreneurship researchers to explore entrepreneurial well-being more systematically.

The 2011–2022 period witnessed unprecedented growth in entrepreneurial well-being research, marked by several academic and non-academic milestones. In a book launched in 2011, Seligman called for a shift in the focus of positive psychology, from the authentic happiness theory to the well-being theory (Seligman, 2011). This period also marked an increased academic focus on the determinants and outcomes of well-being in entrepreneurship (Shepherd and Patzelt, 2017; Stephan, 2018; Uy et al., 2013). The increased academic focus is also reflected in conferences, such as the 2018 Academy of Management conference with the theme “Improving Health and Well-Being in Society” and dedicated special issues in leading journals (e.g., Wiklund et al., 2019). Institutional recognition also marked this period, such as the 2011 UN General Assembly resolution recognizing happiness as a “fundamental human goal” and the 2013 establishment of the International Day of Happiness.

Figure 7 synthesizes the evolution of research themes across these three historical periods.

Analysis of the 1970–2001 period reveals themes in three distinct quadrants:

Niche Themes (showing high density but low centrality): entrepreneurship, firm growth, and size.

Motor Themes (high centrality and density): work-life relationship and extroversion.

Basic Themes (high centrality and low density): job satisfaction, gender, and management (Fernández-González et al. 2020).

The 2002–2010 period showed two noteworthy shifts: job satisfaction evolved from a basic to a motor theme; and an individual-level analysis of entrepreneurs, such as gender, emerged as a new research focus. Notably, the absence of niche and basic themes suggests the consolidation of research priorities during this period. The emerging and motor themes quadrants,

on the other hand, show an increased number of themes compared to the first period. Comparing the articles from the historiographical analysis published during this period, it is possible to identify their relationship with these themes. Job satisfaction (Benz and Frey, 2008), performance (Gorgievski et al., 2010), and stress (Parslow et al., 2004) are just some of the themes addressed by these articles.

The final period (2011–2022) exhibits a paradoxical pattern in thematic development. While individual themes gained greater depth and sophistication, reflected in more extensive literature coverage, the overall thematic diversity narrowed, suggesting research consolidation around specific areas. Attention deficit hyperactivity disorder (ADHD) emerged as a distinctive niche theme, marking a novel focus on specific psychological conditions in entrepreneurship. Innovation, engagement, and management established themselves as motor themes, driving the field’s development during this period. Notably, entrepreneurship performance, previously a motor theme, shifted to the basic theme category, suggesting a change in research emphasis despite its continued relevance to entrepreneurial well-being. This repositioning, indicated by its location in the lower right quadrant, reflects a lower publication density but has retained centrality to the field.

Citation analysis over time reveals evolving research priorities and impact patterns. The earliest period (1970–2001) shows a high citation concentration, with five papers accounting for 75% of the total citations. These highly cited papers address both contextual factors, particularly gender issues, and the relationship between well-being and performance. The middle period (2002–2010) shows a more dispersed impact, with the top five papers accounting for 32% of the citations. Research during this period maintained the focus on well-being and performance but expanded the performance measures and contexts. The most recent period (2011–2022) shows the greatest citation dispersion, with top papers representing only 10% of citations. While performance remained central, the research focus shifted to understanding the process and the mediating role of well-being in entrepreneurial outcomes Table 3.

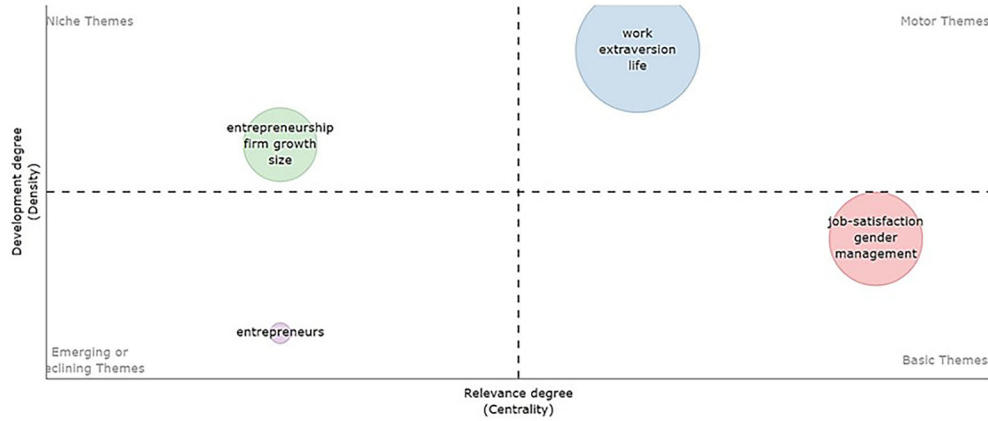
Analysis of thematic maps against the GEM conceptual framework reveals three primary variable sets (Table 4): the context domain, individual attributes, and characteristics of the venture. In the context domain, ‘environment’ emerges as a key theme in the most recent map, aligning with calls for greater contextual consideration in entrepreneurial well-being research (Stephan, 2018). Individual attributes are prominent in earlier maps (1970–2010), particularly gender and location. Although less visible in the most recent map, demographic factors remain a critical influence on entrepreneurial experience and well-being, as shown by contemporary research (Chatterjee et al., 2022; Fritsch et al., 2023; Love et al., 2024; Zhao et al., 2021).

Venture characteristics is the last set of variables from the GEM research to appear on our thematic maps. The themes related to this group appear in all three thematic maps, including firm growth, size, industry, or field of activity. The characteristics of ventures vary widely across the vast array of ventures, and researchers are typically interested in what these differences mean for the well-being of entrepreneurs. These groups that appear on the thematic maps help to capture the great heterogeneity in entrepreneurship, making it important to explore these groups of variables further.

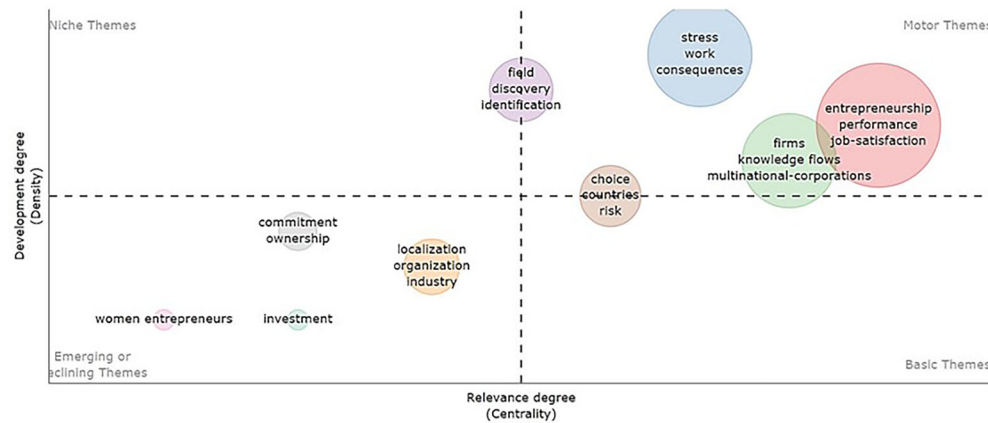
Discussion

This study provides a general description of the current state of the field, examining both its social context and main research themes. The objectives were achieved through the analysis of: (1) leading researchers, (2) collaboration and co-citation networks, and (3) basic, niche, emerging, and motor themes.

1970 - 2001



2002 - 2010



2011 - 2022

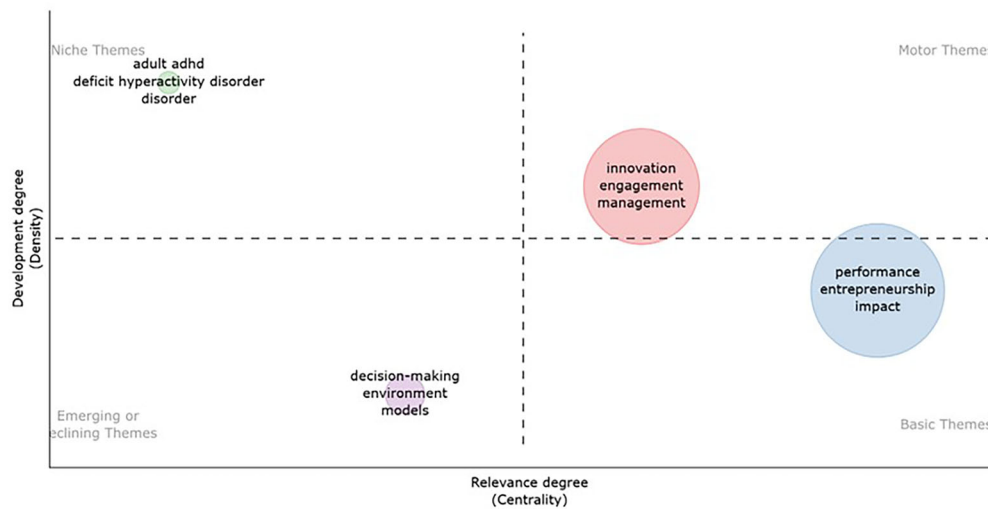


Fig. 7 Thematic map of the keywords most frequently found in publications in the area from 1970 to 2001, from 2002 to 2010, and from 2011 to 2022.

Additionally, two specific patterns were examined: the geographic mismatch between research production and the global distribution of entrepreneurs, and the alignment of research themes with the four basic components of the Global Entrepreneurship Monitor.

Protagonists of the research field. Analysis of temporal production patterns and three-field plots identified the field’s leading researchers. Dean A. Shepherd emerged as both the most productive author and the longest-standing researcher in the field. These findings align with Sierra-Casanova et al. (2024) despite

Table 3 Most cited studies in the thematic map per period.

Authors	Source	Total Citation	TC Per Year
1970-2001			
Parasuraman et al. (1996)	Journal of Vocational Behavior	425	15,179
Jamal (1997)	Journal of Small Business Management	101	3741
Chay (1993)	Journal of Occupational and Organizational Psychology	78	2516
Nerkar et al. (1996)	Journal of Business Venturing	58	2071
Pennings (1982)	Academy of Management Journal	52	1238
2002-2010			
Shepherd (2003)	Academy of Management Review	541	25,762
Benz and Frey (2008)	Economica	296	18,5
Zellweger and Astrachan (2008)	Family Business Review	268	16,75
Chatterji (2009)	Strategic Management Journal	255	17
Hmieleski and Corbett (2008)	Journal of Business Venturing	213	13,31
2011-2022			
Davidsson (2015)	Journal of Business Venturing	425	47.222
Baron and Tang (2011)	Journal of Business Venturing	375	28.846
Block (2012)	Journal of Business Venturing	332	27.667
Klotz et al. (2014)	Journal of Management	328	32.800
Lee et al. (2011))	Journal of Business Venturing	307	23.615

Table 4 Sets of Gem's variables and themes identified in the thematic maps.

Sets of GEM variables	Themes identified in the thematic map
Context (social, cultural, political, and economic)	environment (3)
Social values toward entrepreneurship (how society values entrepreneurship as a good career choice; if entrepreneurs have a high social status; and how media attention to entrepreneurship is contributing (or not) to the development of a national entrepreneurial culture)	-
Individual Attributes (demographic factors, psychological factors, motivational aspects)	gender (1), women entrepreneurs (2), localization (2), countries (2)
Characteristics of the venture: life cycle phases (nascent, new venture, established venture, discontinuation), types of activity (high growth, innovation, internationalization), and sector of activity (Total Early-stage Entrepreneurial Activity—TEA, Social Entrepreneurial Activity—SEA, Employee Entrepreneurial Activity—EEA)	firm growth (1), size (1), industry (2), field (2), multinational-corporations (2), performance (2), innovation (3), performance (3)
Themes apparently not related to GEM's variables	extraversion (1), job-satisfaction (1), management (1), commitment (2), investment (2), ownership (2), organization (2), discovery (2), identification (2), choice (2), risk (2), stress (2), work (2), consequences (2), firms (2), knowledge flows (2), job-satisfaction (2), adult ADHD (3), attention-deficit/hyperactivity disorder (3), disorder (3), models (3), decision-making (3), engagement (3), management (3), entrepreneurship (3), impact (3)

(1) Thematic map from 1970-2001.
 (2) Thematic map from 2002-2010.
 (3) Thematic map from 2011-2022.

minor variations which can be attributed to our expanded keyword set. The temporal analysis revealed both established researchers with sustained contributions and those with recent significant impact, such as Ute Stephan. Multiple analytical approaches confirmed the journals' tendency to give priority to a super-elite group of authors (Orhan et al., 2024).

Analysis of collaboration and co-citation networks revealed key research clusters and influential publications. The collaboration networks include 90% (18 of 20) of the field's most productive authors, with publications predominantly occurring within geographically proximate groups. While the four main clusters show interconnections indicating international collaboration, these remain largely limited to the UK, Europe, and the US. This geographical concentration, also noted by Sierra-Casanova et al. (2024), demonstrates the dominance of WEIRD countries (Western, Educated, Industrialized, Rich, and Democratic), highlighting structural barriers to diversity, equity, and inclusion (DEI) in scientific research (Orhan et al., 2024).

Results addressing the first specific objective revealed patterns consistent with other academic fields, showing research concentration in developed nations. Within the top 10 countries by author count, only China and Australia represent regions outside Europe and North America. The analysis of institutional affiliations shows further concentration, with the United States and the Netherlands dominating in terms of the 10 most productive authors. This concentration is also reflected in the analysis of the collaboration networks. This geographical bias may stem from multiple factors. Amarante et al. (2022) attribute developing countries' underrepresentation to limited research skills, English language proficiency barriers, restricted scientific networks, and inadequate research funding and travel support.

Matthews et al. (2020) document additional barriers stemming from national, racial, and ethnic biases against researchers from developing countries. These researchers report that their work is perceived to be of lower quality than research from the United States and Northwestern Europe. Birthplace advantage significantly

influences the likelihood of producing high-impact publications (Lund, 2022). Researchers in developing countries face a dual challenge: publishing in foreign languages and venues or establishing credible journals in their home countries, both of which require significant efforts to build academic legitimacy.

The geographical mismatch between entrepreneurship research and entrepreneurial activity presents a significant concern, as most entrepreneurs operate in developing countries where they face distinct challenges that are uncommon in developed nations. These challenges include business, economic, and political constraints, coupled with educational, financial, and infrastructure barriers (Panda and Dash, 2014; Tunio et al., 2021). Such obstacles potentially impact entrepreneurial well-being, highlighting the need for targeted research addressing these context-specific challenges.

This disconnection between research production and entrepreneurial reality contradicts the scientific ideal of addressing needs where they exist. More diverse research networks that include scholars and entrepreneurs from developing countries could better represent the global entrepreneurial experience. The geographic bias may also be partly due to database limitations, as the Web of Science indexes publications predominantly from the United States and Northwestern Europe.

Content and thematic categories. The co-citation network analysis revealed two distinct approaches to well-being research: one examining hedonic and eudaimonic well-being as outcomes and another investigating the effects of well-being, with less emphasis on process dynamics. The historiographical analysis identified three research clusters with contrasting findings: while one cluster demonstrates higher job satisfaction among the self-employed (Benz and Frey, 2004), another indicates limited mental health benefits or even negative health effects of self-employment (Parslow et al., 2004; Rietveld et al., 2015). While these findings appear contradictory, Diener and Emmons (1984) demonstrate that positive and negative valence of well-being have distinct predictors. The third research cluster examines the influence of intrapreneurship on motivation, performance, and well-being (Gawke et al., 2017), alongside the role of well-being in fostering personal initiative (Hahn et al., 2012).

The analysis of the first research objective revealed a significant concentration of research in developed economies. GEM Level C countries (GDP per capita below \$20,000, including Brazil, India, and South Africa) show higher entrepreneurship rates than Level A countries (GDP per capita above \$40,000, such as the United States and the Netherlands). Specifically, Level C countries report that 22.36% of their adult population is engaged in entrepreneurial activities, compared to 18.01% in Level A countries (Hill et al., 2023). The analysis of GEM and World Bank data reveals that Level C countries host more than five times the number of entrepreneurs in Level A countries. These entrepreneurs operate in challenging environments characterized by limited government support and resource scarcity, often launching ventures out of necessity rather than opportunity (Acs et al., 2008). This disparity suggests that current research samples poorly represent the global entrepreneurial population, potentially rendering identified trends irrelevant or counterproductive for entrepreneurs and policymakers in developing economies.

The analysis of the second objective revealed that thematic mapping encompasses three of GEM's four conceptual framework components, primarily addressing macro-level factors and outcomes. The literature predominantly posits a direct relationship between resource access and well-being (e.g., Marshall et al., 2020; Najjinda et al., 2024), whereas the GEM framework suggests that social values and individual attributes mediate this

relationship. Notably absent from the thematic mapping is the component of social values toward entrepreneurship - a meso-level variable group encompassing societal perceptions of entrepreneurship as a career choice, entrepreneurs' social status, and the role of the media's attention in developing entrepreneurial culture. These social values could provide crucial insights into the meaning entrepreneurs derive from their work.

The literature also overlooks both intrinsic values (such as growth, purpose, and meaning-making through work) and extrinsic values, mainly materialism - defined as the "use of possession to judge success [...], the centrality of possession in a person's life and the belief that possession [...] leads to happiness and life satisfaction" (Richins, 2004, p. 210). Given that entrepreneurs operate with specific goals, the fulfillment of those goals, whatever they may be, becomes critical to their long-term well-being.

The analysis reveals a limited emergence of micro-level variables, primarily focused on generational and age factors, with notable absences of psychological and motivational characteristics. This pattern suggests that either non-psychology researchers dominate entrepreneurial well-being research or that psychology researchers publish outside WoS-indexed journals. Beyond this methodological bias, a more critical concern is the neglect of psychological models that could enhance entrepreneurial well-being (Barbosa et al., 2024). Given these models' demonstrated effectiveness in practical interventions, incorporating work and organizational psychology frameworks becomes crucial for understanding the context-outcome relationships suggested by the GEM framework. The GEM framework's limitation to economic development as its primary socio-economic outcome measure further underscores the need for broader assessment criteria.

Comparative analysis of the last thematic map (2011–2022) with the first two (1970–2001 and 2002–2010) reveals emerging research opportunities, particularly within niche and emerging/declining quadrants. Notably, the theme with the highest internal network density shows limited external network interaction (centrality). For instance, research on ADHD in entrepreneurship, despite strong internal coherence, has primarily focused on two aspects: symptom manifestation and entrepreneurial outcomes. Future research could explore interactions between ADHD and established motor themes, such as engagement, as ADHD shows a pattern of co-occurrence with work addiction (Atroszko et al., 2023). While culture is one source of cognitive variability, other factors - including ADHD - may mediate entrepreneurial outcomes and well-being (Saeedikiya et al., 2024). Cognitive variability may be particularly problematic for entrepreneurs and the self-employed, who typically operate with limited external control and self-regulation and may require targeted workplace adaptations to enhance well-being.

Decision-making, environment, and models emerge as another low-centrality theme cluster. Research in this area includes Rangan and Gregg's (2019) framework examining how social entrepreneurs balance scaling activities with social impact generation. Stephan (2018) advocates for contextualizing entrepreneurial well-being theory through cross-cultural analysis and institutional factors. The recent emergence of these themes in thematic mapping, coupled with their limited size and density, suggests an understudied but developing research area requiring further investigation as primary research subjects.

Innovation, engagement, and management constitute the current motor themes, as evidenced by highly cited works (Baron and Tang, 2011; Lee et al., 2011) and their prominence among productive authors' keywords. These themes likely will evolve into basic themes, maintaining high centrality while decreasing in density as they integrate with emerging research areas.

Performance, entrepreneurship, and impact have transitioned from motor to basic themes, reflecting their evolving research prominence. While maintaining high centrality despite lower density, these themes warrant critical examination, particularly in Level C contexts where necessity rather than opportunity drives entrepreneurship. The relevance of performance-focused research may be questioned when issues of workplace dignity, prevention, and social protection potentially hold greater social significance. Research themes like innovation and engagement reflect socio-economic biases that inadequately address Level C economies' challenges. Research priorities should shift toward pressing issues, such as increasing work-related accidents among entrepreneurs in developing countries (Barbosa and Borges, 2021), to meaningfully enhance entrepreneurial welfare. This realignment requires critically examining research's impact on entrepreneurs' actual needs.

The analysis of thematic map gaps reveals potential research opportunities, particularly in sociodemographic areas. While gender and ADHD have received attention in earlier literature, the absence of gender from recent thematic maps suggests declining research focus despite persistent gender differences in entrepreneurial experiences (Ester and Román, 2017; Rahman et al., 2024; Saeedikiya et al., 2022, 2024). This oversight is particularly concerning given the critical need to address the intersectionality of gender with race, national context, and financial access barriers.

The International Association of Applied Psychology (IAAP – Division 1) report identified entrepreneurship as a key strategy for achieving the UN Sustainable Development Goals in Latin America, particularly in the areas of poverty reduction, gender equality, and innovation (Kozusznik et al., 2022). Preliminary findings from the forthcoming African edition support these findings, highlighting the need for expanded research on entrepreneurial well-being and its intersection with emerging issues.

In summary, the growing interest in well-being is evidenced by dedicated journal special issues and conference themes (Wiklund et al., 2019). While the well-being-performance relationship remains ambiguous, its exploration remains valuable. The GEM framework provides a sound organizational structure for variable grouping and research orientation, although its performance-focused nature requires adaptation for comprehensive well-being research.

Implications and future studies

This study offers significant implications for entrepreneurial well-being research. It provides new researchers with a comprehensive overview of leading authors, collaborative networks, and influential works, facilitating the exploration of well-being both as an outcome and as a determinant of entrepreneurial success. Additionally, it identifies promising research directions for scholars at all experience levels. The findings suggest opportunities for expanding research through micro and meso-level variables and work-organizational models, particularly examining meaning, values, culture, and context. This expansion becomes especially relevant when considering the impact of individual attributes on entrepreneurial well-being, as entrepreneurs often face “the free obligation to produce” and self-directed pressure (Han, 2020), particularly evident in Level C economies.

The documented concentration of research in developed countries has dual implications. For academia, it reveals both research opportunities in developing countries and systemic inequalities in research environments, publication access, and resource allocation, suggesting the need for targeted interventions in journal policies, grant distribution, and citation practices. For

practitioners and policymakers, these findings emphasize the importance of context-specific support mechanisms that recognize well-being as a crucial determinant of entrepreneurial outcomes.

Research focused on entrepreneurial well-being in Level C economies offers critical insights for advancing the field. Beyond theoretical discussions, as suggested by the Chinese proverb “talk doesn't cook rice,” research must address practical challenges through inductive approaches that promote decent work conditions and enhance quality of life for entrepreneurs in developing economies.

Limitations

The primary limitation of this study stems from its exclusive use of the Web of Science database. Despite WoS's recognized quality and extensive coverage, its focus on English-language journals from developed countries inherently limits the representation of researchers from developing countries. Other limitations include the exclusion of conference proceedings and publications after 2023, and potential gaps in keyword coverage despite the broad search strategy employed.

The adoption of the GEM conceptual framework, while useful for categorizing research themes and trends, presents another limitation due to its performance-oriented nature. Alternative frameworks that include well-being variables or that integrate both well-being and performance measures might offer complementary analytical perspectives.

Conclusion

This study provides a comprehensive fifty-year mapping of entrepreneurial well-being research using innovative analytical methods, including temporal author productivity patterns, three-field plots, collaboration and historiographical networks, and thematic mapping. By integrating these approaches, we aimed to uncover the field's evolution, current state, and research gaps, assessed in relation to the conceptual components of the Global Entrepreneurship Monitor (GEM). Emerging themes related to decision-making and environmental factors suggest promising avenues for advancing entrepreneurial well-being research. Additionally, the identified geographical disparity between research concentration and entrepreneurial activity highlights opportunities for developing more inclusive theoretical frameworks that address diverse entrepreneurial contexts and challenges worldwide.

Our findings highlight the need to address critical gaps in entrepreneurial well-being research, particularly the lack of research on the societal entrepreneurial values component of the GEM's framework. By proposing broader contextual and cultural variables, this research provides directions for developing globally relevant theoretical frameworks. It highlights the importance of focusing on cross-cultural comparisons, societal values, and the intersection of individual and macro-level factors. We advocate for a more inclusive, comprehensive, and globally applicable approach to understanding and fostering entrepreneurial well-being. Such an approach could lead to more effective strategies for enhancing entrepreneurial success and societal welfare across diverse global contexts. These contributions not only enrich the academic landscape, but also catalyze meaningful changes in practice and policy, fostering inclusive entrepreneurial ecosystems that prioritize both economic outcomes and the well-being of entrepreneurs worldwide.

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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Note

1 It is important to note that this is an approximation, as the World Bank's data pertains to the population aged 15 to 64, while the percentages provided by the GEM are based on the population aged 18 to 64. The World Bank did not provide information about the population of Taiwan, a level B country. Therefore, we did not include Taiwan in our approximations, using only 48 out of the 49 countries in GEM.

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Author contributions

RB analyzed and interpreted the bibliometric data, analyzed the thematic maps, and developed future research directions. MB made the initial search for the articles, constructed the methods (the type of review and the steps followed), and the introduction. AN helped with all the analysis and interpretation of the thematic maps, made substantial contributions to future research directions, and was instrumental in drafting the manuscript. EV made substantial additions to the interpretation of the bibliometric data and the thematic maps. FG helped with the discussion and conclusion and made substantial contributions to future research directions. All authors read and approved the final version of the manuscript.

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The authors declare no competing interests.

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Additional information

Correspondence and requests for materials should be addressed to Rodrigo Barbosa.

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