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A Statistical and Empirical Study of Personal, Environmental and Managerial Determinants

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Abstract

This study investigates the determinants of entrepreneurial success in Tunisia through an integrated methodological approach combining Multiple Correspondence Analysis (MCA) and Binary Logistic Regression. Based on primary data collected from 61 Tunisian entrepreneurs over one-year period (2023–2024), the analysis examines the influence of personal, managerial, and environmental factors on business performance. The MCA results identify two dominant dimensions: Motivation/Innovation and State/Macro-Environmental Support. Logistic regression confirms that personal factors, particularly technical and professional skills, motivation, and moderate risk-taking, are the most significant predictors of entrepreneurial success. Conversely, environmental and managerial factors—such as state support, macroeconomic conditions, and business planning—were not found to have a statistically significant effect, suggesting structural inefficiencies and institutional barriers within Tunisia's entrepreneurial ecosystem. The findings underscore the critical role of human capital and intrinsic motivation in sustaining entrepreneurship in transitional economies, while also highlighting the need for policy reforms to improve the effectiveness of public support mechanisms. This study contributes to the empirical literature on entrepreneurship in North Africa by offering a dynamic, performance-based analysis of entrepreneurial outcomes in Tunisia.

Keywords: Entrepreneurship, Human Capital, Entrepreneurial Success, Multiple Correspondence Analysis? Logistic Regression.

JEL Classification: L26, O55, M13

1. Introduction

Entrepreneurship is widely recognized as a key driver of technological progress, economic growth, employment, competition, product and service quality, innovation, and economic flexibility (Hisrich et al., 2007; Kuratko, 2007). Beyond fostering job creation and economic development, entrepreneurship also contributes to personal development (Sarri & Trihopoulou, 2005). An entrepreneur is typically defined as an individual who undertakes creative and innovative initiatives. The question *"Why do some individuals succeed in business more than others?"* has long shaped entrepreneurship research (Isaga, 2012). Since the late 1980s, however, the pace of research on personality traits and entrepreneurial intentions has slowed (Sousa et al., 2018), largely due to theoretical inconsistencies and mixed empirical results (Llewellyn & Wilson, 2003; Zhao & Seibert, 2006).

Recent years have witnessed growing interest in understanding variations in entrepreneurial success rates and identifying the personality traits and behavioral factors that contribute to success. Despite this, little evidence exists regarding the personal profiles of individuals exhibiting high entrepreneurial intentions (Şahin et al., 2019). This lack of clarity makes it challenging for policymakers, advisors, and scholars to identify the dominant traits that best predict entrepreneurial success in the 21st century—or to determine who is likely to become a successful entrepreneur based on individual characteristics.

In Tunisia, entrepreneurship plays an increasingly vital role in economic development. Several Tunisian entrepreneurs have achieved remarkable success, serving as national and international examples. Among them, Moez-Alexandre Zouari, owner of 44% of the French company *Picard*, excels in the food distribution sector; Karim Jouini founded *Expensya* in France, offering secure payment solutions through an integrated platform; Mehdi Houas co-founded several consulting firms, including *Talan*; and Badreddine Ouali established *Vermeg*, a global leader in financial software. Additionally, *Chifco*, founded by Amine Chouaieb, has emerged as a pioneer in the Internet of Things (IoT) and Machine-to-Machine (M2M) technologies. These success stories illustrate that Tunisians possess the necessary skills and attributes to thrive as entrepreneurs.

Several empirical studies explore the different factors of entrepreneurial success or failure in Tunisia. Hardy (2016), Jazir and Miralam (2024), Karamati &Wannes (2022), Ben Salem et al. (2020), Mtibaa & Boudabbous (2023) demonstrate the importance of the personal factors (self-efficacy, prior experience, attitudes, emotional intelligence, entrepreneurial prudence and intermediates) in improving entrepreneurial performance. Other authors like Souissi (2025) reveal the key failure factors for a Tunisian entrepreneur such as lack of managerial skills, difficulties accessing finance, heavy administrative bureaucracy, and lack of institutional support. Entrepreneur's motivation is not enough when structural obstacles prevail. For the environmental factors, Khefacha et al. (2011), Karamati & Wannes (2022) and Tira et al. (2025) point out that Green values are success key factors (social environment pressure, institutional support, regional wages, bureaucracy).

However, most posterior studies examining entrepreneurial sucess or failure in Tunisia have adopted cross sectional surveys, qualitative interviews or annual data for macro level. They capture entrepreneur's perceptions or characteristics at a single point in time, but they do not explicitly evaluate entrepreneurial success over a period to measure reel performance evolution. Hardy (2016) and Souissi (2025) note these key limitation in their studies, both acknowledge that self-reported perceptions might not correspond to real performances outcomes over time.

To fill this gap, we conduct a study with one-year evaluation period, a first interview in 2023 than a second in 2024 to allow dynamic interpretation through an empirical investigation to sixty Tunisian entrepreneurs. This study enabled in one hand the identification of personal, managerial, and environmental characteristics influencing entrepreneurial success and the detection of the real performance of these characteristics based on the situation of the entrepreneurs after one year of the lunch of the business.

The rest of this paper is structured as follows: Section 2 reviews the previous literature, finds the remaining scientific issues, and proposes the research hypothesis for the research significance of this paper. Section 3 outlines the research methods used in this paper, including statistical analysis and logistic regression model. Section 4 identifies the main factors of entrepreneurial success and discusses the results. Finally, Section 5 concludes the study and puts forward the prospects of future studies.

2. Literature review and hypotheses development

A large body of entrepreneurship research classifies determinants of entrepreneurial performance into three broad categories: personal (individual) factors, environmental factors, and managerial factors. The hypothesis are formulated based on the theory. What follows synthesizes the theoretical rationale and empirical evidence for each hypothesis.

H1- Personal factors and entrepreneurial success

The literature consistently treats personal factors as foundational determinants of entrepreneurial outcome, but it also reports mixed empirical effects depending on measurement and context. Key components discussed below include human capital, motivation, risk propensity, innovation propensity, and competencies

H1.1 — expect a positive association between human capital and entrepreneurial success

Human capital (age, gender, education level, type of training and experience) is widely argued to increase entrepreneurs' ability to identify opportunities, manage operations, and access resources. Human capital is measured by highest education level, field of study, years of experience, prior entrepreneurial experience or managerial training. Multiple studies show positive effects of formal education and prior industry experience on firm performance and revenues (e.g., Bosma et al. 2002, Gruber et al. 2022). Yet several authors note ambiguous or conditional effects: higher education does not automatically translate into superior entrepreneurial outcomes in all contexts (Minniti & Bygrave 2001; Van der Sluis et al. 2008). The literature therefore frames human capital as necessary but not always sufficient; its payoff depends on fit with the venture, industry, and implementation capacity. Likewise, Unger et al. (2011) quantifies overall positive effect and task-relatedness caveat.

Affes & Affes (2023) analyzes human and social capital in Tunisian firms (survey of 107 Tunisian companies) and find positive links but emphasize sectoral fit and experience.

H1.2 — Motivation should correlate with entrepreneurial success

Motivation is typically classified into "pull" (opportunity-driven, autonomy, growth) and "push" (necessity, unemployment, dissatisfaction) motives. Empirical studies like Martínez-Cañas et al. (2023) link opportunity-driven motives to higher growth aspirations and better performance; necessity-driven motives often correlate with lower growth orientation and lower

performance. However, some research suggests motivated entrepreneurs, regardless of push/pull—may attract more support or persist longer, producing mixed empirical patterns. Martínez-Cañas et al. (2023) and similar studies on push/pull dynamics show mediation via intentions and resource mobilization. In surveys or interviews, evaluating motivation include intensity scales and growth aspirations (Likert scale).

H1.3 — Risk propensity relates positively to entrepreneurial success

Risk-taking has been canonical in entrepreneurship theory (Antončič et al. 2018). Several studies link tolerance for risk to entrepreneurial entry and persistence. Yet empirical findings vary: some authors find risk propensity predicts perseverance and growth (Robert & Brockhaus 1980) , while others find little or no direct effect on objective success measures (Antoncic et al. 2018). As an indicator, the authors suggest that entrepreneur perception and management of risk calculated or reckless risk-taking is crucial.

H1.4 — Propensity to innovate is positively correlated to entrepreneurial success

Innovation propensity is the desire and the ability to generate new products, processes, markets, or organizational forms. It is strongly related to venture performance in competitive environments. Propensity to innovation refers to R&D activity; new products/services introduced intention to innovate, and absorptive capacity measure. Schumpeterian theory and empirical studies indicate that higher degrees of innovation often lead to better objective and subjective success measures; however, innovation's payoff can be industry and resource-dependent. Some studies also note weak links between entrepreneur's subjective success and firm objective performance (Kemp et al. 2003; Affes &Affes, 2024).

H1.5 — Positive correlation between skills and entrepreneurial success

Skills (business, managerial, interpersonal, technical) and self-efficacy are identified as core success drivers. Most surveys include self-efficacy scales (well validated) as psychological skill proxies. Studies distinguish between innate/personality skills and acquired skills (training, experience). Evidence suggests that competence in areas such as finance, marketing, leadership, and opportunity recognition strongly predicts performance and survival. Competence frameworks (Mitchelmore & Rowley , 2010; Affes &Affes , 2024) list specific skill sets linked to growth and resilience.

H2- Environmental factors and entrepreneurial success

Environmental factors operate at multiple levels: interpersonal networks (social capital), institutional supports (state accompaniment), and the macro environment (market conditions, legal/regulatory framework). The literature shows these factors can enable or constrain entrepreneurial outcomes.

H2.1 — Positive correlation between social capital and Entrepreneurial Success

At the micro level, social capital is one of the most significant environmental determinants of entrepreneurial performance. Entrepreneurs rely on networks to obtain information, legitimacy, resources, and emotional support (Davidsson & Honig, 2003). Dense and diverse social ties facilitate opportunity recognition and reduce uncertainty during start-up processes (Batjargal, 2003). Empirical findings consistently link high-quality networks to superior firm performance and innovation (Cooke & Wills, 1999). Affes (2024) demonstrates that entrepreneurs who

possess strong professional and informal networks achieve higher innovation capability and performance. Similarly, Mbarek (2025) finds that Tunisian women entrepreneurs benefit more from informal ties (family, friends, wasta) than from formal institutional connections.

H2.2 — Positive association between state accompaniment and entrepreneurial success

Public support mechanisms such as incubators, training programs, and financial assistance play an important role in promoting entrepreneurship (Autio & Rannikko, 2016; Lerner, 2009). The Global Entrepreneurship Monitor (GEM, 2023) report on Tunisia indicates that national entrepreneurship policies remain fragmented, and bureaucratic procedures often discourage potential founders. Souissi (2025), in a qualitative study of the Sfax region, confirms that ineffective institutional support, administrative rigidity, and lack of financing are among the principal external causes of entrepreneurial failure.

H2.3 — Positive association between macro-environment and entrepreneurial success

The institutional and economic context determines the opportunity structure for entrepreneurship. According to institutional theory (North, 1990), political stability, regulatory efficiency, and market openness shape entrepreneurs' incentives and risk–reward perceptions. Empirical evidence from transition and developing economies indicates that poor institutional quality, corruption, and bureaucratic constraints negatively influence entrepreneurship (Aidis, Estrin, & Mickiewicz, 2008). Minniti (2008) further argues that government policy can be productive, unproductive, or destructive, depending on whether it reduces transaction costs and fosters competitive markets or reinforces rent-seeking behavior. Khefacha et al. (2011) show that regions with greater access to finance and a supportive regulatory environment have significantly higher firm survival rates.

H3-Managerial Factors and Entrepreneurial Success

Managerial actions taken before and during the start-up phase are proximate determinants of short-term venture performance and survival. The managerial domain encompasses accurate assessment of market potential, the quality and use of the business plan, and the practical management of the start-up phase.

H3.1 — Positive correlation between market potential and entrepreneurial success

Accurate assessment of market potential reduces demand uncertainty, informs positioning and pricing, and guides resource allocation (Blank, 2013; Ries, 2011). Empirical failure analyses frequently identify poor market estimation or insufficient market validation as leading causes of early firm failure (El Mandili & Elabjani, 2024). Market potential therefore functions both as a direct predictor of sales opportunity and as a moderator of managerial competence: good managers extract value from a given market opportunity more effectively than less skilled peers. Tunisian case studies and surveys indicate that market mismatch and limited customer pipelines were common obstacles for new ventures, particularly in regions with lower purchasing power or limited industry clusters (Khefacha et al.2011; Souissi, 2025).

H3.2 — positive association between quality of business plan and entrepreneurial success

A well-constructed business plan clarifies value proposition, operational steps, financial forecasts and risk mitigation strategies. It acts as a signalling device for investors and partners (Lerner, 2009; Autio & Rannikko, 2016). Multiple studies show that business-plan quality

correlates positively with early access to finance and milestone attainment, while others caution that overly rigid planning can reduce necessary adaptability in highly uncertain environments (MDPI Review, 2024). Recent empirical work in the Maghreb and Tunisia shows that start-ups with documented, investor-grade plans are more likely to attract seed funding or public grants, increasing their probability of surviving the first year (Souissi, 2025).

H3.3 — Management of the start-up phase and entrepreneurial success

The start-up phase exposes ventures to operational shocks. Practical managerial behaviours targeted hiring and disciplined cost control, are strongly associated with survival and early growth (Mitchelmore & Rowley, 2010). Failure analyses consistently identify poor start-up management as a proximate cause of closure (El Mandili & Elabjani, 2024; Sustainability Study, 2020). Qualitative surveys of Tunisian entrepreneurs emphasize managerial deficits as grave problems leading to cash crises within the first year (Souissi, 2025; Mtibaa & Boudabbous, 2023).

3. Research methodology

3.1.Sample and data

The statistical analysis in our study is based on primary data collected through a structured questionnaire administered to a sample of 61 Tunisian entrepreneurs in 2023. The participants were all founder–owners of small and medium enterprises (SMEs), primarily located in Tunis, the country's largest entrepreneurial hub. The choice of the district of Tunis regarding to the scarcity of data, can avoid the heterogeneity problem within the sample. The data collection focused on entrepreneurs who had established and operated their businesses for at least one year. The questionnaire consisted of 40 items (annexe 1), primarily ordinal variables measured on a five-point Likert scale, with two additional quantitative questions. It was designed to measure 39 variables, grouped under three major constructs—personal, environmental, and managerial factors—and eleven sub-factors, including human capital, motivation, risk propensity, innovation, competencies, social capital, state support, macro-environmental conditions, market potential, business-plan quality, and start-up management. For the empirical analysis, we built the dependent variable in 2024 (after a year) to evaluate the performance of entrepreneurs and estimate the effect of the chosen variables with the statistical approach.

The survey method was qualitative in orientation but analyzed using quantitative tools, including Multiple Correspondence Analysis (MCA) and binary logistic regression. These methods were applied to explore associations between the identified factors and entrepreneurial success among Tunisian founders.

3.2. Statistical and empirical approaches

This research uses two complementary approaches to analyze the determinants of entrepreneurial success among Tunisian entrepreneurs: Multiple Correspondence Analysis (MCA) and Binary Logistic Regression (Logit Model). Each method contributes to a different analytical dimension of the study: the first focuses on data reduction to identify the most relevant factors, while the second tests the causal relationship between the factors and success outcomes.

3.2.1. Multiple Correspondence Analysis (MCA)

Multiple Correspondence Analysis (MCA) is an exploratory multivariate technique designed to summarize and visualize relationships among several categorical variables. It serves as an extension of Correspondence Analysis (CA) and is conceptually analogous to Principal Component Analysis (PCA) for categorical data. In this study, MCA was used to analyze the categorical variables collected through the entrepreneur questionnaire, allowing for the identification of clusters and associations among personal, environmental, and managerial characteristics.

MCA produces a multidimensional representation of individuals and variable categories, enabling the researcher to detect typologies and structural relationships between variables. The study applied the Benzécri (1979) and Greenacre (1993) eigenvalue corrections to adjust the inflated inertia typically observed in MCA results. The MCA results were used to interpret clusters of successful versus less successful entrepreneurs and to guide variable selection for the logistic regression model. Hawi (2023) and Affes (2024) applied the technique to explore relational and contextual patterns in entrepreneurship data.

Therefore, the MCA provided a data-driven typology of entrepreneurs, revealing underlying patterns in responses and supporting the identification of key dimensions that describe entrepreneurial profiles in Tunisia. The reliability of the MCA structure was evaluated using Cronbach's alpha, with values above 0.70 considered acceptable for internal consistency.

3.2.2. Binary Logistic Regression (Logit Model)

To test the hypotheses regarding the determinants of entrepreneurial success, the study employed a binary logistic regression model. The dependent variable was defined as the binary status of the enterprise, coded as 1 if the business remained active and 0 if it became inactive after one year. Independent variables included indicators derived from the three main dimensions: personal, environmental, and managerial factors.

Binary logistic regression estimates the probability of business success as a function of these explanatory variables. This method is particularly suitable when the dependent variable is dichotomous, and the predictors may be categorical or continuous (Menard, 2010; Hosmer, Lemeshow, & Sturdivant, 2013; Cueva Bermeo et al., 2023). The model quantifies how changes in independent variables influence the likelihood of entrepreneurial success, expressed through odds ratios. The analysis also allows for identifying the most influential determinants while controlling for multicollinearity and confounding effects.

Using the logistic regression, the mean of the response variable p explained by a vector of independent variables X, is modeled by the following equation:

$$logit\ (y) = \ln\left(\frac{P}{1-P}\right) = a + \beta x \quad (1)$$

With p is the actual situation of the entrepreneur (active or inactive), α and β are the parameters of the model.

4. Results and discussion

Analysing the 60 entrepreurs' sample, a two-dimensional MCA solution was considered the most suitable. The first and second dimensions represent respectively the eigenvalue; 19,152 and 5,149 I.e. all the measurement variables explain 51,49% of the information. Cronbach's Alpha, 0.972 and 0.826 with 0.983 shows that the method specification is satisfactory. Although

the generally accepted lower bound for Cronbach's alpha is 0.70, a smaller value is acceptable in exploratory research where a low alpha score may be due to a reduced number of questions, poor interdependence between the elements or heterogeneous responses (see Table 1).

Table 1: Cronbach's Alpha indicator

		Represented Variance
Dimension	Cronbach'S Alpha	Total (eigenvalues)
1	0,972	19,152
2	0,826	5,149
Total	0,983[a]	24,301

Source: author calculation

In this study, we deal with heterogeneous constructs to capture a two-dimensional analysis of the data, and the methodological procedure was conducted assuming this limitation. We obtained discrimination measures (Annex 2) and a joint graph of category points were obtained (Figure 1). All discriminations are greater than 0.5 with a maximum value between 0.940 and 0.952 (Motivation and innovation) for the first dimension and 0.580 (macro-environmental context) for the second dimension. Human capital also contributed to the first dimension's own value (value 0.779). The most discriminating variables for dimension 1 were hierarchically motivation, innovation, professional skills, risk propensity, human capital, start-up management and Business plan quality. For dimension 2, the most discriminating variables were state accompaniment and macro-environmental context (Table 2 and Figures 1). From the results and their graphical visualization, dimension 1 was called « Motivation/innovation » and the second dimension « State/macro-environment support ». In dimension 1, the business sector was not significantly correlated (transformed variables) with any variables. Human capital is strongly correlated with motivation, risk propensity, innovation, professional skills and social capital.

Table 2: Factor odds of the Tunisian sample

	Dimension 1	2
Activity sector	-0,062	-0,321
Human Capital		
1. I have adequate training for running my business.	0,702	0,074
2. I possess relevant technical skills for my business.	0,779	-0,005
3. I have professional experience that is relevant to my business.	0,633	,054
Motivation		
4. I am passionate about my business.	0,952	-0,167

5. I am motivated by the challenges that entrepreneurship presents.	0,935	-0,156
6. I am confident in my ability to manage my business.	0,950	-0,176
Risk propensity		
7. I enjoy taking risks in my professional life.	0,695	-0,065
8. I am willing to take risks to ensure the success of my business.	0,749	-0,009
9. I believe that taking risks is an essential part of entrepreneurship.	0,846	-0,053
Innovation		
10. Adopting new technologies and new working methods is essential for keeping my business competitive in the market.	0,940	-0,203
11. I actively encourage the exploration of new ideas to improve existing products and services and to create new ones.	0,939	-0,183
12. Innovation is a driver of growth and development for my business.	0,930	-0,200
Professional skills		
13. I am able to identify business opportunities in my field of activity.	0,903	-0,115
14. I am able to manage the daily operations of my business.	0,855	-0,149
15. I am able to solve problems related to my business.	0,931	-0,125
16. I am able to make strategic decisions for my business.	,915	-,186
Social Capital		
17. I have a useful network of contacts for my business.	0,905	-0,006
18. I have reliable business partners for my company.	0,674	0,202
19. I have access to external financial resources for my business.	0,667	0,234
20. I have access to external material resources for my business.	0,127	0,465
State Accompagnement		
21. Government support programs have been helpful for my business.	0,273	0,526
22. State assistance facilitated the creation of my business.	0,264	0,661
23. Administrative procedures for business creation are simple.	-0,158	0,750
24. The tax burden is manageable for my business	-0,448	0,752
Macro-Environmental Context		
25. The general economic environment is favourable for my business.	-0,040	0,751
26. Market conditions are favourable for my business.	0,036	0,707
27. Existing rules and regulations are favourable for my business.	-0,003	0,758
28. Competition is low in my industry sector.	-0,240	0,429
Market Potential		
29. I conducted an in-depth market study before launching my business.	0,761	0,235
30. Identifying a clear potential market is a key element for my business's success.	0,858	-0,056
31. I am convinced that my business meets an important market need.	0,825	-0,052
Quality of the Business Plan		
32. I developed a detailed business plan before launching my business.	0,743	0,272
33. I regularly update my business plan according to the evolution of my company.	0,594	0,309
Start-Up Phase Management		
34. I followed a clear strategy to manage the start-up phase of my business.	0,724	0,249
35. I implemented key performance indicators to monitor my company's growth.	0,616	0,434

Correspondence analysis is a method that graphically represents categories in rows and columns and allows their 'correspondences' (associations) to be compared at the category level. The development of MCA has not been limited exclusively to statisticians; its diversity of

development and scope of application have allowed it to be used, for example, in the fields of health, social sciences and archaeology. As such, overall, MCA is a very relevant method of data analysis in exploratory studies. Or even when a more in-depth analysis of categorical data is required, making it a particularly useful technique because it is versatile. This is partly because no underlying distribution assumptions are required, thus adapting to any type of categorical variable, whether binary, ordinal or nominal; (ii) it provides a graphical output (often two-dimensional) to represent the associations between variables in a low-dimensional space, thus providing key exploratory information on the relationships between the collected data.

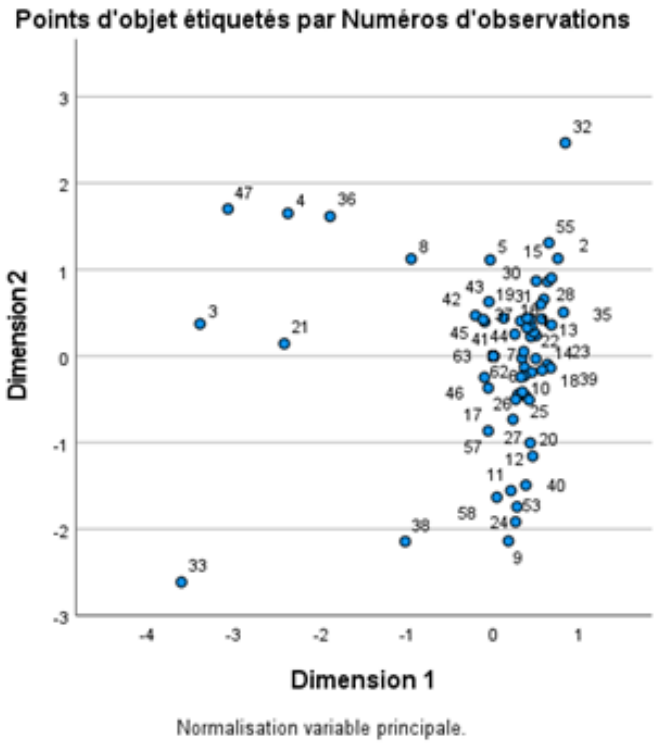

Figure 1. MCA scatterplot

The qualitative analysis of personal factors in this study reveals that among Tunisian entrepreneurs, technical skills and professional competencies constitute the most decisive determinants of success. Other personal factors, such as motivation and risk-taking, also play notable roles, while experience, autonomy, and innovativeness appear to have limited significance in the Tunisian context. These results are consistent with several prior studies highlighting the central role of human capital quality particularly technical and managerial skills in determining entrepreneurial performance (Unger et al., 2011; Rauch & Rijsdijk, 2013). The finding that technical skills are the only statistically significant component of human capital in Tunisia aligns with the work of Isaga (2017), who reported that technical and managerial competencies are crucial predictors of business success among Tanzanian entrepreneurs.

Similarly, Jaafar et al. (2014) found that passion-driven motivation and confidence were decisive among Malaysian entrepreneurs, emphasizing that affective and cognitive factors can

Table 3. Results of the logit regression for personal factors

Logistic regression	Number of obs =	61
	LR chi2(10) =	38.66
	Prob > chi2 =	0.0012
Log likelihood = -21.556452	Pseudo R2 =	0.4728

Dependent variable	Coef.	Std. Err.	z	P>IzI	(95% Conf.Interval]	
F1	.7101097	.4874053	1.46	0.145	- .2451871	1.665407
F2	1.581393	.7739583	2.04	0.041	.0644624	3.098323
F3	- .6347354	.6605784	-0.96	0.337	-1.929445	.6599746
F4	-2.586 479	1.428563	-1.81	0.070	-5.386.412	.2134534
F5	-.3979896	.6854401	-0.58	0.561	-1.741.427	.9454483
F6	1.614485	.8593168	1.88	0.060	-.0697449	3.298715
F7	-2.503431	1.046183	-2.39	0.017	-4.553911	-.4529499
F8	.8578388	.9591552	0.89	0.371	-1.022 071	2.737748
F9	1.303647	.8933327	1.46	0.144	- .4472533	3.054546
F10	1.235803	.8073622	1.53	0.126	- .3465982	2.818 203
F11	-.1791227	.7615079	-0.24	0.814	-1.671651	1.313405
F12	1.49688	1.004484	1.49	0.136	-.471873	3.465633
F13	-1.050401	.8496609	-1.24	0.216	-2.715705	.6149042
F14	1.860369	.9478882	1.96	0.050	.0025418	3.718195
F15	-1.889967	.866807	-2.18	0.029	-3.588878	-.191057
F16	-2.49262	1.218269	-2.05	0.041	-4.880381	-.1048594
-cons	5.578032	2.946461	1.89	0.058	- .1969246	11.35299

The importance of motivation—particularly passion and self-confidence—confirms entrepreneurship psychology models asserting that intrinsic motivation sustains persistence and

resilience under uncertainty (Carsrud & Brännback, 2011). The Tunisian results thus reinforce the notion that personal motivation acts as a psychological buffer against systemic and market challenges. Regarding risk taking, Tunisian entrepreneurs display a moderate but essential propensity for risk. This aligns with Ndono and Van Niekerk (2019), who found that South African entrepreneurs view risk-taking as an inherent and necessary component of entrepreneurship, alongside autonomy and internal control. Yet, while autonomy and innovativeness were found to be significant in South Africa, they were non-significant in the Tunisian sample—likely due to the constrained and regulation-heavy business environment, which limits entrepreneurs' strategic freedom and capacity for innovation (Ben Slimane & Lamine, 2021).

Table 4. Results of the logit regression for environmental factors

logit F17 F18 F19 F21 F22 F23 F24 F25 F26 F27
Iteration 0: log likelihood = -40.886051
Iteration 1: log likelihood = -39.51087
Iteration 2: log likelihood = -39.499338
Iteration 3: log likelihood = -39.499338

Logistic regression	Number of obs =	61
	LR chi2(10) =	2.77
	Prob > chi2 =	0.9863
Log likelihood = -39.499338	Pseudo R2 =	0.0339

Dependent variable	Coef.	Std. Err.	z	P>IzI	(95% Conf.Interval]	
F17	-0,0220912	0,4130659	-0,05	0,957	-0,8316855	0,7875032
F18	-0,0304938	1,1231000	-0,03	0,978	-2,2317300	2,1707420
F19	-0,3026444	1,1575170	-0,26	0,794	-2,5713370	1,9660480
F21	0,1495726	0,3031370	0,49	0,622	-0,4445650	0,7437103
F22	-0,1567704	0,3042181	-0,52	0,606	-0,7530270	0,4394861
F23	0,0321705	0,3477363	0,09	0,926	-0,6493801	0,7137211
F24	0,1114203	0,3771304	0,30	0,768	-0,6277416	0,8505822
F25	0,2904739	0,4300530	0,68	0,499	-0,5524144	1,1333620
F26	0,2083559	0,4280689	0,49	0,626	-0,6306437	1,0473560
F27	-0,4572725	0,4830884	-0,95	0,344	-1,4041080	0,4895634
Cons	1,0609110	1,2880550	0,82	0,410	-1,4636310	3,5854520

This result contrasts with the general assumption in the entrepreneurship literature that a supportive environment enhances venture creation and survival (Aidis, Estrin, & Mickiewicz, 2008; Autio & Rannikko, 2016). In many economies, institutional and policy support systems such as incubators, financial assistance, and advisory programs, are found to reduce business mortality rates and promote start-up performance (Kshetri, 2014; Mason & Brown, 2013). For instance, studies in emerging economies (e.g., Nigeria and Morocco) have shown that state support and favorable regulations significantly improve the odds of entrepreneurial success (Abor & Quartey, 2010; El Mandili & Elabjani, 2024).

However, the lack of significance observed in Tunisia aligns with several regional studies highlighting systemic constraints in the entrepreneurial ecosystem. Ben Slimane et al. (2021)

report that Tunisian public programs are often poorly targeted, bureaucratic, and inefficient in meeting entrepreneurs' real needs. Moreover, the institutional environment remains rigid, characterized by excessive administrative complexity, weak enforcement of property rights, and a regulatory bias toward rent-seeking sectors (OECD, 2023). These institutional weaknesses reduce the effectiveness of public support and undermine its potential to drive business success.

The results of the present study indicate that managerial factors previously identified as significant in Tunisian female entrepreneurship (Jazir and Miralam 2024)—notably emotional intelligence, self-efficacy, entrepreneurial caution, and control—do not exert a statistically significant influence on entrepreneurial success in 2023. This finding suggests a potential shift in the determinants of success, reflecting either changing entrepreneurial dynamics or contextual instability within the Tunisian business environment.

In their qualitative study, Jazir and Miralam (2024) demonstrated that emotional intelligence (the ability to perceive, manage, and utilize emotions constructively), self-efficacy, and prudence in decision-making were crucial success factors among Tunisian women entrepreneurs. These traits enabled them to manage uncertainty, build trust-based networks, and maintain psychological resilience. Emotional intelligence, in particular, has been recognized across the literature as a key managerial competence that enhances adaptability and leadership effectiveness in entrepreneurship (Pradhan & Nath, 2012; Boyatzis, 2018).

However, the absence of a significant effect of these factors in the 2023 analysis may be attributed to broader structural and economic changes in Tunisia. Recent studies (Ben Slimane & Lamine, 2021; OECD, 2023) emphasize that institutional constraints, financial uncertainty, and post-pandemic market instability have reshaped the entrepreneurial landscape. As a result, operational and strategic competencies, rather than affective or personality-based managerial traits, may have become more decisive for business continuity.

Furthermore, Tunisian entrepreneurs increasingly face resource scarcity, regulatory rigidity, and intensified competition. Under these conditions, emotional and self-regulatory capacities might no longer differentiate successful entrepreneurs from others, as external pressures overshadow individual managerial attributes. This contrasts with findings from more stable contexts, where managerial and psychological competencies such as leadership, communication, and emotional intelligence remain strong predictors of success (Rahim et al., 2019; Adegbite et al., 2022).

Additionally, while self-efficacy remains a widely validated predictor of entrepreneurial performance (Bandura, 1997; Rauch & Frese, 2007), its impact may be context-dependent. In environments with limited institutional and financial support, confidence alone may not suffice to ensure success. This contextual attenuation effect could explain the observed lack of significance in Tunisia in 2023.

Overall, the findings imply that managerial factors are losing relative importance compared to technical and operational capabilities in the current Tunisian context. Whereas emotional and self-regulatory skills were pivotal in 2022 for female entrepreneurs, 2023 data suggest that structural and environmental constraints now dominate the entrepreneurial success equation.

Table 5. Results of the logit regression for managerial factors

. logit Reusiirleurprojet F29 F30 F31 F32 F33 F34 F35 F36 F37
Iteration 0: log likelihood = -40.886051
Iteration 1: log likelihood = -36.763893
Iteration 2: log likelihood = -36.726375
Iteration 3: log likelihood = -36.726359
Iteration 4: log likelihood = -36.726359

Logistic regression	Number of obs =	61
	LR chi2(10) =	8.32
	Prob > chi2 =	0.5023
Log likelihood = -36.726359	Pseudo R2 =	0.1017

5. Conclusion

Our research focused on personal, managerial, and environmental factors that can determine entrepreneurial success in Tunisia.

It was based on three chapters; the first aimed to define the entrepreneur and entrepreneurial success, the second served to identify the characteristics related to entrepreneurial success, and

Dependent variable	Coef.	Std. Err.	z	P>IzI	(95% Conf.Interval]	
F29	2108725	5159702	0.41	0.683	-.8004106	1.222156
F30	7433304	4972592	-1.49	0.135	-1.717941	.2312798
F31	.2415711	.416518	0.58	0.562	-.5747892	1.057931
F32	3665395	4154499	-0.88	0.378	-1.180806	.4477274
F33	.062152	3510678	0.18	0.859	-.6259283	.7502323
F34	2694062	4025261	0.67	0.503	-.5195304	1.058343
F35	.011858	4634776	0.03	0.980	-.8965413	.9202573
F36	1071148	.4771519	0.22	0.822	-.8280857	1.042315
F37	.5632843	.502821	-1.12	0.263	-1.548795	.4222268
cons	3.177404	1.327443	2.39	0.017	.5756634	5.779144

the third aimed to analyze the characteristic factors related to entrepreneurial intentions in Tunisia, discuss the results, and finally conclude.

This study has shed light on the crucial determinants of entrepreneurial success in Tunisia. Thru an in-depth analysis of empirical data, we have identified specific traits and favorable

conditions that contribute to the performance of Tunisian entrepreneurs. These results offer new perspectives for decision-makers and practitioners wishing to encourage entrepreneurship in the country.

This study reveals that motivation, passion, technical skills, self-confidence, risk-taking, and professional skills are undeniably key personal characteristics that predict both entrepreneurial intention and ensure entrepreneurial success. The study also reveals that the characteristics that predict entrepreneurial intention, such as good management of the startup phase, also ensure entrepreneurial success. The number of studies conducted in the field over the past decade has increased, although these studies have been conducted in very few countries with unbalanced research approaches, leaning toward qualitative methods. Further research using diverse methods is needed to better understand the success of entrepreneurship. The study provided a guide on the identified gaps that require urgent attention in the targeted field. This study greatly contributes to the existing body of knowledge on the success and intention of entrepreneurship in Tunisia and will certainly contribute to the development of entrepreneurship and entrepreneurial policies derived by the State in general and by ANETI in particular.

The findings of this study highlight several important policy implications for strengthening Tunisia's entrepreneurial ecosystem. First, given that technical and professional competencies emerged as the strongest predictors of success, entrepreneurship programs should emphasize practical managerial and sector-specific training, supported by partnerships between universities, vocational institutes, and business incubators to bridge the gap between theory and practice. Second, the ineffectiveness of state accompaniment in fostering entrepreneurial success suggests that public support mechanisms remain overly bureaucratic and poorly targeted. Policymakers should therefore streamline administrative procedures, enhance digitalization, and increase transparency in funding and support programs. Third, there is a need to cultivate motivation and risk-taking culture among entrepreneurs through mentorship initiatives, storytelling campaigns, and recognition of local success stories, which can foster confidence and resilience among aspiring business owners. Moreover, improving the business environment is essential to reduce regulatory rigidity and macroeconomic uncertainty by simplifying tax systems and ensuring a stable, predictable policy framework for SMEs. In addition, gender-inclusive and regionally balanced policies should be prioritized to promote equal access to resources and opportunities, particularly for women entrepreneurs and those operating outside the capital region. Finally, the study's one-year evaluation underscores the importance of longitudinal monitoring system to be developed by agencies such as ANETI and the Ministry of Employment to track entrepreneurial performance over time and inform evidence-based policy adjustments.

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Annexes

Annexe 1: Questionnaire for 60 entrepreneurs

Respondent Profile

Full Name (optional):
Age:
Gender: ☐ Male ☐ Female
Project/Business:
How long ago did you start your business?
Number of employees:

Instructions

Please indicate your level of agreement with each statement by ticking the box that best corresponds to your opinion, using the **Likert scale from 1 to 5**, where:

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

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I. Personal Factors

Human Capital

1. I have adequate training for running my business.
   1 2 3 4 5
2. I possess relevant technical skills for my business.
   1 2 3 4 5
3. I have professional experience relevant to my business.
   1 2 3 4 5

Motivation

4. I am passionate about my business.
   1 2 3 4 5
5. I am willing to work hard for the success of my business.
   1 2 3 4 5
6. I am motivated by the challenges that entrepreneurship presents.
   1 2 3 4 5
7. I am confident in my ability to manage my business.
   1 2 3 4 5

Risk-Taking Propensity

8. I enjoy taking risks in my professional life.
   1 2 3 4 5
9. I am willing to take risks for the success of my business.
   1 2 3 4 5
10. I believe that taking risks is an essential part of entrepreneurship.
    1 2 3 4 5
11. I am willing to take financial risks for my business.
    1 2 3 4 5

Professional Competence

12. I am able to identify business opportunities in my field of activity.
    1 2 3 4 5
13. I am able to manage the daily operations of my business.
    1 2 3 4 5
14. I am able to solve problems related to my business.
    1 2 3 4 5
15. I am able to make strategic decisions for my business.
    1 2 3 4 5

II. Environmental Factors

Social Capital

16. I have a useful network of contacts for my business.
    1 2 3 4 5
17. I have reliable business partners for my company.
    1 2 3 4 5
18. I have access to external financial resources for my business.
    1 2 3 4 5
19. I have access to external material resources for my business.
    1 2 3 4 5

State Support

20. Government support programs have been helpful for my business.
    1 2 3 4 5
21. State assistance has facilitated the creation of my business.
    1 2 3 4 5

22. Administrative procedures for starting a business are simple.
    1 2 3 4 5
23. The tax burden is manageable for my business.
    1 2 3 4 5

Macro-Environmental Context

24. The general economic environment is favorable for my business.
    1 2 3 4 5
25. Market conditions are favorable for my business.
    1 2 3 4 5
26. Current rules and regulations are favorable for my business.
    1 2 3 4 5
27. Competition is low in my industry sector.
    1 2 3 4 5

III. Managerial Factors

Market Potential

28. I conducted an in-depth market study before launching my business.
    1 2 3 4 5
29. Identifying a clear potential market is a key element for my business's success.
    1 2 3 4 5
30. I am convinced that my business meets an important market need.
    1 2 3 4 5

Quality of Business Plan

31. I developed a detailed business plan before launching my business.
    1 2 3 4 5
32. I regularly update my business plan according to the evolution of my company.
    1 2 3 4 5

Management of the Start-Up Phase

33. I followed a clear strategy to manage the start-up phase of my business.
    1 2 3 4 5
34. I implemented key performance indicators to monitor the growth of my business.
    1 2 3 4 5

35. I regularly evaluated the performance of my business and took measures to correct deviations.
    1 2 3 4 5
36. I was able to adapt quickly to changes in the market and business environment.
    1 2 3 4 5
37. I managed my finances well and maintained a positive cash flow.
    1 2 3 4 5

Annexe 2: Descriptive Statistics for 60 Tunisian Entrepreneurs

Analysis Items	N
Business sector:	60
1. I have adequate training for running my business.	60
2. I possess relevant technical skills for my business.	60
3. I have professional experience relevant to my business.	60
4. I am passionate about my business.	60
5. I am motivated by the challenges that entrepreneurship presents.	60
6. I am confident in my ability to manage my business.	60
7. I enjoy taking risks in my professional life.	60
8. I am willing to take risks for the success of my business.	60
9. I believe that taking risks is an important part of entrepreneurship.	60
10. Adopting new technologies and new working methods is essential for keeping my business competitive in the market.	60
11. I actively promote the exploration of new ideas to improve existing products and services and to create new ones.	60
12. Innovation is a driver of growth and development for my business.	60
13. I am able to identify business opportunities in my field of activity.	60
14. I am able to manage the daily operations of my business.	60
15. I am able to solve problems related to my business.	60
16. I am able to make strategic decisions for my business.	60
17. I have a useful network of contacts for my business.	60
18. I have reliable business partners for my company.	60
19. I have reliable business partners for my company.	60
20. I have access to external material resources for my business.	60
21. Government aid programs have been useful for my business.	60
22. State support has facilitated the creation of my business.	60
23. Administrative procedures for business creation are simple.	60
24. The tax burden is manageable for my business.	60
25. The general economic context is favorable for my business.	60
26. Market conditions are favorable for my business.	60
27. The current rules and regulations are favorable for my business.	60

Analysis Items	N
28. Competition is low in my industry sector.	60
29. I conducted an in-depth market study before launching my business.	60
30. Identifying a clear potential market is a key element for my business's success.	60
31. I am convinced that my business meets an important market need.	60
32. I developed a detailed business plan before launching my business.	60
33. I regularly update my business plan according to the evolution of my company.	60
34. I followed a clear strategy to manage the start-up phase of my business.	60
35. I implemented key performance indicators to monitor the growth of my business.	60
36. I regularly evaluated the performance of my business and took corrective measures when needed.	60
37. I adapted quickly to changes in the market and business environment.	60

Annexe 3: Transformed Variables from correlation

	SA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
SA	1,000	-,001	-,070	,019	-,030	-,061	-,039	,042	,072	-,053	-,046	-,053	-,042	,007	,055	-,083	-,054	-,106	-,053	-,041
1	-,001	1,000	,787	,532	,622	,578	,619	,546	,605	,588	,596	,577	,611	,640	,584	,586	,668	,576	,388	,376
2	-,070	,787	1,000	,545	,690	,691	,709	,469	,585	,680	,682	,679	,700	,744	,644	,692	,656	,673	,565	,564
3	,019	,532	,545	1,000	,484	,480	,500	,618	,620	,539	,538	,557	,557	,591	,621	,553	,573	,541	,587	,579
4.	-,030	,622	,690	,484	1,000	,978	,981	,619	,665	,813	,975	,968	,963	,855	,817	,927	,917	,871	,533	,529
5.	-,061	,578	,691	,480	,978	1,000	,979	,596	,640	,805	,972	,974	,939	,846	,801	,934	,865	,893	,523	,517
6..	-,039	,619	,709	,500	,981	,979	1,000	,622	,677	,813	,973	,966	,950	,881	,832	,924	,907	,880	,540	,529
7.	,042	,546	,469	,618	,619	,596	,622	1,000	,843	,700	,592	,615	,612	,651	,668	,571	,576	,574	,558	,527
8..	,072	,605	,585	,620	,665	,640	,677	,843	1,000	,757	,653	,669	,656	,776	,835	,559	,605	,515	,553	,536

9. t.	-,053	,588	,680	,539	,813	,805	,813	,700	,757	1,000	,805	,799	,825	,905	,650	,732	,724	,654	,535	,529
10.	-,046	,596	,682	,538	,975	,972	,973	,592	,653	,805	1,000	,984	,950	,871	,838	,947	,921	,873	,492	,488
11	-,053	,577	,679	,557	,968	,974	,966	,615	,669	,799	,984	1,000	,948	,856	,845	,939	,890	,882	,523	,520
12.	-,042	,611	,700	,557	,963	,939	,950	,612	,656	,825	,950	,948	1,000	,879	,793	,890	,913	,826	,547	,543
13	,007	,640	,744	,591	,855	,846	,881	,651	,776	,905	,871	,856	,879	1,000	,792	,814	,826	,721	,525	,515
14.	,055	,584	,644	,621	,817	,801	,832	,668	,835	,650	,838	,845	,793	,792	1,000	,787	,802	,719	,595	,584
15	-,083	,586	,692	,553	,927	,934	,924	,571	,559	,732	,947	,939	,890	,814	,787	1,000	,908	,943	,529	,525
16.	-,054	,668	,656	,573	,917	,865	,907	,576	,605	,724	,921	,890	,913	,826	,802	,908	1,000	,846	,507	,503
17.	-,106	,576	,673	,541	,871	,893	,880	,574	,515	,654	,873	,882	,826	,721	,719	,943	,846	1,000	,606	,600
18.	-,053	,388	,565	,587	,533	,523	,540	,558	,553	,535	,492	,523	,547	,525	,595	,529	,507	,606	1,000	,985
19.	-,041	,376	,564	,579	,529	,517	,529	,527	,536	,529	,488	,520	,543	,515	,584	,525	,503	,600	,985	1,000
20	-,124	,009	,087	,133	,038	,031	,019	,024	,103	-,002	,014	,059	,046	,000	,145	,062	,040	,100	,340	,366
21	-,161	,346	,180	,067	,202	,192	,179	,099	,131	,236	,188	,157	,178	,194	,102	,243	,171	,263	,219	,238
22.	-,126	,333	,179	,254	,143	,115	,122	,079	,151	,187	,141	,120	,132	,176	,104	,190	,147	,235	,193	,215
23.	-,171	-,076	-,227	,039	-,258	-,256	-,272	-,076	,042	-,129	-,261	-,249	-,290	-,207	-,129	-,275	-,272	-,215	-,047	,015

24.	-,206	-,316	-,354	-,124	-,570	-,527	-,552	-,323	-,306	-,455	-,553	-,525	-,602	-,500	-,417	-,475	-,561	-,363	-,138	-,082
25	-,306	,081	,033	,167	-,156	-,134	-,152	-,117	-,052	,033	-,165	-,149	-,125	-,037	-,169	-,140	-,141	-,089	,168	,188
26.	-,266	,141	,049	,078	-,064	-,051	-,074	,150	,124	,022	-,131	-,092	-,065	-,051	-,072	-,094	-,131	,012	,203	,199
27.	-,247	,026	-,045	-,087	-,079	-,040	-,086	,020	-,002	,015	-,120	-,106	-,120	-,052	-,179	-,077	-,179	,022	,026	,019
28	-,060	-,177	-,135	-,329	-,255	-,228	-,259	-,219	-,187	-,172	-,302	-,286	-,285	-,229	-,337	-,300	-,360	-,225	-,152	-,130
29..	-,152	,539	,507	,451	,678	,658	,651	,506	,477	,648	,652	,659	,667	,674	,486	,677	,676	,723	,502	,498
30.	-,094	,493	,639	,526	,809	,815	,807	,549	,504	,714	,812	,808	,841	,773	,640	,843	,791	,863	,620	,611
31..	-,058	,576	,636	,451	,838	,826	,819	,616	,644	,765	,815	,808	,798	,766	,671	,772	,750	,725	,441	,435
32.	-,006	,567	,559	,474	,627	,603	,609	,498	,522	,634	,589	,585	,541	,633	,517	,656	,610	,692	,508	,509
33..	-,034	,383	,413	,518	,456	,461	,450	,502	,523	,439	,423	,467	,386	,452	,509	,492	,446	,560	,538	,540
34..	,073	,587	,610	,316	,665	,616	,650	,327	,428	,480	,629	,616	,599	,555	,568	,638	,635	,660	,419	,427
35. e.	-,086	,451	,431	,255	,514	,484	,528	,328	,458	,479	,501	,486	,425	,520	,469	,502	,506	,529	,340	,346
36.	-,045	,447	,608	,423	,738	,699	,721	,480	,575	,614	,685	,688	,718	,691	,679	,721	,694	,700	,629	,627
37.	-,134	,366	,486	,264	,639	,620	,641	,257	,372	,431	,599	,598	,549	,508	,569	,643	,622	,650	,528	,536

38.	-,199	,303	,347	,143	,427	,417	,448	,089	,184	,288	,420	,392	,417	,360	,332	,435	,449	,432	,337	,344
Dim	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Val prop	19,149	2,082	1,684	1,572	1,227	1,094	1,008	,880	,828	,703	,614	,540	,495	,422	,379	,338	,302	,250	,200	,170

Annexe 4: MPC Correlation scatterplot