BAR Brazilian Administration Review

ANPAD

Research Article

# What are the Necessary Psychological Well-being Conditions for Women Entrepreneurs to Feel Effective?

Sayonara de Fátima Teston[1], Patrick Zawadzki[1], Hilka Pelizza Vier Machado[2,3], Carla Fabiana Cazella[1]

[1] Universidade do Oeste de Santa Catarina, Chapecó, SC, Brazil
[2] UniCesumar, Maringá, PR, Brazil
[3] Universidade Federal do Paraná, Curitiba, PR, Brazil

**How to cite:** Teston, S. F., Zawadzki, P. Machado, H. P. V., & Cazella, C. F. (2025). What are the necessary psychological well-being conditions for women entrepreneurs to feel effective? *BAR-Brazilian Administration Review, 22*(2), e240107.

**DOI:** https://doi.org/10.1590/1807-7692bar2025240107

**Keywords:**
women entrepreneurs; entrepreneurial self-efficacy; psychological well-being; necessary condition analysis; entrepreneurship.

**JEL Code:**
L26, I31, J16

**Received:**
July 12, 2024.
This paper was with the authors for two revisions.

**Accepted:**
February 07, 2025.

**Publication date:**
June 12, 2025.

**Corresponding author:**
Sayonara de Fátima Teston
Universidade do Oeste de Santa Catarina
Av. Nereu Ramos, n. 3777D, CEP 30140-083, Chapecó, SC, Brazil.

**Funding:**
The author thank the National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico [CNPq, Brazil]).

**Conflict of Interests:**
The author stated that there was no conflict of interest.



**Reviewers:**
Three anonimous reviewers.

**Editorial assistants:**
Eduarda Anastacio and Simone Rafael (ANPAD, Maringá, Brazil).

## ABSTRACT

**Objective:** to identify which psychological well-being (PWB) conditions help women entrepreneurs feel efficacious. **Method:** relational, quantitative, and cross-sectional survey design. We collected data from 252 Brazilian female entrepreneurs in western Santa Catarina. We validated the instruments with robust confirmatory factor analysis and tested the statements through multiple necessary condition analysis (NCA). **Results:** the findings reveal the percentage thresholds of necessary conditions to achieve 100% of the outcomes. Personal growth (66.7%) and purpose in life (45.5%) act as facilitators for enabling entrepreneurs to develop new products or explore market opportunities. Environmental mastery (50%) and purpose in life (63.6%) also serve as facilitators, while self-acceptance (37.5%) functions as an optimizer for defining the main business objective. In addition, purpose in life (45.5%) and self-acceptance (37.5%) serve as optimizers for managing key human resources. Finally, purpose in life (54.5%) and self-acceptance (37.5%) function as facilitator and as optimizer, respectively, for initiating contact with investors. **Conclusion:** by identifying the PWB conditions for ESE, our study advances research on how mental health phenomena influence women's entrepreneurial processes.

**Data Availability:** Zawadzki, P., Teston, S. de F., Cazella, C. F., & Pelizza Vier Machado, H. (2025), "Dataset on Entrepreneurial Self-Efficacy and Psychological Well-Being of Brazilian Women Entrepreneurs in Southern Brazil (Wave 1), published by BAR - Brazilian Administration Review", Zenodo, doi: https://doi.org/10.5281/zenodo.15504940
BAR – Brazilian Administration Review encourages data sharing but, in compliance with ethical principles, it does not demand the disclosure of any means of identifying research subjects.

**Plagiarism Check:** BAR maintains the practice of submitting all documents received to the plagiarism check, using specific tools, e.g.: iThenticate.

**Peer review:** is responsible for acknowledging an article's potential contribution to the frontiers of scholarly knowledge on business or public administration. The authors are the ultimate responsible for the consistency of the theoretical references, the accurate report of empirical data, the personal perspectives, and the use of copyrighted material. This content was evaluated using the double-blind peer review process. The disclosure of the reviewers' information on the first page is made only after concluding the evaluation process, and with the voluntary consent of the respective reviewers.

## INTRODUCTION

Entrepreneurship is an interdisciplinary field of research with individual and social implications (Machado et al., 2021; Wiklund et al., 2019). Self-efficacy, or the belief in performing a task (Bandura, 2000; McGee & Terry, 2024; Wood & Bandura, 1989; ), is associated with self-judgment regarding the ability to achieve desired performance (Locke, 1987) and influences choice of activities, persistence, and performance (Otache et al., 2024). For entrepreneurs, self-efficacy is important because it represents a sense of personal agency (Bandura & Wessels, 1994; Gkypali & Roper, 2024), vital for entrepreneurship (Frese, 2009), referring to the ability to produce an anticipated result (Pandit et al., 2018).

Thus, De Noble et al. (1999) define entrepreneurial self-efficacy (ESE) as an individual's belief in their ability to carry out the tasks and activities necessary to start and manage a new venture, covering six dimensions: developing new products or market opportunities, developing an innovative environment, defining the main business objective, managing key human resources, initiating contacts with investors, and facing unforeseen changes.

Another relevant aspect for entrepreneurs is psychological well-being (PWB), which refers to the perception of the full development of one's own potential (Ryff, 1989). This construct also has six dimensions: positive relationships, autonomy, environmental mastery, personal growth, purpose in life, and self-acceptance (Ryff & Keyes, 1995). It is seen both as a consequence and as an influencer of entrepreneurship (Gish et al., 2022; Nikolaev et al., 2020), as the engagement produced by autonomy in entrepreneurship can bring happiness and satisfaction (Dimov & Pistrui, 2024). As entrepreneurs play social roles, well-being is essential (Ryff, 2023; Wiklund et al., 2019) — it produces commitment and motivation (Ribes-Giner et al., 2019), being essential for the success of women entrepreneurs (Bastian et al., 2023).

Although the well-being approach has been explored in entrepreneurship (Bandura, 2010; Mata & Tarroja, 2022; Singh et al., 2019; Zawadzki et al., 2024), there is still a need for further studies with women entrepreneurs (Castellano et al., 2017; Iezzi & Deriu, 2014; Ryff, 2019; 2023), especially in Latin American countries (Amorós et al., 2019; Zawadzki et al., 2024), as self-efficacy varies between female and male entrepreneurs in different countries (Minniti, 2009), as does well-being (Zawadzki et al., 2024). In addition, the social relevance of the topic reinforces the need for advances in the study of well-being in entrepreneurship (Gish et al., 2022), especially since entrepreneurs experience both high levels of well-being and high levels of suffering, making the entrepreneurial context conducive to investigating PWB (Gish et al., 2022). For women entrepreneurs, well-being is an integral part of gender equality, as well as an aspect of human rights and sustainable development (Chatterjee et al., 2022). Given that the well-being of women entrepreneurs may vary culturally (Zawadzki et al., 2024) and that there is little knowledge about this among Brazilian entrepreneurs (Machado, 2024), it is important to deepen our understanding of this aspect.

There is limited knowledge about women entrepreneurs' PWB, a crucial aspect for the development of their ventures and a potential catalyst for gender equality (Chatterjee et al., 2022). PWB and self-efficacy contribute to the empowerment of these women (Bastian et al., 2023) and are crucial both for coping with stress and tensions at work (Pathak, 2021; Vanderstraeten et al, 2024) and for reconciling work and personal life (Monteiro et al., 2017).

Investigating Brazilian women entrepreneurs is relevant, as they represent 34% of businesses in Brazil, and the number of those that generate jobs rose 30% from 2021 to 2022 (Instituto Brasileiro de Geografia e Estatística [IBGE], 2022). Despite their involvement, they face factors that can affect well-being, such as risk aversion (Ruda et al., 2021), self-doubt (Kovaleva et al., 2023), fear of failure, low self-confidence (Nevi et al., 2025; Shaik et al., 2024), and work-family conflict (Song et al., 2023). They also have more difficulty accessing credit (Wu et al., 2019) and are more prone to gender discrimination and hostile work environments (Wieland et al., 2021). These factors can influence self-efficacy and entrepreneurial success, since individual dynamics have an impact on organizational dynamics (Del Giudice et al., 2019; Nevi et al., 2025).

This research is based on the assumption that a lack of perception of one's own potential, i.e., PWB (Ryff, 1989), implies a lack of belief in one's own entrepreneurial abilities, i.e., ESE (De Noble et al., 1999). This gave rise to the research question: What are the necessary conditions of psychological well-being for an entrepreneur to feel effective? Thus, the study aimed to assess the necessary PWB conditions for women entrepreneurs to feel effective.

The main contribution of this study lies in the identification of critical PWB factors necessary for Brazilian women entrepreneurs to rework their perceptions of efficacy, highlighting levels of PWB that are essential for the emergence and maximization of the dimensions of ESE. This information allows organizations and entrepreneurs to focus on resolving the aspects identified, avoiding wasting efforts on causes that do not directly impact self-efficacy. The relevance of this contribution

is evident, given that Brazilian female entrepreneurs play a significant role in generating jobs and income, driving the country's socioeconomic development (Lima et al., 2024). In addition, identifying these conditions helps women entrepreneurs understand and overcome personal, contextual (Gish et al., 2022; Nevi et al., 2025), and business challenges (Cardella et al., 2020). In an extended perspective, the results also provide input for the formulation of personalized support strategies, such as targeted training initiatives (Nevi et al., 2025).

## THEORETICAL FRAMEWORK

PWB can be analyzed at a macro or individual level (Pathak, 2021). At the individual level, its analysis focuses on adult development and mental health (Keyes et al., 2002). Well-being, in this context, goes beyond a subjective view of happiness, encompassing the achievement of goals aligned with the self (Pathak, 2021).

In turn, self-efficacy presupposes that people are intentional, capable of self-regulating their own actions and commanding themselves in the learning process, seeking experiences that favor their goals (Bandura, 1977; Gkypali & Roper, 2024; Locke, 1987). Among the objectives compatible with the self of self-effective entrepreneurs is the development of new products and market opportunities (De Noble et al., 1999). The authors point out that this key task is a dimension of ESE and that concerns the personal belief in the creative capacity to find opportunities in the market to develop new products and services, adapting to changes. In this context, the PWB dimensions facilitate the alignment between the self and the entrepreneur's behavior.

Environments that promote self-acceptance and autonomy encourage the exploration of new ideas without fear of judgment, favoring creativity (Hemingway & Steven, 2011). Positive relationships and environmental mastery foster collaboration, trust, and teamwork in entrepreneurial contexts (Jaboob et al., 2025). In addition, a clear purpose in life and opportunities for personal growth motivates creative problem-solving and drive an innovative culture (Iqbal et al., 2025). In this sense, we propose:

> $D_1$: PWB dimensions are critical to developing new products or market opportunities.

The eudaimonic approach to well-being explores human nature, seeking to understand the conditions that enhance or hinder this nature (Deci & Ryan, 2008). Exposure to activities that stimulate creativity and innovation strengthens well-being, while continuous learning and interaction with the arts and humanities contribute to eudaemonia and a life oriented towards fulfillment (Ryff, 2024). By promoting well-being, in addition to achieving true human nature, it is possible to realize virtuous potentials (Deci & Ryan, 2008).

Women entrepreneurs need to demonstrate environmental mastery and organizational skills (Shir & Ryff, 2022; Zawadzki et al., 2024), which implies controlling complex activities and creating contexts suited to their own needs and values (Ryff & Keyes, 1995). Entrepreneurs have higher levels of well-being compared to other professionals (Stephan et al., 2023), which enhances their creative and innovative capacity (Law & Breznik, 2017; Jaboob et al., 2025) and, consequently, increases their sense of achievement (Deci & Ryan, 2008).

If internal resources for innovation are lacking, creating positive work environments may increase people's satisfaction, productivity, and innovative contribution (Iqbal et al., 2025). For women entrepreneurs, well-being can boost ideas and creativity (Hatak & Zhou, 2019). In addition, well-being also has repercussions for organizations, such as improving absorptive capacity (Nunes et al., 2024), which, in turn, is associated with innovation. De Noble et al. (1999) indicate that building an innovative environment is a dimension of entrepreneurial self-efficacy, based on personal belief in one's own ability to create favorable conditions for innovation. We therefore propose:

> $D_2$: The dimensions of PWB are prerequisites for self-efficacy, specifically with regard to one's ability to develop an innovative environment.

Ryff (2023) highlights the essential role of eudaimonic well-being at different stages of the entrepreneurial process. Waterman et al. (2008) point out that eudaemonia is related to the feelings perceived as the individual seeks self-realization, develops potential, and defines life purposes. In this sense, setting goals or objectives is fundamental to the PWB of entrepreneurs (Ryff, 2023).

The elements that make up the eudaimonic view of well-being represent a fundamental resource for entrepreneurship, encompassing the psychological, social, and cognitive resources that are critical for achieving goals and tasks (Pathak, 2021). Although they adopted a hedonic theoretical approach, Patel and Wolfe (2019) identified that individual well-being is positively related to financial well-being, which is also relevant for entrepreneurs.

Entrepreneurs need to set goals and make decisions, generating a continuous sense of self-efficacy (Yang et al., 2022). De Noble et al. (1999) describe the

importance of defining the main business objective, understanding that the more the individual focuses on an objective, the greater their motivation for the venture. However, defining goals that are consistent with the self (Pathak, 2021) requires self-acceptance, autonomy, and a clear vision of purpose (Ryff, 2023), which are dimensions of well-being. Thus:

$D_3$: The PWB dimensions are a sine qua non for defining the main business objective.

The dimensions of PWB cover living conditions, relationships, past experiences, and future expectations (Keyes & Ryff, 1998; Ryff, 1989; Ryff & Keyes, 1995). These include the ability to establish positive relationships, characterized by satisfying and trusting bonds, as well as the ability to develop empathy and affection (Keyes & Ryff, 1998; Ryff, 1989; Ryff & Keyes, 1995). Often, maintaining these positive relationships requires behavioral modulation (Bandura, 1977), a principle of social cognitive theory, the basis of self-efficacy studies.

When entrepreneurs are psychologically well, they tend to create a positive work environment, act assertively in conflict management (Huieba, 2025), and express innovative behaviors, in addition to promoting psychological security (Fauzi & Desiana, 2025) — fundamental aspects of human resource management. In entrepreneurial self-efficacy, managing key human resources (De Noble et al., 1999) implies attracting and retaining talent (Benson & Taylor, 2025), indicating that:

$D_4$: The PWB dimensions are indispensable for managing key human resources.

Among the dimensions of PWB is self-acceptance, which aims at recognizing and integrating multiple aspects of the personality. PWB also involves autonomy, understood as the ability to resist social pressures and maintain self-determination and independence. It also encompasses purpose in life, which is related to setting goals and objectives with a sense of direction. Finally, it includes personal growth, characterized by openness to new experiences and the continuous search for improvement (Ryff, 1989; Ryff & Keyes, 1995).

These elements are important for women entrepreneurs to establish relationships and ties in the entrepreneurial role, expand their businesses, and foster empowerment (Bastian et al., 2023). One of the ways to expand the business is through contact with investors. Among various factors, investors make investment and financing decisions in a developing country based on interaction ties (Rizwan et al., 2025). These ties can be influenced by the mental health of the entrepreneur (Gish et al., 2022). Thus, the deterioration of the entrepreneur's mental health not only affects her or the venture itself but also has repercussions on the well-being of other agents involved (Gish et al., 2022). In this sense:

$D_5$: The PWB dimensions are crucial for initiating contacts with investors.

Considering that self-efficacy involves the belief in one's personal ability to perform tasks (Bandura, 2000; Brown et al., 2002; Wood & Bandura, 1989), create new ventures (Sánchez et al., 2011; Wiklund et al., 2019) and deal with uncertainty and failure (Bandura, 2000; Salanova et al., 2001), women entrepreneurs need to be prepared to face unforeseen changes.

To cope with unpredictable situations, adaptation skills are needed, which are more common in individuals with a high level of PWB. In this sense, PWB has a positive influence on autonomy and helps with exposure to uncertainty (Dimov & Pistrui, 2024). For entrepreneurs, this ability to adjust is favorable in two respects: first, it helps explain why some outperform their peers; second, entrepreneurial cognitive and behavioral traits promote companies' ability to adjust to new circumstances, contributing to long-term sustainability through innovation (Korber & McNaughton, 2017).

According to De Noble et al. (1999), ESE requires dealing with unexpected changes, which implies working under uncertainty, tolerating problems, and adapting to transformations. Therefore:

$D_6$: PWB dimensions are essential for the ability to cope with unforeseen changes.

Given these statements, this research assessed the necessary PWB conditions for the ESE of a group of women entrepreneurs, analyzing the intersection of their dimensions.

## METHOD

In order to test the statements, a needs-based, quantitative, relational approach was adopted, operationalized through a survey for data collection and analysis, as well as a cross-sectional design, by carrying out a single individual collection. The method was planned in two stages: the first, for recruiting participants and collecting data; the second, for analyzing the data, involving checking the quality of the base, validating the theoretical constructs, and testing the statements.

The sample was obtained by convenience, without using probabilistic techniques to determine the necessary size. The participants were Brazilian entrepreneurs living in the west of Santa Catarina, who were mem-

bers of a cooperation program organized by a community university. Their companies were consolidated and recognized in the regional market, with involvement in trade associations and an interest in expanding internationally, which made the sample relevant. Data was collected at the program.

Two instruments were used to operationalize the theoretical constructs. The first was the entrepreneurial self-efficacy scale (ESE), developed by De Noble et al. (1999) and adapted by Camozzato et al. (2017). It contains 23 items, assessed on a seven-point Likert scale (from 'totally incapable' to 'totally capable'), distributed across six dimensions: developing products and market opportunities (APO), building an innovative environment (AEN), defining the main business objective (ABO), developing key human resources (AHR), establishing potential relationships with investors (AIR), and the ability to deal with unforeseen changes (AUC). The second instrument was the psychological well-being scale (PWB), proposed by Ryff and Keyes (1995) and adapted by Machado et al. (2013). It has 36 items, measured on a six-point Likert scale (from 'totally disagree' to 'totally agree'), also organized into six dimensions: positive relationship (BPR), autonomy (BAU), environmental mastery (BEM), personal growth (BPG), purpose in life (BPL), and self-acceptance (BSA).

In addition to the scales mentioned above, information was collected on age, level of education, city of residence, affiliation with own company, and shareholding. The complete instrument was made available online via email and WhatsApp, as well as in a printed version distributed in person. Participation was entirely voluntary. At the end of three months, 252 women entrepreneurs had answered the questionnaire, concluding the first stage of the study.

The second stage began by checking the quality of the database using Harman's single-factor test to assess common method bias (Podsakoff et al., 2003), which resulted in 22.01% of explained variance, below the 50% threshold. Next, the normality of the variables was checked using the skewness [–2, +2] and kurtosis [–3, +3] limits (George & Mallery, 2019; Pearson, 1905). Finally, the consistency of the instruments was assessed using Cronbach's alpha (1951), with $\alpha = 0.94$ for the ESE scale and $\alpha = 0.86$ for the PWB scale, indicating sufficient quality for the second stage of the research.

To validate the theoretical constructs, confirmatory factor analysis ([CFA]Brown, 2015) was carried out separately on each instrument. The robust method was used, with Satorra-Bentler correction, using maximum likelihood estimation with robust standard errors (MLM), considering the factorial covariance ($\phi$) of the dimensions, the factorial loadings ($\lambda$), and the residual covariance ($\delta$) of the items. The adjustment included a post hoc analysis based on the correlation matrix of the observed residuals, looking for values below 0.10. The model's quality of fit was assessed based on: root mean square error of approximation (RMSEA < 0.08), 90% and 95% confidence intervals, standardized root mean square residual (SRMR < 0.05), comparative fit index (CFI > 0.90), Tucker-Lewis index (TLI > 0.90), and the chi-square test ($\chi^2$), considering their degrees of freedom and significance level ($p < 0.05$). After determining the two models, we proceeded to the third step of the second stage.

The statements were tested using necessary condition analysis (NCA), a relational approach based on necessity rather than sufficiency. The logic behind NCA states that without the presence of a certain necessary condition, the desired result cannot be achieved, regardless of the existence or intensity of other conditions. Unlike the logic of sufficiency — in which each cause is considered capable of increasing the probability of a result occurring — NCA focuses on identifying bottlenecks or critical success factors that make a certain result unfeasible. It is therefore not a question of explaining how changes in a factor modify the outcome (additive average effect logic), but of clarifying whether the outcome does not occur when a specific condition is not met (Dul, 2016; 2020; 2025).

To test each statement, a multiple NCA was carried out: the six dimensions of well-being (necessary conditions) were analyzed in relation to the six dimensions of entrepreneurial self-efficacy (outcomes), totaling 36 analyses. The procedure involved the construction of the bottleneck table, a tool that simplifies the interpretation of the relationship of necessity between conditions and outcomes, confirming the necessary condition in degree. It considered the percentage range defined by the fixed percentile by weighting, based on the average of the remaining items in each dimension validated in the CFA. The necessary condition in kind was defined by the indicators described in Table 1 (Dul et al., 2020; Dul et al., 2023). The restriction line, used to determine the number of observations that violated the necessary condition, was established by the free disposal hull (FDH) method through the ceiling envelope (CE), and the number of resamples in the approximate permutation statistical test was 10,000. NCA graphs were also generated for each analysis with significant results, including the regression envelope lines (CR-FDH) and the regression line (OLS) for comparison, using the percentage range of the distributions in the scale. The CE-FDH adjustment was chosen because it adjusted 100% of the data in each analysis.

**Table 1.** Statistical indicators of NCA.

| Indicator | Meaning | Interpretation |
|---|---|---|
| Ceiling restriction zone (upper bound) | Area in the graph where the necessary condition is violated | Region in the data space where the necessary condition is not met, located above the ceiling line. |
| CE-FDH (ceiling envelopment-free disposal hull) | Conservative approach to defining the ceiling line, following a step-wise format | Allows observing the number of observations that violate the ceiling line under the free disposal hull (FDH) method. |
| CR-FDH (ceiling regression-free disposal hull) | Regression-adjusted version of CE-FDH with greater flexibility in defining the ceiling line | Allows observing the number of observations that violate the ceiling line under the corrected FDH method. |
| *d* (effect size) | Degree of the strength of the necessary condition | Small (< 0.1), medium (0.1 to 0.3), large (> 0.3). |
| *p*-value | Tests the statistical significance of the necessary condition | Significant model (< 0.05). |
| *p*-accuracy | Evaluates the precision of the *p*-value calculation | *p*-value precision (< 0.05). |
| Absolute inefficiency | Total deviation of observations from the ceiling line | Total size of the discrepancy in absolute terms. |
| Relative inefficiency | Proportion of absolute inefficiency in relation to the total data scope | Total size of the discrepancy in percentage terms. |
| Condition inefficiency | Proportion of inefficiency attributed to the independent variable | Represents the proportion of the condition above the maximum critical level that is not necessary to achieve the highest level of the outcome.<br>Condition ineff. > Outcome ineff. = Optimizing condition.<br>With low levels of the condition, the outcome can be achieved. The condition is important for maximizing the outcome, but investing beyond the critical level of the condition does not generate additional gains in the outcome. |
| Outcome inefficiency | Proportion of inefficiency attributed to the dependent variable | Indicates the extent to which the outcome can be achieved without the need for a specific level of the condition (%).<br>Outcome ineff. > Condition ineff. = Facilitating condition.<br>The condition is important but not absolutely necessary. The outcome can be achieved even with low levels of the condition, and investing in it can generate additional gains. |

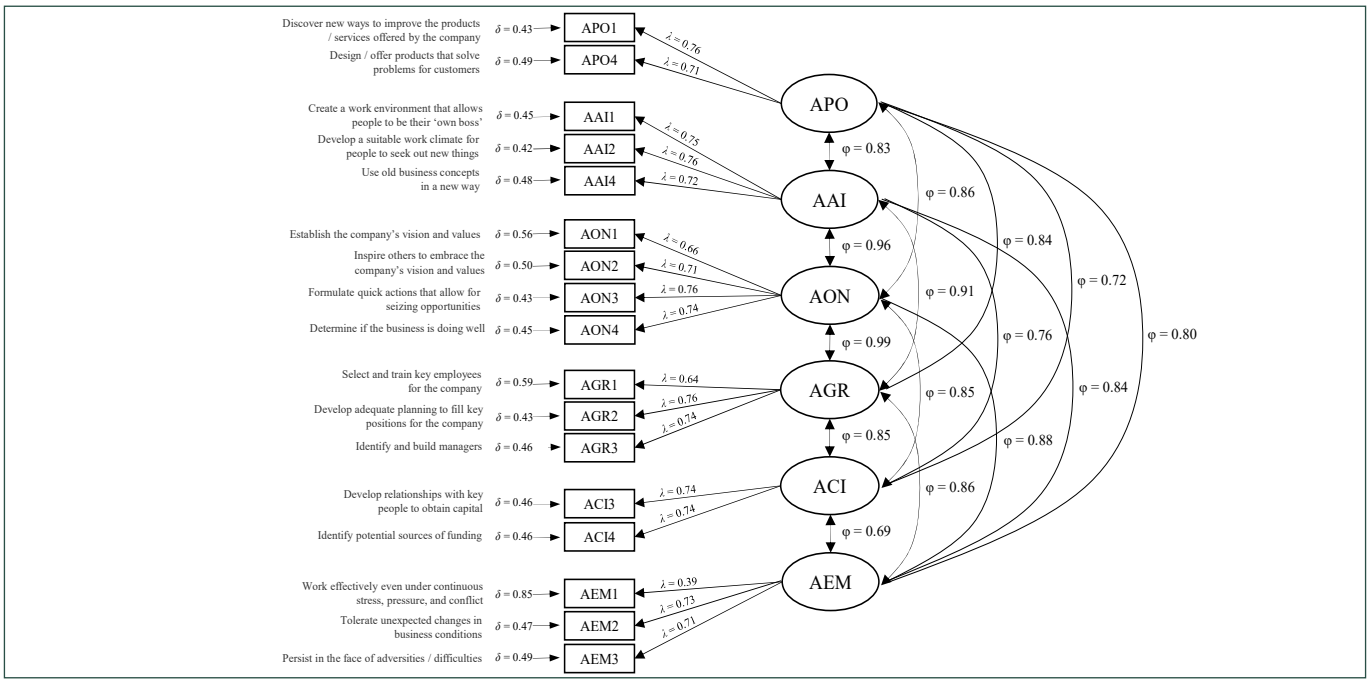
Note. Elaborated based on Dul, J. (2016). Necessary Condition Analysis (NCA): Logic and Methodology of "Necessary but Not Sufficient" Causality. *Organizational Research Methods, 19*(1), 10–52. https://doi.org/10.1177/1094428115584005, Dul, J. (2020). *Conducting necessary condition analysis: For business and management students* (1st ed). SAGE Publications., Dul, J., van der Laan, E., & Kuik, R. (2020). A statistical significance test for necessary condition analysis. *Organizational Research Methods, 23*(2), 385–395. https://doi.org/10.1177/1094428118795272, Dul, J., Hauff, S., & Bouncken, R. B. (2023). Necessary condition analysis (NCA): Review of research topics and guidelines for good practice. *Review of Managerial Science, 17*(2), 683–714. https://doi.org/10.1007/s11846-023-00628-x

In all procedures, the significance level adopted was 5%. The R language (R Core Team, 2022) was used with the aid of the Jamovi software (The Jamovi Project, 2002), lavaan (Rosseel, 2012), NCA (Dul, 2016; 2020; Dul et al., 2020), psych (Revelle, 2022), and semPlot (Epskamp, 2017).

## RESULTS

The sample included 252 women entrepreneurs with an average age of 35.88 years (SD = 9.50). In terms of education, 7% had a high school degree, 32% had completed higher education, and 61% had a graduate degree. The participants, from 20 towns in the west of Santa Catarina, included 60% with their own company and 48% as partners.

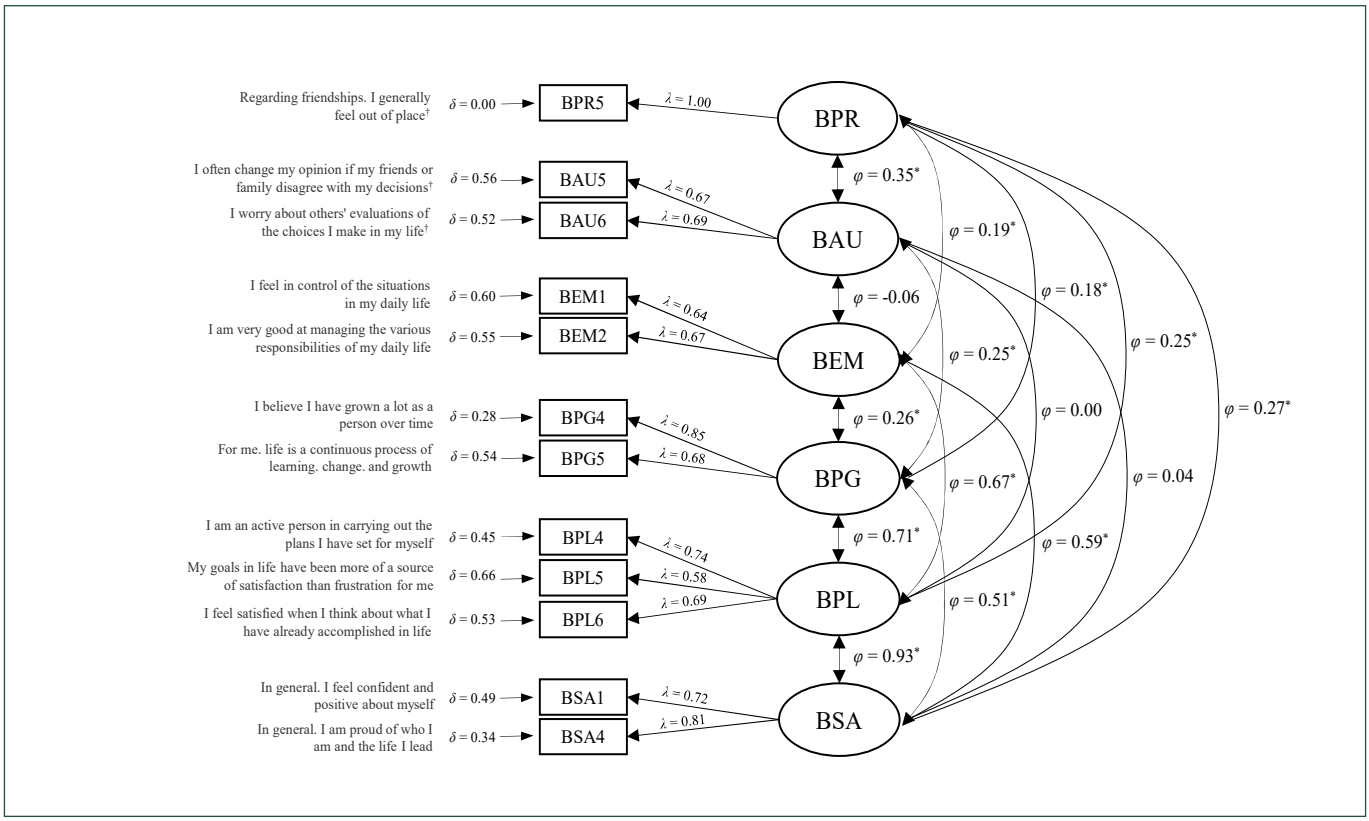
Confirmatory factor analysis validated the instruments, maintaining all the expected dimensions. For the ESE scale, the adjustment indicators were: RMSEA = 0.035 (95% CI: 0.016-0.081; 90% CI: 0.032-0.066), SRMR = 0.035, CFI = 0.967, TLI = 0.956, $\chi^2$ = 153.635 (*df* = 104, *p* = 0.001). The post hoc test indicated values <0.10 for the remaining items. Figure 1 shows the validated model.




Source: All coefficients are significant at $p < 0.01$. λ: loading, δ: residual covariance, φ: factorial covariance. APO: Developing new products or market opportunities; AEN: Developing an innovative environment; ABO: Definition of the main business objective; AHR: Managing key human resources; AIR: Initiating contacts with investors; AUC: Ability to cope with unforeseen changes.

**Figure 1.** Valid model for entrepreneurial self-efficacy.

The validated model for PWB, shown in Figure 2, displayed the following indicators: RMSEA = 0.049 (95% CI: 0.000-0.093; 90% CI: 0.021-0.072), SRMR = 0.033, CFI = 0.970, TLI = 0.951, $\chi^2 = 61.505$ ($df = 40$, p = 0.016). The post hoc test confirmed values <0.10 for all items. The six dimensions remained in the final model.




Source: All items' factorial covariance and loadings were significant at $p < 0.01$. For factorial covariances: * $p < 0.05$, λ: loading, δ: residual covariance, φ: factorial covariance. BPR: Positive relationship; BAU: Autonomy; BEM: Environmental mastery; BPG: Personal growth; BPL: Purpose in life; BSA: Self-acceptance.

**Figure 2.** Valid model for psychological well-being.

After validation by confirmatory factor analysis (CFA), the dimensions of the instruments were operationalized to test the statements by means of a necessary conditions analysis (NCA). The average of the items remaining in the CFA was converted into fixed percentiles, weighted based on the scale of the instruments, to analyze the theoretical level between the dimensions. Each statement was tested with six statistical models, totaling 36 analyses, corresponding to the six dimensions of each construct. The results of each model for the statements are summarized in the tables, accompanied by figures on the significant models.

The first statement ($S_1$), based on the literature review, indicated that the PWB dimensions are essential for developing new products or exploiting market opportunities (APO). Among the six analyses carried out, two dimensions confirmed their necessity: personal growth (BPG) and purpose in life (BPL). Table 2 shows the results of $S_1$, with the ceiling envelope bottleneck indicators (CE-FDH) at the top and the model fits for each PWB dimension at the bottom.

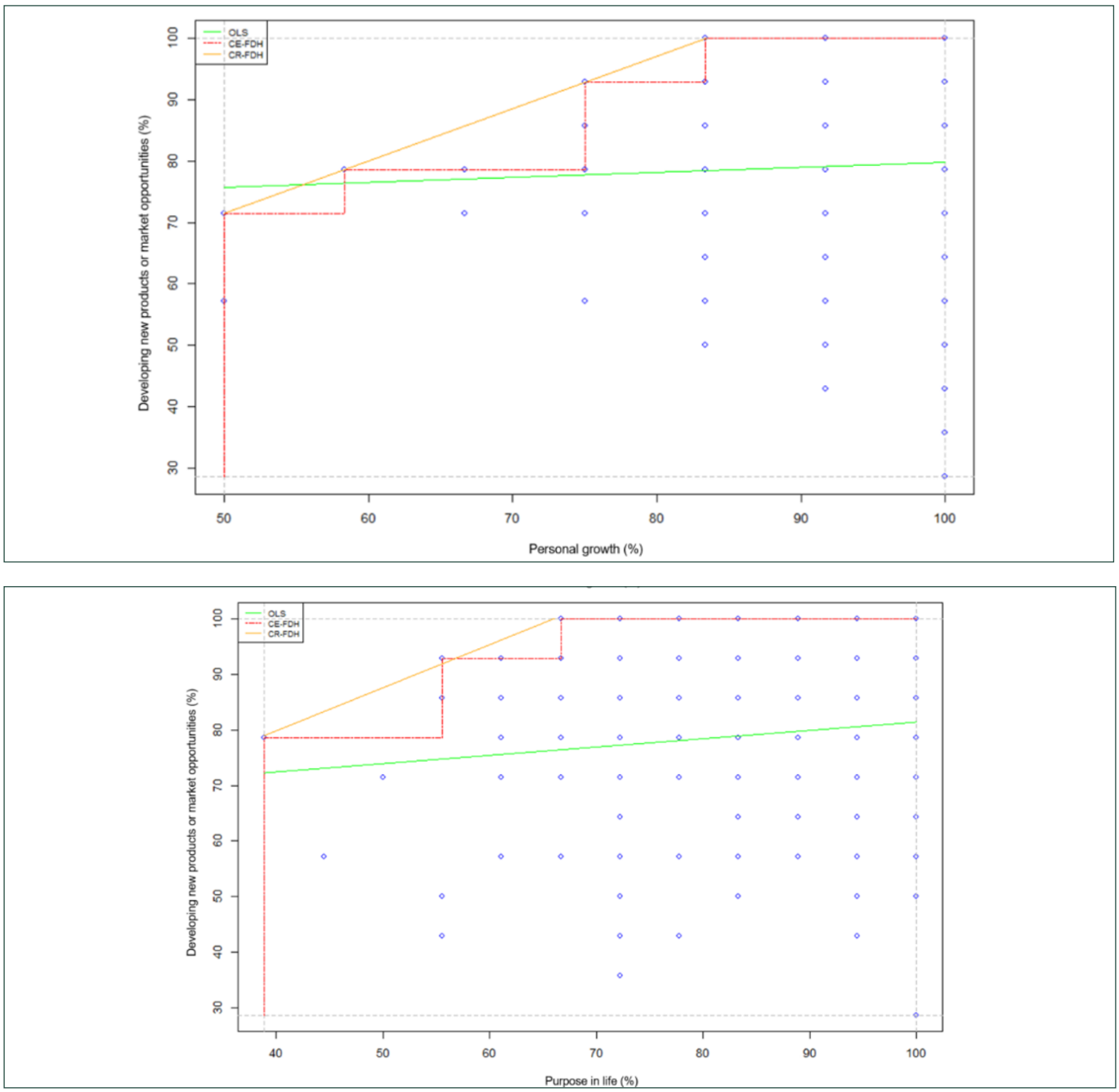
**Table 2.** Necessary PWB conditions to develop new products or market opportunities.

| APO | BPR | BAU | BEM | BPG | BPL | BSA |
|---|---|---|---|---|---|---|
| 0 % | NN | NN | NN | NN | NN | NN |
| 10 % | NN | NN | NN | NN | NN | NN |
| 20 % | NN | NN | NN | NN | NN | NN |
| 30 % | NN | NN | NN | NN | NN | NN |
| 40 % | NN | NN | NN | NN | NN | NN |
| 50 % | NN | NN | NN | NN | NN | NN |
| 60 % | NN | NN | NN | NN | NN | NN |
| 70 % | NN | NN | 12.5 | 50.0 | 27.3 | NN |
| 80 % | NN | NN | 12.5 | 50.0 | 27.3 | NN |
| 90 % | NN | NN | 12.5 | 50.0 | 27.3 | NN |
| 100 % | NN | NN | 12.5 | 66.7 | 45.5 | 37.5 |
| *CE-FDH* | 0 | 0 | 178.726 | 654.702 | 436.564 | 178.500 |
| *d* | 0 | 0 | 0.038 | 0.183‡ | 0.100‡ | 0.037 |
| *p-value* | 1 | 1 | 0.315 | 0.014* | 0.035* | 0.509 |
| *p-accuracy* | 0 | 0 | 0.009* | 0.002* | 0.004* | 0.010* |
| *Absolute ineff.* | - | - | 4583.512 | 2619.262 | 3769.762 | 4583.738 |
| *Relative ineff.* | - | - | 96.25% | 73.34% | 86.36% | 96.25% |
| *Condition ineff.* | - | - | 87.49% | 33.34% | 54.54% | 62.50% |
| *Outcome ineff.* | - | - | 70.00% | 60.00% | 70.00% | 90.00% |

Note. APO: Developing new products or market opportunities; BPR: Positive relationship; BAU: Autonomy; BEM: Environmental mastery; BPG: Personal growth; BPL: Purpose in life; BSA: Self-acceptance; NN: Not necessary; CE-FDH: Ceiling envelope; d: Effect size; p-value: Significance level; p-accuracy: Accuracy level; Ineff.: inefficiency; NN: Not necessary. * $p < 0.05$, ‡ average effect.

The personal growth bottleneck (BPG) indicates that 50% are needed to achieve 70–90% APO, while 66.7% guarantee 100% APO ($d$ = 0.183, $p$ = 0.014). The model has a medium effect, is significant, and is highly accurate ($p$-accuracy = 0.002). The high relative inefficiency shows that the inefficiency of the outcome exceeds that of the condition, classifying BPG as a condition that facilitates APO. This suggests that investing in BPG can generate additional gains, even with low initial levels.

For the purpose in life bottleneck (BPL), 27.3% are needed to achieve 70–90% of APO, while 45.5% guarantee 100% of APO. The model also shows a medium effect ($d$ = 0.100, $p$ = 0.035, $p$-accuracy = 0.004) and is considered a facilitating condition, with even lower values needed to achieve the total outcome. Figure 3 shows the NCA graphs of the significant dimensions and their respective effect sizes.




Source: CE-FDH: Ceiling envelope; CR-FDH: Regression envelope; OLS: Regression line.

**Figure 3.** NCA charts for APO: Personal growth and purpose in life.

The second statement ($S_2$), which suggested that the dimensions of PWB are prerequisites for developing an innovative environment, did not show significant evidence in any of the six analyses carried out. This result refutes the statement, indicating that the dimensions of psychological well-being are not necessary conditions for developing an innovative environment.

The third statement ($S_3$) affirmed that the dimensions of PWB are sine qua non conditions for defining the main business objective. Three dimensions showed significant indicators of need: environmental mastery (BEM), purpose in life (BPL), and self-acceptance (BSA). The detailed results for $S_3$ are shown in Table 3.

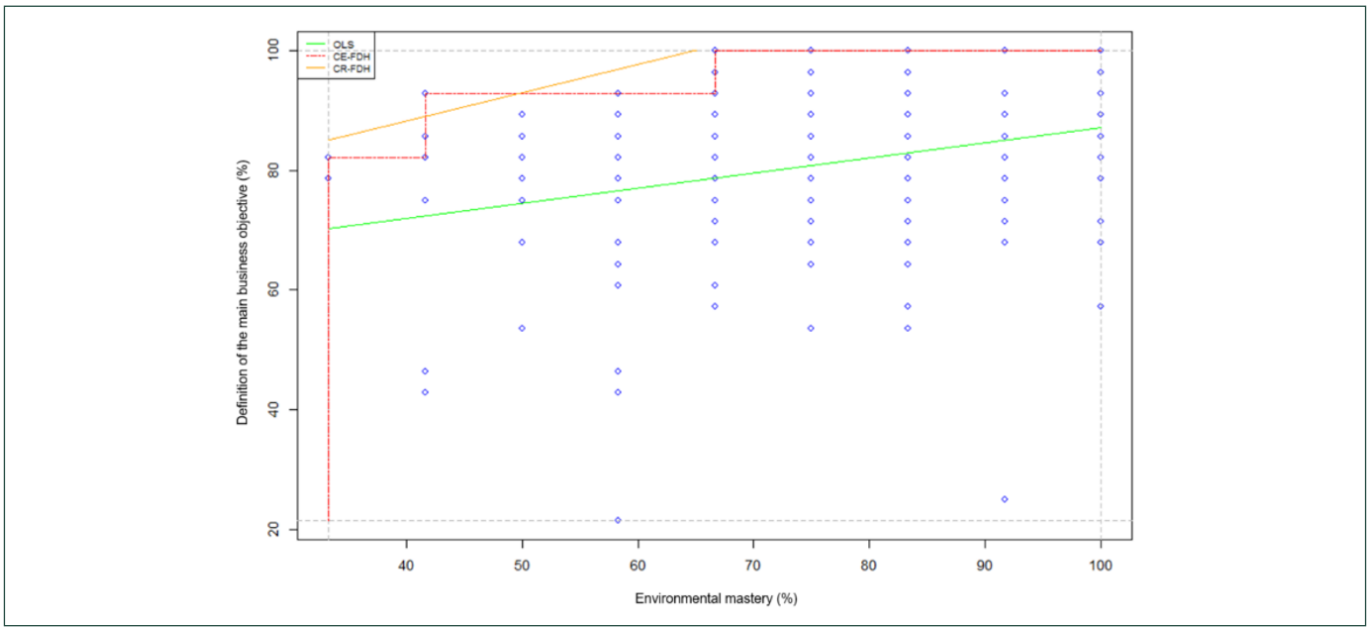
**Table 3.** Necessary conditions for defining the main business objective.

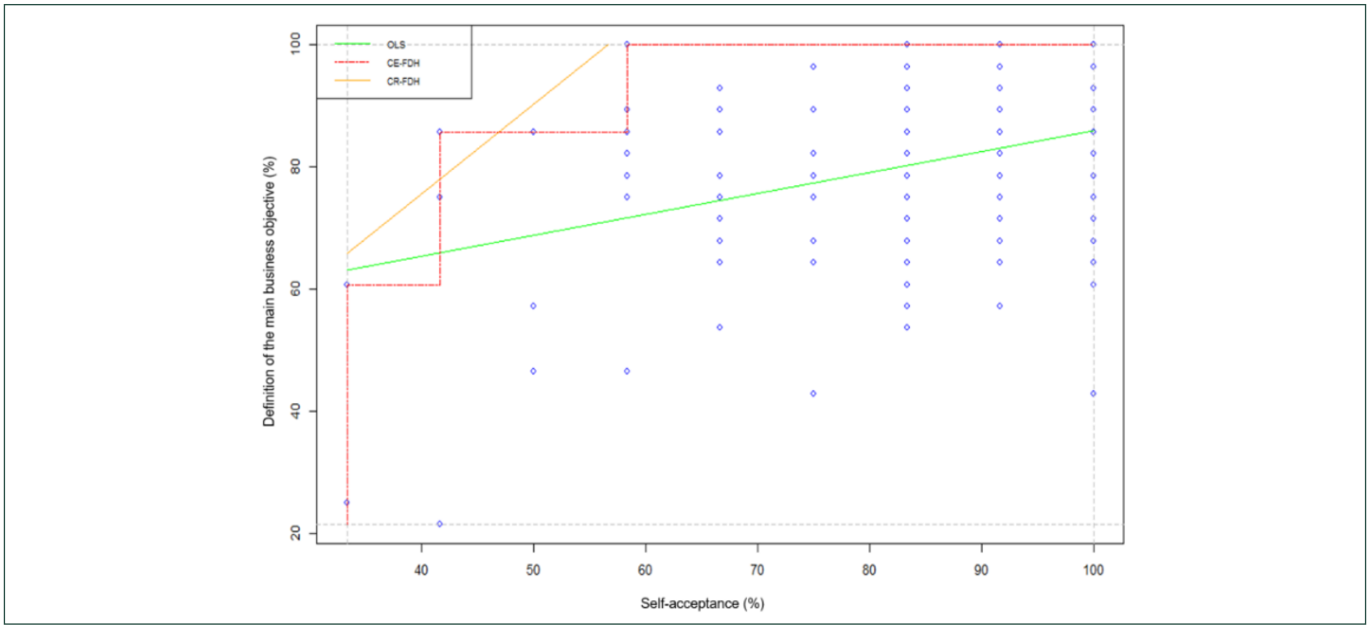
| ABO | BPR | BAU | BEM | BPG | BPL | BSA |
|---|---|---|---|---|---|---|
| 0 % | NN | NN | NN | NN | NN | NN |
| 10 % | NN | NN | NN | NN | NN | NN |
| 20 % | NN | NN | NN | NN | NN | NN |
| 30 % | NN | NN | NN | NN | NN | NN |
| 40 % | NN | NN | NN | NN | NN | NN |
| 50 % | NN | NN | NN | NN | NN | 12.5 |
| 60 % | NN | NN | NN | NN | NN | 12.5 |
| 70 % | NN | NN | NN | NN | NN | 12.5 |
| 80 % | NN | NN | 12.5 | NN | NN | 12.5 |
| 90 % | NN | NN | 12.5 | 66.7 | 45.5 | 37.5 |
| 100 % | NN | NN | 50.0 | 66.7 | 63.6 | 37.5 |
| *CE-FDH* | 0 | 0 | 327.452 | 356.964 | 456.452 | 565.750 |
| *d* | 0 | 0 | 0.063‡ | 0.091 | 0.095‡ | 0.108‡ |
| *p-value* | 1 | 1 | 0.029* | 0.211 | 0.011* | 0.003* |
| *p-accuracy* | 0 | 0 | 0.003* | 0.008* | 0.002* | 0.000* |
| *Absolute ineff.* | - | - | 4642.809 | 3571.536 | 4245.675 | 4256.012 |
| *Relative ineff.* | - | - | 88.63% | 90.91% | 88.43% | 81.25% |
| *Condition ineff.* | - | - | 49.99% | 33.34% | 36.36% | 62.50% |
| *Outcome ineff.* | - | - | 77.27% | 86.37% | 81.81% | 49.99% |

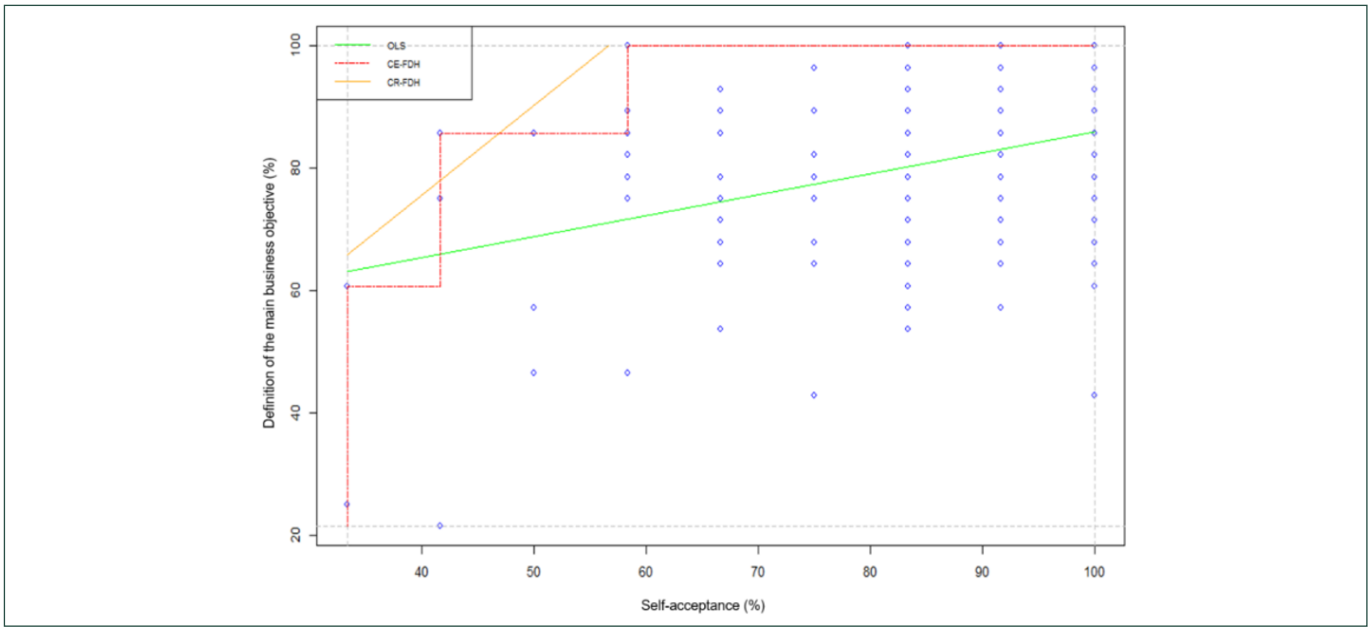
Note. APO: Developing new products or market opportunities; BPR: Positive relationship; BAU: Autonomy; BEM: Environmental mastery; BPG: Personal growth; BPL: Purpose in life; BSA: Self-acceptance; NN: Not necessary; CE-FDH: Ceiling envelope; d: Effect size; p-value: Significance level; p-accuracy: Accuracy level; Ineff.: inefficiency; NN: Not necessary. * $p < 0.05$, ‡ average effect.

The BEM ($d$ = 0.063, $p$ = 0.029) and BPL ($d$ = 0.095, $p$ = 0.011) dimensions showed a small effect. For BEM, 12.5% are needed to achieve 80–90% ABO, and 50% guarantee 100%. The greater inefficiency in the outcome classifies BEM as a facilitating condition, indicating that increases in the dimension can improve ABO. For BPL, 45.5% result in 90% ABO, while 63.6% achieve 100%. Similarly, the ratio of inefficiencies confirms BPL as a facilitating condition, justifying investments for additional gains in ABO.

The BSA dimension showed a medium effect ($d$ = 0.108, $p$ = 0.003). With 12.5% BSA, it is possible to achieve 50–80% ABO, while 37.5% guarantees 90–100%. However, the ratio of inefficiencies characterizes BSA as an optimizing condition, suggesting that increases beyond 37.5% do not bring additional gains in ABO. Figure 4 shows the NCA graphs of the three significant analyses.




Source: CE-FDH: Ceiling envelope; CR-FDH: Regression envelope; OLS: Regression line.

**Figure 4.** NCA charts for ABO: Environmental mastery, purpose in life, and self-acceptance.

The fourth statement ($S_4$) proposed that the PWB dimensions are indispensable for the management of key human resources. Two dimensions showed significant values with a medium effect: purpose in life (BPL) and self-acceptance (BSA). The detailed results are presented in Table 4.

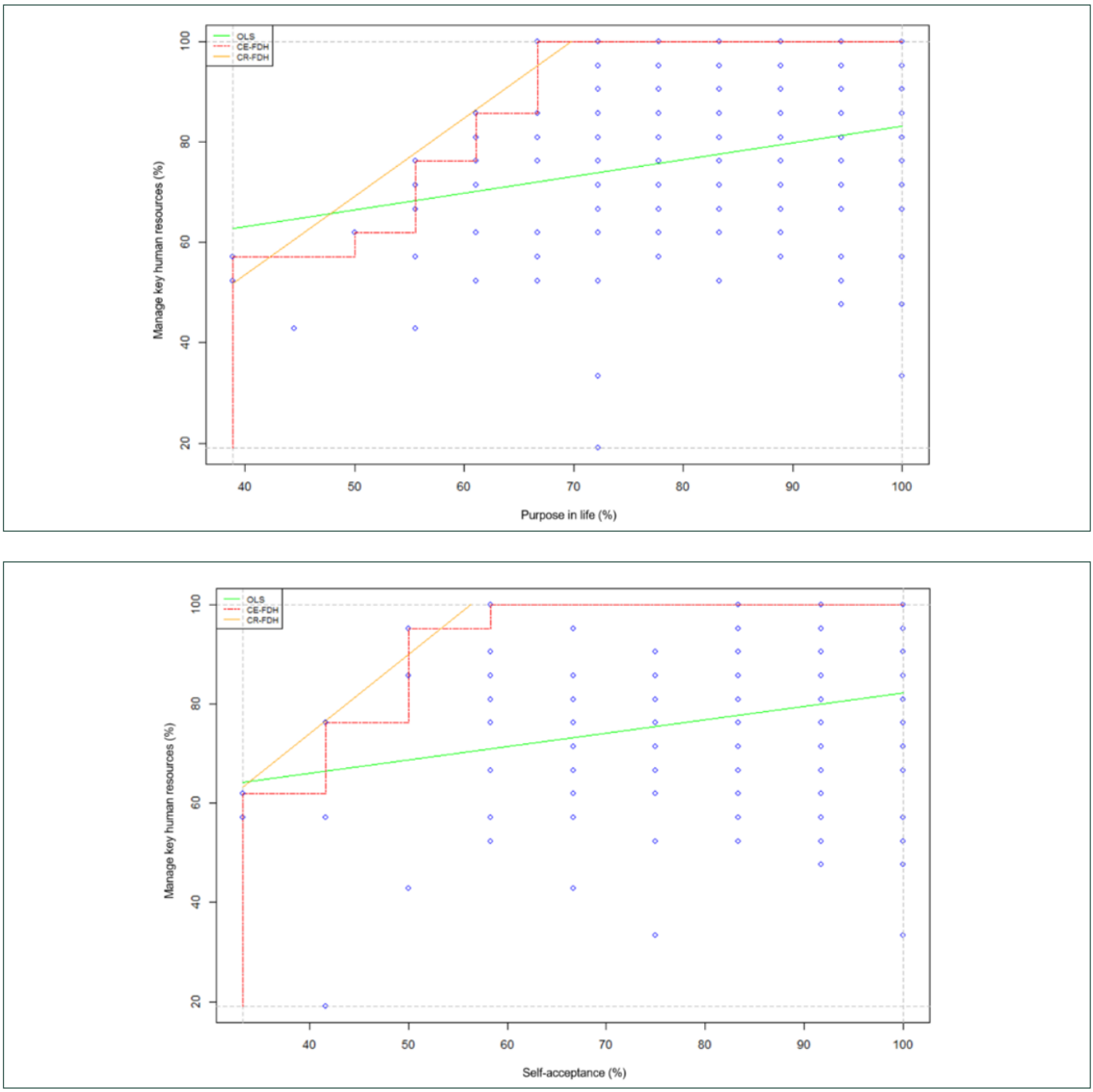
**Table 4.** Necessary conditions for managing key human resources.

| AHR | BPR | BAU | BEM | BPG | BPL | BSA |
|---|---|---|---|---|---|---|
| 0 % | NN | NN | NN | NN | NN | NN |
| 10 % | NN | NN | NN | NN | NN | NN |
| 20 % | NN | NN | NN | NN | NN | NN |
| 30 % | NN | NN | NN | NN | NN | NN |
| 40 % | NN | NN | NN | NN | NN | NN |
| 50 % | NN | NN | NN | NN | 18.2 | NN |
| 60 % | NN | NN | NN | NN | 27.3 | 12.5 |
| 70 % | NN | NN | NN | NN | 27.3 | 12.5 |
| 80 % | NN | NN | 12.5 | NN | 36.4 | 25.0 |
| 90 % | NN | 10.0 | 25.0 | NN | 45.5 | 25.0 |
| 100 % | NN | 10.0 | 25.0 | NN | 45.5 | 37.5 |
| CE-FDH | 0 | 79.302 | 317.611 | 0 | 899.609 | 555.742 |
| *d* | 0 | 0.012 | 0.059 | 0 | 0.182‡ | 0.103‡ |
| *p-value* | 1 | 0.618 | 0.064 | 1 | 0.000* | 0.014* |
| *p-accuracy* | 0 | 0.010* | 0.005* | 0 | 0.000* | 0.002* |
| *Absolute ineff.* | - | 6666.262 | 5000.024 | - | 3756.204 | 4444.437 |
| *Relative ineff.* | - | 98.82% | 92.65% | - | 75.93% | 82.35% |
| *Condition ineff.* | - | 90.00% | 75.00% | - | 54.54% | 62.50% |
| *Outcome ineff.* | - | 88.24% | 70.59% | - | 47.05% | 52.93% |

Note. AHR: Managing key human resources; BPR: Positive relationship; BAU: Autonomy; BEM: Environmental mastery; BPG: Personal growth; BPL: Purpose in life; BSA: Self-acceptance; NN: Not necessary; CE-FDH: Ceiling envelope; *d*: effect size; *p*-value: Significance level; *p*-accuracy: Accuracy level; Ineff.: Inefficiency; NN: Not necessary. * $p < 0.05$, ‡ average effect.

The bottleneck of the BPL dimension ($d = 0.182$, $p < 0.001$) indicates that 18.2% is enough to achieve 50% AHR, 27.3% for 60–70%, 36.4% for 80%, and 45.5% for 90–100%. The ratio of inefficiencies characterizes BPL as an optimizing condition, suggesting that increases beyond 45.5% do not generate additional gains in AHR.

For the BSA dimension ($d = 0.063$, $p = 0.029$), 12.5% ensure 60–70% AHR, 25% achieve 80–90%, and 37.5% ensure 100%. The greater inefficiency in the condition than in the outcome also classifies BSA as an optimizing condition. Figure 5 shows the NCA graphs of the significant dimensions.




Source: CE-FDH: Ceiling envelope; CR-FDH: Regression envelope; OLS: Regression line.

**Figure 5.** NCA charts for AHR: Purpose in life and self-acceptance.

The fifth statement ($S_5$) proposed that the PWB dimensions are crucial for initiating contacts with investors. The purpose in life (BPL) and self-acceptance (BSA) dimensions showed significant values as necessary conditions. In addition, the personal growth dimension (BPG) showed borderline significance with a medium effect. The full results for the six dimensions are detailed in Table 5.

**Table 5.** Necessary conditions for initiating contacts with investors.

| AIR | BPR | BAU | BEM | BPG | BPL | BSA |
|---|---|---|---|---|---|---|
| 0 % | NN | NN | NN | NN | NN | NN |
| 10 % | NN | NN | NN | NN | NN | NN |
| 20 % | NN | NN | NN | NN | NN | NN |
| 30 % | NN | NN | NN | NN | NN | NN |
| 40 % | NN | NN | NN | NN | NN | 12.5 |
| 50 % | NN | NN | NN | NN | NN | 12.5 |
| 60 % | NN | NN | 12.5 | NN | NN | 12.5 |
| 70 % | NN | NN | 12.5 | 16.7 | NN | 12.5 |
| 80 % | NN | NN | 12.5 | 50.0 | 45.5 | 37.5 |
| 90 % | NN | 10.0 | 12.5 | 66.7 | 45.5 | 37.5 |
| 100 % | NN | 10.0 | 37.5 | 66.7 | 54.5 | 37.5 |
| *CE-FDH* | 0 | 119.036 | 416.774 | 714.262 | 634.952 | 833.571 |
| *d* | 0 | 0.017 | 0.073 | 0.167‡ | 0.121‡ | 0.103‡ |
| *p-value* | 1 | 0.612 | 0.092 | 0.056 | 0.025* | 0.014* |
| *p-accuracy* | 0 | 0.010* | 0.006* | 0.004* | 0.003* | 0.002* |
| *Absolute ineff.* | - | 7023.179 | 4821.536 | 3333.262 | 4523.476 | 4285.786 |
| *Relative ineff.* | - | 98.33% | 84.38% | 77.78% | 86.36% | 75.00% |
| *Condition ineff.* | - | 90.00% | 62.50% | 33.34% | 45.46% | 62.50% |
| *Outcome ineff.* | - | 83.33% | 58.34% | 66.67% | 75.00% | 33.33% |

Note. AIR: Initiating contacts with investors; BPR: Positive relationship; BAU: Autonomy; BEM: Environmental mastery; BPG: Personal growth; BPL: Purpose in life; BSA: Self-acceptance; NN: Not necessary; CE-FDH: Ceiling envelope; d: Effect size; p-value: Significance level; p-accuracy: Accuracy level; Ineff.: Inefficiency; NN: Not necessary. * $p < 0.05$, ‡ average effect.

The BPG dimension showed that 16.7% are sufficient to achieve 70% AIR, 50.0% for 80%, and 66.7% for 100%. The inefficiency indicates that BPG is a facilitating condition, but the borderline significance suggests caution in interpretation, and studies with larger samples are recommended to reduce the risk of Type I error.

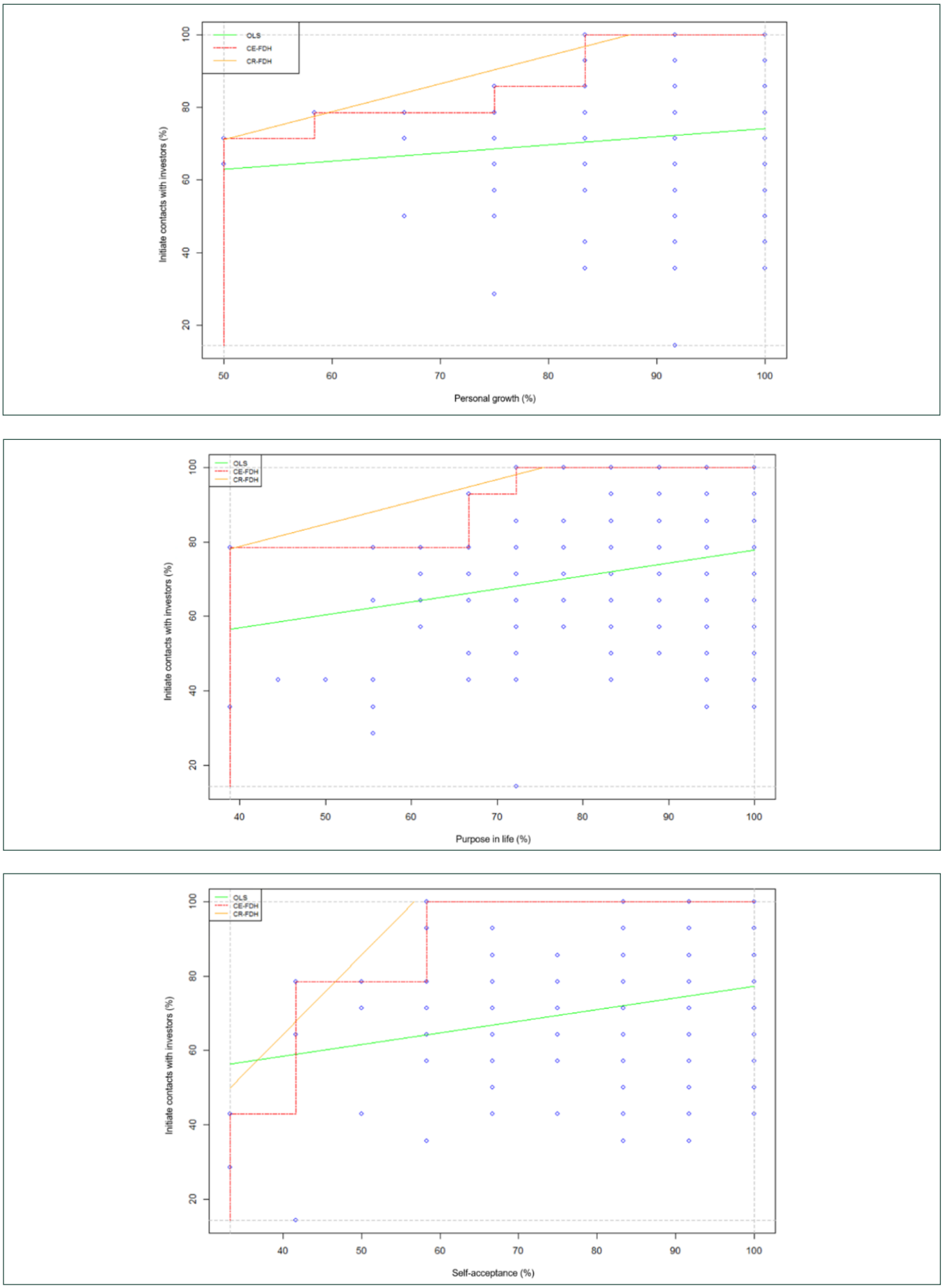
The BPL dimension ($d$ = 0.063, $p$ = 0.029) begins its bottleneck at 45.5%, reaching 80–90% AIR, and at 54.4% it reaches 100%. Inefficiency confirms BPL as a facilitating condition, indicating that increasing BPL can increase AIR.

In turn, BSA starts the bottleneck at 12.5%, with AIR ranging from 40–70%, and reaches 80–100% with 37.5%. This dimension is classified as an optimizing condition, since increases above 37.5% do not generate additional gains in AIR. Figure 6 shows the NCA graphs for the significant dimensions of $S_5$.

The sixth statement ($S_6$) proposed that the PWB dimensions are essential for coping with unforeseen changes. The results, presented in Table 6, show that only the environmental mastery dimension (BEM) presented significant indicators ($p$ = 0.027). The personal growth dimension (BPG) showed a medium effect size ($d$ = 0.115), but no statistical significance ($p$ = 0.131).

The BDO bottleneck starts at 12.5% to reach 70–80% AUC, reaching 90–100% when increasing to 37.5%. The model shows a small effect, and the inefficiencies indicate that BEM is a facilitating condition. This suggests that even with low initial levels, increasing BEM can generate additional gains in AUC. The NCA graph with the results of this necessary dimension in $S_6$ is shown in Figure 7.

Table 7 summarizes the significant evidence from the 36 analyses carried out for the six statements. In total, eight results with a medium effect and three with a small effect were identified, totaling eleven pieces of evidence that support five of the six statements, with $S_2$ being completely refuted. Each row presents the findings for the statements ($S_1$ to $S_6$), while the columns show the significant results, classified by effect size, as well as the totals per row and column. The cells indicate the dimension of psychological well-being required to achieve 100% of the predicted outcome and the classification of the condition based on the inefficiency analysis.




Source: CE-FDH: Ceiling envelope; CR-FDH: Regression envelope; OLS: Regression line.

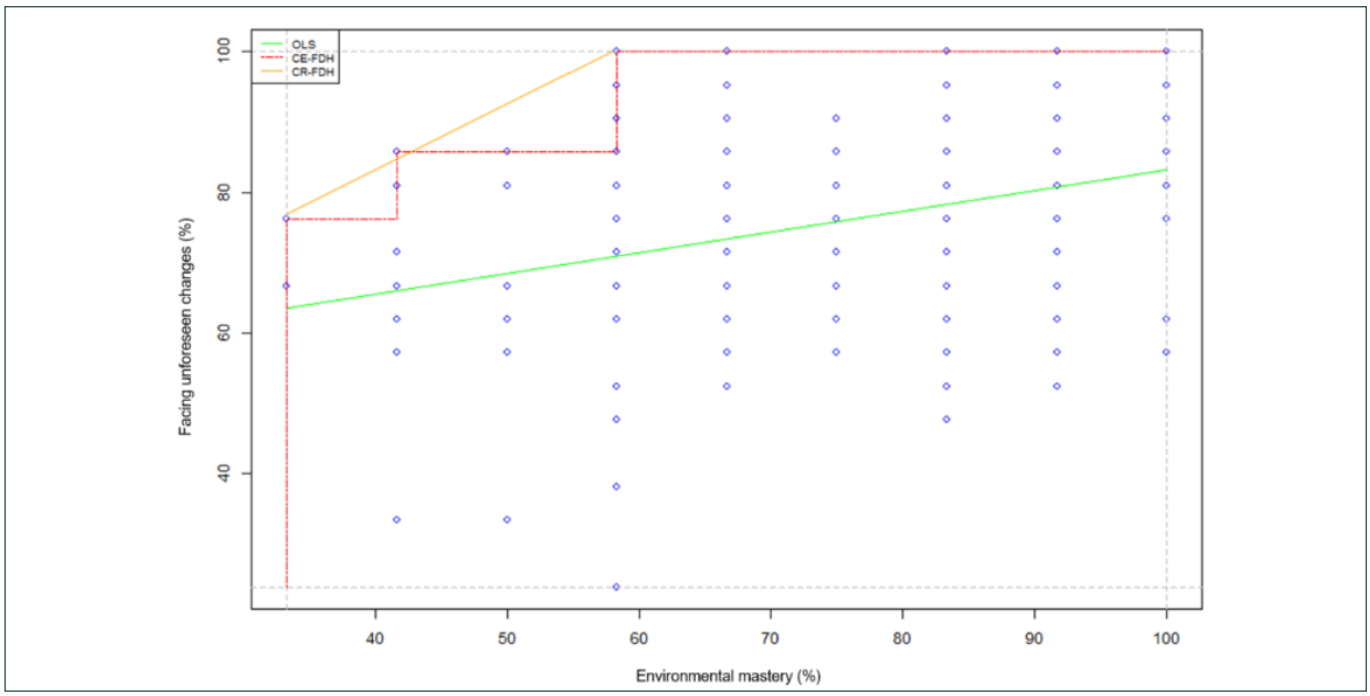
**Figure 6.** NCA charts for AIR: Personal growth, purpose in life, and self-acceptance.

**Table 6.** Necessary conditions to cope with unforeseen changes.

| AUC | BPR | BAU | BEM | BPG | BPL | BSA |
|---|---|---|---|---|---|---|
| 0 % | NN | NN | NN | NN | NN | NN |
| 10 % | NN | NN | NN | NN | NN | NN |
| 20 % | NN | NN | NN | NN | NN | NN |
| 30 % | NN | NN | NN | NN | NN | NN |
| 40 % | NN | NN | NN | NN | NN | NN |
| 50 % | NN | NN | NN | NN | NN | NN |
| 60 % | NN | NN | NN | NN | NN | NN |
| 70 % | NN | NN | 12.5 | NN | NN | NN |
| 80 % | NN | NN | 12.5 | NN | NN | NN |
| 90 % | NN | NN | 37.5 | 66.7 | 54.5 | 35.5 |
| 100 % | NN | NN | 37.5 | 66.7 | 72.7 | 35.5 |
| *CE-FDH* | 0 | 0 | 436.647 | 436.552 | 449.701 | 238.000 |
| *d* | 0 | 0 | 0.086† | 0.115‡ | 0.097 | 0.047 |
| *p-value* | 1 | 1 | 0.027* | 0.283 | 0.131 | 0.628 |
| *p-accuracy* | 0 | 0 | 0.003* | 0.009* | 0.007* | 0.009* |
| *Absolute ineff.* | - | - | 4484.337 | 3333.214 | 4020.923 | 4841.587 |
| *Relative ineff.* | - | - | 88.28% | 87.50% | 86.36% | 95.32% |
| *Condition ineff.* | - | - | 62.50% | 33.34% | 27.28% | 62.50% |
| *Outcome ineff.* | - | - | 68.75% | 80.04% | 81.24% | 87.51% |

Note. AUC: Facing unforeseen changes; BPR: Positive relationship; BAU: Autonomy; BEM: Environmental mastery; BPG: Personal growth; BPL: Purpose in life; BSA: Self-acceptance; NN: not necessary; CE-FDH: Ceiling envelope; *d*: Effect size; *p*-value: Significance level; *p*-accuracy: Accuracy level; Ineff.: Inefficiency; NN: Not necessary. * $p < 0.05$, † small effect, ‡ medium effect.

The BDO bottleneck starts at 12.5% to reach 70–80% AUC, reaching 90–100% when increasing to 37.5%. The model shows a small effect, and the inefficiencies indicate that BEM is a facilitating condition. This suggests that even with low initial levels, increasing BEM can generate additional gains in AUC. The NCA graph with the results of this necessary dimension in S6 is shown in Figure 7.




Source: CE-FDH: Ceiling envelope; CR-FDH: Regression envelope; OLS: Regression line.

**Figure 7.** NCA graphs for MSA: Environmental mastery.

**Table 7.** Necessary conditions to cope with unforeseen changes.

| Declaration | Small effect | Medium effect | Total |
|---|---|---|---|
| $D_1$: PWB → APO | NA | BPG: 66.7% — Facilitator<br>BPL: 45.5% — Facilitator | 2 |
| $D_2$: PWB → AAI | NA | NA | 0 |
| $D_3$: PWB → AON | BEM: 50.0% — Facilitator<br>BPL: 63.6% — Facilitator | BSA: 37.5% — Optimizer | 3 |
| $D_4$: PWB → AGR | NA | BPL: 45.5% — Optimizer<br>BSA: 37.5% — Optimizer | 2 |
| $D_5$: PWB → ACI | NA | BPG: 66.7% — Facilitator<br>BPL: 54.5% — Facilitator<br>BSA: 37.5% — Optimizer | 3 |
| $D_6$: PWB → AEM | BEM: 37.5% — Facilitator | NA | 1 |
| Total | 3 | 8 | 11 |

Note. APO: Developing new products or market opportunities; AEN: Developing an innovative environment; ABO: Defining the main business objective; AHR: Managing key human resources; AIR: Initiating contacts with investors; AUC: Ability to cope with unforeseen changes; BPR: Positive relationship; BAU: Autonomy; BEM: Environmental mastery; BPG: Personal growth; BPL: Purpose in life; BSA: Self-acceptance; NA: No result.

## DISCUSSION

The results of this study highlight fundamental aspects of the relationship between PWB and women's ESE, by identifying critical factors of psychological well-being necessary for women entrepreneurs to improve their perception of effectiveness, highlighting bottlenecks in the levels of PWB that are essential for the emergence and maximization of the dimensions of ESE.

Firstly, the results showed that the dimensions of personal growth (66.7%) and purpose in life (45.5%) are average facilitators for developing new products or market opportunities ($S_1$). Having a clear purpose in life and perceiving opportunities for personal growth motivate women entrepreneurs to seek creative solutions to problems (Iqbal et al., 2025). In addition, the belief in their own creative capacity to find opportunities in the market to develop new products and services (De Noble et al., 1999) implies an alignment between self and expressed behavior, making them seek experiences that favor their own goals (Bandura, 1977; Gkypali & Roper, 2024; Locke, 1987).

Despite the initial findings, for the sample investigated, the PWB dimensions are not necessary conditions for the development of an innovative environment ($S_2$). Other factors may facilitate or optimize the ability to create a work environment that allows people to be 'their own boss,' seek to do new things, or even apply business concepts in an unprecedented way (De Noble et al., 1999). These factors have been maintained in the CFA. These aspects could include the ability to delegate, to foster innovation in others, or even to master the knowledge or skills to deal with business concepts. Creating positive work environments has not been shown to be enough to produce innovative environments (Iqbal et al., 2025), highlighting the need for women entrepreneurs to pay attention to other mechanisms for generating innovation. Well-being is associated with creativity (Hatak & Zhou, 2019) and improving the absorptive capacity of organizations (Nunes et al., 2024); however, it is necessary to go further to generate innovation, such as through investments.

The PWB dimensions of environmental mastery (50%) and purpose in life (63.6%) had a small effect as facilitating conditions for defining the main business objective, while self-acceptance (37.5%) proved to be an optimizing condition with an average effect ($S_3$). These findings corroborate Waterman et al. (2008), who point out that eudaimonic pleasure occurs as the individual pursues self-realization, developing their potential and promoting life purposes. However, this depends on the acceptance of the self, a critical asset for achieving goals and carrying out tasks in the entrepreneurial context (Pathak, 2021), strengthening the continuous sense of self-efficacy (Yang et al., 2022) and, consequently, facilitating the definition of the main business objective. This result suggests that PWB has little effect on self-efficacy, which indicates that PWB is not a sufficient condition to produce agency in women entrepreneurs, highlighting that Brazilian women entrepreneurs need transformative agency to challenge structures of resource constraints and difficulties, such as difficulties in managing the business due to maternity and lack of support networks, as well as the lack of recognition in the role (Silva et al., 2024; Versiani et al., 2021).

Purpose in life (45.5%) and self-acceptance (37.5%) were shown to be an average effect optimizing conditions for managing key human resources ($S_4$). Behavioral modulation for human resource management (Bandura, 1977) seems to influence the ability to create a positive work environment, acting more assertively in conflict management (Huieba, 2025) and in the perception of psychological safety at work (Fauzi & Desiana, 2025). It is interesting that the PWB dimension of maintaining positive relationships with others (Keyes & Ryff, 1998; Ryff, 1989; Ryff & Keyes, 1995) was not a necessary condition for this ESE dimension, probably because the item that remained in the PWB CFA refers to friendships, not interpersonal relationships at work.

Purpose in life (54.4%) is a facilitating condition, while self-acceptance (37.5%) is an optimizing condition, both with an average effect, for initiating contacts with investors ($S_5$). Therefore, having goals and objectives in life, a sense of direction, maintaining beliefs and purpose, and perceiving meaning in one's current life (Ryff & Keyes, 1995), as well as having a positive attitude toward oneself and accepting multiple aspects of one's personality (Ryff, 1989; Ryff & Keyes, 1995), are indicators of the entrepreneur's mental health and may, in turn, impact the well-being of other stakeholders (Gish et al., 2022). This finding is particularly relevant for women entrepreneurs, as Brazilian women tend to invest less and are less prone to taking risks or obtaining third-party capital (Campelo, 2023).

Finally, environmental mastery (37.5%) is a facilitating condition, with a small effect, for the ability to cope with unforeseen changes ($S_6$). Considering that self-efficacy refers to the belief in one's personal ability to perform a task (Bandura, 2000; Brown et al., 2002; Wood & Bandura, 1989) and to deal with uncertainty and failure (Bandura, 2000; Salanova et al., 2001), women entrepreneurs rely on their perceived control over the conditions in which they live to seize opportunities around them and create an environment that meets their needs and values (Keyes & Ryff, 1998; Ryff, 1989; Ryff & Keyes, 1995).

## CONCLUSION

This study identified critical psychological well-being factors required for Brazilian women entrepreneurs to enhance their perception of self-efficacy, revealing essential PWB levels for both the emergence and maximization of ESE dimensions. These findings allow organizations and entrepreneurs to focus efforts on specific bottlenecks, avoiding the allocation of resources to aspects with limited impact.

Of the six statements formulated in this research, five were supported by evidence. Among the six PWB dimensions analyzed, four were identified as necessary conditions, either as optimizers or facilitators. Environmental mastery proved to be a facilitating necessary condition for defining the main business objective and for the ability to deal with unforeseen changes. Personal growth emerged as a facilitating condition for the development of products and market opportunities, as well as for establishing potential relationships with investors. Purpose in life was shown to be a facilitating condition for the development of products and market opportunities, the creation of an innovative environment, and the establishment of potential relationships with investors; it was also an optimizing condition for the development of key human resources. Finally, self-acceptance was identified as an optimizing condition for defining the main business objective, developing key human resources, and establishing potential relationships with investors.

This study expands the understanding of PWB and ESE among women entrepreneurs in the Latin American context (Amorós et al., 2019; Zawadzki et al., 2024), specifically in Brazil. By employing two constructs (PWB and ESE) to analyze entrepreneurial behavior, the study addresses Pathak's (2021) recommendation to include multiple measures when investigating PWB, while also advancing the assessment of important well-being conditions for women entrepreneurs (Gish et al., 2022). Tailored support strategies can be developed, including training initiatives aimed at the optimizing and facilitating conditions (Nevi et al., 2025). Moreover, these strategies may be incorporated into public policies focused on women's entrepreneurship, given their relevance to policy agendas (Vanderstraeten et al, 2024). For entrepreneurs themselves, the findings show that persisting in their roles by strengthening PWB results in benefits not only for their personal well-being but also in how they manage their businesses across five ESE dimensions.

This study presents some limitations related to sample size and the scarcity of prior evidence applying necessity logic in previous research. Future investigations may explore PWB and ESE in other regions, considering that well-being and self-efficacy may vary among entrepreneurs (Bastian et al., 2023) and across different contexts (Stephan et al., 2023). Moreover, as both PWB and ESE are subject to change (Vanderstraeten et al, 2024), longitudinal studies might offer new perspectives. Finally, given the variations in PWB across different phases of the entrepreneurial process (Dimov & Pistrui, 2024), future research may examine the necessary conditions in other stages of entrepreneurship, such as business creation.

## REFERENCES

Amorós, J. E., Poblete, C., & Mandakovic, V. (2019). R&D Transfer, policy and innovative ambitious entrepreneurship: Evidence from Latin America countries. *The Journal of Technology Transfer, 44*, 1396-1415. https://doi.org/10.1007/s10961-019-09728-x

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215. https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science, 9*(3), 75-78. https://doi.org/10.1111/1467-8721.00064

Bandura, A. (2010). *Self-efficacy. The Corsini Encyclopedia of Psychology* (pp. 1-3). John Wiley & Sons.

Bandura, A., & Wessels, S. (1994). *Self-efficacy. encyclopedia of human behavior* (pp. 71-81). Academic Press.

Bastian, B. L., Wood, B. P. & Ng, P. Y. (2023). The role of strong ties in empowering women entrepreneurs in collectivist contexts. *International Journal of Gender and Entrepreneurship, 15*(1), 122-146. https://doi.org/10.1108/IJGE-10-2021-0171

Benson, G. M., & Taylor, W. (2025). Employee retention predictors: A statistical analysis for business. In *Innovative Recruitment and Retention for Employee Empowerment* (pp. 285-308). IGI Global Scientific Publishing.

Brown, K. M., Thomas, D. Q., & Kotecki, J. E. (2002). *Physical activity and health: An interactive approach*. Jones & Bartlett Learning.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). The Guilford Press.

Camozzato, E. S., Verdinelli, M. A., Lizote, S. A., & Serafim, F. K. (2017). Orientação empreendedora, autoeficácia dos gestores e satisfação com o desempenho: Um estudo em empresas incubadas. *Revista de Ciências da Administração, 19*(48), 68-83. https://doi.org/10.5007/2175-8077.2017v19n48p68

Campelo, M. (2023). As mulheres no mercado de capitais: Como investem e o que podemos aprender com elas. *Portal do Investidor*. https://www.gov.br/investidor/pt-br/penso-logo-investo/as-mulheres-no-mercado-de-capitais-como-investem-e-o-que-podemos-aprender-com-elas

Cardella, G. M., Hernández-Sánchez, B. R., & Sánchez-García, J. C. (2020). Women entrepreneurship: A systematic review to outline the boundaries of scientific literature. *Frontiers in Psychology, 11*. https://doi.org/10.3389/fpsyg.2020.01557

Castellano, R., Musella, G., & Punzo, G. (2017). Structure of the labour market and wage inequality: Evidence from European countries. *Quality & Quantity, 51*(5), 2191-2218. https://doi.org/10.1007/s11135-016-0381-7

Chatterjee, I., Shepherd, D. A., & Wincent, J. (2022). Women's entrepreneurship and well-being at the base of the pyramid. *Journal of Business Venturing, 37*(4), 106222. https://doi.org/10.1016/j.jbusvent.2022.106222

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297–334. https://doi.org/10/cc5

De Noble, A. F., Jung, D., & Ehrlich, S. B. (1999). Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial action. *Frontiers of Entrepreneurship Research, 1999*(1), 73-87.

Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies, 9*, 1-11. https://doi.org/10.1007/s10902-006-9018-1

Del Giudice, M., Garcia-Perez, A., Scuotto, V., & Orlando, B. (2019). Are social enterprises technological innovative? A quantitative analysis on social entrepreneurs in emerging countries. *Technological Forecasting and Social Change, 148*, 119704. https://doi.org/10.1016/j.techfore.2019.07.010

Dimov, D., & Pistrui, J. (2024). Dynamics of entrepreneurial well-being: Insights from computational theory. *Journal of Business Research, 172*, 114427. https://doi.org/10.1016/j.jbusres.2023.114427

Dul, J. (2016). Necessary Condition Analysis (NCA): Logic and Methodology of "Necessary but Not Sufficient" Causality. *Organizational Research Methods, 19*(1), 10–52. https://doi.org/10.1177/1094428115584005

Dul, J. (2020). *Conducting necessary condition analysis: For business and management students* (1st ed). SAGE Publications.

Dul, J. (2025). *Advances in Necessary Condition Analysis*. https://bookdown.org/ncabook/advanced_nca2/

Dul, J., van der Laan, E., & Kuik, R. (2020). A statistical significance test for necessary condition analysis. *Organizational Research Methods, 23*(2), 385–395. https://doi.org/10.1177/1094428118795272

Dul, J., Hauff, S., & Bouncken, R. B. (2023). Necessary condition analysis (NCA): Review of research topics and guidelines for good practice. *Review of Managerial Science, 17*(2), 683–714. https://doi.org/10.1007/s11846-023-00628-x

Epskamp, S. (2017). *semPlot: Path Diagrams and Visual Analysis of Various SEM Packages' Output*. [R package]. https://cran.r-project.org/package=semPlot

Fauzi, G. N., & Desiana, P. M. (2025). The Influence of Intrinsic Motivation and Supportive Leadership on Innovative Behavior through Career Sustainability and Psychological Safety of Employees in E-Commerce Companies in Indonesia. *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE), 8*(1), 1486-1503.

Frese, M. (2009). Towards a psychology of entrepreneurship—An action theory perspective. *Foundations and Trends in Entrepreneurship, 5*(6), 437-496. http://dx.doi.org/10.1561/0300000028

George, D., & Mallery, P. (2019). *IBM SPSS statistics 26 step by step: A simple guide and reference* (6º ed). Routledge. https://doi.org/10.4324/9780429056765

Gish, J. J., Lerner, D. A., McKelvie, A., Wiklund, J., van Witteloostuijn, A., & Wolfe, M. T. (2022). Entrepreneurship as an auspicious context for mental health research. *Journal of Business Venturing Insights, 18*, e00349. https://doi.org/10.1016/j.jbvi.2022.e00349

Gkypali, A., & Roper, S. (2024). Innovation and sales growth intentions among the solopreneurs: The role of experience and entrepreneurial self-efficacy. *Technological Forecasting and Social Change, 200*, 123201.

Hatak, I. & Zhou, H. (2019). Health as human capital in entrepreneurship: Individual, extension, and substitution effects on entrepreneurial success. *Entrepreneurship Theory and Practice, 1*, -25 http://doi.org/10.1177/1042258719867559

Hemingway, A., & Steven, P. (2011). Innovating to achieve sustainable wellbeing inside the built environment. *Perspectives in Public Health, 131*(3), 117–118. https://doi.org/10.1177/1757913911405720

Huieba, J. S. (2025). Impacto da liderança na gestão de conflitos. *Revista Ibero-Americana de Humanidades, Ciências e Educação, 11*(1), 804–817. https://doi.org/10.51891/rease.v11i1.17683

Instituto Brasileiro de Geografia e Estatística. (2022). *Censo demográfico*. https://www.ibge.gov.br/estatisticas/sociais/trabalho/22827-censo-demografico-2022.html

Iezzi, D. F., Deriu, F. (2014). Women active citizenship and wellbeing: the Italian case. *Quality & Quantity 48*, 845–862. https://doi.org/10.1007/s11135-012-9806-0

Iqbal, J., Aukhoon, M.A., & Parray, Z.A. (2025). Thriving minds, thriving workplaces: unleashing creativity through psychological wellbeing and psychological capital. *Journal of Organizational Effectiveness: People and Performance*, ahead-of-print. https://doi.org/10.1108/JOEPP-01-2024-0025

Jaboob, M., Iqbal, S. & Hameed, S.F. (2025). How do emotional intelligence and psychological well-being affect decision making in Omani SMEs? Mediating role of entrepreneurial intention? *Current Psychology (2025)*. https://doi.org/10.1007/s12144-024-07186-9

Keyes, C. L. M., & Ryff, C. D. (1998). Generativity in adult lives: Social structural contours and quality of life consequences. In D. P. McAdams & E. de St. Aubin (Eds.), *Generativity and adult development: How and why we care for the next generation* (pp. 227–263). American Psychological Association. https://doi.org/10.1037/10288-007

Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: the empirical encounter of two traditions. *Journal of Personality and Social Psychology, 82*(6), 1007-1022. https://pubmed.ncbi.nlm.nih.gov/12051575/

Korber, S., & McNaughton, R. B. (2017). Resilience and entrepreneurship: a systematic literature review. *International Journal of Entrepreneurial Behavior & Research, 24*(7), 1129-1154. https://doi.org/10.1108/ijebr-10-2016-0356

Kovaleva, Y., Hyrynsalmi, S., Saltan, A., Happonen, A., & Kasurinen, J. (2023). Becoming an entrepreneur: A study of factors with women from the tech sector. *Information and Software Technology, 155*, 107110. https://doi.org/10.1016/j.infsof.2022.107110

Law, K. M., & Breznik, K. (2017). Impacts of innovativeness and attitude on entrepreneurial intention: Among engineering and non-engineering students. *International Journal of Technology and Design Education, 27*, 683-700. https://doi.org/10.1007/s10798-016-9373-0

Lima, R. M. de, Corrêa, V. S., Melo, P. L. de R., Nassif, V. M. J., & Arruda, M. C. S. de. (2024). Female entrepreneurship in a developing context: Motivations, challenges, and drivers to succeed in Brazil. *Brazilian Administration Review, 21*(2), e220157. https://doi.org/10.1590/1807-7692bar2024220157

Locke, E. A. (1987). Social foundations of thought and action: A social-cognitive view. *Academy of Management Review, 12*(1), 169-171. https://doi.org/10.5465/amr.19874306538

Machado, W. L., Bandeira, D. R., & Pawlowski, J. (2013). Validação da Psychological Well-being Scale em uma amostra de estudantes universitários. *Avaliação Psicológica, 12*(2), 263-272. http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1677-04712013000200017

Machado, H. P. V., Cazella, C. F., Piekas, A. A. S., & Carvalho, C. E. (2021). Entrepreneurship and strategy: Analyzing themes from bibliometric studies in the light of the concept of strategic entrepreneurship. *Brazilian Administration Review, 18*(3), e200036. https://doi.org/10.1590/1807-7692bar2021200036

Machado, H. P. V. (2024). Entrepreneurship and gender: An appreciation of studies in Brazil. *Gender, Work & Organization*. https://doi.org/10.1111/gwao.13208

Mata, K. K. C. & Tarroja, M. C. H. (2022). Impact of emotional exhaustion and self-efficacy on the psychological well-being of child care workers in the Philippines. *Psychology Studies, 67*(30), 352-361. https://doi.org/10.1007/s12646-022-00662-x

McGee, J. E., & Terry, R. P. (2024). Covid-19 as an external enabler: The role of entrepreneurial self-efficacy and entrepreneurial orientation. *Journal of Small Business Management, 62*(2), 1058-1083. https://doi.org/10.1080/00472778.2022.2127746

Minniti, M. (2009). Gender issues in entrepreneurship. *Foundations and Trends in Entrepreneurship, 5*(7–8), 497-621. http://dx.doi.org/10.1561/0300000021

Monteiro, R., Pereira, M., Daniel, F., Silva, A. G. & Matos, F. R. N. (2017). The influence of organizational reconciliation Policies and culture on Workers Stress Perceptions. *Brazilian Administration Review, 14*(3), 1-13, e170005. https://doi.org/10.1590/1807-7692bar2017170005

Nevi, G., Ancillai, C., Pascucci, F., & Palladino, R. (2025). Investigating female entrepreneurship: A micro-perspective of drivers and barriers for aspiring and experienced women entrepreneurs. *International Entrepreneurship and Management Journal, 21*(1), 1-28. https://doi.org/10.1007/s11365-024-01012-1

Nikolaev, B., Boudreaux, C. J., & Wood, M. (2020). Entrepreneurship and subjective well-being: The mediating role of psychological functioning. *Entrepreneurship Theory and Practice, 44*(3), 557-586. https://doi.org/10.1177/0007650320927688

Nunes, P.M., Proença, T. & Carozzo-Todaro, M.E. (2024). A systematic review on well-being and ill-being in working contexts: contributions of self-determination theory. *Personnel Review, 53*(2), 375-419. https://doi.org/10.1108/PR-11-2021-0812

Otache, I., Edopkolor, J. E., Sani, I. A., & Umar, K. (2024). Entrepreneurship education and entrepreneurial intentions: Do entrepreneurial self-efficacy, alertness and opportunity recognition matter? *The International Journal of Management Education, 22*(1), 100917. https://doi.org/10.1016/j.ijme.2023.100917

Pandit, D., Joshi, M. P., & Tiwari, S. R. (2018). Examining entrepreneurial intention in higher education: An exploratory study of college students in India. *The Journal of Entrepreneurship, 27*(1), 25-46. https://doi.org/10.1177/0971355717738595

Patel, P. C., & Wolfe, M. T. (2019). Money might not make you happy, but can happiness make you money? The value of leveraging subjective well-being to enhance financial well-being in self-employment. *Journal of Business Venturing Insights, 12*, e00134. https://doi.org/10.1016/j.jbvi.2019.e00134

Pathak, S. (2021). Contextualizing well-being for entrepreneurship. *Business & Society, 60*(8), 1987-2025. https://doi.org/10.1177/0007650320927688

Pearson, K. (1905). Das fehlergesetz und seine verallgemeiner-ungen durch fechner und pearson. A rejoinder. *Biometrika, 4*(1–2), 169–212. https://doi.org/10.1093/biomet/4.1-2.169

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

R Core Team (2022). *R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria*. https://www.R-project.org/

Revelle, W. (2022). *psych: Procedures for Personality and Psychological Research, Northwestern University, Evanston, Illinois, USA*. https://cran.r-project.org/web/packages/psych/index.html

Ribes-Giner, G., Moya-Clemente, I., Cervelló-Royo, R., & Perello-Marín, M. R. (2019). Wellbeing indicators affecting female entrepreneurship in OECD countries. *Quality & Quantity, 53*, 915-933. https://doi.org/10.1007/s11135-018-0796-4

Rizwan, A., Hanif, M. S., & Khan, T. Z. A. (2025). Laying the Foundations of Technology Startups–An Inquiry of Crowd-funding Investment Decisions in a Developing Country. *Technology in Society*, 102811. https://doi.org/10.1016/j.techsoc.2025.102811

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software, 48*(2), 1-36. https://doi.org/10.18637/jss.v048.i02

Ruda, W., Keller, P. G., El Tarabishy, A., & Ascúa, R. (2021). Gender and study discipline-specific differences in the opinion about entrepreneurial aspects: An 'ICSB academy' investigation. *Journal of Small Business Management, 59*(sup1), S193-S214. https://doi.org/10.1080/00472778.2020.1786336

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Ryff, C. D. (2019). Entrepreneurship and eudaimonic well-being: Five venues for new science. *Journal of Business Venturing, 34*(4), 646-663. https://doi.org/10.1016/j.jbusvent.2018.09.003

Ryff, C. D. (2023). In Pursuit of Eudaimonia: Past advances and future directions. *Human Flourishing, 9*. https://link.springer.com/chapter/10.1007/978-3-031-09786-7_2

Ryff, C. D. (2024). Meaningful aging via lifelong growth and development. In *Meaning and aging: Humanist perspectives* (pp. 11-38). Springer Nature Switzerland.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*(4), 719-727. https://doi.org/10.1037/0022-3514.69.4.719

Salanova, M., Grau, R., & Schaufeli, S. L. W. B. (2001). Exposición a las tecnologías de la información, burnout y engagement: El. *Revista de Psicología Social Aplicada, 11*(1) 69-90. https://www.wilmarschaufeli.nl/publications/Schaufeli/174.pdf

Sánchez, J. C., Carballo, T., & Gutiérrez, A. (2011). The entrepreneur from a cognitive approach. *Psicothema, 23*(3), 433-438. https://www.psicothema.com/pdf/3906.pdf

Shaik, A. S., Jain, M., Mendiratta, A., Alarifi, G., & Arrigo, E. (2024). Role of strategic knowledge management practices in enhancing strategic perspectives of an organisation to improve entrepreneurial performance. *Journal of Knowledge Management, 28*(6), 1648–1675. https://doi.org/10.1108/JKM-04-2023-0300

Shir, N., & Ryff, C. D. (2022). Entrepreneurship, self-organization, and eudaimonic well-being: A dynamic approach. *Entrepreneurship Theory and Practice, 46*(6), 1658-1684. https://doi.org/10.1177/10422587211013798

Silva, J. P., A. C. C. S.; Vale, C. P.; Silva, L. C. R. & Campos, A. L. F. (2024). Delineando o empreendedorismo feminino: Uma busca por suas especificidades. In *Anais do 13º EGEPE Encontro da Associação Nacional de Pesquisas em Empreendedorismo e Pequenas Empresas*. Curitiba.

Singh, S. K., Pradhan, R. K., Panigrahy, N. P., & Jena, L. K. (2019). Self-efficacy and workplace well-being: moderating role of sustainability practices. *Benchmarking: An International Journal, 26*(6), 1692-1708. https://doi.org/10.1108/BIJ-07-2018-0219

Song, J., Jiao, H., & Wang, C. (2023). How work-family conflict affects knowledge workers' innovative behavior: A spillover-crossover-spillover model of dual-career couples. *Journal of Knowledge Management, 27*(9), 2499–2525. https://doi.org/10.1108/JKM-06-2022-0458

Stephan, U., Rauch, A., & Hatak, I. (2023). Happy entrepreneurs? Everywhere? A meta-analysis of entrepreneurship and wellbeing. *Entrepreneurship Theory and Practice, 47*(2), 553-593. https://doi.org/10.1177/10422587211072799

The Jamovi Project (2022). *Jamovi. (Version 2.3)* [Computer Software]. https://www.jamovi.org

Vanderstraeten, L., Opdecam, E. & Everaert, P. (2024). Chicken or egg? On the relation between course performance and first-year students'well-being and self-efficacy. *Accounting Education*. https://doi.org/10.1080/09639284.2024.2354766

Versiani, F., Carvalho, A. Neto, Mota-Santos, C. & Caeiro, M. L (2021). Consequências (não) premeditadas do empreendedorismo para a mulher. *Revista de Administração FACES Journal, 20*(2), 10-28.

Waterman, A. S., Schwartz, S. J., & Conti, R. (2008). The implications of two conceptions of happiness (hedonic enjoyment and eudaimonia) for the understanding of intrinsic motivation. *Journal of Happiness Studies, 9*, 41-79. https://doi.org/10.1007/s10902-006-9020-7

Wieland, A. M., Kemmelmeier, M., Gupta, V. K., & McKelvey, W. (2021). Gendered cognitions: A socio-cognitive model of how gender affects entrepreneurial preferences. *Entrepreneurship & Regional Development, 31*(3–4), 178–197. https://doi.org/10.1080/08985626.2018.1551787

Wiklund, J., Nikolaev, B., Shir, N., Foo, M. D., & Bradley, S. (2019). Entrepreneurship and well-being: Past, present, and future. *Journal of Business Venturing, 34*(4), 579-588. https://doi.org/10.1016/j.jbusvent.2019.01.002

Wood, R., & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review, 14*(3), 361-384. https://doi.org/10.2307/258173

Wu, J., Li, Y., & Zhang, D. (2019). Identifying women's entrepreneurial barriers and empowering female entrepreneurship worldwide: A fuzzy-set QCA approach. International *Entrepreneurship and Management Journal, 15*, 905–928. https://doi.org/10.1007/s11365-019-00570-z

Yang, Z., Cai, X., Jiang, Y., Li, G., Zhao, G., Wang, P., & Huang, Z. (2022). What are the recipes of an entrepreneur's subjective well-being? A fuzzy-set approach for China. *International Journal of Environmental Research and Public Health, 20*(1), 417. https://doi.org/10.3390/ijerph20010417

Zawadzki, P., Teston, S. F, Machado, H. P. V., & Cazella, C. F. (2024). Self-efficacy and psychological well-being of female entrepreneurs: A study on the Brazil-Argentina border. *RAE - Revista de Administração de Empresas, 64*(4), e2022–0410. https://doi.org/10.1590/S0034-759020240404

## Authors

**Sayonara de Fátima Teston**
Universidade do Oeste de Santa Catarina
Av. Nereu Ramos, nº. 3777D, CEP 89801-200, Chapecó, SC, Brazil
sayonara.teston@unoesc.edu.br

**Patrick Zawadzki**
Universidade do Oeste de Santa Catarina
Av. Nereu Ramos, nº. 3777D, CEP 89801-200, Chapecó, SC, Brazil
patrick.zawadzki@unoesc.edu.br

**Hilka Pelizza Vier Machado**
UniCesumar
Av. Guedner, nº 1610, CEP 87050-900, Maringá, PR, Brazil

Universidade Federal do Paraná
Av. Prefeito Lothario Meissner, nº 623, CEP 8021-0170, Curitiba, PR, Brazil
hilkavier@yahoo.com

**Carla Fabiana Cazella**
Universidade do Oeste de Santa Catarina
Rua Paese, nº. 198, CEP 89566-252, Videira, SC, Brazil
carla.cazella@unoesc.edu.br

## Authors' contributions

**1st author:** conceptualization (equal), data curation (equal), investigation (equal), methodology (equal), resources (equal), software (equal), validation (equal), visualization (equal), writing - original draft (equal), writing - review & editing (equal).

**2nd author:** conceptualization (equal), data curation (equal), formal analysis (equal), investigation (equal), methodology (equal), software (equal), validation (equal), visualization (equal), writing - original draft (equal), writing - review & editing (equal).

**3rd author:** conceptualization (equal), formal analysis (equal), funding acquisition (equal), project administration (equal), resources (equal), supervision (equal), validation (equal), visualization (equal), writing - original draft (equal), writing - review & editing (equal).

**4th author:** conceptualization (equal), investigation (equal), visualization (equal), writing - original draft (equal), writing - review & editing (equal).