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Impact of emotional intelligence on the success of startups in business incubators

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Introduction: This research investigates the impact of business incubators' training and support initiatives on emotional intelligence in entrepreneurship and how this subsequently affects the success of incubated startups.

Methods: The study proposes and tests four hypotheses using a structural equation model (SEM) and data collected from October 2023 to February 2024.

Results: The findings indicate the following: First, business incubator training programmes significantly enhance entrepreneurs' emotional intelligence. Second, psychological support services help entrepreneurs overcome challenges and maintain a positive mindset. Third, incubators provide a supportive environment that fosters entrepreneurs' confidence, contributing to business success.

Discussion: By elucidating the relationship between incubator activities, emotional intelligence development, and entrepreneurial success, this study can inform the design of more effective business incubator programmes and the development of policies prioritising entrepreneurs' emotional growth, strengthening the entrepreneurial ecosystem.

KEYWORDS

business incubators, emotional intelligence, entrepreneurship, startup, business success

1 Introduction

Academic literature on entrepreneurship has tended to focus on identifying and characterising the conditions that motivate someone to become an entrepreneur, primarily emphasising rational factors (Lu et al., 2022) and drawing on the perspective of economic theory (Palomeque et al., 2020). Research has often centred on factors such as the individual's environment, training and experience (Teruel-Sánchez et al., 2021) business financing (Díaz, 2018), income (Shi and Wang, 2021), business strategy, marketing, sales, management, and technology (Vaz et al., 2022), as well as government policies (Yin and Wu, 2023). However, in recent decades, emotional factors such as confidence, resilience, and personal skills have also been recognised as influential elements in one's decision to become an entrepreneur.

When discussing emotional factors, researchers frequently invoke concepts such as soft skills (Ubfal et al., 2022) and emotional intelligence (EI). EI, in particular, has gained significant attention in the fields of psychology, business management, and entrepreneurship (Minarova et al., 2020; Popovici et al., 2020; Castilla, 2021; Enriquez et al., 2021; Sah, 2021; Bartra et al., 2022).

Defined by Goleman (1996), EI is the way our emotional and mental abilities shape our character traits, which are essential for social adaptation. In the business context, studies by Daniel Goleman support the importance of Emotional Intelligence (EI) in areas such

as leadership. Goleman concludes that truly effective leaders share a fundamental trait: a high level of emotional intelligence, without which neither the best training, nor a brilliant mind, nor great ideas can guarantee true leadership (Goleman, 1998a). Other researchers have found that high levels of self-confidence, adaptive assertiveness (Baciu et al., 2020), self-innovation, self-inspiration, self-vision (Karia, 2021), and resilience (Garcés et al., 2018) positively correlate with job performance, leadership, and physical and mental health (Humphrey, 2013). These skills and competencies are important for an individual's personal and professional success (Torres and Vidal, 2018) and an organisation's workplace and business success (Jansen et al., 2023). Larger and more personality-diverse teams within startups, where individuals exhibit low levels of modesty and high levels of openness to experience and activity, are more likely to achieve success (Branca et al., 2025).

EI has been associated with various aspects of personal and professional life, including physical and mental wellbeing (Goleman, 1998b, 2006), academic and work performance, interpersonal relationships, communication, leadership, mental health, problem-solving, and resilience, among others (Allen et al., 2020; Zhao and Xie, 2020). As such, this concept is increasingly being researched in entrepreneurial environments. In this context, Vidal et al. (2021) relate EI to personal competencies, organisational behaviour, personal development, and human relationships. Meanwhile Garcés et al. (2018) link it to an individual's understanding of their emotions, as well as their emotional sensitivity, self-control, empathy, and resilience. Torres and Vidal (2018) explore EI's connexion to entrepreneurial intention in the university environment, relating it to work experience and the individual's field of study.

Rutka et al. (2020) and Lotito (2022) have revealed that individuals with higher EI demonstrate greater teamwork, communication, and leadership skills, as well as greater resilience to stress (Pathak and Goltz, 2021; Khan et al., 2022) than individuals with lower EI. This enables them to make better decisions, fostering motivation and confidence (Popovici et al., 2020). So much so that, based on the Big Five personality traits (openness to experience, extraversion, conscientiousness, agreeableness, and neuroticism), Ahmad et al. (2023) suggest that while four of the five major personality traits are important for an entrepreneur's success, neuroticism is unlikely to contribute to it.

The importance of EI also extends to the corporate world, where larger companies' efficiency indicators have improved after implementing EI in corporate culture (Gerasimova, 2018). Thus, EI is a determining factor in business success (Doan et al., 2020). Business leaders who apply these emotional tools can positively impact employee engagement (Malik et al., 2021), improve organisational culture, and foster innovation and business growth (Allen et al., 2020; Wang et al., 2019).

These findings explain the emerging line of academic research on the emotional and psychological factors that influence one's decision to become an entrepreneur. In terms of EI, Goleman identifies five key factors: self-awareness, self-control, motivation, empathy, and social skills. In addition to their effect on one's decision to become an entrepreneur, these factors can affect the

longevity and success of entrepreneurial initiatives, warranting further research.

Entrepreneurship has emerged as a vital pillar of the economy (Cavallo and Ghezzi, 2021; Sanchaniya and Geipele, 2021; Fernandes et al., 2022; Li et al., 2022; Munyo and Veiga, 2022; Salimi, 2022), particularly in the fields of business development (García et al., 2023), innovation, and employment. As such, it is receiving increasing attention in the academic community (Haugh, 2020; Montiel and Soto, 2020). However, entrepreneurs face multiple challenges (Hoogendoorn et al., 2019) distinct from those of other business people. These challenges can be mitigated by business incubators (Lange and Johnston, 2020; Oberg et al., 2020; De Esteban et al., 2022; Lubishtani et al., 2022). Business incubation centres play a crucial role in supporting startups and fostering innovation. So much so that it is essential to delve into the need for a holistic approach to measuring their performance, incorporating both hard and soft metrics (Azadnia et al., 2022). Our analysis will examine how business incubators help improve the EI of the entrepreneurs they host, potentially enhancing their chances of success and the longevity of their startups.

Existing literature evaluates startup success through indicators such as survival rate (Blank, 2021; Manconi et al., 2022; Woolley and MacGregor, 2022), profitability, and resource acquisition (Fernández et al., 2019; Zheng et al., 2019; Gozali et al., 2020; Siddiqui et al., 2021; Fuschi and Galiyeva, 2022; Pattanasak et al., 2022). As with the trend in entrepreneurship literature more broadly, academic reviews on business incubators have primarily focused on performance parameters based on rational factors (Palomeque et al., 2020), such as revenue, sales, job creation, etc., without thoroughly evaluating those based on emotional factors (Schiopu et al., 2015).

Considering this background and the emerging research that relates emotional factors to business success (including entrepreneurial success) and the lack of previous research on this topic, there is a need to analyse the extent to which business incubators promote EI and confidence in entrepreneurs. Therefore, this study applies these findings to the field of business incubators by showing how emotional skills affect the behaviour of Spanish entrepreneurs and the sustainability of their startups. This leads us to the following research questions, which we aim to address through the findings of this study:

RQ1. How do business incubators provide security and confidence to entrepreneurs and support them in developing their emotional skills?

RQ2. In what ways do the security, confidence, and emotional skills fostered by business incubators influence the success, survival, growth, and long-term sustainability of the startups they host?

To this end, we propose a measurement model that describes the influence of business incubators on emotional factors and the influence of emotional factors on entrepreneurial success. The model was developed using data collected from 84 business incubator managers in Spain via an online survey. The results of this work can inform strategies and practises that allow entrepreneurs to optimise their emotional skills, leading to improved work and business performance. They can also present new ways of supporting and developing entrepreneurship within organisations, such as business incubators.

TABLE 1 Key findings of the literature review.

| Stage of research | Key findings | References |
|---|---|--|
| Rational factors in entrepreneurship and measuring entrepreneurial success | Early studies on entrepreneurship focused on rational factors such as the economic environment, government policies, and access to funding. Traditionally, success is measured through metrics such as revenue and survival, but the importance of EI remains underexplored | (Lu et al., 2022; Palomeque et al., 2020; Teruel-Sánchez et al., 2021; Díaz, 2018; Shi and Wang, 2021; Vaz et al., 2022; Yin and Wu, 2023; Blank, 2021; Manconi et al., 2022; Woolley and MacGregor, 2022; Fernández et al., 2019) |
| The development of emotional factors | Over time, the influence of emotional factors such as confidence, resilience, and personal skills on entrepreneurial decision-making has been recognised. | (Ubfal et al., 2022; Minarova et al., 2020; Popovici et al., 2020; Castilla, 2021; Enriquez et al., 2021; Sah, 2021; Bartra et al., 2022) |
| Emotional Intelligence (EI) and business success | EI has been identified as a key factor in leadership, decision-making, and entrepreneurs' adaptability. Traits such as openness, conscientiousness, and extraversion enhance entrepreneurial success, while neuroticism has a lesser impact. Companies that integrate EI into their corporate culture experience improvements in efficiency, employee engagement, and innovation. | (Goleman, 1996, 1998b; Baciú et al., 2020; Karia, 2021; Garcés et al., 2018; Humphrey, 2013; Ahmad et al., 2023; Jansen et al., 2023; Branca et al., 2025; Gerasimova, 2018; Doan et al., 2020; Malik et al., 2021; Allen et al., 2020; Wang et al., 2019) |
| EI in business incubators and its impact on entrepreneurial success | Business incubators play a key role in developing entrepreneurs' EI, influencing their resilience and business success. EI not only influences the decision to start a business but also contributes to the sustainability and long-term success of incubated ventures. | (Lange and Johnston, 2020; Oberg et al., 2020; De Esteban et al., 2022; Lubishtani et al., 2022; Vidal et al., 2021; Garcés et al., 2018; Pathak and Goltz, 2021; Khan et al., 2022) |

TABLE 2 Research steps.

| | | | |
|--|---|------------------------------|--|
| STEP 1 Definition of the topic | Emotional intelligence—business incubators | | Document selection |
| STEP 2 Database selection | Web of Science (WoS) | | |
| STEP 3 Research criteria | FIRST PARAMETER Title-Abstract-Keywords “Entrepreneurship and emotional intelligence” | | |
| | SECOND PARAMETER WOS Areas “Business” “Entrepreneurship” “Emotional intelligence” | | |
| | THIRD PARAMETER Type of documents “Article” | | |
| | FOURTH PARAMETER Publication period “All years” | | |
| | FIFTH PARAMETER Indexes “All indexes” | | |
| STEP 4 Data encoding and processing | Questionnaire design and data collection | SEM-PLS (SmartPLS4 software) | Non-linear structural equation statistical model |
| STEP 5 Data analysis | Processing analysis of the results | | |

Table 1 summarises the key findings of the literature review to enhance the understanding of the research focus.

Following this introduction, we describe the methodology, theoretical support, and hypotheses of our study. Subsequently, we present the results, followed by a discussion and final conclusions.

2 Materials and methods

This study employs a mixed-method approach. First, we used the Web of Science (WoS) database to conduct a systematic review of existing literature on the relationship between emotional intelligence and business incubators. WoS is a comprehensive resource that catalogues high-quality, peer-reviewed academic journals, conference proceedings, and books from across the world and over 250 disciplines in the sciences, social sciences, and humanities. Relevant studies were identified based on the search

criteria outlined in Table 2, focusing on the link between EI and business incubator operations.

We simultaneously conducted surveys with business incubator managers to collect practical, contextual insights that could enrich the literature review findings. Subsequently, we developed a structural equation model (SEM) to analyse the results and obtain a robust understanding of the relationship between EI and business incubators. Table 2 outlines each of these research steps.

2.1 Methodological framework and hypothesis development

Business incubators provide a collaborative and supportive working environment that fosters learning (Man et al., 2022), trust, and knowledge sharing (Redondo and Camarero, 2022),

increasing entrepreneurs' ability to work in teams and network with other entrepreneurs (Blanco et al., 2023). Arguably, the services and methodologies used in business incubators could easily be adapted to help entrepreneurs develop skills and knowledge related to EI, which are necessary to manage the stress and uncertainty (Hoogendoorn et al., 2019) inherent in creating and managing a company (Games et al., 2023).

Among the various support functions offered by business incubators, training plays a crucial role (Ahmed et al., 2022; Santana et al., 2022; Antonovica et al., 2023). Beyond mere knowledge transmission, these programmes act as catalysts for business development, forging competent and resilient leaders (Ahmed et al., 2020; Vaz et al., 2022). The training offered in business incubators transcends theory, instructing participants in business realities and building a pragmatic ecosystem where entrepreneurs acquire technical knowledge and the mindset needed to face challenges (Chavoushi et al., 2020). Chavoushi et al. (2020) propose that training sessions influence entrepreneurial progress significantly, making it a determining factor of incubated businesses' future success. Based on this context, we formulate the first hypothesis:

H1: Business incubators' training enhances the EI of hosted entrepreneurs.

The relationship between psychology and entrepreneurship has been attracting growing academic interest (Baron et al., 2016; Miao, 2020; Yousaf et al., 2020; St-Jean and Tremblay, 2021; Zhao and Wibowo, 2021). Researchers are working to understand how such psychological factors as decision-making, motivation, resilience, self-efficacy, and EI affect entrepreneurial behaviour and success. Hu et al. (2022) report that psychological capital mediates the relationship between individual entrepreneurial passion and business success. In this context, psychological capital is understood as confidence, optimism, and perseverance (Tang, 2020; De Hoe and Janssen, 2022; Hu et al., 2022; Nate et al., 2022). Based on these findings, we propose the following hypothesis:

H2: Business incubators' psychological support enhances the EI of hosted entrepreneurs.

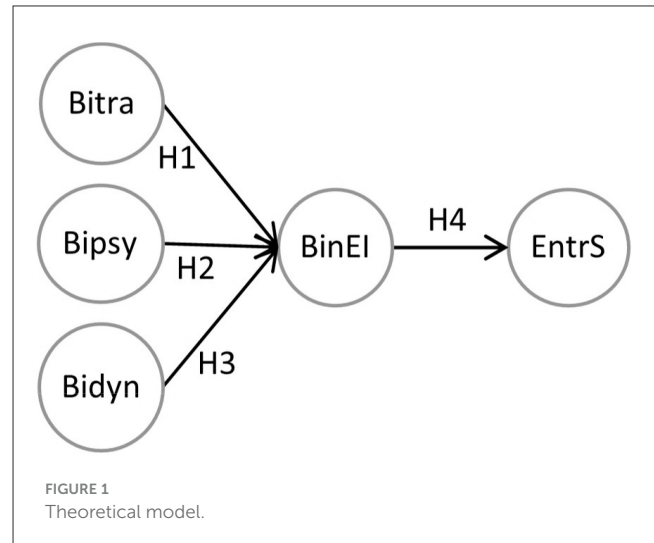
Previous research has established that EI is a crucial skill for business success. It enhances assertive communication, which, when used correctly with emotions, ethics, and timing, improves the likelihood of ideal results (Jansen et al., 2023). EI can also play a vital role during crises, improving company performance by promoting emotional stability (Khan et al., 2022). Furthermore, it improves decision-making, conflict management, and interpersonal relationships, making its incorporation into team dynamics essential for business environments (Popovici et al., 2020). Thus, we propose the following hypothesis:

H3: Business incubators' group dynamics enhance the EI of hosted entrepreneurs.

These attributes of business incubators highlight the importance of our research. Understanding how business incubators nurture entrepreneurs' EI and trust helps us devise strategies to improve the success and profitability of startups. Our final hypothesis is as follows:

H4: Business incubators' collective actions nurture the EI of hosted entrepreneurs, increasing their success.

Figure 1 graphically represents the theoretical model with the proposed hypotheses.



2.2 Variables

Next, we describe how the concepts in this study have been measured. The variables are grouped into five constructs:

BinEI (Business Incubators' Emotional-Intelligence-Related Actions): This represents the total, varied actions undertaken by business incubators to foster hosted entrepreneurs' EI. In this study, we focus specifically on training (Ahmed et al., 2022; Vaz et al., 2022), psychological support (Hu et al., 2022), and group dynamics (Jansen et al., 2023).

Bitra (Business Incubator Training): This construct pertains to the training provided by business incubators (Ubfal et al., 2022; Antonovica et al., 2023) to bolster entrepreneurs' mental health and provide tools for emotional management. It also reflects the intensity of EI-related training offered by the incubator.

Bipsy (Psychological Support): This refers to the psychological support available in business (De Hoe and Janssen, 2022; Nate et al., 2022), which aims to reinforce and support entrepreneurs' wellbeing and understand their mental state during the early stages of business development.

Bidyn (Group Dynamics): This construct relates to business incubators' efforts to foster effective communication, empathy, personal development, and soft skills among hosted entrepreneurs through group dynamics (Khan et al., 2022; Jansen et al., 2023).

EntrS (Entrepreneurial Success): EntrS measures the impact of these actions on entrepreneurial EI and their reflection in business success metrics (Villares et al., 2020; Sevilla et al., 2022), such as increased turnover, expanded customer base, and sustained business continuity over time.

Table 3 lists the sources that informed our measurements for each of the dimensions examined in this study.

2.3 Sample

The sample comprises 84 business incubators located across Spain. We used an online survey to collect data in a structured manner, employing uniform questions for all respondents.

TABLE 3 Sample questionnaire items for each latent variable in the study based on previous research.

| Latent variable (Construct) | Indicators | Authors |
|--|--|---|
| Business incubators' collective EI-related actions | Effectiveness of EI training in business incubators Effectiveness of psychological support in business incubators Effectiveness of EI-nurturing group dynamics in business incubators | (Chavoushi et al., 2020; Popovici et al., 2020; Tang, 2020; Zhao and Wibowo, 2021; Ahmed et al., 2022; Hu et al., 2022; Vaz et al., 2022) |
| Business incubators' training | Importance of EI in entrepreneur success Mental health Emotional management tools Specific EI training in business incubators Support for the entrepreneur's soft skills Value of EI training | (Ahmed et al., 2020; Santana et al., 2022; Ubfal et al., 2022; Antonovica et al., 2023) |
| Business incubators' psychological support | Psychological support in business incubators Promoting emotional wellbeing Specific training to address emotional management Measuring emotional satisfaction Mood assessment Importance that the entrepreneur gives to the incubator's EI-related support services | (Baron et al., 2016; Miao, 2020; Yousaf et al., 2020; St-Jean and Tremblay, 2021; De Hoe and Janssen, 2022; Nate et al., 2022) |
| Business incubators' group dynamics | Intensity of EI-nurturing group dynamics in business incubators Group dynamics that develop soft skills and EI Assessment of entrepreneurs in business incubators | (Khan et al., 2022; Jansen et al., 2023) |
| Success of entrepreneurs hosted in business incubators | Assessing hosted entrepreneurs' turnover Assessing hosted entrepreneurs' customer base Survival rate of hosted entrepreneurs' startups | (Mas-Verdú et al., 2015; Villares et al., 2020; Blank, 2021; Sevilla et al., 2022) |

TABLE 4 Sampling schedule and response collection.

| Phase | Date | Number |
|--|-----------------------|---------------------------|
| Compilation of business incubators at the national level (Spain) | October–December 2023 | 410 (business incubators) |
| Sample refinement and questionnaire development | December 2023 | 410 |
| Online publication of the questionnaire | January 2024 | 410 (sent) |
| Response collection | February 2024 | 84 (replied) |

Various researchers have utilised this methodology previously (Roustapisheh and Yazdizadeh, 2019; Boubker et al., 2021; Kummitha and Kummitha, 2021).

The questionnaire, developed internally and influenced by the authors listed in Table 2, was distributed from January to February 2024 via Google Forms to all 410 business incubators in Spain. It was designed to test our four hypotheses through empirical analysis. A total of 84 valid responses were obtained, as detailed in Table 4.

We used an SEM approach to test the validity of these hypotheses. This linear statistical model is based on our theoretical framework and validated using the empirical data collected from our representative sample of business incubators in Spain. SEM is one of the most widely used multivariate statistical tools, as it allows researchers to examine multiple relationships between latent variables simultaneously. It has gained popularity in recent decades, particularly in the field of psychology and studies involving

numerous variables (Zhang et al., 2013; Grace, 2022; De Rooji et al., 2023).

Statistical estimates were generated using SmartPLS 4 software to validate the hypothesised relationships (Ringle et al., 2022).

3 Results

Figure 2 illustrates the relationships between the five constructs and summarises the main values and p -values for each parameter in the model.

We extracted the following results from the model's parameters:

H1: Incubators' training (Bitra) enhances the EI of hosted entrepreneurs (BinEI). The training provided by incubators significantly influences entrepreneurs' EI, with $\beta = 0.217$ and $p = 0.033$. Thus, H1 is accepted.

H2: Incubators' psychological support (Bipsy) enhances the EI of hosted entrepreneurs (BinEI). The psychological support offered by business incubators significantly influences entrepreneurs' EI, with $\beta = 0.310$ and $p = 0.001$. Thus, H2 is accepted.

H3: Incubators' dynamics (Bidyn) enhance the EI of hosted entrepreneurs (BinEI). The dynamics of the incubators significantly influence entrepreneurs' EI, with $\beta = 0.427$ and $p = 0.000$. Thus, H3 is accepted.

H4: Incubators' collective actions nurture the EI of hosted entrepreneurs (BinEI) increasing their success (EntrS). A substantial positive relationship exists between the actions conducted in business incubators and the success of hosted entrepreneurs, with $\beta = 0.511$ and $p = 0.000$. Thus, H4 is accepted.

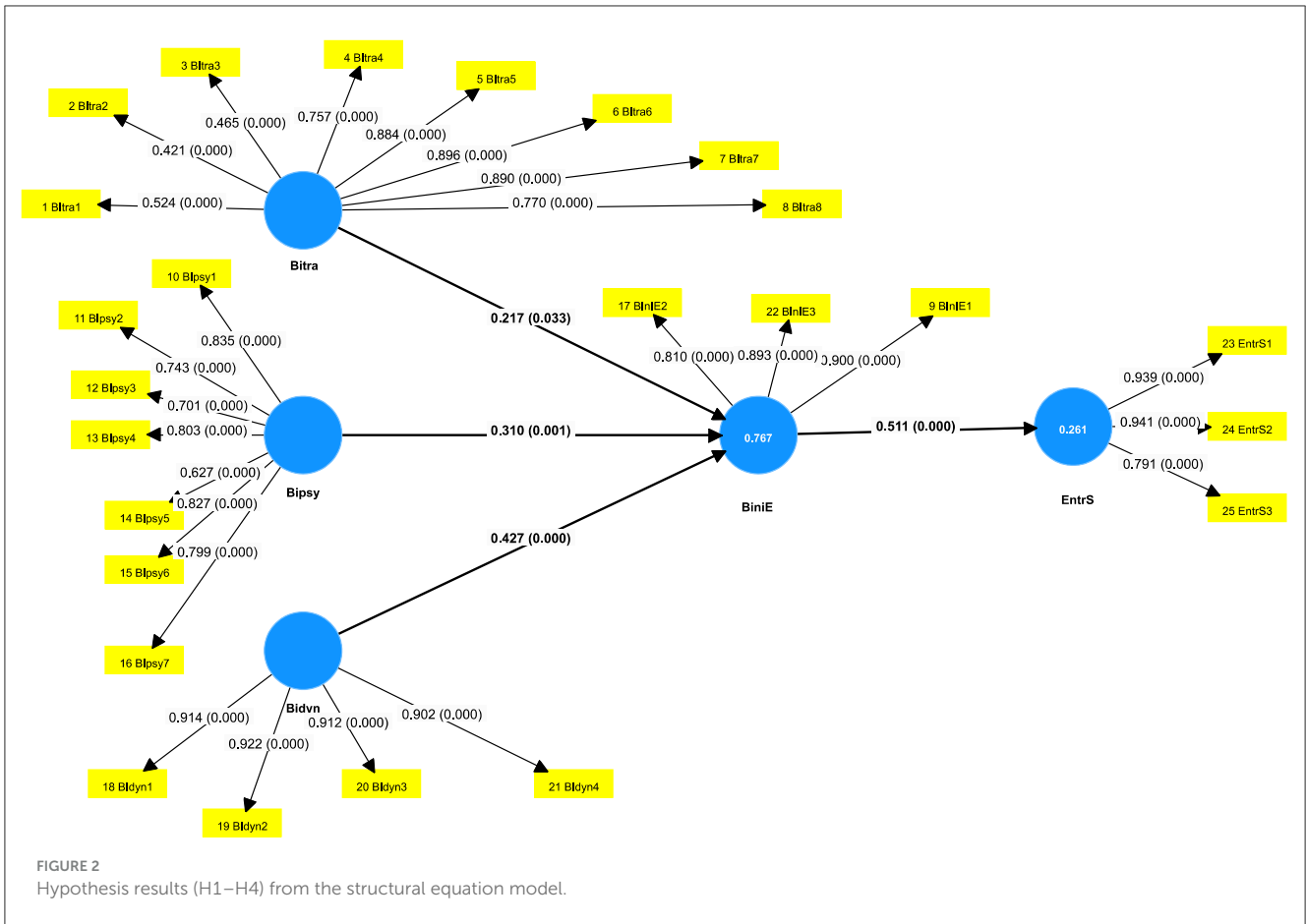


TABLE 5 Significance levels (by standardised coefficients and *p*-values) of the indicators.

| Hypothesis | Standardised coefficients | <i>p</i> -value | Significance of the relationship |
|--|---------------------------|-----------------|----------------------------------|
| H1: Incubators’ training (Bitra) enhances the EI of hosted entrepreneurs (BinEI) | 0.217 | 0.033 | Significant |
| H2: Incubators’ psychological support (Bipsy) enhances the EI of hosted entrepreneurs (BinEI) | 0.310 | 0.001 | Significant |
| H3: Incubators’ dynamics (Bidyn) enhance the EI of hosted entrepreneurs (BinEI) | 0.427 | 0.000 | Significant |
| H4: Incubators’ collective actions enhance the EI of hosted entrepreneurs (BinEI), contributing to their success (EntrS) | 0.511 | 0.000 | Significant |

The results of the model exhibited a confidence level of over 95%, confirming all our hypotheses. These are summarised in Table 5 below.

The values $R^2 = 0.767$ and $R^2 = 0.261$ indicate that the model explains 76% of the impact of incubators’ collective actions on hosted entrepreneurs’ EI and 26% of the impact on hosted entrepreneurs’ success.

Convergent validity was tested using the average of variance extracted (AVE), with values >0.50 indicating convergent validity (Table 6). Discriminant validity was assessed using the Fornell-Larcker criterion (Table 7), wherein you take the square root of each latent variable’s AVE; square roots that exceed the variable’s

correlation with any other latent construct indicate discriminant validity. Our constructs exhibited high discriminant validity, except for Bipsy and Bitra, which were considerably close to the generally accepted threshold. This was considered acceptable, given the exploratory nature of the model.

Additionally, measurement models’ reliabilities were also verified. Indicator reliability with outer loadings higher than 0.70, and internal consistency reliability Cronbach’s alpha values between 0.70 and 0.90 are considered satisfactory (Table 6).

Regarding the structural model, the adjusted R^2 values of 0.767 and 0.261 measure the extent to which the latent variables explain the variability of the dependent variable. This measure is

TABLE 6 Construct reliability and validity.

| Constructs | Cronbach's alpha | Composite reliability (rho_a) | Composite reliability (rho_c) | Average variance extracted (AVE) |
|------------|------------------|-------------------------------|-------------------------------|----------------------------------|
| Bidyn | 0.933 | 0.934 | 0.952 | 0.833 |
| BinEI | 0.837 | 0.848 | 0.902 | 0.754 |
| Bipsy | 0.880 | 0.883 | 0.908 | 0.586 |
| Bitra | 0.862 | 0.918 | 0.892 | 0.526 |
| EntrS | 0.870 | 0.894 | 0.922 | 0.798 |

TABLE 7 Fornell-Larcker criterion.

| Constructs | Bidyn | BinEI | Bipsy | Bitra | EntrS |
|------------|-------|-------|-------|-------|-------|
| Bidyn | 0.913 | | | | |
| BinEI | 0.827 | 0.869 | | | |
| Bipsy | 0.744 | 0.790 | 0.765 | | |
| Bitra | 0.779 | 0.781 | 0.746 | 0.725 | |
| EntrS | 0.462 | 0.511 | 0.558 | 0.480 | 0.893 |

TABLE 8 Collinearity statistics (VIF).

| Constructs | VIF |
|-----------------|-------|
| Bidyn -> BinEI | 2.998 |
| BinEI -> EntreS | 1.000 |
| Bipsy -> BinEI | 2.658 |
| Bitra -> BinEI | 3.018 |

considered acceptable in social science research. For interpretation, notably, the closer the R^2 value is to one, the better the model fit. Additionally, the model does not present collinearity problems (Table 8), as the variance inflation factors (VIFs) are significantly lower than five (the upper limit commonly proposed in the literature).

4 Discussion

The results obtained from the statistical analysis provide significant insights into the relationship between emotional skills, entrepreneurial behaviour, and the sustainability of startups in Spain, particularly in the context of business incubators. First, the evidence highlights how business incubators facilitate the development of entrepreneurs' emotional skills (Galiyeva and Fuschi, 2021; Azadnia et al., 2022). These spaces provide the ideal conditions for trust, security, and collaboration among entrepreneurs, which, in turn, helps strengthen their emotional skills. The presence of mentors, training (Ubfal et al., 2022; Antonovica et al., 2023), dynamic activities (Khan et al., 2022; Jansen et al., 2023), and support networks within business incubators (Ahmed et al., 2020; Nate et al., 2022; Vaz et al., 2022), plays a critical role in the development of business ventures. This

is consistent with the findings of Enriquez et al. (2021), Sah (2021), Vidal et al. (2021), and Bartra et al. (2022).

The results also indicate that startups led by individuals with a high level of EI empathy and resilience (Ramadani et al., 2022) tend to experience higher survival and growth rates, which are the main measures of business success in existing literature (Puente, 2020; Blank, 2021; Manconi et al., 2022; Woolley and MacGregor, 2022; Branca et al., 2025). These entrepreneurs exhibit a greater ability to manage stress (Pathak and Goltz, 2021; Khan et al., 2022), greater assertiveness and adaptability to changing environments, enhancing business model innovation, identifying new entrepreneurial opportunities (Guo et al., 2020) and better mental health (Humphrey, 2013; Baciu et al., 2020; Karia, 2021) compared to entrepreneurs with lower levels of EI. The findings also highlight their growing customer base and increased turnover, factors previously emphasised by Fernández et al. (2019), Siddiqui et al. (2021), Fuschi and Galiyeva (2022), and Pattanasak et al. (2022). This confirms the integral role of EI in supporting entrepreneurs during their initial and most vulnerable stages of growth and consolidation and the importance of emotional development in business incubators' efforts to ensure the sustainability of startups (Wang et al., 2019; Doan et al., 2020; Azadnia et al., 2022).

This study demonstrates that the knowledge and skills entrepreneurs acquire from business incubators' training enhance their EI. Psychological support offers theoretical and technical guidance and the ability to overcome challenges and maintain a positive mindset in the face of adversities. The dynamics facilitated by incubators are crucial for strengthening the entrepreneur's confidence, as they provide a supportive environment and ongoing assistance during the most vulnerable phase of their business. Overall, this diverse range of services enhances the long-term viability of the businesses nurtured within these incubators.

The results of this study have significant implications for business theory and practice, highlighting the need to promote emotional development as a fundamental part of the entrepreneurial ecosystem. We suggest that incubators invest more effort in fostering emotional development by strengthening resources and initiatives that support entrepreneurs and creating a collaborative environment. These findings can also influence the formulation of public policies that promote entrepreneurship and business sustainability in Spain. This includes integrating emotional development initiatives within entrepreneurship support programmes and promoting and strengthening business incubators throughout the country.

5 Limitations and future research

This study has certain limitations. First, the research was geographically restricted to Spain, which limits the generalisability of the findings. Second, the questionnaire methodology used for data collection could have biased the results. Third, as data were collected at a single time point, our data could not capture trends over time, including seasonal variations or other temporal changes. Future research could address these limitations by implementing additional statistical models and using multiple data collection methods to improve the validity and reliability of the findings.

Lastly, this study does not explicitly consider potential disparities related to race, gender, socioeconomic status, or neurodiversity, which may influence the relationship between emotional intelligence (EI) and startup success. Previous research, such as Ray's (2019) study on racialised organisations, demonstrates that many organisations present themselves as racially neutral when, in reality, they are not. Similarly, Stamarski and Hing's (2015) research highlights how decision-makers' biases contribute to sexist behaviours. These findings suggest that, while this study primarily focuses on individual cognitive and emotional factors, future research should incorporate an intersectional perspective to better capture the complexity of the entrepreneurial ecosystem.

Despite these limitations, the positive results achieved in this research highlight the importance of emotional skills in the success and sustainability of startups, especially within business incubators. Our findings suggest that the acquisition of EI, within incubator environments that enable the development of emotional skills is a determining factor in the growth and continuity of startups.

6 Conclusions

Based on the results presented here, we can conclude that business incubators that incorporate emotional support activities into their programmes play a crucial role in developing the EI of hosted entrepreneurs (RQ1), ultimately increasing the possibility of success for their ventures. Our findings reveal that the various initiatives undertaken by these incubators, such as training and capacity-building activities, psychological support, and group dynamics, significantly impact the sustainability and growth of entrepreneurs' startups (RQ2).

The positive influence of these initiatives is expressed in entrepreneurs' ability to manage their emotions efficiently, enhance

their communication, leadership, and teamwork skills, and face the challenges and stress associated with the entrepreneurial process. Traditionally, entrepreneurial education and incubation models have focused primarily on technical and strategic skills, often overlooking the emotional and psychological dimensions of entrepreneurship. However, our research suggests that fostering an environment conducive to personal and emotional development enhances entrepreneurs' leadership, teamwork, and adaptability skills, which are critical factors in overcoming the common challenges associated with launching and scaling a business. The study highlights the importance of considering emotional aspects in the design and implementation of entrepreneurship support programmes rather than focusing solely on the rational and technical aspects of entrepreneurship. It is essential to provide an environment that fosters the personal and emotional development of entrepreneurs, as this has a positive influence on incubated companies. Moreover, the study underscores the role of business incubators as dynamic ecosystems that not only provide opportunities for financing and networking but also serve as safe environments where entrepreneurs can cultivate self-confidence, resilience, and problem-solving abilities. The conclusions of this study are supported by and aligned with contemporary research that positions emotional intelligence (EI) as a key factor in business success, particularly in contexts characterised by high levels of uncertainty and competition. Entrepreneurs with well-developed EI are more likely to engage effectively with stakeholders, maintain positive relationships with clients, and lead their teams with empathy and strategic vision. In conclusion, business incubators present themselves as key agents in this process by offering numerous services focused on business technicalities and entrepreneurs' wellbeing and emotional capacity.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

DD-E-E: Conceptualisation, Data curation, Formal analysis, Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing. CD-P-H: Investigation, Validation, Writing – review & editing. JM-B: Data curation, Software, Writing – review & editing. FJB-J: Project administration, Supervision, Validation, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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