

UNIVERSITY ENTREPRENEURSHIP TRAINING AS A LEVER FOR THE PROFESSIONAL INTEGRATION OF GRADUATES IN ALGERIA

Kahina AHMEDI 

Mouloud MAMMERI University, Tizi Ouzou, Algeria
kahina.ahmedi@ummto.dz

Amina SMADI 

Mouloud MAMMERI University, Tizi Ouzou, Algeria
amina.smadi@ummto.dz

Abstract

In Algeria, persistent unemployment among higher education graduates and weak professional integration have prompted public authorities and universities to promote entrepreneurship as a strategic alternative. This study examines the role of university entrepreneurial training delivered through Entrepreneurship Houses in the business creation process among young graduates in central Algeria (Tizi Ouzou, Bouira, Béjaïa, Boumerdès and Algiers). Drawing on a mixed methods design, we collected quantitative data from 200 graduate entrepreneurs who benefited from this training and qualitative data based on semi-structured interviews conducted with managers and trainers from the Entrepreneurship House. The findings indicate that training significantly strengthens the decision to become an entrepreneur and develops personal, business and technical skills essential for project realisation, particularly during the early stages of the entrepreneurial process. However, the study reveals structural limitations, including the lack of post-creation follow-up, insufficient personalised coaching and the marginal use of experiential learning methods. This study contributes to the growing body of research on entrepreneurship education in developing economies and offers recommendations for improving university support mechanisms by highlighting the importance of integrating entrepreneurial training, institutional support and the entrepreneurial ecosystem.

Keywords: University entrepreneurial training, Entrepreneurial skills, Decision to start a business, Professional integration, Higher education graduates.

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1. INTRODUCTION

Higher education graduates face major challenges when they leave university. In this regard, the public authorities have implemented a series of reforms aimed at creating jobs and helping young graduates enter the labour market. Despite these efforts, their labour market situation remains challenging, resulting in the highest unemployment rate among all social groups. In 2024, the unemployment rate among higher education graduates reached 19.5%, compared with a national unemployment rate of 12.7% (ONS, 2024). This figure highlights the difficulties graduates face when entering the labour market and the need to seek alternative employment pathways. In response to this situation, entrepreneurship has emerged as a strategic solution to reduce unemployment and improve employability. To encourage such initiatives, several entrepreneurship support mechanisms have been put in place, demonstrating the government's commitment to promoting entrepreneurship. In addition to these policies, Algerian universities also play a key role in this process. This involvement takes the form of integrating entrepreneurship modules into university curricula and developing entrepreneurship-oriented programmes. These initiatives aim to raise awareness among students by cultivating their entrepreneurial mindset, knowledge and attitudes. Entrepreneurial training is not limited to these courses; it also includes training within university support structures such as Entrepreneurship Houses (now Entrepreneurship Development Centres) and incubators. These structures aim to support young graduates throughout the entrepreneurial process. Nevertheless, some authors emphasise that the effectiveness of entrepreneurial training depends heavily on the content of the courses, the methods used and the economic and institutional context in which entrepreneurs operate (Honig, 2004; Audet, 2004). Other studies have highlighted its positive impact on entrepreneurial intentions (Fayolle & Gailly, 2015).

Existing research on graduate employability in the MENA region remains largely descriptive or centred on economic macro-indicators, leaving a gap regarding the micro-processes through which university training shapes entrepreneurial trajectories. This study addresses that gap by combining an analysis of skill development with an evaluation of institutional support structures in Algeria.

In this context, it is necessary to analyse the actual role of university entrepreneurial training in the professional integration of young higher education graduates, taking into account the Algerian entrepreneurial context. Accordingly, the following research question is addressed: to what extent does university entrepreneurial training contribute to reducing unemployment among higher education graduates in Algeria?

To address this question, the following sub-questions are proposed:

- What is the impact of university entrepreneurship training on the professional integration of young Algerian graduates?
- Do public measures effectively support the integration of graduates?

- To what extent do the objectives of entrepreneurial training address youth unemployment among graduates?

2. THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 University entrepreneurial training

Entrepreneurship education gradually established itself as an academic field in the second half of the twentieth century. This development emerged in response to the economic, social and technological transformations that occurred worldwide during this period (Gómez Santos, 2014; Fayolle, 2012). This evolution was accompanied by considerable academic debate, various institutional experiments and the development of new pedagogical approaches and entrepreneurship teaching methods.

The American experience is widely regarded as a major reference in entrepreneurship education. The first entrepreneurship courses were taught at Harvard in 1947 (Gómez Santos, 2014), in a context that had been marked long before by the work of Schumpeter. By the end of the 1990s, the United States had successfully integrated entrepreneurship into all levels of the education system, giving rise to the concept of the “entrepreneurial university” (Fayolle, 2012; Katz, 2003). This transformation is based on the interaction between the academic world and its external environment, in particular businesses (Dif, 2018).

The European experience, in turn, was largely inspired by the American model. It emerged in the 1980s and accelerated in the 2000s with the impetus of European public policies. This development encouraged the French government to promote entrepreneurship (European Commission, 2002). These developments encouraged the French government to create an environment conducive to business creation. From then on, their objective was to create an environment conducive to business creation (Gómez Santos, 2014). The emergence of Entrepreneurship Houses (from 2004) and entrepreneurial hubs (from 2009) illustrates this institutional dynamic.

At the same time, the debate on whether entrepreneurship can be taught remains ongoing. The conservative perspective considers entrepreneurship to be an innate ability that is difficult to teach (Thompson, 2004). In contrast, the progressive school argues that entrepreneurship can be taught and that entrepreneurial knowledge and skills can be transferred (Drucker, 1985; Hernandez, 1999). The second perspective is now widely supported in the literature, emphasising that the non-transferability of talent does not prevent the transfer of skills through entrepreneurial training (Bechard & Toulouse, 1998; Fayolle, 1999; Verstraete, 1997; Schieb-Bienfait, 2000). Fayolle and Fillion (2006) specify that entrepreneurs are not born, but made.

Indeed, the founders of the progressive school point to the existence of three levels of intervention in entrepreneurial education (Fayolle, 2001; Tounes, 2003; Verstraete & Saporta, 2006) and several approaches (Tounes, 2003; Hadj Slimane & Kara Terki, 2016).

The first level focuses on awareness-raising and entrepreneurship promotion. It aims to develop an entrepreneurial spirit and present business creation as an alternative to salaried employment. This level is aimed at all students, particularly those at the beginning of their university career. It is based on information campaigns, the organisation of conferences and competitions, and testimonials (Tounes, 2003). The second level refers to specialisation and training.

It targets potential entrepreneurs with entrepreneurial intentions. The objective of this level is to transfer entrepreneurial skills through qualifying and professional training courses (Fayolle, 2012). The third level concerns support and advice. This level targets prospective entrepreneurs engaged in the creation process and is carried out through support structures (EDC, incubators, etc.) with the aim of launching and ensuring the success of businesses (Hernandez, 1999; Benoun & Senicourt, 1994).

2.2 Approaches and methods of entrepreneurial education

Approaches to entrepreneurship education vary according to the role of the teacher and the learner. The functional approach aims to impart the technical skills necessary for new venture creation. It considers entrepreneurship education as a subject, unlike the cross-curricular approach, which considers it as a global skill aimed at developing an entrepreneurial spirit.

In addition to these two approaches, authors (Neumann, 2001; Hadj Slimane & Kara Terki, 2016) identify three main models. The supply model focuses on the transmission of knowledge by the teacher. The demand model places the learner at the centre of learning, taking into account their needs and objectives. The skills model aims to develop learners' abilities in a real-world context. Furthermore, in response to the limitations of traditional teaching methods, new approaches have emerged that favour experiential and action-based learning (Honig, 2004; Carrier, 2009). Other methods have been highlighted by Fayolle (2012) and Carrier (2009), such as simulations, business games, case studies and the use of life stories, films and videos. Simulations enable learners to make informed decisions, experiment with management and uncertainty, and view failure as a source of learning (Stumpf et al., 1991; Wolfe & Bruton, 1994). Life stories and testimonials promote the development of entrepreneurial personality (Rae & Carswell, 2000).

The integration of entrepreneurial training into higher education has transformed the role of universities, particularly with regard to professionalisation and openness to their external environment (Chambard, 2013; Fayolle, 2012). Universities have become key players in the development of entrepreneurial culture and skills. Entrepreneurial training is not limited to the transmission of knowledge, but is part of a process of skills development and professionalisation. As such, it contributes to the economic and social development of countries by linking teaching, research and the promotion of student initiatives (Verstraete & Saporta, 2006; Fayolle, 2012).

2.3 Unemployment in Algeria

Economic and demographic changes have shaped the evolution of unemployment. Freyssinet (2004) distinguishes three main phases. The first phase was characterised by low unemployment and a stagnant labour market (before the 1960s). The second phase, from 1960 to 1970, saw a gradual rise in unemployment due to technological change. The third phase, from 1975 to 2000, was characterised by the establishment of long-term mass unemployment.

Algeria experienced all three phases, but with specific structural characteristics. The work of Talahite and Bouklia-Hassane (2007, 2008) indicates that the evolution of unemployment in Algeria is linked to fluctuations in oil revenues. The post-independence period until the mid-1980s was characterised by stable employment and expansion of the public sector. However, the oil counter-shock of 1986 led to a rapid rise in unemployment and a restructuring of the labour market. The 2000s saw a relative decline in unemployment thanks to various employment policies and entrepreneurship support programmes.

Unemployment cannot be understood as an isolated cyclical phenomenon, but rather as the result of a structural imbalance affecting professional integration, the functioning of the labour market and the education system (Freyssinet, 2004; Rose, 2005). Education is seen as an investment that increases individual productivity and reduces the risk of unemployment (Becker, 1964; Schultz, 1961). Nevertheless, numerous studies show that investment in education does not automatically guarantee access to the labour market, particularly in economies with a weak productive system (Thurow, 1975; Gurgand, 2005).

In Algeria, this observation still holds true today, and rising graduate unemployment reveals an employment crisis and an ineffective education system. Guillon (2010) and Duru-Bellat (2006) emphasise that education and higher education policies are not aligned with the needs of the labour market and the economic fabric. These authors confirm the analysis of Bourdieu and Passeron (1970), who had already argued that school does not guarantee professional integration, but rather reproduces social trajectories.

Professional integration is the process of transition from education to stable employment (Vernières, 1993; Vincens, 1981). It encompasses all the successive phases of unemployment, precarious jobs and further training (Dupaquier et al., 1986; Paul, 1984). When the labour market is selective, this process is prolonged, exposing young graduates to long-term unemployment (Freyssinet, 2004).

In recent years, the concept of skills has replaced that of qualifications, thereby accentuating the difficulties of integration. Skills generally include behavioural dimensions that are difficult to measure by the diploma obtained (Gendron, 2001; Rovel, 2002). This situation disadvantages young graduates who lack professional experience (Thurow, 1975). In addition, the mismatch between training and employment is a key determinant of unemployment. It manifests itself in the form of downgrading and misalignment, when the jobs held do not correspond to the specialisation and level of training (Rose, 2005; Picard, 2001). This situation undermines the employability of young people and forces them to accept precarious or informal jobs.

2.4 Characteristics of unemployment in Algeria

The labour market in Algeria is characterised above all by a high unemployment rate (12.7% in 2024). According to ONS statistics (2024), unemployment particularly affects young people, women and higher education graduates, revealing the selectivity of the labour market. One of the major characteristics is the low economic participation of women and young people. This low participation is reflected in high female unemployment, estimated at 25.4%, and youth unemployment, which stands at 29.3%.

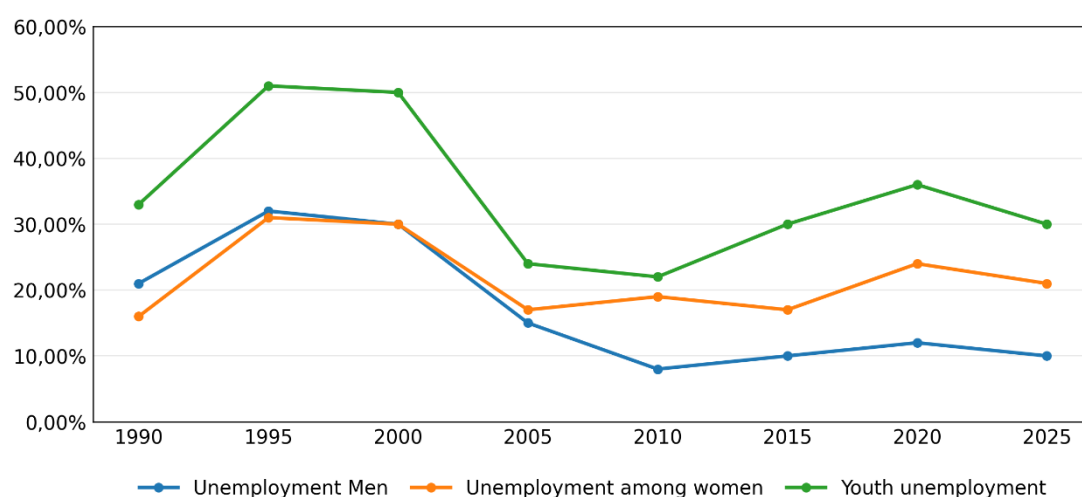


FIGURE 1. UNEMPLOYMENT IN ALGERIA FOR THE PERIOD (1991-2024)

Source: World Bank, 2024.

This phenomenon is widely observed in developing economies (ILO, 2018). This situation is partly rooted in cultural and institutional factors and the nature of the jobs available (Musette, 2014). Furthermore, the weak productive system, dominated by market services and trade, to the detriment of the industrial and agricultural sectors that generate more labour, limits job creation (11.7% and 4.2% respectively) (Benyahia, 2019).

Although the service sector remains an important driver of economic growth, the marginalisation of other sectors only exacerbates unemployment. In addition, the dominance of the private sector, characterised by unstable working conditions and temporary contracts, reinforces job insecurity (Ben Makhoul, 2019).

This situation encourages long-term unemployment, particularly among young graduates (Freyssinet, 2004). Indeed, 68.3% of unemployed people say they are willing to accept a job below their professional skills, 69.3% would accept a job that does not match their training profile, 65.7% say they are willing to accept a low-paid job and 76.3% would accept a job in any sector of activity.

The Algerian labour market also exhibits important social characteristics. Decades of population growth have resulted in labour supply far exceeding demand (ONS, 2024). This demographic pressure mainly affects young people, who constitute the most active age group. The level of education and the extension of schooling delay entry into the labour market, thereby increasing the number of unemployed graduates

without guaranteeing them professional integration. Duru-Bellat (2006) and Charlot (1995) point out that educational success does not automatically translate into professional success and that mass education leads to a devaluation of qualifications. According to ONS statistics, the unemployment rate for higher education graduates is 19.5%, compared with 14.6% for vocational training graduates and only 9.6% for those without qualifications. Finally, unemployment in Algeria has a strong urban dimension. This is a consequence of rural exodus and the concentration of economic opportunities in large cities. This phenomenon accentuates regional inequalities and increases the vulnerability of young graduates.

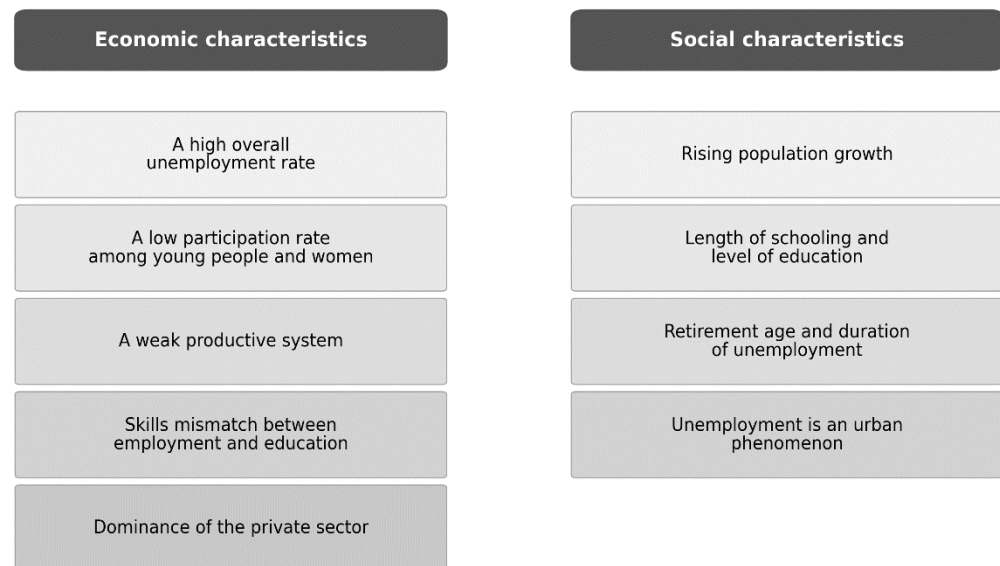


FIGURE 2. CHARACTERISTICS OF THE LABOUR MARKET IN ALGERIA

Source: Prepared by the authors based on secondary data.

The three-level model of entrepreneurial education (Fayolle, 2001; Verstraete & Saporta, 2006) directly informs our first research question: it allows us to assess whether entrepreneurial training provided through Entrepreneurship Houses, operating at the second and third levels (specialisation and support), effectively moves students from intention to action and thereby improves professional integration. The processual approach to entrepreneurship, which emphasises the interactions among individual factors, perceived opportunities and context, frames our second research question by enabling an evaluation of whether public support measures, particularly institutional support provided through Entrepreneurship Houses and financial support from NESDA, genuinely facilitate this transition or remain disconnected from labour market realities. Finally, human capital and skills-based theories underpin our third research question: if entrepreneurial training addresses the mismatch between education and employment, it should reduce structural unemployment; conversely, if it remains overly theoretical and poorly aligned with labour market needs, its impact on youth unemployment will remain limited.

3. METHODOLOGY

This study adopts a mixed-methods research design, combining quantitative and qualitative approaches to provide a comprehensive understanding of the contribution of university entrepreneurial training to the professional integration of higher education graduates in Algeria. This methodological choice is particularly appropriate for examining a complex phenomenon such as entrepreneurship, which involves both measurable outcomes and individual experiences.

The study adopts a pragmatic research perspective, allowing quantitative and qualitative evidence to be combined to strengthen the robustness of the findings. The quantitative component makes it possible to measure the contribution of entrepreneurial training through statistical analysis, while the qualitative component provides a deeper understanding of the experiences of the actors involved and the functioning of the Entrepreneurship Houses.

The empirical investigation was conducted in five wilayas located in central Algeria: Algiers, Tizi-Ouzou, Béjaïa, Boumerdès and Bouira. These wilayas were selected for several reasons. First, they constitute one of the country's main economic and university regions, hosting a large number of higher education institutions as well as Entrepreneurship Houses. Second, their geographical proximity facilitated access to respondents and ensured efficient data collection. Finally, these wilayas contain some of the oldest Entrepreneurship Houses established in Algeria, making them particularly relevant for evaluating the effectiveness of university entrepreneurial support.

The quantitative sample consists of 200 higher education graduates who completed entrepreneurial training within Entrepreneurship Houses and subsequently created their own businesses. The sample represents approximately 10% of the target population of graduate entrepreneurs supported by the selected centres. Participants were selected according to the following criteria: holding a higher education degree; having completed entrepreneurial training provided by Entrepreneurship Houses; having effectively created a business; and operating within one of the five selected wilayas.

The qualitative component is based on 18 semi-structured interviews conducted with managers and trainers working in Entrepreneurship Houses. These interviews were intended to obtain a detailed understanding of the organisation of the training programmes, the pedagogical approaches adopted, the challenges encountered by trainers and graduates, and the perceived contribution of entrepreneurial training to business creation.

The quantitative data were collected through a structured questionnaire administered to the selected graduate entrepreneurs. The questionnaire gathered information on respondents' socio-demographic characteristics, entrepreneurial background, participation in university entrepreneurial training, skills

acquired during the training process, and the contribution of this training to business creation and professional integration.

The qualitative data were collected through semi-structured interviews with managers and trainers from Entrepreneurship Houses. This method provided valuable insights into the implementation of entrepreneurial training programmes, the support offered to graduate entrepreneurs, and the institutional challenges affecting the effectiveness of these initiatives.

The combination of questionnaires and interviews enabled methodological triangulation, thereby improving the credibility and comprehensiveness of the findings.

The quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistical techniques, including frequencies, percentages and cross-tabulations, were first employed to describe the characteristics of the respondents and identify the main trends emerging from the data.

In addition, Multiple Correspondence Analysis (MCA) was carried out to examine the relationships between the categorical variables and to identify the principal dimensions underlying the entrepreneurial training process. This multivariate technique made it possible to reveal the associations between entrepreneurial training, the competencies developed by graduates and their entrepreneurial outcomes.

The qualitative interviews were analysed through thematic content analysis. The interview transcripts were carefully examined to identify recurring themes relating to the strengths and limitations of entrepreneurial training, the role of institutional support, and the factors influencing graduates' entrepreneurial trajectories. The qualitative findings were subsequently compared with the quantitative results to strengthen interpretation through data triangulation.

4. RESULTS AND DISCUSSION

This section presents the findings of the empirical study and addresses the research questions. It reports the results of the field survey and provides their interpretation. The field survey provided valuable evidence on the impact of entrepreneurial training provided through Entrepreneurship Houses.

4.1 Characteristics of respondents

The analysis first focuses on individual characteristics, such as their level of education, initial training, place of study, age, gender and motivations.

Table 1 presents the main characteristics of entrepreneurs trained through Entrepreneurship Houses, providing context for the analysis of the profiles of the entrepreneurs surveyed. The gender breakdown of

our sample shows a male majority of 59%, compared with 41% female. This indicates a higher level of male participation in entrepreneurship while also highlighting substantial female engagement, which reflects the growing interest of both sexes in starting a business.

TABLE 1. CHARACTERISTICS OF RESPONDENTS

Category	Variable	Percentage (%)
Gender	Female	41
	Male	59
Level of education	Bachelor's degree	18
	Master's degree	78
	Doctorate	4
Geographical distribution	Algiers 1	21
	Algiers 2	14
	Algiers 3	10
	Boumerdes M'Hamed Bougara	17
	Bouira Akli Mohand Oulhadj	11
	Bejaïa Abderrahmane Mira	12
	Tizi-Ouzou UMMTO	15
Age	Under 25	0.83
	25 to 29 years old	51.66
	30 to 34 years old	30.83
	35 to 40 years old	16.66
Faculties of origin	FGEI	25
	FSBA	21
	FGC	6
	FS	12
	FSEGC	16
	FDSP	3
	FLL	8
	FSHS	4
	FSTGAT	3
	FAPS	2

Source: Based on the results of the 2024 survey.

Analysis of educational attainment shows that the majority of entrepreneurs have a high level of education. Indeed, 78% of respondents hold a Master's degree, 18% hold a Bachelor's degree and 4% hold a Doctorate. This suggests that entrepreneurial training mainly attracts Master's students for two reasons: firstly, because they are at a stage between the end of their studies and entering the job market; and secondly, because these young graduates seek improved career prospects and greater financial independence. The relatively small proportion of doctoral graduates may reflect their focus on an academic career.

The geographical distribution of respondents shows a significant concentration in universities in the central region. The University of Algiers 1 accounts for 21% of trained entrepreneurs, followed by the University of Boumerdes with 17% and Tizi-Ouzou with 15%. The universities of Algiers 2, Bejaïa, Algiers 3 and Bouira account for 14%, 12%, 11% and 10% respectively. This distribution confirms that the central region,

particularly the capital, offers greater entrepreneurial opportunities and infrastructure conducive to entrepreneurship.

Regarding the age of the entrepreneurs, we observe that the majority belong to the "25 to 29" age group (51%). They are followed by the "30 to 34" age group, representing 30.83%, and the "35 to 40" age group, with 16.66%. Meanwhile, those under 25 years old make up only 0.83%. This distribution suggests that entrepreneurship generally occurs after a short period of integration or job search, which allows these young graduates to acquire a minimum of professional maturity and a better knowledge of the local market.

Finally, the distribution of entrepreneurs according to their faculty of origin highlights a dominance of technical and scientific training, led by the Faculty of Electrical Engineering and Computer Science with 25%, followed by the Faculty of Biological and Agricultural Sciences with 21% and the Faculty of Economics, Business and Management Sciences with 16%. The Faculty of Science accounts for 12% of entrepreneurs, while the other faculties represent small proportions ranging from 8% to 2%. These findings suggest that graduates from technical fields have skills that can be applied in the field of entrepreneurship, further strengthened by the entrepreneurial training received through Entrepreneurship Houses. Overall, these findings indicate that the entrepreneurs surveyed are predominantly young, highly educated and from diverse backgrounds. These elements reinforce the consistency between entrepreneurial training, participant profiles and the projects developed.

4.2 The emergence of entrepreneurial intention and the role of university training

The entrepreneurial idea emerged predominantly within the academic environment. For 43% of respondents, the university entrepreneurship module served as the trigger. This finding aligns with Fayolle and Gailly (2015), who demonstrate that entrepreneurship education positively shapes entrepreneurial intentions by providing knowledge and reducing perceived risk. However, the module's impact remains limited in scope: many students subsequently turned to EDCs for specialised training, suggesting that curricular entrepreneurship teaching in Algeria is still largely theoretical and insufficiently professionalised. This corroborates Honig (2004), who argues that the effectiveness of training depends heavily on pedagogical methods and contextual adaptation.

Meetings with entrepreneurs (22%) also play an important role in building an entrepreneurial profile, offering models of success, opportunities and encouragement. We found in particular that even limited professional experience contributes to the acquisition of know-how and practical skills (56%). As for the impact of university projects and stays abroad, it remains limited despite contributing to the maturation of the idea.

Furthermore, prior to starting their businesses, these students were characterised by a high degree of professional precariousness. The majority were casual workers (36%), 33% were unemployed, 21% were employees and 10% were still students. These findings highlight the positive impact of university education and entrepreneurial training in preparing students for entrepreneurship.

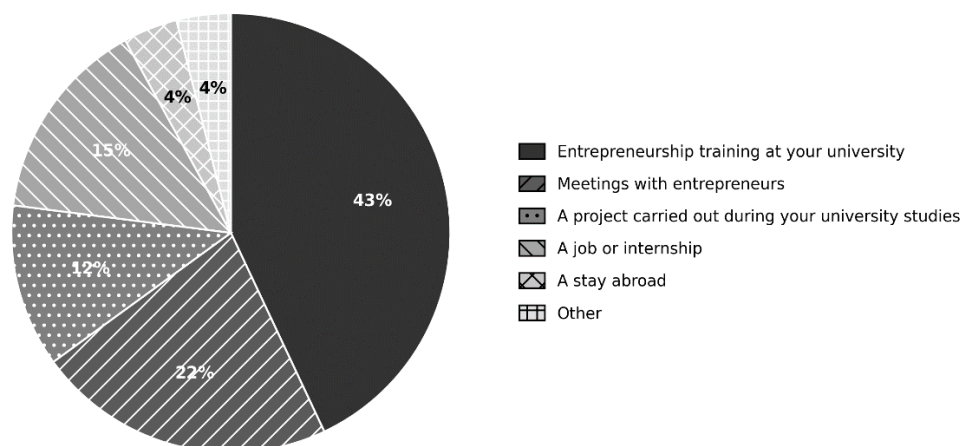


FIGURE 3. BIRTH OF THE ENTREPRENEURIAL IDEA

Source: Based on the results of the 2024 survey.

In addition, these young entrepreneurs are motivated by a combination of necessity- and opportunity-driven factors, reflecting resilient profiles, high aspirations and a need for independence and creativity. Our analysis confirms the close link between entrepreneurial activity and economic activity, as well as the importance of policies and mechanisms to support entrepreneurship. The findings also indicate that the majority of students evolve in an entrepreneurial environment. This proximity promotes learning, moral support and access to advice and, in some cases, financial resources.

Meetings with entrepreneurs inspired 22% of respondents to pursue entrepreneurship, providing successful role models and illustrating the importance of social learning (Rae & Carswell, 2000). Prior professional experience, even limited, contributed to the acquisition of practical knowledge and skills among 56% of respondents. Notably, 93% of entrepreneurs felt the need for training before launching, indicating a high level of perceived uncertainty and recognised skill deficiencies. After training, respondents reported a reduction in perceived risk and increased psychological readiness, confirming that Entrepreneurship Houses act as a bridge between entrepreneurial intention and business creation. Nevertheless, for some, entrepreneurship remains a necessity-driven choice rather than an opportunity-driven one.

Prior to creation, 36% were casual workers, 33% unemployed, 21% employees and 10% students. This profile of high precarity supports the “push” factor thesis in developing economies (Reynolds et al., 2002): entrepreneurship becomes a refuge from labour market exclusion. However, the hybrid motivations observed (combining necessity and opportunity) reflect resilient profiles with strong aspirations for autonomy, consistent with the Algerian context where formal employment is scarce.

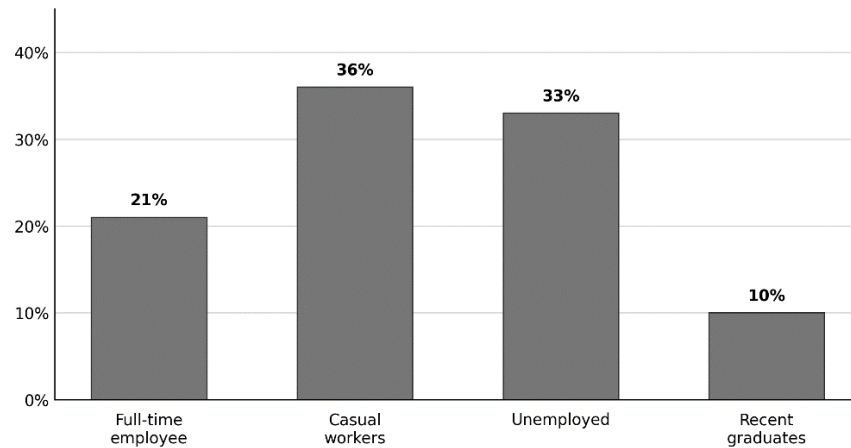


FIGURE 4. STATUS PRIOR TO BUSINESS CREATION

Source: Based on the results of the 2024 survey.

Our analysis reveals that entrepreneurial training is not simply a complement to students' initial training, but rather a response to the difficulties they face in entering the labour market. The fact that 93% of respondents felt the need to undergo training before transforming their entrepreneurial idea into a viable business project indicates that they recognised their skill deficiencies and lacked confidence. After the training, we observed a reduction in perceived risk and increased psychological confidence, which ultimately strengthened their entrepreneurial intention and commitment, making the training indispensable to their trajectories. This reflects a shift in the understanding of entrepreneurship, which is no longer seen as an individual choice but as a structured learning process. However, some entrepreneurs still see it as a necessity-driven choice, adopted out of constraint.

4.3 Pedagogical practices and the entrepreneurial training process

To maximise the chances of success, trainers use a variety of teaching methods, with a predominance of workshops (52%) and roundtables (37%). However, these practices are mainly teacher-centred (60%), with the use of business plans (16%) and case studies (11%) promoting knowledge acquisition but remaining insufficient for developing practical entrepreneurial competencies. Project-based learning (2%) and simulations (4%) remain marginal due to a lack of resources and limited time. Consequently, 67% of entrepreneurs consider that the training provided by the Entrepreneurship House remains insufficient and that its impact is more pronounced during the early stages of the entrepreneurial process.

The training levels are structured into three tiers (TRIE, CREE and GERME). They reflect a progressive learning process but also a focus on introductory training (TRIE). This result indicates that the majority of entrepreneurs require greater support in the initial phase of their ventures. Although TRIE training plays a crucial role in the maturation of the idea, low participation in other training courses limits the development of managerial and strategic skills.

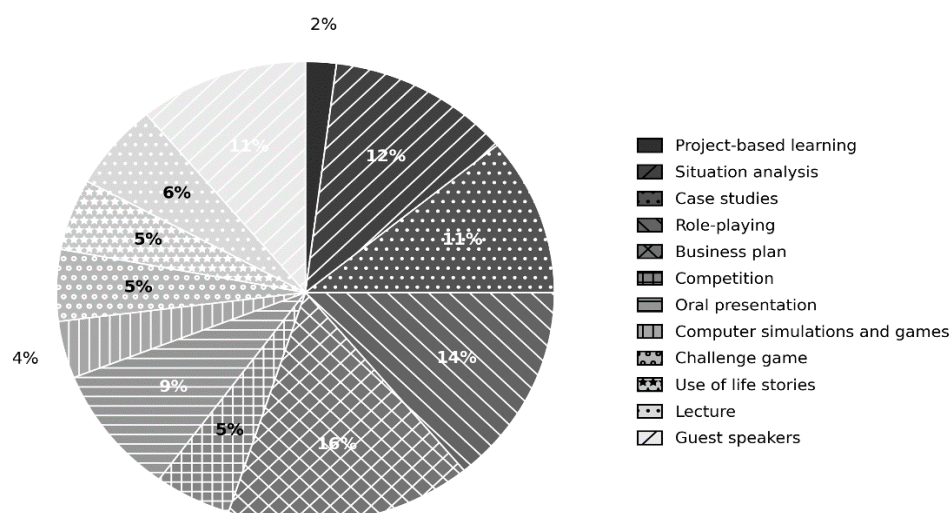


FIGURE 5. TEACHING PRACTICES USED AT THE ENTREPRENEURSHIP HOUSE

Source: Based on the results of the 2024 survey.

One of the major findings of our survey is that all respondents maintained their decision to start a business after the entrepreneurial training. Indeed, entrepreneurial training is a tool for strengthening and motivating entrepreneurship. The findings indicate that 80% of entrepreneurs took direct action following training, suggesting that such programmes serve as effective filtering and optimisation mechanisms. This shows that entrepreneurial training plays a role in filtering and optimising projects.

During the training, the Entrepreneurship House offered satisfactory support to project leaders. In addition, 83% of respondents confirmed the presence of this structure at their university, which reflects their long-standing institutional presence since 2014.

The awareness-raising activities put in place aim to guide students towards entrepreneurship through activities designed to encourage entrepreneurial engagement, such as information days (34%), scientific events (35%), competitions (23%) and summer universities. Despite these efforts, a large majority of respondents (62%) believe that students have limited awareness of entrepreneurship in the university environment, and in particular consider that these initiatives are not sufficient to encourage business creation. Interview data suggest that this shortcoming is due primarily to a lack of entrepreneurial intent, followed by insufficient information and inadequate content and initiatives. These findings suggest that the effectiveness of these awareness-raising initiatives depends heavily on their content and their ability to meet participants' expectations whilst respecting their level of entrepreneurial maturity.

4.4 Support mechanisms and resource mobilisation

Business creation relies primarily on intangible resources. Personal competencies and practical experience are the most essential resources for 99 entrepreneurs, followed by business networks (92 entrepreneurs) and advice (83 entrepreneurs). Funding, a key resource cited by 78 respondents, is

generally accessible through public schemes such as NESDA. In addition to these resources, the support provided by the Entrepreneurship House focuses mainly on the early stages of the entrepreneurial process. It appears that 50% of entrepreneurs benefited from advice and guidance, 22% had access to networking, and 12% benefited from coaching. However, material services remain very limited (4%). It is clear that the lack of post-creation support is a major weakness of the scheme. Despite this, 67% of respondents highlight the positive role of the support team in optimising time and ensuring the success of projects. However, the time taken to complete these projects varies between 1 and 2 years for more than 50% of entrepreneurs, revealing a significant gap between actual timelines and the ambitious deadlines announced at national and international level. This can be explained by the cumbersome administrative process and institutional constraints.

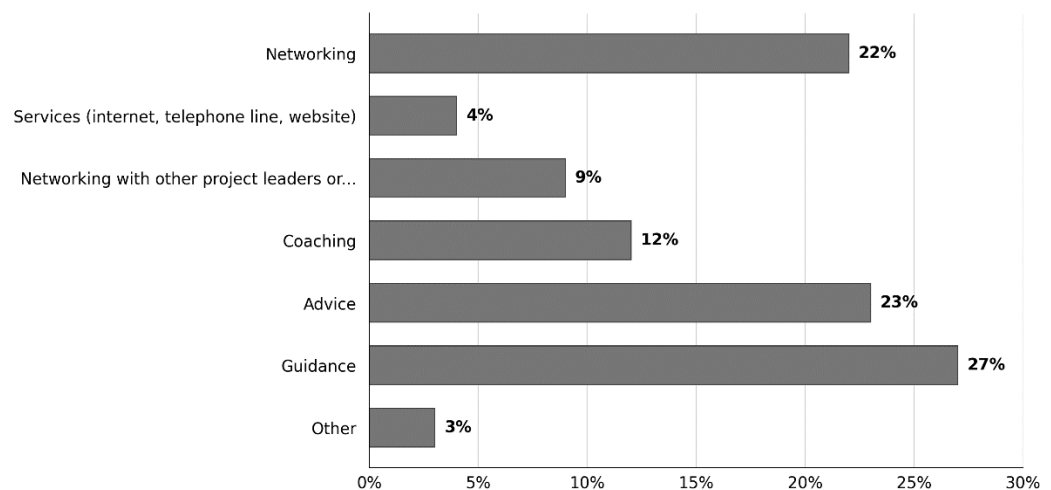


FIGURE 6. SUPPORT OFFERED BY THE ENTREPRENEURSHIP HOUSE

Source: Based on the results of the 2024 survey.

During the start-up phase, links with the external environment play a decisive role in facilitating access to advice (50%), financing (37%), practical knowledge (23%) and networks (22%). As a result of the training provided by the Entrepreneurship House, participants developed three complementary categories of skills: personal, technical and business-related. Personal skills are the most developed, particularly entrepreneurial skills (risk tolerance, perception of opportunities, initiative) developed in 62% of entrepreneurs. Personal development, information management and assimilation skills remain marginal. Business-related skills mainly concern business creation (39%), management (27%) and finance (25%). However, these skills are considered essential for the survival and growth of the business, although some are underdeveloped, such as communication and negotiation skills. Finally, technical skills are concentrated in marketing and sales (32%), business development (27%) and strategic positioning (25%). Leadership is the least developed skill (15%), as it depends largely on the entrepreneur's own experience.

4.5 Skills developed and their perceived utility

During the start-up phase, personal skills are the most useful and most frequently used (42%) compared to technical skills (21%) and business-related skills (37%). This helps explain the educational focus and priorities of the training provided at the Entrepreneurship House.

The findings indicate that entrepreneurial training had a major impact first on skills development (72%), then on project planning (31%) and finally on project success (23%). Training also had an indirect impact on the economy and society through job creation, local development and the spread of entrepreneurial culture. It mainly helped to clarify the target market (42%), marketing (25%), financial planning (17%) and competition (16%).

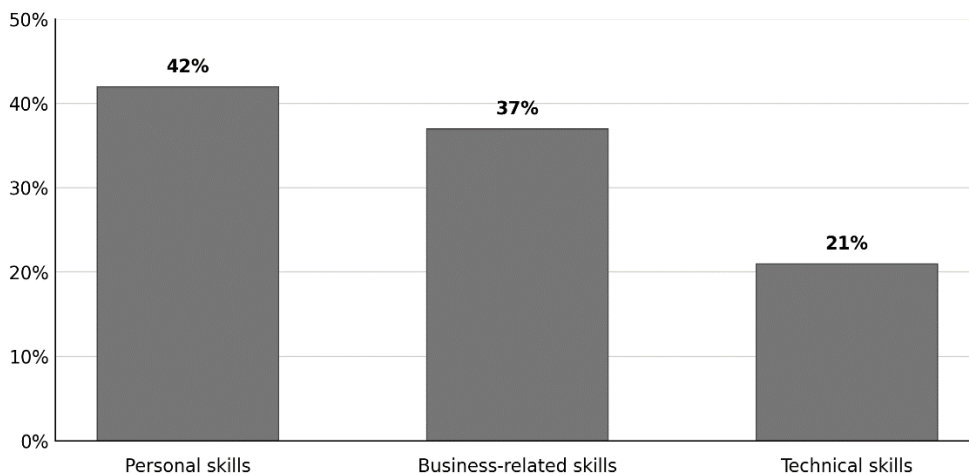


FIGURE 7. THE MOST USEFUL SKILLS IN THE START-UP PHASE OF A BUSINESS

Source: Based on the results of the 2024 survey.

Regarding its role, the majority of entrepreneurs (67%) consider this training a complement to their initial education, whereas the remainder perceive it as basic training. The content is considered satisfactory by 63%, but 37% express dissatisfaction with the lack of practical experience, the superficiality of the content and the insufficient duration of the training. Nevertheless, it met the needs and expectations of 53% of participants. Conversely, 47% felt that their needs were unmet due to the lack of post-training follow-up and personalised coaching. Overall, 54% of entrepreneurs consider this training sufficient to embark on their business creation process, as it is an essential catalyst.

4.6 Critical analysis of limitations

Despite these positive outcomes, our study reveals significant limitations that temper the optimism surrounding entrepreneurship houses.

Post-creation follow-up and sustainability: the most critical gap is the near-total absence of post-creation follow-up. While 67% of respondents praised the support team's role in optimising time and ensuring

launch-phase success, no institutional mechanism exists to monitor businesses beyond the first year. This finding corroborates the theoretical critique of entrepreneurship support in developing economies: training programmes often function as launch pads without providing long-term support mechanisms (Naudé, 2010). Consequently, we cannot assess long-term business sustainability, job creation durability or economic impact. The lack of longitudinal data prevents us from determining whether the 80% action rate translates into viable enterprises or merely short-lived survivalist ventures.

Pedagogical inadequacy: although 63% found content satisfactory, 37% criticised the lack of practical experience, superficial coverage and insufficient duration. The marginalisation of simulations and project-based learning (6% combined) contrasts sharply with best practices in entrepreneurial education (Honig, 2004; Carrier, 2009). In an economy where 68.3% of the unemployed accept jobs below their skill level, training must go beyond business-plan drafting to include resilience-building, adaptive management and digital entrepreneurship (areas currently underrepresented).

Institutional coordination: interviews with NESDA representatives revealed fragmented coordination between universities, Entrepreneurship Houses and financing bodies. Entrepreneurs often face redundant administrative requirements and unclear pathways from training to funding. This institutional friction prolongs the creation timeline (1–2 years for over 50%) and discourages potential creators.

Selection bias: the study's focus on successful creators (those who actually started a business) excludes dropouts. Whilst our qualitative interviews suggest that dropouts often reflect a healthy selection mechanism (discouraging ill-prepared candidates), they may also indicate systemic failures, particularly among women and rural graduates who face additional barriers not captured by our sample.

5. CONCLUSIONS

Our research contributes to a body of work that considers entrepreneurship to be a phenomenon that goes far beyond an individual approach focused on personality traits. It highlights entrepreneurship as a driver of economic and social development, capable of generating value and employment and contributing to regional dynamics, provided that it develops within a favourable institutional and economic environment. Our study thus confirms the processual approach to entrepreneurship, according to which the entrepreneurial act results from interactions among individual factors, perceived opportunities and contextual determinants. In addition, the findings confirm that university entrepreneurial training is a key element in this process, particularly when delivered through support structures such as Entrepreneurship Houses. These structures serve as a bridge between universities and the labour market. Their role is not limited to transmitting technical knowledge; it also extends to the development of several types of skills, the reduction of uncertainty and the facilitation of the transition from intention to action. Consequently, they

help transform constraints into entrepreneurial opportunities. Our research contributes to the literature on entrepreneurship education in three ways. First, it provides empirical evidence from an under-studied context (Algeria's central region) thereby extending the geographical scope of processual theories beyond Western and Asian settings. Second, it demonstrates that Fayolle's three-level model, whilst theoretically sound, faces implementation challenges in developing economies: the first two levels (awareness and training) are relatively well covered, but the third (sustained support) remains structurally weak. Third, the study highlights the necessity-opportunity hybridity characteristic of Algerian graduate entrepreneurs, suggesting that existing typologies developed in mature economies require contextual adaptation.

Our analysis reveals that the impact of entrepreneurial training is most evident in the early stages of the entrepreneurial process. At this stage, training plays a decisive role in the decision to start a business, helping graduates to clarify their ideas, assess risks and develop realistic projects in line with the Algerian entrepreneurial context. This support during the early stages contributes significantly to building self-confidence, maturing the idea of entrepreneurship and validating projects through guidance provided by trainers within the Entrepreneurship House. However, the research highlights that this training does not systematically lead to the actual creation of a business, which confirms the complexity of entrepreneurial trajectories in Algeria.

The initial results of our research also highlight that the teaching methods used during the training courses are a key factor for success. Active and experiential approaches promote learning by doing and allow participants to confront situations that are close to reality. These methods promote both the ability to anticipate and engage in strategic planning and the decision-making skills of graduate entrepreneurs. Nevertheless, their impact remains limited in the later stages of the entrepreneurial process due to insufficient post-training follow-up and a lack of resources.

In terms of skills, the study shows that the entrepreneurial training provided at Entrepreneurship Houses contributes to the development of three complementary categories of competencies. It promotes the acquisition of personal skills (autonomy, motivation, resilience, risk perception), business-related skills (management, finance, resource mobilisation) and technical skills (leadership, marketing, business development).

However, these skills are often perceived as insufficient to tackle the business creation process, particularly when the training is too theoretical and poorly connected to real-world experiences. In addition, we found that this training is an important but insufficient mechanism, as its effectiveness depends on its complementarity with practical experience and additional practical learning opportunities.

Our work also highlights the structural limitations of the entrepreneurial training provided within the Entrepreneurship House. A significant proportion of participants point to the limited alignment of the

content with the actual needs of the labour market in Algeria, as well as the insufficiency of awareness-raising and support measures. This situation reveals a gap between the objectives of Entrepreneurship Houses and the practices implemented. In this regard, the recent transformation of Entrepreneurship Houses into Entrepreneurship Development Centres appears to be an attempt to reorganise the system, with the aim of achieving greater consistency in its objectives, more personalised support and better adaptation to the current context.

Furthermore, this research shows that training does not have the same impact on all beneficiaries. It seems to be effective for students who already have entrepreneurial predispositions, for whom it acts as a motivator. Conversely, for participants who are less committed to entrepreneurship, the training can lead to withdrawal from the entrepreneurial process, although this does not mean failure, but rather a selection mechanism.

Finally, the study highlights several methodological and empirical limitations, linked in particular to the difficulty of accessing institutional data and the impossibility of evaluating the performance and sustainability of the businesses created in the long term. These limitations open up prospects for future research, inviting further analysis of entrepreneurial trajectories over a longer period and the inclusion of cases of failure.

Overall, this work makes a significant contribution to understanding the role of university entrepreneurship education as a tool for professional integration and resilience in the face of labour market vulnerability. It highlights the need for an integrated approach, combining training, support, practical experience and a favourable institutional environment to enhance the contribution of university entrepreneurship education to economic and social development in Algeria.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work, the authors used DeepL for translation purposes and Kimi for language editing and proofreading to improve the manuscript's readability, grammar and linguistic accuracy. After using these tools, the authors carefully reviewed and edited the content as needed and take full responsibility for the content of the publication.

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